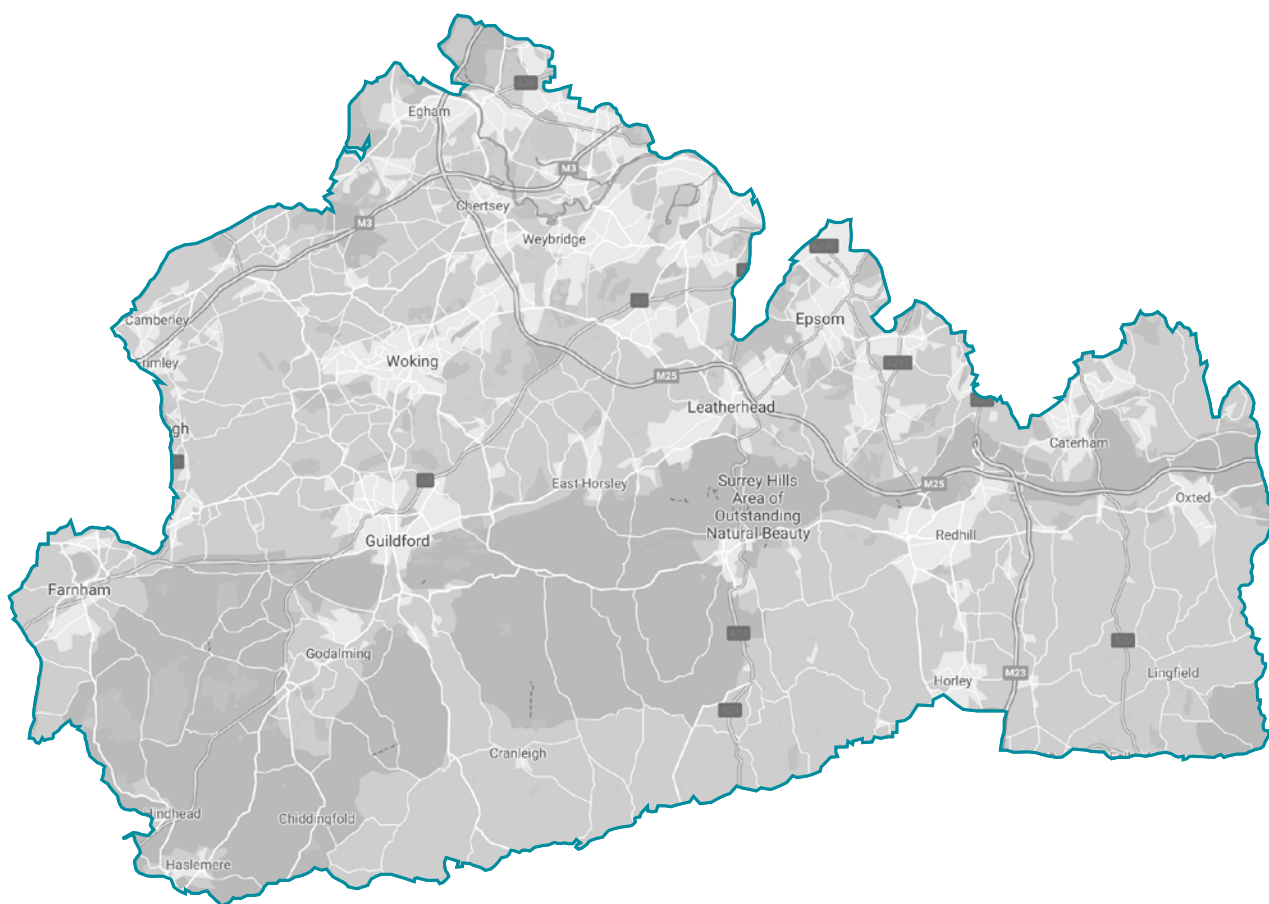




►► CHARTING SURREY'S ◀◀
POST-COVID RESCUE,
RECOVERY AND GROWTH



SURREY





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▶▶ Research Team ◀◀



▶ TEAM BIOS ◀



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Amelia joined the University of Surrey in January 2019 as Head of the Department of Politics, Chair in European and International Affairs and co-Director of the Centre for Britain and Europe (awarded prestigious Centre of Excellence funding in August 2020). Previously, Amelia worked as Director of the Centre for European Studies (CEFEUS), a Jean Monnet Centre of Excellence at Canterbury Christ Church Uni (2013-2018), where she worked in conjunction with Kent County Council and Kent-based stakeholders to produce a series of county-wide Brexit impact assessments on business and rural economy, health and social care, and the UK border. Prior to CCCU, she held positions in Brussels at the Vrije Universiteit Brussels and the Institute for European Studies. Amelia is regularly called upon as a guest speaker, external supervisor, research partner, consultant and by the media on areas of EU foreign affairs, and of late, EU-UK relations.



Dr Alia Middleton ►

Dr Alia Middleton is a Lecturer in Politics and co-Director of the Centre for Britain and Europe. After completing her PhD at the University of Edinburgh, she worked as a Research Associate at Newcastle University before joining the University of Surrey in 2015. She is a specialist in British politics, with particular expertise in political leadership, voter behaviour, the impact of leaders during election campaigns, national and local campaigning and party electoral strategy. She has published widely on local, regional and national elections and is regularly called upon by national and international media.

**◀ Economist: Marta Alvaro-Taus**

Marta Alvaro-Taus is currently studying a PhD in Economics at the University of Surrey. She holds a MA in European Economics from the College of Europe (Belgium), and an Bachelor's degree in Economics from the University of Valencia (Spain). Her previous experience includes working as Macroeconomic Analyst at Fidelity Investments, and as Research Analyst at the European Central Bank.

Surrey Voices: Ellen Hughes ►

Ellen Hughes is a Research Fellow at the Surrey Business School, University of Surrey. Her research questions how people and firms decide where to locate, and how places evolve over time.

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A specialist in international trade, Eric is currently the Deputy Head of Department and Senior Teaching Fellow in the School of Economics at the University of Surrey, responsible for various economics courses. He has provided consulting advice on Brexit-trade matters to major British and multinational corporations. Between 2011 and 2016, Eric was a Research Fellow at Oxford University.



Aviation Cluster: Christian Turner ▶

Christian Turner is a former policy advisor at the Department for Business, Energy and Industrial Strategy (BEIS), where he worked on EU Exit, including on Rules of Origin and no-deal preparation. He has previously worked as a research analyst at the Centre for European Studies (CEFEUS) at Canterbury Christ Church University and as a policy advisor at the UK Chamber of Shipping. Christian holds a first-class honours degree in International Relations with American Studies from Canterbury Christ Church, in addition to a distinction level LLM in International Law from the University of Kent.

◀ **Knowledge Cluster: Victoria Denton**

Victoria graduated from the University of Surrey in 2019 with a bachelor's degree in International Politics. She then completed a master's degree in Security Studies at UCL in 2020. Victoria has been a political analyst and research associate with the CBE/DoP at the University of Surrey since July 2019.

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Megan has recently graduated from the University of Surrey with a First-Class Honours degree in BSc Politics and Sociology. She will soon begin her postgraduate studies at London School of Economics and Political Science, studying MSc Gender, Peace and Security.

◀ **Business Cluster: James Penny**

James is studying BSc International Relations and is currently in his third year at the University of Surrey. He has a keen interest in foreign affairs, international development and sustainability.





Surrey is by any measure a special place. Our people, communities, economy, natural environment, public sector and globally significant location, have created a successful and ambitious County.

We cannot however take this for granted. Growing pressures mount all the time and have been accelerated in many cases by Covid-19 itself, and the wider implications of tackling it. Our historic success looks increasingly unsustainable.

We face an extraordinarily critical, complex, and uncertain time and need to make decisions and act in ways that will address these challenges both now and for the longer term. I am therefore delighted to provide these opening comments for the work that follows, having been commissioned by Surrey County Council, in conjunction with Rt. Hon. Philip Hammond, as Chairman of the Future Economy Surrey Commission.

Surrey University's initial research into four key sectors of our economy that have the potential to make the biggest contribution to our economic recovery going forward is an interesting, stimulating and inordinately helpful piece of work. The real value of it though lies in how we collectively use and apply it to our work, decisions and services. I would strongly encourage anyone reading it to engage with us, contribute to and act on it to the benefit of Surrey's economy and residents.

Tim Oliver, Leader, Surrey County Council

A handwritten signature in black ink, appearing to read 'Tim Oliver'.





We are facing a period of unparalleled challenge in the UK economy as we navigate the Covid crisis and face the potential shock of a move to non-preferential trading with our largest trading partner in a few months' time. Across the UK, we will need to re-double efforts to improve competitiveness if we are to return rapidly to growth. The Surrey economy has distinctive characteristics and traditionally has been resilient - but there is no room for complacency. On some key measures, Surrey is falling behind in relative terms.

And the widening gap between the east and the west of the county is a growing cause for concern and a challenge to our future prosperity.

So now is the moment to take stock; to assess the strengths and the weaknesses of our Surrey economy; to look at the opportunities and threats facing it; to make a plan to seize the former and mitigate the latter. This report provides us with the baseline analysis to do so. A platform on which to build a plan for Surrey's future prosperity, based on the comparative advantages the County enjoys and the clusters of excellence that it hosts.

I commend all those who have been involved in the production of this report for an excellent piece of work, delivered under difficult circumstances, and I extend my personal thanks to the third party organisations and businesses who have taken the time and trouble to engage with this project during what has been a difficult period for all of us.

Philip Hammond,
Chair, Future Economy Surrey Commission

The University of Surrey is proud of its association with the county of Surrey. We have been actively engaged at every level with its local governments and communities. As Vice-Chancellor, I have been privileged to serve on the county's Future Economy Surrey Commission, and the Surrey Growth Board.

Our academic disciplines and expertise span fields that help drive innovation within the county and the UK. For example, our Faculty of Arts and Social Sciences includes Schools of Business, Economics, Law and Department of Politics, each of which is actively involved in informing and helping shape future direction. Our Engineering and Physical Sciences Faculty has world-leading research and innovation expertise underpinning AI, telecommunication, space, manufacturing and automotive industries, whilst our Health and Medical Sciences colleagues have been contributing at the forefront of fighting the Covid19 pandemic.

As a leading research-intensive university in the UK, we fully recognise the deep importance of place, and the symbiotic relationship between world-leading, 'driver-like' research and local and regional development. We are therefore fully committed to contributing to advancing Surrey economically and socially for the benefits to its residents and communities.

In this regard, I congratulate Professor Amelia Hadfield and her team at the University for successfully conducting this study; this report highlights the key economic sectors, social issues, and challenges and opportunities within the context of Covid and Brexit, illustrating how the growth of established sectors and development of new industries alike will help both Surrey's short-term recovery and long-term prosperity.

Professor Max Lu,
President and Vice-Chancellor, University of Surrey



Team Leader Overview

Place matters. Places are separate, special and unique. Their uniqueness is derived from their economic characteristics, social attributes and political preferences as well as their geographic location. In this introduction, I want to reflect on the key issues unique to Surrey – including the goals that preceded Covid, as well as the many challenges that now face the county, and its sectors as a whole. In doing so, I want to explain to readers what the point of the report is, its chosen ‘look’ and the structure and tools we used to assemble it, as well as highlighting its recommendations.

I asked the team to read both widely and deeply: to consider reports that outlined Surrey as a county and as a regional market, and those which looked in great depth at the unique but impacted areas of its local economy arising from Covid. The findings to some extent reflect the pre-Covid strengths and weaknesses of the county, while also pointing to areas where bold new sources of innovation, as well as grave new dangers, are now present. My position on the Future Economy Surrey Commission is to my mind charged with the very real responsibility of explaining how the county needs to chart its future in the short, medium and long term. One of the very first reports I read within a few months of joining the University of Surrey as Head of the Department of Politics was the Surrey Future report entitled *Surrey’s 2020 Place Ambition: our approach to place leadership, infrastructure & good growth (2019)*.

The report presents a bold vision shared by both Local Authorities and strategic partners alike that only their conjoined efforts together can “ensure that Surrey continues to play a full part in the economic success of the country over the next 30 years”. The report lists as key drivers the importance of **growth, innovation and skills** in the regional and national economy alike, as well as the satisfaction derived from living in “an excellent place where people can live, work and learn” (p. 3). These themes were further reinforced when I had the opportunity to attend a 2-day place-based leadership conference in January 2020, where – representing the University of Surrey – I had the great good fortune

to meet key players in local government and leading decision-makers from across a host of sectors. It seems a world away now, but the key messages then clearly inspired Surrey’s leaders in both public and private sectors, and are largely attainable once we’re able to past through the vale of Covid.

These messages include the parallel goals of living and working with equal quality of life, in a county with top-quality business opportunities, based on a local economy marked out by key areas of excellence, dedicated to sustaining historical areas of growth while developing new ones, deepening more forms of inter-sectoral innovation, and working to build a wider inter-generational skillset. Surrey’s unique location featured heavily in these goals, but also served to undercut some of its ambition: proximity to London, the highly skilled workforce of Heathrow and Gatwick, a diverse digital business base all sufficiently underwrote the county economy. Equally, key sectors seemed unambitious, even complacent, while the growing east-west divide as well as various social indicators suggested that the county needed to quickly reappraise its overall strategic priorities to sufficiently deliver services and opportunities locally.





Covid-19 Defined

Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2 or more commonly known as Covid-19) emerged in Wuhan, China in December 2019 and has since spread globally, being declared a pandemic by the World Health Organisation (WHO, 2020) in March 2020. The virus affects people differently, but most infected people will experience mild to moderate respiratory illness and recover without hospitalisation, with the most common symptoms including a fever, dry cough, and tiredness (WHO, 2020). However, there are a number of high-risk categories. Older people, and those with underlying health conditions, are at higher risk. Governments around the world have generally recommended that these groups should take extra precautions through 'shielding' during the peak of the pandemic to minimise their interaction with other people. The virus spreads from person-to-person, primarily through droplets of saliva or discharge from the mouth and nose when an infected person coughs or sneezes. The current UK guidelines to prevent the spread of the virus and slow down transmission include washing hands regularly, wearing a face covering in enclosed spaces, maintaining at least two metres distance, or 1 metre with a face covering or other precautions (recently enshrining in law in England the 'Rule of Six' in terms of the maximum number of people at any given gathering) and getting a test and staying home for those who feel unwell or show symptoms (Gov.uk, 2020). There are currently no specific vaccines or treatments available for the virus however, there is a global drive for ongoing clinical trials to evaluate potential treatments.

Covid-19 has been the ultimate wake-up call.

Surrey's valuable assets - from its world class business, healthcare and education facilities to its high quality standard of living - have suffered serious setbacks in terms of GVA, supply-demand and supply chain upheavals, rising unemployment, investment declines, and wholesale behavioural changes. As this report explores, some sectors have been blighted to the point that recovery may now be impossible - including aviation and its related industries. Others have spotted opportunities based on swift transformation, and are surviving, or even thriving. Between these two opposites rest the majority of SMES, some MNCs, Local Economic Partnerships (LEPs), Local Authorities and the citizens of Surrey themselves, all using a variety of coping mechanisms to get through the next few months, and years.

It is important that the both the detailed analysis that comprises this report, as well as the 'strategic asks' we painstakingly amassed from all those we spoke to, are not only carefully considered but converted rapidly and efficiently into **high-impact recommendations** for local and national government alike. Key decision-makers in business, aviation, health and knowledge/R&D have spent considerable time talking with us, reflecting on the

emerging national and local trends, and outlining precisely what they need to ensure Surrey recovers swiftly and sustainably. As can be seen, we feel that each of the four clusters we explored have a range of 'strategic asks' but also material recommendations boiled down into a single, overarching 'must-do' message. Putting that message into rapid action however, is the next, most vital step.

As Chair of the Future Economy Surrey Commission, Philip Hammond suggested a number of ways in which we might approach the task. The first was to get the measure of what is best about Surrey - as well as what was most impacted by Covid - by looking at clusters. Clusters represent a particular grouping or concentration of a particular specialism which helps to distinguish it from other outputs in the area, thereby giving it a regional comparative advantage (by producing something unique) and - depending on the overall quality of the output, a competitive advantage in market terms, allowing the output and region as a whole to truly stand out. Surrey is full of such areas, as this report demonstrates. Concentrating in the main on four key clusters - business, aviation, healthcare and the knowledge economy - we quickly amassed a list of sub-cluster and cross-cluster areas where Surrey

possessed local comparative advantages over its neighbouring counties, as well as examples of truly high-value output that acted as boosters, or 'drivers' to Surrey overall. As explored below, the terminology of clusters and drivers may appear either abstract or arbitrary. What makes a cluster? When is an industry considered to be a driver for the county, not just a catalyst to the local economy?

Of Drivers and Clusters

'Drivers' effectively represent a practical checklist against which any output can be measured, regardless of the sector or industry. The checklist included innovation (e.g. academic-industry collaboration), demonstrable knowledge exchange and transfer, impactful professional networking which generally extended beyond the immediate sector to pull in other partners, technological or idea-based excellence, national if not indeed global impact, as well as representing an area unique to Surrey.

Clusters were trickier. In some sense, a region is itself a cluster. In others, overarching structures like LEPs gather together areas of excellence that over time 'grow' clusters. In still others, historic entities like universities or long-established companies have produced areas of world-leading growth that are visibly outstanding. And in others, the infrastructure itself and the business that accompanies it – including the airports – represent examples where the industry is a key part of the strategic economic geography of the county or region. Geography, however, it a hard taskmaster. In three key areas: aviation, LEP-related business and healthcare, the borders of Surrey simply refused to play along, thwarting our attempts to produce neat, intra-county clusters, spilling time and again into intra-regional groupings. While it was comparatively easy to map the three universities (University of Surrey, Royal Holloway University of London and University for the Creative Arts) and their outputs and partners into the 'Knowledge Cluster', charting the sheer technological spread of the relevant LEPs: Enterprise M3, Coast to Capital and the Gatwick Diamond (among others) defied even our most creative map-making. Heathrow and Gatwick for instance, both sit outside the county of Surrey. Some of the key regional networks, spread defiantly across county lines. Others – like the Surrey Research Park were better behaved. Against these areas existed underlying categories that we also had to take into

account, to get a clear sense of how Surrey operated as both a market and place to live, including 'travel to work areas', 'housing market areas', and 'commercial property market areas'.

It may seem somewhat paradoxical in a report dedicated to exploring the impact of Covid (and to a lesser extent, Brexit) on Surrey specifically, that foregoing the strictures of the county lines produced something of a revelation in our findings. While place is a key – it's the impact of **growth, innovation and skills upon** Surrey, and the impact of Surrey **UPON growth, innovation and skills** that counts, in a wider but more real sense. To some extent therefore – geography doesn't matter. It's what you *do* with geography that counts. Or to put it another way – while place is key, geography is less so. Recent work commissioned by EM3 on Functional Economic Market Areas (FEMAs) makes this logic clearer still – and it operates particularly well in decoding Surrey's strengths and weaknesses:

A functional economic market area (FEMA) is not constrained by administrative boundaries but reflects the way the economy works; the relationships between where people live and work, the scope of service market areas and catchments. Not only do FEMAs not necessarily map to administrative boundaries, they generally do not have hard and fast boundaries at all. Defining a FEMA is therefore not a precise science. It is about assessing the evidence and devising an area of best fit... It is about seeking to appreciate where influence is stronger or weaker (Hardisty Jones Associates, Enterprise M3 Towns Analysis, Final Report Part 1: Data Analysis and Town Classification, December 2019, p.5).

Surrey boasts a high number of FEMAs, whether infrastructure-based (e.g. aviation), industry (e.g. AI, 5G, gaming) or skills (digitisation). They are defined both by their relation to (or sometimes within) Surrey and the role they play within the four identified clusters, and in especially high-value or high-worth cases, as "strategic drivers of the current and future economic growth" of Surrey and the wider Southeast. Again, while Surrey boasts strong intra-county specialisms, many of these are innately intra-regional, boosted by commuting flows, ICT, digital-based work patterns and diverse R&D and knowledge networks that comprise the overall economy of Surrey as a whole.

Methodology

For this reason, it was important that the report adopt an inherently mixed-methods approach. The introduction and the subsequent ‘Surrey Voices’ section provides readers with a detailed appraisal of the social, economic and community-based dynamics that have historically contributed to Surrey. Based on in-depth interviews with a selection of business leaders, decision-makers and politicians from across the county, the insights provide a rich appraisal of the known and lesser-known attributes of Surrey that have made and sustained the county as a residential and business hub. It was important that we set the scene by exploring these key attributes, to determine just how much impact both Covid, and Brexit, were envisaged to have upon both sectors, and the lived environment of Surrey overall.

Drawing together decision-makers from all levels of local government, representatives from both LEPs as well as those responsible for innovative regional developments, our interviews clarify both the ‘cluster rationale’ employed in the rest of the report, give depth to the concept of ‘Surrey drivers’ as well as providing key examples, and highlighted a variety of general and specific requirements or ‘asks’ which - along with the four clusters – form a key part of the conclusion.

Tying the ‘Surrey Voices’ section to the four clusters are two economic sections. The first provides a national overview of Covid’s economic impact, gathering together both a brief review of ‘economic clusters’ as a working tool, with highly. Relevant and recent data obtained from the ONS (including Business Impact of Covid-19 Survey data), OECD, Bank of England, Apple Mobility Index, IMF, WEO, HMRC CJRS, SEISS, and more. Together, this provides a necessary national baseline upon which to locate changes in both Surrey-specific and sector-specific performance. The second refines this baseline to the Surrey-specific level, gathering together a county-based SWOT analysis with key reports produced (and generously shared with us) between April-September by a range of major stakeholders including C2C, EM3 and Gatwick Diamond. The Surrey Chambers of Commerce are owed particular thanks, for allowing us to submit Covid and Brexit-specific questions to their July questionnaire to Surrey-based businesses, providing us with invaluable and highly

original data that allowed us to refine our interview questions as well as subsequent data searches.

Thanks are also due to Dayton Bell who assisted in supplying equally original and key data for each of our four clusters on the short-term impacts of Covid, Brexit preparation, as well as questions on Surrey-specific specialisms and strengths. Our approach at all times was to seek the most appropriate, most Surrey-specific data, which could not only describe a clear narrative arc regarding Covid’s impact on key sectors, but the consequences of the impact – for better or worse – on Surrey’s overall ability to recover, regenerate and ultimately flourish. Combining detailed qualitative analysis with quantitative analysis drawn from national (macro), county (meso) and district and borough (micro) levels, the team has amassed a focused, highly original and useful series of cluster overviews, based on numerous interview to generate case studies, baseline appraisals to clarify Surrey’s strengths and weaknesses, a simple SWOT analysis, alongside national, county and sector-specific economic analyses leading to the concluding strategic insights and forecasts. Taken together, these represent a rich overview of both the generic characteristics of Surrey, the role of its specific clusters and drivers, and the impact of Covid (and where appropriate, Brexit) on Surrey’s ability to rescue, support and redirect its post-Covid renewal.

Goals

To be clear, as of late 2020, the identified clusters and drivers represent both hotspots of genuine dynamism in Surrey, as well as areas of very real decline or even collapse in output. Some have weathered the crisis astonishingly well. Others are on the verge of extinction. All, however represent Surrey’s strategic economic geography; the report’s recommendations are largely sequenced on the need to **rescue aviation**, ensure new and continued **growth for business** (particularly driver-like high value/high worth), **innovate among knowledge and R&D**, and ensure continued **capacity building and skills** in healthcare. Final recommendations to both local authorities, LEPs and the Chambers of Commerce alike are to consider robust streamlining to ensure cost efficiencies, policy effectiveness and impactful outcomes that produce genuine and even-handed recovery, leading to sustained post-recovery growth.

There is an irony here of course. Much of Surrey's businesses crosses county lines and regional identifiers, while the administrative areas remain distinct, and potentially increasingly centralised. The challenge was to establish a workable balance between the very real richness in growth and innovation found across these 4 and many other clusters in Surrey (including world-leading, high-value drivers) and more effective levers for both business and local government alike to draw upon to ENSURE such growth in the long-term. A **key recommendation** therefore is to ensure that the administrative areas of local government support businesses contiguous with the county lines, *and* those beyond, which visibly serve as drivers of innovation, growth or prosperity. This will require insightful strategic policymaking to guarantee Surrey-specific growth AND infrastructure to ensure both regional and cross-cluster drivers shared with neighbouring authorities flourish.

Key areas need to be explored: cost-efficiency and financial savings; risks to and resilience of service provision and the impact of anticipated changes upon key areas; the way in which the performance of local government and its provisions might be impacted both negatively and positively; assessing Covid-specific issues; impacts on the overall 'place-based specialisms' of Surrey and the wider place agenda (PWC, 2020). Research flowing from this report suggests a number of strategic issues, which both local authorities and a possible growth-oriented strategic task force could potentially remedy:

- **The need to align infrastructure investment with strategic business growth and housing delivery;**
- **Streamlined, efficient leadership dedicated to driving growth and innovation;**
- **A single, clear economic development strategy;**
- **The need to bring together far more of Surrey's various business communities by serving as both a permanent hub and responsive 'broker' in facilitating business-to-business, and business-to-sector links;**
- **The need for a practical and impactful model of local government able to deliver courageous rescue packages where needed, sustainable growth in high-value areas, more robust business networks, creative innovation, and capacity-building including skills development;**

- **A commitment to developing further cluster-led excellence across the county and ensuring high-value, high-worth Surrey drivers are boosted nationally and globally;**
- **Stronger cross-system leadership to remedy current east-west divisions in key socio-economic areas;**
- **Cluster-specific attention to areas where uplift is needed: health and social care, education, housing and transportation;**
- **Radical new approaches to seizing potential Covid-generated changes in behaviour to enhance a greener component to public service transformation alongside support for flexible working strategies;**
- **Clarity on how local government can genuinely represent and reflect all of Surrey's myriad communities and distinct businesses, in the short and long-term;**
- **Improved overall resident and business experience of Surrey.**

Foundational Analysis: From Here to There

The research team has laboured intelligently and fruitfully to produce key findings. A brief overview follows herewith, but the details of the entire report need properly to be read, marked and inwardly digested to appreciate both their content and the strategic import of the cluster-specific 'asks' and the ensuring recommendations.

Our report gathered from sources far and wide. One of the first baselines we looked at was the *ARUP COVID-19 Economic Impact Assessment*, which provided an initial sectoral analysis of the potential impacts of the Covid-19 on Surrey's economy, drawing comparisons from pre-COVID economic performance at both county and national level. Pre-Covid, it was clear that Surrey enjoyed a highly productive economy contributing over £40 billion per annum (Arup, 2020, p. 3), whose diversity of sectors likely provided a degree of resilience to external shocks.



However, a number of factors restrict Surrey from achieving good, sustainable growth. Ironically, some of these same features are numbered among the county's strengths and uniqueness, so there is something of a balancing act to be struck between pre and Covid analysis as well as short and long-term ambitions for the county.

These include Surrey's close proximity to London and major UK gateways (between the seaports in Portsmouth and Southampton and major international hubs of Heathrow and Gatwick). Location both contributes to the size of Surrey's economy but also sees prosperity flowing away from the county, undermined still further by increasing economic disparities and business-based unevenness between West and East Surrey. Clearly, the productivity gap between the two will remain a post-Covid issue. Our economic forecasts suggest that a national economic recession would see a sharp reduction in GVA of about 14% for Surrey, likely further widening gaps in productivity and inequalities in the region. LEP data, as well as our own economic analysis, and myriad qualitative interviews can be found in the following pages, on a cluster-by-cluster basis.

While much of the analysis was focused heavily upon gauging Covid's overall impact on the county, as well as potential Brexit effects, we did want to read ahead in terms of identifying the full potential of Surrey. While this may take far longer to achieve as a result of Covid, many of the Surrey-based descriptors, as well as strategic goals outlined in the 'Innovation South' Report of 2017 sponsored by the Department for Business, Energy & Industrial Strategy are worth noting. Innovation South represents a consortium of more than 100 organisations including businesses, industry and partners from across the private and public sectors, focusing on the driver-like potential of the Southeast in national and global terms. The pre-Covid baseline of 2017 outlined the in Innovation South report forms a valuable reminder of the very real strengths of the county in terms of cluster-based areas of excellence, high-value drivers, as well as potential fault lines regarding the worsening of geographic disparities and inattention to increasing forms of deprivation. Surrey has some way to go to reach its 2017 levels in terms of economic performance. However, the overall strategy of the 'Innovation South' report still represents an entirely viable way forward for the county, in reworking itself to be a powerhouse

of world class strengths in the area of Digital Enabling Technologies (DET) including digital communications, cyber security, big data analytics, photonics, quantum research, as well as the commercialisation of DET across Surrey and the Southeast in both connecting and catalysing the region as a whole.

With the myriad strategic 'asks' of the large number of stakeholders we engaged with between June-September, and the range of recommendations that have emerged represent each of the four clusters. In view of Covid's impact, some of Innovation South's suggestions are positively prophetic, from radically enhanced 'Innovation Hot Spots' to ensure digital support continues to drive innovation in a way that effectively transcends infrastructure and transport, to Knowledge-to-Market Accelerators to swiftly convert research to both commercial and policy-making processes regionwide. As identified in the present report, what all four clusters have in common is their ability to draw on, and in some cases harness Digital Enabling Technologies. DET is both a cross-cluster structure boosting high-value innovation, but quite likely the best possible driver that Surrey can draw on to weather – and win – in the age of Covid.

Finally, on a personal note, I would like to thank the research team, who have laboured tremendously in the production of this highly original report. Over the course of the summer, with myriad updates throughout the fall, more than 100 stakeholders were consulted, many dozens of other reports read, all to refine our understanding of Covid's impact on Surrey, and in the process, enhancing our overall knowledge and informing our recommendations. It has been an honour to lead this vital work on behalf of the Future Economy Surrey Commission during this critical period for the county and the nation.

Enjoy the report!



Professor Amelia Hadfield

Head of Department of Politics,
Director, Centre for Britain and Europe
Chair in European and International Relations

University of Surrey

Surrey Voices

This first context-setting component is based on extensive interviews undertaken between June and September 2020 with a range of key Surrey-based decision-makers, including Malcolm Parry OBE (CEO – Surrey Research Park), Lou Williams (Growth Manager, Coast to Capital Growth Hub), Professor Sir William Wakeham (Independent Chair, SEPnet), Kevin Lloyd (Local Industrial Strategy Lead- Enterprise M3), Louise Punter (CEO – Surrey Chambers of Commerce) and Richard Maybury (IoD Surrey Chair).

Their views were set against a range of Surrey-based socio-economic data to provide the general and thematic overviews of the county, with specific attention paid to the county's demographics, business culture, historic strengths and weaknesses, as well as contemporary insights on Covid and Brexit and a series of final 'strategic asks'.



Introduction

Over the past decade, two juxtaposing views of Surrey have emerged. First is the traditional view of Surrey as the Garden of London, a prosperous county of retreat: a pleasant place to live for highly paid commuters and wealthy retirees, that needs little in the way of change or development. Second, is more of a contemporary image of Surrey as a county with a significant economy, home to frontier firms, with well-connected transport routes to London, airports, and ports on the south coast, but with a need for local economic development. These two views sit uneasily beside each other.

‘We have been in an actual and psychological transition from Surrey as “London’s garden” to Surrey as “a good place to do business”’

This section of the report provides pre-Covid context to the county, highlighting population dynamics, issues impacting on firms’ attraction to and exit from the county, as well as the performance of network connections between organisations. It draws on in-depth interviews with individuals working within the two LEPs serving the region, within higher education and business networks.

Population and Employment

Wealthy population

Surrey is home to 1.2 million people¹. The population is wealthy, having the highest regional gross disposable household income outside London². The county is characterised as home to those with significant inherited wealth, high proportions of retirees, and a residence for highly-paid London workers. Unemployment levels are low, and there are few areas of deep deprivation. The county proved resilient during the 2008/9 banking crisis, though reasons for this are unclear. The introduction of the Right-to-Buy scheme in the 1980s, alongside a continued rise in house prices has priced many lower-

income workers out of the county. Ethnic diversity is lower in Surrey than in England as a whole, with 83.5 percent of the population reporting their ethnic group as White British compared to 79.8 percent across England³.

Aging population

The population is also aging⁴. Surrey has a lower proportion of people aged 20-34 compared with the national average, and the proportion of the population in all age groups under 65 is projected to fall over the next 20 years⁵. The county is a net exporter of university-aged people⁶; young people also leave for lower house prices and job opportunities elsewhere.

Local impacts of wealthy and aging population

Local spend in the county is significant, and as the population is dispersed across both towns and rural areas, local high streets have been relatively well supported. The county has high levels of employment in service jobs and in the public sector; particularly in retail, care homes and other services for the elderly. Workers in lower-paid service roles tend to reside in neighbouring counties where housing costs are lower. As a consequence, the county experiences a daily out-flow of commuters leaving for highly paid work in London, and a daily in-flow of workers for lower-paid service jobs. This results in heavy congestion on transport networks, impacting on workers’ quality of life, and causing disruption to businesses in the county.

‘Road congestion and overcrowding on public transport is a huge problem. The lack of investment in infrastructure adds to this. The lived experience has been very, very bad for a lot of people and it is getting worse.’

Local economic development aspirations

The lower proportions of younger people in the county has implications for the wider social dynamics, as services and amenities are not only geared to an

¹ Source: Surrey-I Population Estimates by Age and Gender www.surreyi.gov.uk/dataset/2wkl8/population-estimates-by-broad-age-and-gender

² Source: ONS Regional gross disposable household income, UK:1997-2017 www.ons.gov.uk/economy/regionalaccounts/grossdisposablehouseholdincome/bulletins/regionalgrossdisposablehouseholdincomegdhi/1997to2017

³ Source: <https://www.surreyi.gov.uk/jsna/surrey-context/#header-population-estimates>

⁴ Source: Surrey-i www.surreyi.gov.uk/jsna/surrey-context

⁵ Source: <https://www.surreyi.gov.uk/jsna/surrey-context/#header-population-estimates>

⁶ Source: <https://www.surreyi.gov.uk/jsna/surrey-context/#header-population-estimates>

elderly population but also to people who live, but do not work, in the area. The night-time economy and cultural offer is limited. Attracting young people into the county to live and work, in order to develop an economic base that can strengthen and support settlements, has been an aspiration of Surrey's economic development for some time.

Resistance to development plans

New housing and workspaces form a key role in development plans, but areas of developable land in Surrey are small. Development has met with resistance among those who wish both to retain traditional aspects of Surrey life and protect the green belt. The issue of housing, and who is able to live in Surrey remain highly salient political issues at the local level. Parliamentary, council, district and borough seats have all been fought over this issue, with powerful local campaigning groups enabling a rise in the number of independent councillors over the past ten years. Recently, there has been a shift in perception among decision-makers, as concerns about the experience of the elderly in the county grow. Without an efficient local economy or public services, the elderly population have encountered issues. This is causing some decision makers to start prioritising development.

Covid Impacts

Many local residents will be insulated from the economic impacts of both Covid and Brexit because of personal wealth. The pandemic has demonstrated there is a real opportunity for Surrey to create housing and workspaces for people relocating away from London in search of space. Local services have been hit by Covid, but in the longer term, as a result of home working, local spend on the high street may increase. The pandemic has proven that public and service sector workers are integral to the functioning of society. This may change attitudes towards the provision of lower-cost housing for essential workers.

Brexit Impacts

Firms may leave the county, or close entirely, causing local employment to fall. This in turn will have an impact on the local service economy, which has already been dramatically impacted by the pandemic.

Surrey Business Environment

Locating in and out of the county

Historically, Surrey was relatively untouched by both the agricultural and industrial revolutions, deriving its wealth instead from London. The poor quality of soil made it unsuitable for arable or pastoral farming, and it is now the most wooded county in England; a county of woods and fields, with few cattle or crops. Its many towns form part of a radial structure to London, and as a result have not served as major employment centres for the local population.

Twentieth-century government investments and development of a knowledge-based economy

Over the last 150 years a range of organisations have migrated to the county from London. They have been accompanied by investment from central government, which has contributed to a high level of skilled knowledge in the county. In the late nineteenth century, large mental health institutions were located in Surrey to treat the overflow of patients from across London. In 1914 the government set up the Pirbright Institute, a research centre dedicated to the study of infectious diseases in farm animals; this created a local specialism in veterinary science. During World War II, other research institutions moved to the county from London for safety. Defence research activity, particularly in aviation and tank testing, grew in connection with Farnborough Airport, the Ministry of Defence and nearby Aldershot. The Grant-Bellair School of Dance and Drama relocated to Guildford at the start of World War II and became the Guildford School of Acting.

In 1966, Guildford Borough Council invited Battersea Polytechnic, founded in 1880 and specialising in science and technology subjects, to relocate to Guildford and form the University of Surrey. Guildford was, at that time, experiencing a decline in automotive manufacturing and the university offered opportunities for the creation of new employment opportunities and helped to facilitate a shift from a manufacturing to a knowledge-based economy.



There are four higher education institutions in the county: University of Surrey in Guildford; Royal Holloway University of London in Egham; University of the Creative Arts in Farnham; and the University of Law, also in Guildford. The universities have increased both the degree of research activity and the number and diversity of jobs in the county to include many in engineering, science, and technology.

‘A lot of research goes on here. Much of this stems back from the Second World War, when many research institutes moved out of London to be safe, and then grew up here. So we have a high level of intellectual capacity.’

Industries Locating in the Region

‘The M3/M4 is the heartbeat of the UK economy, particularly in terms of emerging and rapidly-growing high-value business’.

Proximity to London, Gatwick and Heathrow airports, and the M4/M3 is a key factor in why firms locate themselves in the county. Transport routes into the capital as well as international locations are excellent, and office space is available at a lower cost than in central London. Additional factors for locating into the county are harder to pinpoint. The satellite industry is the only industry regarded as unique to Surrey, and no other essential attracting industries have been identified. Other neighbouring counties that are similarly close to London and the airports tend to have lower property costs and attractive urban areas. However, two factors may provide Surrey with a slight comparative advantage. First is the availability of rail links with London. Although overcrowded, train routes in and out of London are considered faster and more efficient than those in some neighbouring counties. Second, the high standard of living and level of private school provision in the county attract top tier employees.

Over the past thirty years, a significant number of multinational frontier firms from diverse industries have made Surrey their UK base. Digital industries, such as immersive technology and games are well represented, as are health sciences and high-end automotive

industries. These firms form part of global networks, generate high levels of GVA, and employ widely on an international basis, but are not major employers in the county.

‘Public services are a huge employer in the county. Councils, the NHS, care homes for the elderly are really big employers and it is important not to forget about that.’

Traditionally, there have been high levels of public sector employment, particularly in healthcare. Located close to Heathrow and Gatwick, and with a history of aircraft manufacture during the two World Wars, Surrey contains a significant number of firms in aerospace and the aviation supply chain.

The county also hosts a high proportion of firms in professional services. These are back office firms in law and financial services, which service the city of London, and take advantage of Surrey’s lower office costs, easy access to London as well as other lifestyle benefits.

Golf courses, equine businesses and landscape gardening industries are unusually highly represented, servicing the lifestyle of the county’s wealthy and retired population. A high number of lifestyle businesses are in operation, including vineyards and distilleries, which are often set up as retirement or leisure projects. However, the tourism sector is small, due in part to the local resistance towards development, and a reluctance to become a key tourist destination.

‘Lots of people who live in the countryside tend to be a mixture of tradespeople, equine, and retired bankers setting up small businesses - for example, vineyards and distilleries. These types of businesses will not be affected by Covid.’




CASE STUDY


SURREY RESEARCH PARK ENTREPRENEURS

Surrey is an entrepreneurial county, with entrepreneurs tending to live in Surrey prior to beginning a new venture. Built on university land, the Surrey Research Park in Guildford offers short-term lets to high-tech companies who do not wish to be locked into long-term leases, and has spatial capacity to accommodate scaling companies. This letting strategy by the Research Park has meant it shares risk with entrepreneurs as they test their ideas against demand and competition. The Park has attracted an estimated £1bn of inward investment to Guildford, much of which is from overseas.

Typically, entrepreneurs come from a 35-mile radius of the Research Park and are in their late 20s/early 30s. It is uncommon for entrepreneurs to begin a business immediately after graduation. More commonly, a Surrey resident identifies an opportunity for innovation after a number of years of experience in other high-tech companies or organisations in the region. Entrepreneurs then seek start-up premises close to home. A move out of Surrey is unlikely at this stage, as they are often domestically and socially embedded in the area, with significant difficulties in setting up a business and relocating their families simultaneously. As the start-up company grows, new staff are recruited; some come from the surrounding area, but due to the limitations of local talent, others are recruited from further afield. The high cost of housing in the county can make this recruitment problematic.

If a firm becomes very profitable, has a simple ownership structure and few employees, it may be acquired by a larger, international company, with small firms often being acquired for their IP and subsequently disbanded. The smaller the firm, the more likely it is to be moved out of the county after acquisition. However, large firms that have been acquired usually stay in Surrey, as it is difficult to unseat a company: workers are embedded in the county and do not wish to move.

Firms Exiting the Region

‘Some of Surrey’s cocksureness has meant it has taken its eye off the ball.’

In a recent trend, a number of major multi-national companies, such as Ericsson and Philips, have left the county. Reasons for the relocations are not fully known, and greater efforts need to be made to understand this. Furthermore, Surrey has been limited in its efforts to attract new businesses to the area. These factors provide warning signs of an overconfidence in the county’s ability to continue as a prosperous leafy stockbroker belt location, without a clear and consistent economic development plan.

‘There is no great nostalgia for being based in Surrey.’

A range of factors has been identified that may underlie the relocation of firms away from Surrey. Some have left the UK as a result of Brexit. Others have moved to alternative locations in the South East, such as the Thames Valley, which has good digital infrastructure and also hosts speedy connections into the Capital. Other firms have moved further afield, for example to the Bristol and Bath region.

‘If there are connectivity problems, and you find it difficult to attract people, and it is expensive, then it makes you think about moving. Recently firms leaving the area has been more of an issue than it has previously.’

Changing working patterns over last five years have also led to corporates with other bases in the South East region merging offices, causing Surrey to lose out. For example, Ericsson recently closed its Surrey office, merging with its headquarters in Reading.

Latterly, firms have struggled to find sufficient local talent. Surrey is failing to attract younger skilled workers with high levels of mobility, who are able to choose from a range of employment opportunities in and around London. High property prices are a factor in this, but, despite property prices being higher in central London, many still prefer to locate in the Capital due to the social and cultural lifestyle on offer. Once located and embedded in the county however, people tend to remain over the long term, particularly after the formation of a new family.

‘Where you live is important. I rarely see people leave the county.’

Transport and digital infrastructures in the county are limited, despite the excellent international transport routes by air provided by Heathrow and Gatwick airports. Train routes in and out of London are fast and direct, but suffer problems with overcrowding. Road and rail connections between towns and to other destinations across the South East are poor and congested. Problems of overcrowding have been exacerbated by a lack of infrastructure investment.

‘Surrey is a very entrepreneurial county – there are many blessings to being here, but infrastructure is not one of them.’

Digital connectivity is patchy. Significant areas of the county have poor broadband and mobile connectivity, which has limited the ability for many to consider working away from London.

The EM3 LEP is currently working towards put in place a digital fibre spine between Guildford and Basingstoke. This would be a major intervention for improving connectivity across Surrey and Hampshire. These kind of interventions, originating from public sector and commercial operators, will be significant for the county’s future development.

Covid and Brexit Impacts on Business

Covid

The move towards remote working may mean proximity to London is no longer a priority. As such, firms may relocate away from Surrey to areas with lower office and housing costs. Retail and back office professional services may also face heavy cuts. With the closure of large retail and financial services, other services will be harder to sustain. In the Surrey Research Park, firms have been affected in different ways. For some, Covid has been an advantage, and firms have been able to pivot rapidly to respond to the pandemic. For example, one firm working in clinical diagnostics has recently taken on more space, will strengthen links with the university and create new jobs. Large corporations that were outgrowing the research park are now scaling back and deciding not to leave. Other firms are struggling, and in these cases the Park and University’s R&I team have put in place measures to assist them maintain their businesses. There has also been an upsurge in enquiries from London firms seeking office space in Surrey.

‘We have seen a significant hit on Surrey job postings due to Covid. Our hunch is that this reflects pre-existing circumstances. Covid is a final straw – firms are deciding not to advertise for new staff, or to take the business somewhere else, or are closing the business. Potentially Covid and Brexit will exacerbate pre-existing trends.’

Brexit

The impacts of Brexit are unknown, and fears around the issue are higher than fears around the impacts of Covid. Brexit will impact on supply chains and the movement of people. Businesses are aware that that relationships will change, but there is a great deal of uncertainty. The UK skills’ base is not considered strong enough, and companies are finding it difficult to recruit from overseas.

While it is hard to forecast the impact on businesses in the frontier sector, if they are unable to gain access the right people, or access markets without friction, they may leave both Surrey and the UK. Entrepreneurs are likely to find ways to work around the new restrictions,

such as setting up subsidiaries in the EU, but recruiting talent may be a greater problem. There may be additionally be a decline in high-value manufacture as it will be easier to manufacture on the EU mainland.

Surrey Networks

Business Support and Collaboration

Businesses' engagement with local LEPs has worked best when support has been offered through clear and straightforward communications.

'People want straightforward things. They want straightforward questions answered on the phone or online, signposts to support.'

However, in some areas, business engagement has been lower in Surrey than in surrounding counties. There are no clear answers why. One possibility is that many of the county's SMEs are formed by individuals with existing business experience and established networks for accessing funding. It may also be the case that the county's resilience during the 2008/9 banking crisis has led some businesses to be overconfident in their ability to continue to do business and to weather the storm.

Accessing investment networks can be problematic for Surrey entrepreneurs, as investors tend to be based in London.

'A top priority is how we can improve and maintain innovation. I have seen how well collaborative innovation can work in science parks. The problem is that most investment networks are in London. We need more localised networks to support local innovation.'

LEP networks have worked to link firms for collaboration. The Peer Network, delivered by Coast to Capital LEP, connects CEOs and MDs of organisations to share ideas and to collaborate. Initially, sessions are held to establish trust relationships. As a result of the scheme, peers have developed strong relationships and have worked together on commercial and non-commercial issues and projects. Fears over IP theft can present barriers to engagement, so the development of clear agreements that give protection of IP is required. Collaboration works well when the process is managed by a facilitator

to bring individuals together, ask difficult questions, and provides tools and techniques to support the process. Collaborations can work well across both local and regional networks, and there are plans to expand the Peer Network to form a national network.

'National connections are really important as some things can actually happen outside the area to the benefit of the area. You basically want to have a relationship with whoever is the right person to work with, wherever they are located.'

Covid Impacts on Networks

Businesses quickly found new ways to communicate online with their teams, which in many cases led to better intra-firm communications. Firms required soft skills to both motivate and support staff working remotely. Entrepreneurs were quick to assess available resources and act creatively to pivot businesses, such as shifting their operations to manufacturing personal protective equipment (PPE). However, as sources of income are decreasing, many organisations are struggling with the impacts of Covid. This may lead more need for engagement with LEPs. Firms will need to organise themselves for collaborative support, with new networks and relationships of trust to be established. Equally, both local and national LEPs are communicating more effectively since Covid, rather than their previous positions of 'small islands defending their patch'. Communication and collaboration between organisations, including at a national level, remains important.



HEI to Industry Networks in Surrey

Higher education and industry networks in Surrey provide powerful examples of success. The Surrey Research Park has an international reputation and has had long term success as a business incubator. It is home to the University of Surrey's spin-out company, Surrey Satellite Technology Limited [SSTL]. SSTL was founded in 1985, and is at the forefront of space technology, becoming the world's leading small satellite company. The University of Surrey's 5G Innovation Centre brings together academics and industry to collaborate in developing and defining the 5G infrastructure. The Institute for Cyber Security Innovation at Royal Holloway University of London also has a strong reputation for connecting academics, industry and government for applied research and innovation in cyber security.

SetSquared is another university enterprise partnership between the universities of Surrey, Southampton, Exeter, Bristol and Bath, and has been ranked as the global No.1 business incubator⁷. It supports the development of new ventures by students, academics, SMEs and entrepreneurs. Key to its success is the breadth of knowledge in the network, and the interactions that extend beyond the small regional base. Funded by the Higher Education Funding Council for England, the South East Physics Network, or SEPnet, was created in 2008, in response to the threatened closure of physics departments in universities across the South East, with the aim of increasing undergraduate applications and developing graduates' employability skills. The success of this network led to the expansion of the consortium in 2013 to further include the University of Portsmouth, University of Hertfordshire and the Open University; the University of Reading later joined as an associate. It is now led by the University of Southampton.

To make such relationships work requires skilled and careful management. University/industry collaborations have worked well in many cases, but are not without tensions. Within industry, there has been a lack of willingness among firms to engage with universities, and when they do engage, they have found academic modes of presentation off-putting. There is a perceived need for a greater commercialisation of university IP and for universities to change their mode of collaboration.

⁷ Source <https://www.setsquared.co.uk/about-us/>

Covid and Brexit Impacts on Industry Networks

The future of these HE/business partnerships is unsure. HE funding models are struggling with the impacts of both Covid and Brexit. Universities may be facing great difficulty due to the absence of overseas students, and businesses may have limited capacity to engage. HE will need to support graduates further with careers advice, with more graduates than jobs available, and the likelihood of competing against applicants with more experience and skill.

'People will survive by having different relationships with others. If the pandemic leads to people stepping forward and into a more networked approach that would be positive. When there is a pre-existing relationship between firms, collaborative work works well, they work to solve common problems.'

In terms of Brexit, the loss of EU funds will cause a significant issue for the HE funding model. Additionally, a large number of European academic staff may leave.

'The UK's poor handling of Covid may tip the balance and cause academics to leave, especially if the UK does badly after Brexit. The UK is not looking like an attractive place to be. This could be a big problem for universities. It is not obvious that UK is a wonderful place to live.'



Surrey Voices: Strategic Asks

Support For New Entrepreneurs: Post-Covid there will be a raft of people setting up new businesses as a result of redundancy. They will need business support and tax relief.

Equity: Both entrepreneurialism, and high-tech industries in the UK are heavily male dominated. Women in the UK are only half as likely to launch an enterprise as their male counterparts, and are substantially less likely to have qualifications or experience in STEM. Female entrepreneurs also access less funding at every stage of business development⁸. Policy makers need to ensure policies support women in high-tech innovation and entrepreneurialism.

Investment in Business to Business Networks:

Businesses will need to collaborate to find new solutions to their common problems. New relationships require a new forum in which to meet, as well as skilled facilitators to connect firms together and establish trust relationships between competitors.

Skills Boost: There is a need to supply some of the skills firms do not have, but which are important in order for them to organise themselves for collaborative support. There is a need to establish new networks and new relationships of trust.

Digital Infrastructure: There is a very real need to improve digital connectivity across Surrey.

HE Careers Service Support: Universities need to offer additional support to new graduates on how to enter the jobs market. Careers services will need to be proactive in understanding how organisations are operating post-Covid.

Investment in HE/Industry Networks: Relationships between HE and industry need to be strengthened, and there needs to be an increased rate of university IP commercialisation. Networks require skilled facilitation.

Community networks: Local community networks need to be developed to ensure that employees are not isolated when working from home.

Change of management: Strong leadership from politicians and senior business leaders is needed. Political and business leaders have an opportunity to lead a step change in working practices, improvement of quality of life, the environment and health as well as well-being. There is a need to put in place support mechanisms that enable an understanding of change.

Local Development: There is a need for more workspaces and housing in town centres in order for towns to become multifunctional digital places, with space for young people to both live and work. There is a need for local NHS Covid offices, for job centres to tackle rising unemployment, and for high-speed broadband work cafes.



⁸ Source: The Alison Rose Review of Female Entrepreneurship, 2019 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/784324/RoseReview_Digital_FINAL.PDF

National Perspectives: Members of Parliament



Angela Richardson,
MP for Guildford



Crispin Blunt,
MP for Reigate



Chris Grayling,
MP for Epsom and Ewell



Claire Coutinho,
MP for East Surrey⁹



Jeremy Hunt,
MP for South West Surrey

Uniquely Surrey

Accessibility and connectivity were highlighted as key comparative advantages for Surrey, with its proximity to two international airports, the M25 and the capital city. Attention was also drawn to the talent prevalent in Surrey that offers a valuable recruitment pool for businesses. Likewise, Surrey leads in digital innovation with its flourishing gaming industry and 5G capabilities, both of which offer significant opportunities if geopolitical challenges can be overcome. Surrey is also recognised as a “champion” of unitary authority based on the progressive devolution agreement between Surrey Heartlands and the NHS. ‘Leafy’ Surrey boasts vast areas of green space which is becoming increasingly desirable since the Covid pandemic, with a rise in people seeking to relocate out of London to the surrounding countryside. Moreover, Surrey can be considered a great place to live with a diverse population, high-performing schools and “services

that work”. Focusing on their respective constituencies, Crispin Blunt argued that Reigate plays a key role in the Surrey economy, home to both Pfizer and Fidelity International which are large employers in the local economy. Likewise, Chris Grayling noted that the University for the Creative Arts (UCA) offers a core creative hub for Epsom, which has stimulated plans for future housing and economic outputs to be developed around the university campus.

Covid Impacts

The most visible impacts of Covid are on the high street, which has experienced significant financial losses due to the closure of non-essential shops during the peak of the pandemic. Nevertheless, there is some evidence of economic growth with new outlets recently opening in Guildford. Furthermore, Covid has inevitably impacted the flow of commuters from Surrey into London with more people working from home (WFH). This in turn

⁹ Councillor Richard Biggs, a staff member in Claire Coutinho's office, spoke on behalf of the Member of Parliament.

could serve as a benefit for local businesses and the high street as more people spend time and money in their local area, suggesting that Surrey's proximity to London may no longer serve as its main advantage. This is further supported by the success of remote working in maintaining productivity, which will likely impact the role of office space in the future.

The healthcare infrastructure in Surrey has performed outstandingly, with hospitals overachieving, which has in turn restricted their eligibility for some avenues of emergency grant funding. While cancer treatment has continued, diagnosis has not, which is likely to cause future health risks and dramatic increases in cancer patient numbers. Additionally, local governments have seen huge losses in business rates, with many struggling to cope under the sheer impact of Covid. As Chris Grayling argued, for many, "Covid recovery is beyond local council capabilities."

Brexit Impacts

Covid has largely overshadowed Brexit related issues and consequently, there has been limited engagement from the public in respect of Brexit concerns. Tariffs are less important within Surrey, as its primary exports are services rather than physical goods. However, post-Brexit import and export regulations for business will be significant for the county and therefore local businesses must be proactive and implement measures to minimise the impact. In addition, there is currently a tension between protectionism and globalisation with many countries adopting the former in their Covid rescue packages. The UK may need to follow this lead and adopt more protectionist policies to safeguard industry.

LEPs

Whilst LEPs play a significant role in the local economy, they could benefit from wider executive authority. Furthermore, LEPs have failed to expand from their role as a central government agency, which serves as an obstacle to local cooperation and hinders their work. LEPs are limited in scope, predominantly focusing on the Gatwick Diamond and Western Surrey at the expense of other areas. This is evident with Coast to Capital (C2C) which struggles due to a lack of commonalities between Brighton and Epsom. Moreover, the fragmented approach between the borough councils, Surrey County Council and the LEPs is neither cost effective nor coherent, leading to duplication of contracts.

Business Relocation vs. Opportunities

In recent years, many businesses, such as Canon and Legal & General, have relocated out of Surrey for a multitude of reasons. The government's focus on 'the North' reflects the emerging shift within business to invest outside of the county. There is also a growing trend amongst businesses to relocate from Guildford to Reading, which is a major disadvantage to Surrey, demonstrating that its current infrastructure is under pressure. Pressure is mounting from local government to build more houses however, this must be balanced with the need to relieve pressure on the local infrastructure and protect green spaces. Covid has provided an opportunity to improve the local infrastructure. There is a need for a coordinated programme of hard infrastructure development in Surrey as a political priority, in order to support economic growth.

Aviation

Surrey benefits from international accessibility, located between two of the world's busiest airports, Heathrow and Gatwick, offering a key incentive for business development in the county. Nevertheless, there is limited support for Gatwick expansion due to lack of sufficient infrastructure, local housing, and workforce to support it. Covid has had a devastating immediate impact on the aviation sector, however it will likely recover. Nevertheless, there is concern that the climate change agenda is pushing unrealistic ambitions onto the aviation sector; for example, the target to reach net zero carbon emissions by 2050 can only be met if stringent policies are enforced on aviation.



Regional Perspectives: Surrey County Council, EM3 and C2C

Uniquely Surrey

There is a London fringe effect, benefitting areas such as Staines, Woking and Guildford. They tend to feature more successful office-based companies in contrast to Farnham, Cranleigh and Dorking in South Surrey which do not benefit from equivalent levels of connectivity.

Covid Impacts

SCC has adopted rapid changes in response to Covid, with the implementation of agile working enabling employees to work from home. While these measures are necessary, there is a risk of losing creativity that can only be engendered through face-to-face activity; it is therefore imperative to get this balance right.

Brexit Impacts

Covid has interrupted a great deal of the strategic planning for Brexit that businesses would have conducted over the past few months. However, businesses who have managed to survive the pandemic have a newfound confidence in their resilience, believing that they will also be able to withstand the impacts of Brexit. Nevertheless, there is concern that Brexit may restrict vital access to international talent and therefore immigration policies will be critical for Surrey.

Business Challenges

SCC is restricted in its outreach capabilities due to having a single base in one location. Dividing staff into hubs or quadrants would be a more effective way to respond to local demands. Likewise, complacency is a key obstacle for growth in Surrey, with a clear East-West divide operating alongside a North-South divide in industrial output, with the North also boasting a slightly higher industrial GVA than the South. There is a need for increased business engagement from SCC to boost awareness of what the council is doing and what they can offer local businesses. Furthermore, it is crucial to show that there is a unified approach in supporting businesses in Surrey in order to incentivise more people and businesses to the area.



LEPs

EM3 covers a large, prosperous area of Surrey that comprises seven districts and boroughs with high visibility and a focused strategy. In contrast, C2C in turn represents the areas of Sussex and East Surrey, representing a number of diverse boroughs, from Brighton to Epsom & Ewell, covering growing high-worth sectors of the economy. SCC is unique in its position within two LEPs, however this also creates discrepancies in the county's response and outputs. For example, while capital grants for infrastructure have been supplied, more innovative schemes are required, such as the development of business premises, broadband, promotion of entrepreneurship and platforms for collaboration in order to stimulate both growth and partnership working. It also means that SCC lacks an identity as it is split between these two LEPs. Moreover, LEPs are not delivery partners but enablers, taking target areas and promoting them so that they are able to self-function. Therefore, LEPs should be operating in partnership, rather than in competition with one another. LEPs should provide financial support to help start-ups stabilise their position, and then provide a handover to SCC, who can offer infrastructure and business support. While LEPs are restricted by their current size, SCC lacks the capability and the finance to help many newer businesses and therefore, a partnership would enable better outcomes. The growth board is likely to be a key force driving such a partnership strategy.

This section combines the views expressed by various decision-makers representing SCC, EM3 and C2C.



Surrey Employment and Skills Board:

The Employment and Skills Board (ESB) delivers local strategy on behalf of employers on skills for local authorities in Surrey. The ESB collectivises expertise to influence the employment and skills agenda in the county and address the obstacles that face both employers and the workforce. The aim of the ESB is the skill needs of the county and facilitating a better relationship between stakeholders in the employment cluster. The board is used to influence both local and national government policy on matters of skills and training. The current work of the ESB has included: the Hidden Talent project, the apprenticeship levy and helping to shape a local industrial strategy for skills with the LEPs.



THE HIDDEN TALENT SCHEME

The Hidden Talent scheme is a priority for the board and its aim is to develop Surrey-wide initiatives to engage “workers who can make a valuable contribution but face barriers to employment” (Online interview with Bob Pickles, ESB Chair, October 2020). This scheme can help support Surrey businesses as well in addressing skills gaps and help address groups in the county that face obstacles to employment and level up within the county.

As Bob Pickles outlined, the findings in the present UniSurrey report illustrate “that for the employment cluster to succeed in Surrey, there must be the presence of a robust and efficient apprenticeships and skills system”. A further report from Surrey County Council and the ESB seeks to recommend solutions to the apprenticeships levy to make it more accessible for businesses and employers provides recommendations that remain relevant and correspond to our strategic recommendations (ESB, 2018).

With the introduction and rollout of T Levels across Further Education, it is therefore as important as ever for FE institutions have close links with employers and key employee stakeholders.

This can be implemented alongside a joined-up approach by LEPs to work towards a local employment strategy that finds solutions to the skills shortage in key growth sectors in the county.

Local Perspectives: Borough Councils

- **Chris Burchell, Local Economy Manager
for Guildford Borough Council**

Uniquely Surrey

Surrey has a resilient, complex economy covering a diversity of sectors. This could provide better recovery prospects in the county post-Covid, although equally, there is a high number of jobs in the retail, hospitality and leisure sectors.

Covid Response

The council has agreed on a Recovery Plan with an important focus on economic recovery. There is a strong emphasis on projects to provide skills and employment support such as the launch of the Guildford Online Job Club. We are also re-launching the Council's 'Innovation Board', with a vision to promote digital infrastructure, smart cities and the digital games sector. Guildford has also embraced developments in digital health, and a steering group has been created to stimulate this sector

locally through value proposition and stakeholder mapping. Another high priority is supporting the retail and related sectors in the town centre in collaboration with Experience Guildford the Business Improvement District. Creating more co-working space, comprising smaller offices near train stations for increased accessibility and London commuting, is a key aim. In terms of corporate engagement GBC is focusing on key anchor corporates and strategic high-growth companies. It is recognised that businesses appreciate a local authority contact with an interest in their operations and an up-to-date knowledge of their industry.

Challenges and Opportunities

Guildford is limited in terms of affordable housing and could improve its digital connectivity. The shift to WFH has prioritised the need to invest in digital infrastructure to ensure a comprehensive full-fibre to premise service. There is huge potential to develop full-fibre across Surrey, which would future-proof the economy, enabling people from rural areas to work effectively from home as well as meeting high demands for data.





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"There is huge potential to develop full-fibre across Surrey, which would future- proof the economy, enabling people from rural areas to work effectively from home as well as meeting high demands for data."



UK ECONOMIC BASELINE



UK Economic Baseline

The UK economic baseline provides a top-level analysis of how the UK economy has dealt with the COVID-19 pandemic. The key messages for business is of course the overall economic disruption, which was unprecedented in speed and scope, the subsequent impact on key sectors as well as consumer behaviour, and ongoing uncertainty over the resumption of 'business as usual' or wholesale transformation to new modes of working and living.

As of October 2020, while data is available regarding sectors, businesses and employees taking up government assistance schemes, it remains unclear precisely how furlough patterns could translate into job losses, business downturns and overall contractions and recession. A number of key messages need to be borne in mind:

- Both supply and demand effects have been drastically affected; supply effects by workplaces functioning less efficiently due to restrictions and reductions; demand effects by customers and clients not spending money.
- Production sectors are primarily affected on the supply side.
- Business services and consumer-facing services have borne the brunt of both supply and demand contractions.
- Shifts to the composition of traditional sectors, business structures and skills are inevitable.
- A large number of low and middle-skill roles are already affected.
- There are both risks and opportunities for industry, business and business associations, and government alike; these range from ongoing national intervention and local support schemes to tackle the immediate labour market consequences of Covid to medium and long-term strategies to help wide-spread reskilling and business support as well as policies that strategically prepare workers and citizens alike for Covid disruption being a part of the national lived reality for some time to come.

The radical shifts in the UK's overall business activity throughout the pandemic has been closely tracked by the fortnightly ONS BICS Survey, data from which is utilised in the following analysis.

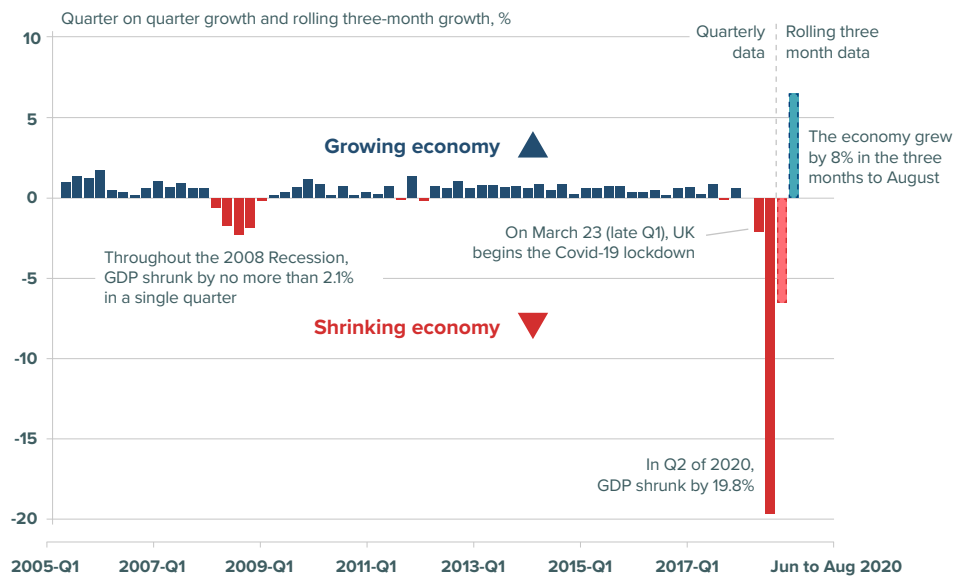


The Current Economic Environment

The global spread of Covid-19 has caused economic activity to fall dramatically in many countries; as lockdowns have eased, output has begun to recover. In the UK, GDP fell by 20.4% in the second quarter of 2020: the biggest fall in quarterly GDP on record, reaching its lowest point in April. Since then, economic recovery has been visible but slow. While there has been a bounce back in GDP in the three months until August, output is still below its February level. Looking at quarter on quarter growth, GDP fell by 19.8% in the three months to August.

UK Quarterly GDP Growth

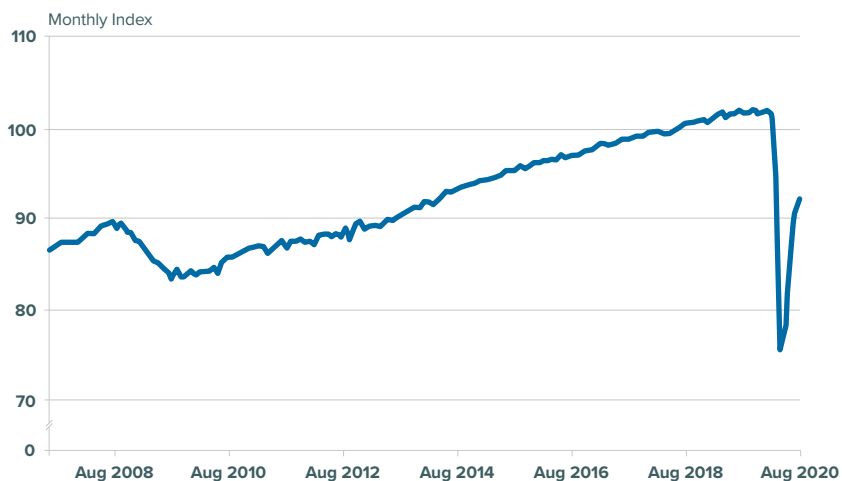
UK gross domestic product (GDP) growth, Quarter 1 (Jan to Mar) 2005 until May to July 2020



Source: Office for National Statistics

UK Monthly GDP

Monthly index, January 2007 to July 2020



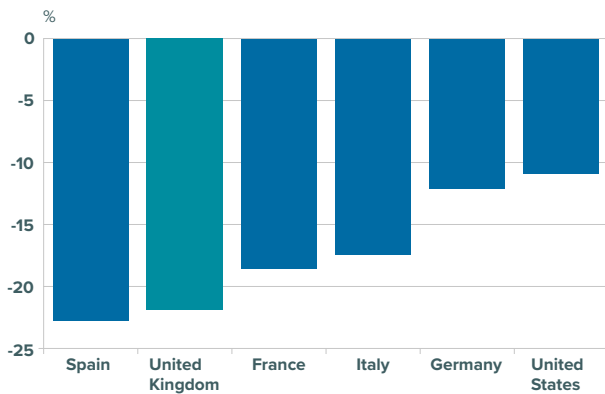
Source: Office for National Statistics - GDP Monthly Estimate

UK Trade

The UK's major trading partners have also been strongly affected. GDP in the Euro Area fell by 12% in Q2, while US GDP fell by 10.6% in the same period. Within the Euro Area however, there were significant differences between countries: Spain's GDP fell by 22.7% while Germany's GDP fell by only 11.9%. The difference in magnitudes were largely affected by national differences in the timing, duration and intensity of the various restrictions, as well as delays in reopening economies.

GDP in Selected Countries

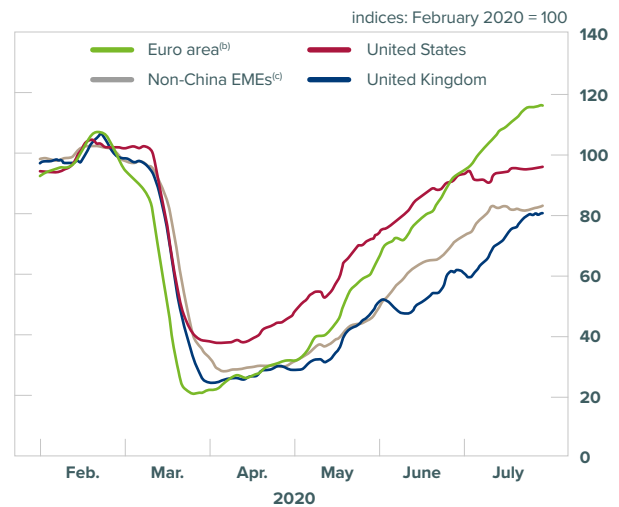
Quarter 4 (Oct to Dec) 2019
to Quarter 2 (Apr to Jun) 2020



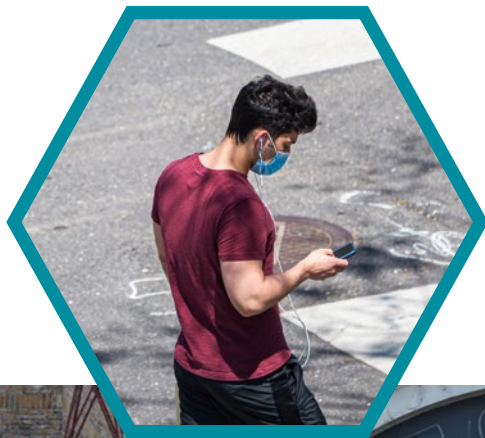
Source: Office for National Statistics, Organisation for Economic Co-operation and Development

Apple Mobility Industries in Selected Regions

Apple mobility indices(a)



Source: Bank of England (BoE) Monetary Policy Report, August 2020.



Report Sources: Apple Mobility Index, IMF WEO and Bank calculations.

Sectoral Contractions

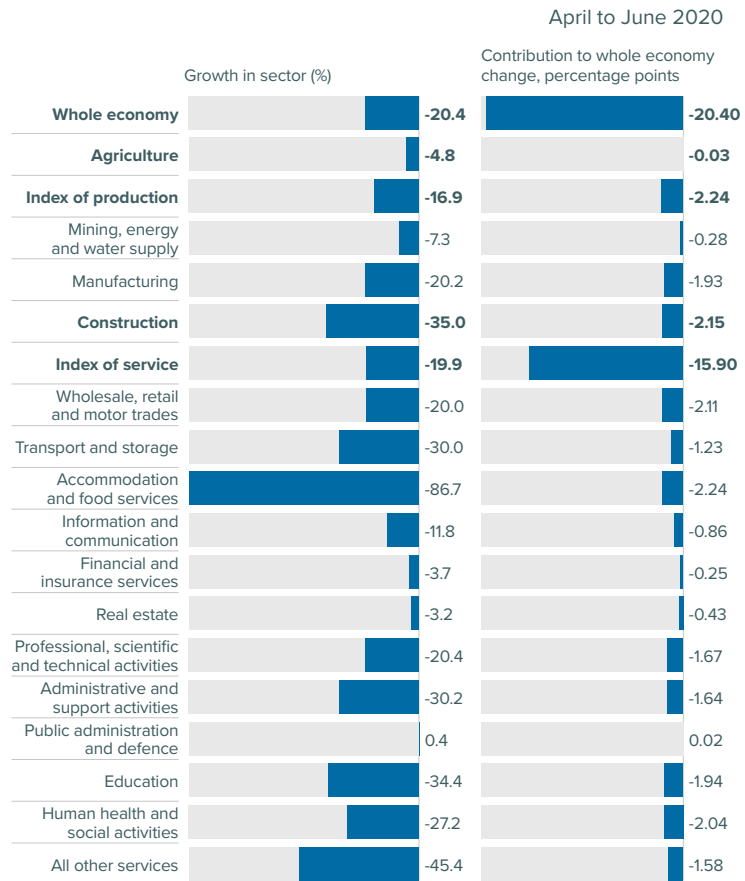
As the tables below illustrate, the UK's economic contraction in the second quarter of 2020 was widespread across all main sectors of the economy.

The hardest hit sector in terms of contributions to GDP growth was the service sector (-15.9pp), followed by the construction sector (-2.15pp), and manufacturing (-1.93pp). Private consumption accounted for more than 70% of the fall in GDP, while government consumption, gross capital formation and trade flows also recorded significant contractions.

The fall in global trade has meant that the UK posted a trade surplus of 4% of GDP in the second quarter. Business investment was the main contributor to the overall drop in gross capital formation, which is an estimate of net capital investment by both the public and the private sectors, experiencing the largest quarterly fall on record.

Breakdown of GDP and its Sub-Sectors,

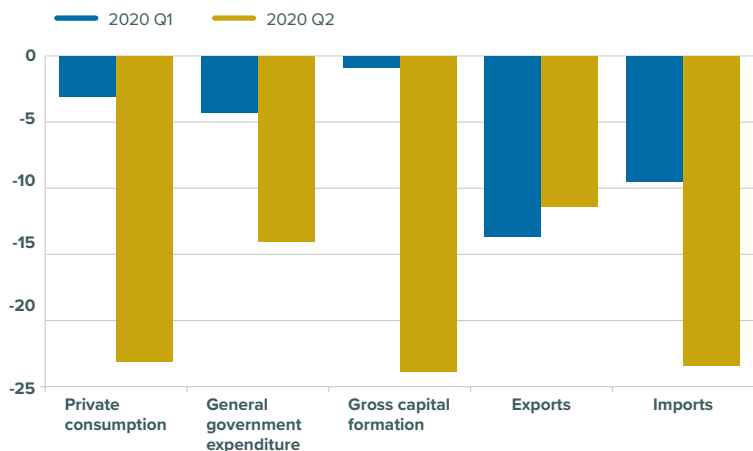
Rolling three-month growth rates and contributions to growth



Source: Office for National Statistics

UK GDP - Expenditure Approach

UK Quarter 1 (Jan to Mar) 2020 and Quarter 2 (Apr to June) 2020



Source: Office for National Statistics – GDP first quarterly estimate



Unemployment and Covid-related Government Schemes

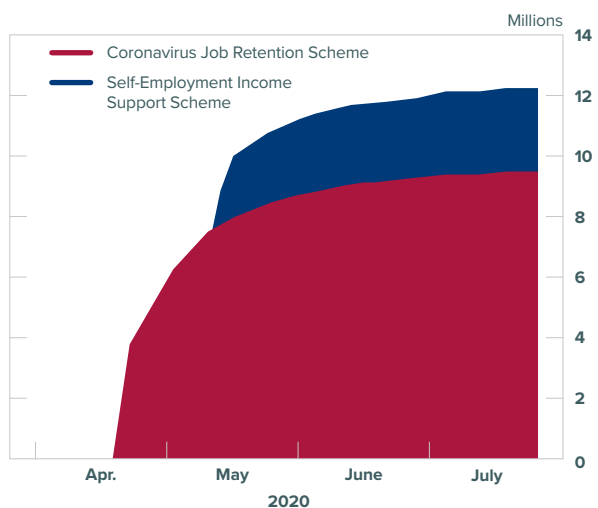
While the drop in overall and sector-specific activity in the UK was significant, unemployment itself remained unchanged at 3.9% in June, thanks to a number of government policies. In June 2020, approximately 7.5 million employees were temporarily furloughed under the government's Coronavirus Job Retentions Scheme (CJRS) scheme, with 2.7 million claims filed under the Self-Employment Income Scheme (SEISS). At the peak of the pandemic, around 12 million people were at risk of becoming unemployed. The UK government and devolved administrations also unrolled a range of government-backed accredited loans and finance agreements.

The largest share of furloughed employees in July was in wholesale and retail and repair of motor vehicle (20%), followed by accommodation and food services (18%) and manufacturing (11%). Construction and arts and entertainment businesses were also highly affected with 76% of the eligible employers in each of the industries relying on the CJRS scheme.

The latest ONS survey (Wave 12) confirms that government measures have been essential to preserve jobs in the past months. Of all the respondents, the information and communication industry and human and social work activities were the only two sectors in which less than fifty percent of the businesses had applied for the CJRS at 48.8% and 46.8%,

respectively. Other sectors have also relied on cash coming in from government-backed accredited loans and business grants funded by the UK and devolved governments to continue operating. For instance, 38% and 34% of respondents in accommodation and food service activities applied for government-back finance and agreement and business grants, respectively.

Furloughed employees and Claims by Self-Employed



Source: BoE Monetary Policy Report, August 2020.*
CJRS data refer to the total number of furloughed jobs and SEISS data refer to the total number of claims.

Report Sources: HMRC and Bank calculations. (a) Where daily claims data are not available they are linearly interpolated from weekly data. CJRS data refer to the total number of furloughed jobs and SEISS data refer to the total number of claims.

Sector	Employers		Employments	
	Employers furloughing staff	Take-up rate	Employments furloughed	% of Total
Unknown & other	23,300	•	101,300	1.1%
Accommodation & food services	110,700	87%	1,693,600	17.6%
Trade union, religious, political & repair	71,200	77%	315,000	3.3%
Manufacturing	74,800	76%	1,021,500	10.6%
Construction	174,000	76%	769,300	8.0%
Arts, entertainment, recreation & other services	30,100	76%	474,300	4.9%
Wholesale & retail; repair of motor vehicles	178,600	74%	1,906,100	19.9%
Waste & Recycling	4,000	72%	43,700	0.5%
Education	24,400	63%	341,700	3.6%
Property	28,600	62%	157,800	1.6%
Business administration & support services	102,00	62%	890,500	9.3%
Transport & storage (inc postal)	43,100	60%	424,100	4.4%
Health	55,100	55%	423,200	4.4%
Mining, quarrying & utilities	600	54%	14,800	0.2%
Energy Production	700	53%	20,800	0.2%
Professional, scientific & technical	150,900	49%	632,900	6.6%
Finance & insurance	14,500	42%	76,800	0.8%
Information & communication	59,400	38%	227,500	2.4%
Agriculture, forestry & fishing	9,700	29%	36,600	0.4%
Domestic employers	8,200	11%	10,100	0.1%
Public administration & defence	500	7%	20,400	0.2%
Total	1,164,400	61%	9,601,700	100%

Source: HMRC CJRS August 2020

Reopening the Economy

The reopening of the UK economy has taken place in stages, with data indicating a number of concurrent trends. For instance, there has been a steady fall in the number of businesses indicating that they had halted production in the previous two weeks in each consecutive BICS survey. In the two weeks to the 23rd August (Wave 12) therefore, only 3.6% of business had registered as temporarily closed or having paused trading, compared with nearly 25% in April (Wave 3). Similarly, the proportion of businesses for whom turnover has increased in the previous two weeks

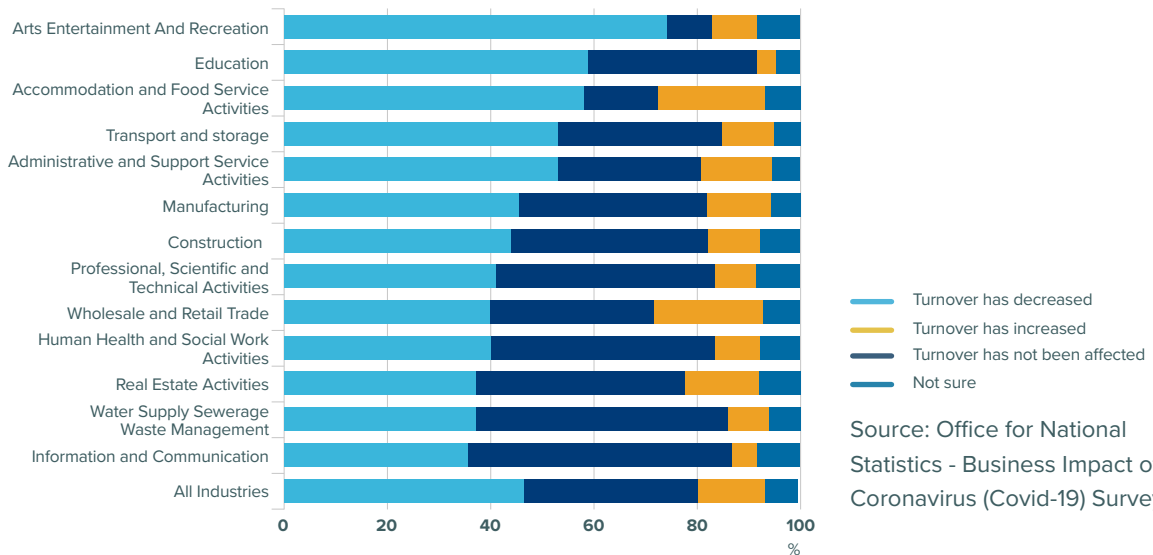
also surged to approximately 11% against the 2.7% low in April (Wave 3).

Nevertheless, the overall environment in which UK businesses are operating in, at both national and local levels, remains challenging. Unsurprisingly, 47% of BICS respondents reported lower turnover than normal, with 26.9% reporting operating costs equal or exceeding turnover. More worryingly, around 45% of businesses have reported that they have no, or less than six months' worth of cash reserves, reflecting severe liquidity problems.

Impact on Turnover

Of businesses currently trading, 47% reported a decrease in turnover compared with what is normally expected for this time of year, while 13% reported an increase

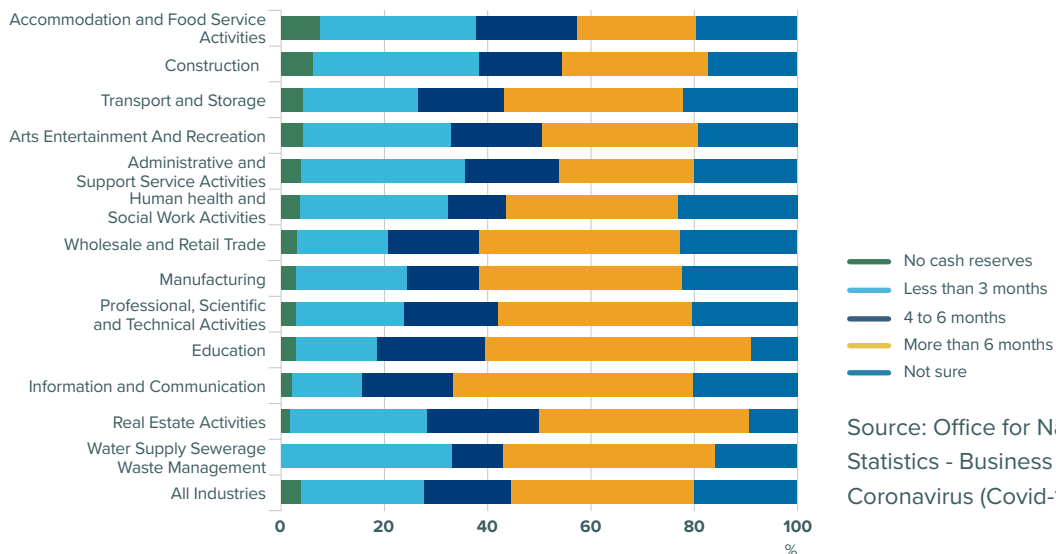
Businesses who are currently trading, broken down by industry, UK, 10 August to 23 August 2020



Cash Reserves

Across all industries, 28% of businesses reported they had no or less than three months' cash reserves

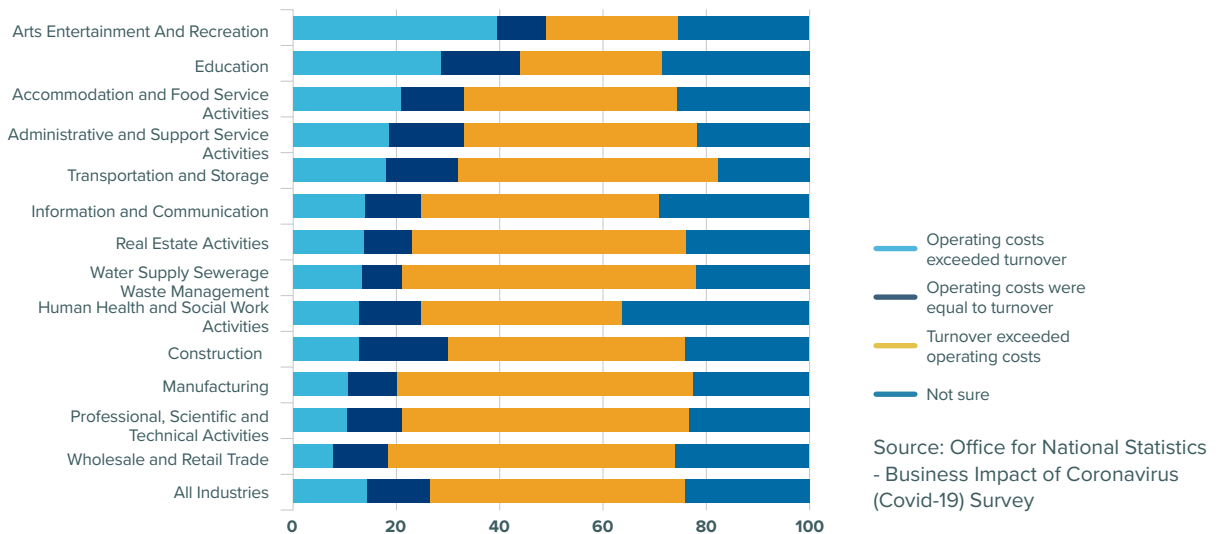
Cash reserves, businesses who have not permanently stopped trading, broken down by industry, UK, 10 August to 23 August 2020



Operating Costs Comparison with Turnover

The arts, entertainment and recreation industry reported the largest percentage of businesses indicating that operating costs had exceeded turnover, at 40%

Operating cost comparison with turnover, businesses who are currently trading, broken down by industry, UK, 10 August to 23 August 2020



Looking Ahead

The outlook for the UK and global economies remains uncertain. From Q2 2020 until the end of 2020, much depends upon the rise and decline in Covid cases both nationally and regionally, as well as the various measures taken by governments to protect the population. From a business perspective, certainty is needed to boost both market activity and consumer confidence. Covid needs to be more proactively controlled by improved testing or vaccine development, in order for consumer and market confidence to promote a recovery in both the UK's own GD, and other global economies. In the short term, increased consumption as well as sector-specific support are likely to remain the main driver of UK growth, as the recovery in spending that began in the second

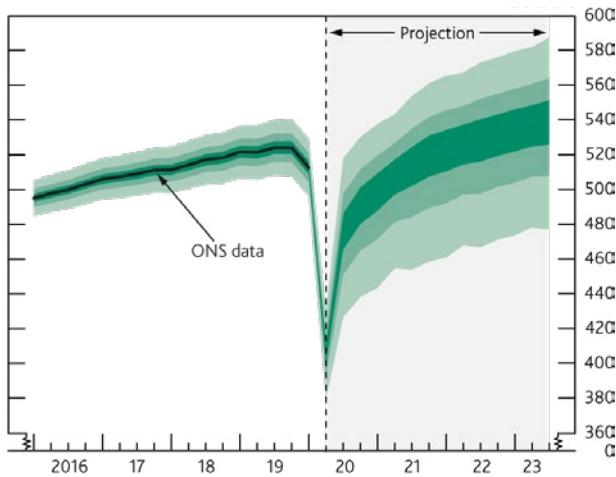
quarter continues. Post-2020, other factors come into play. The terms of the UK's departure from the EU for instance remain a key source of anxiety for many businesses.

In line with the above data, the Bank of England's (BoE) August 2020 forecasts indicate that GDP will increase gradually, but that it will only reach pre-Covid levels in two years, if not more. As the fund chart below illustrates, the speed of the recovery is essentially subject to the realisation of a host of different assumptions, including the future relationship with the EU, future trade with other partners including the US and China, increase in inward investment and consumer confidence.



GDP Projection Based on Market Interest Rate Expectations, Other Policy Measures as Announced

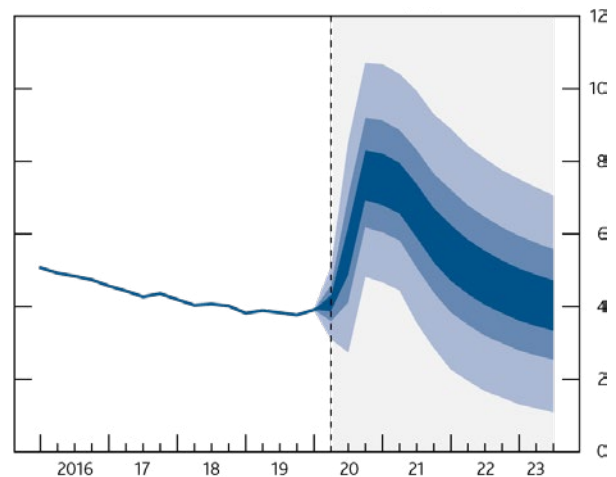
£ billions



Source: BoE Monetary Policy Report, August 2020

Unemployment Projection Based on Market Interest Rate Expectations, Other Policy Measures as Announced

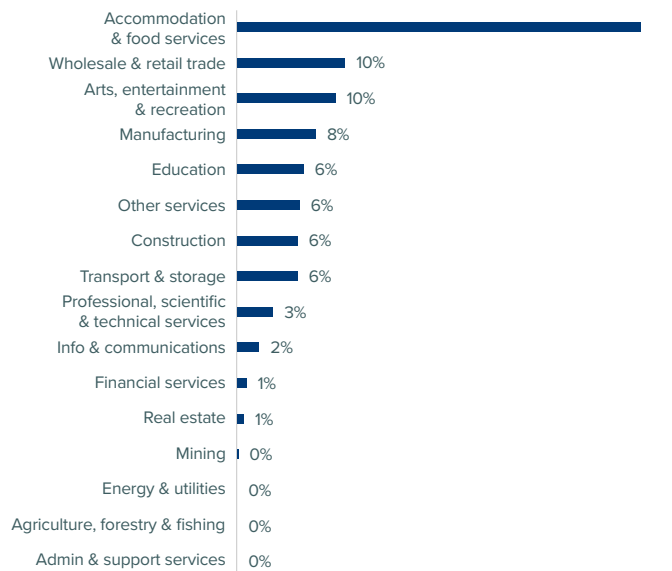
Unemployment rate, per cent



Source: BoE Monetary Policy Report, August 2020

Labour market figures are expected to decline in the coming months, with the likelihood of many furloughed employees permanently losing their jobs before finding new positions or retraining. The Bank of England foresees unemployment increasing to 7.5% by the end of 2020, only falling later in 2021. The extent and speed of the labour market recovery will therefore depend largely on firms' willingness to make both investment and hiring decisions under high levels of uncertainty; but it will also be affected by an increased mismatch between the types of vacancies and those looking for work, as the impact of Covid differs across sectors. Most of the expected job losses are likely to be concentrated in sectors that will take a longer time to recover, or where logistical adjustment to Covid compliance protocols is more demanding and costly, including the hotel and restaurants sector, wholesale and retail trade, as well as the arts, entertainment and recreation sector.

Sector Share of Furloughed Workers at Risk of Redundancy by the End of 2020 Q2



Source: ONS & owns calculations.
Data on occurrences for 2020 up to a week ending 29 August



SURREY-SPECIFIC ECONOMIC OVERVIEW



Surrey-Specific Economic Overview

Surrey Trends

As the Surrey-specific SWOT analysis demonstrates, the county possesses both areas of real resistance, and challenging disparities. Both were in evidence pre-Covid, and both are likely to complicate the ability to chart a sustainable recovery plan for the short and long term. Much of the preceding national data illustrate patterns that represent Surrey's current economic reality. Equally, as research undertaken by a number of key Surrey-based entities, as well as our own research indicates, Surrey's economy, workforce, sectors and residents reveal shifting trends in their response to Covid that need to be considered. While an extension of the Job Retention Scheme and other government assistance programmes have helped Surrey firms gain a more secure footing, regional disparities, sectoral limitations, the ongoing decline in high street shopping and wholesale transformations to the entire definition of 'work' and 'home' represent very real challenges to Surrey's economy.

Surrey SWOT Analysis

► STRENGTHS

- Firms within Surrey have a large GVA contribution to economy (over GBP 44bn, 2018) with annual GVA growth of 2.5% over the last 10 years (ONS, 2019)
- Generating a steady above national average income – Guildford (£42,400) and Surrey Heath (£45,500) compare favourably to the national average of £37,400 (ONS, 2019)
- Residents in Surrey county are 24% more productive than UK averages, with a GVA of £35,693 per capita in 2018 (ONS, 2019)
- Large proportion of UK MNCs and knowledge-based businesses based in Surrey across a large number of industries (e.g. Whirlpool, Canon, Pfizer, Kia Motors, Toyota, Unilever, Proctor & Gamble, Nestle, Colgate-Palmolive)
- High-skilled, mature workforce concentrated in highly productive sectors including financial services, sciences, professional and scientific areas of work (c.23% of population) (Source: Google Covid Community Mobility Survey, 2020; ONS, 2018)
- Lower crime rate than the national average (except bicycle theft and public order) (ONS, 2019).
- Consistent above average population growth (ONS, 2018)
- Strong international and business connections, with easy access to two major international airports (Heathrow and Gatwick)
- A large number of self-employed and specialist workers who are very mobile: 12.5% within Surrey versus 9.8% nationally
- Good research Universities with the University of Surrey and Royal Holloway, University of London
- Continued expansion of new housing within the county, including 7,440 new homes per year (1.8% growth) of which 9% is affordable housing (ONS, 2019)
- Good availability of grade-A office space (Surrey County Council, 2018)
- Low county-wide deprivation, low county-wide unemployment (5.8% in April 2020, ONS)
- High standards of living, including significantly above average home size, particularly in the 90-meter squared and above categories (ONS, 2019)
- Higher levels of home ownership in Surrey (74.1%) above the rest of the country (66.3%) (ONS, 2019)
- Reputation: known throughout the UK as safe with good public services

WEAKNESSES

- Mature economic position with relative weakness in preceding 5 years: GVA growth rate since 2014 has been slower than the overall UK and England growth (ONS, 2019)
- GVA per head has declined in relative terms to the rest of the UK (from 140 in 1998 to 125 in 2018) (ONS, 2019)
- Higher than norm dependency ratio: 38.6% are 0-16 or 65+ in Surrey versus 37.5% in England (ONS, 2019)
- Surrey residents are more likely to be working in excess of 49 hours a week. They are almost more likely to have longer commutes. These factors are associated with health risks (Surrey County Council, 2016)
- Low rate of business creation and below average sustainability than the rest of the UK: this might hold back local long-term GVA growth (ONS, 2019)
- High numbers of self-employed workers and aviation workers who are particularly sensitive to economic downturns (ONS, 2019)
- Surrey is very well connected, but existing roads are heavily used, with motorways carrying 80% more traffic than average for the South East and Surrey's A-Roads having 66% more traffic (Surrey Place Ambition, 2019)
- A large number of employees involved in global commerce (aviation, MNCs) which are sensitive to costs, which are affected by both Covid and Brexit
- Low housing affordability: Surrey is the second most expensive County in England, with an average house price of £537,000 versus a national average of £298,000.



OPPORTUNITIES

- A shift out of London together with improved infrastructure investment which favours suburban towns, enables the county to attract further MNCs businesses. Currently 19% of Surrey residents (131,000) commute to every day (Surrey Place Ambition, 2019). If these residents work from home, this will provide additional economic activity
- Further investment in digital connectivity and the expansion of fibre optic services to homes and businesses within the county to enhance remote working capabilities. Existing full fibre optic coverage in Surrey is 6%, below the England average of 7.5% (Surrey Place Ambition, 2019)
- Improving the business environment and innovation by attracting high technology businesses – traditionally a Surrey strength. Furthering a small technology cluster which already exists at Surrey Business Park (University of Surrey, 2020).
- Encouraging businesses to invest in employee skills development and to sponsor placement or training students.
- Attracting and retaining young people within the County through new training, placement and housing schemes. Surrey has a below average number of young people (20.7% of population in 2018) and current projections indicate this worsening to 19.1% of population by 2040. (Surrey County Council, 2018).

THREATS

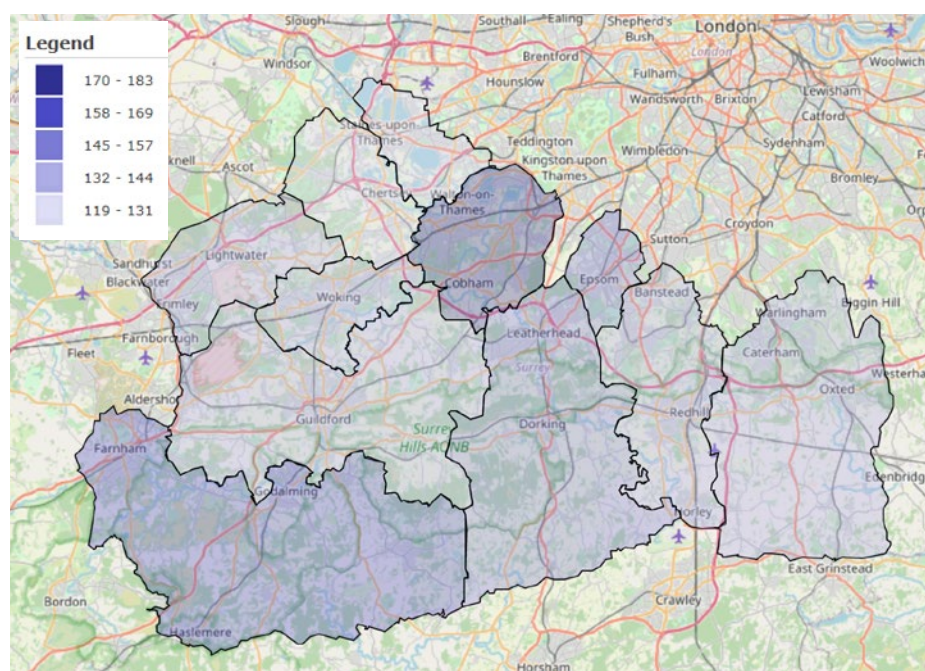
- MNCs may choose to reduce office space and increase work from home, reducing the need to live near to towns and within the London commuter belt. Currently 19% of Surrey residents (131,000) commute to every day (Surrey Place Ambition, 2019). But potentially these residents could move to cheaper places
- Increasing average age within the County, young people are leaving for cheaper areas: 37.3% of Surrey population is age 20-49 versus 39.2% in England (ONS, 2019)

- Housing affordability – Surrey housing costs have been outpacing salary increases in all age groups (Nationwide, June 2020; ONS, May 2020)
- Traffic and infrastructure problems cost the Surrey economy £550 million a year: car dependency is high, and congestion are regular, Guildford area is the 7th most congested in the country, with very uncertain journey times. (Guildford Borough, 2019; Surrey Congestion Programme, 2014; Google Covid Mobility Report, 2020)
- Public transportation service quality and timeliness could be improved. For trains, the current service provider, SWR has some of the highest dissatisfaction and delay ratings for continuing franchises in UK (National Rail Passenger Survey, 2020)
- There is a dependency on in and out commuting workers low-value-add sectors in Surrey, particular food service, hotels and catering (Google Covid Mobility Report, 2020)
- Declining town centres, with significant loss of shops in Guildford (-10.9%), Epsom and Ewell (-10.3%), and Woking (-9.3%) since 2000. Vacancy rates exceed 12.6% in Surrey, but near national average (VOA, 2019; BRC-LDC, 2020)
- A lack of county growth initiatives and future economic development plans



Gross Disposable Household Income and Gross Value Added

Household's disposable income per head in Surrey is above the national average (£21,109) for every local authority. However, income per capita is highest in Elmbridge at +82.4%, followed by Waverley at +58.3%, and Epsom and Ewell at +51.2%. The lowest income per capita is found in Runnymede with an income 17.8% above the UK's.



GDHI per head Index (UK=100)

Elmbridge	182.4
Epsom and Ewell	151.8
Guildford	139.7
Mole Valley	150.1
Reigate and Banstead	134.9
Runnymede	117.8
Spelthorne	127.3
Surrey Heath	139.1
Tandridge	136.9
Waverley	158.3
Woking	137.2

Source: ONS Regional Accounts

Surrey's GVA in 2018 was £43 billion, contributing 16% to the South East GVA and 2.3% to UK's GVA. In simple terms, West Surrey contributes 70% to Surrey's overall output, and East Surrey the remaining 30%. However, Surrey's overall contribution to UK output has gradually fallen over the last decade due to poor growth rates when compared with the UK. In 2018, Surrey grew 0.4%, well below the UK average of 3.4%. In real terms, Surrey's growth rate in 2018 weighed in at -1.3% compared with 1.4% for the UK. Thus, despite the initial GVA-based disparities between east and west, both regions have collectively underperformed compared to the national average; interviews throughout this report all suggest that cross-county, cross-LEP and cross east/west connections remain underpowered.

East Surrey remains an area of concern, having experienced persistent negative growth rates over the past few years. In 2018, the GVA growth rate of the area was -4.2% (-5.9% in real terms), compared to 2.5% in West Surrey. This in turn has had an impact on productivity levels which themselves have been falling and have produced a narrowing in the GVA gap between Surrey and the UK. While Surrey residents' productivity was 25% higher than the national in 2018 (with a GVA per head of £35,693), East Surrey's productivity is only 16% higher than the UK's productivity (with a GVA per head of £33,172).

Gross Value Added 2018

	UK		England		South East		Surrey		East Surrey		West Surrey	
	2018 level	Annual Growth, %	2018 level	Annual Growth, %	2018 level	Annual Growth, %	2018 level	Annual Growth, %	2018 level	Annual Growth, %	2018 level	Annual Growth, %
GVA (£ million)	1,908,608	3.40	1,643,271	3.10	277,256	2.30	43,443	0.36	13,350	-4.20	30,093	2.50
Real GVA (2016 £ million)	1,838,019	1.36	1,587,799	1.42	267,813	0.52	42,013	-1.26	12,916	-5.94	29,097	0.97
GVA per Head	28,729	2.70	29,356	2.50	30,356	1.70	35,693	-3.51	33,172	-4.70	38,213	2.20
GVA per Head Indices (2016=100)	100		103		107		125		116		134	

Source: ONS Regional Accounts

The ONS regional real GVA figures are obtained using implied deflators. The deflators are obtained by dividing the value estimates by the volume estimates; and although these are not true regional price indices, owing to the use of national prices in the deflation of GVA data, they reflect regional variation in goods and services produced.

Annual GVA Growth Rates

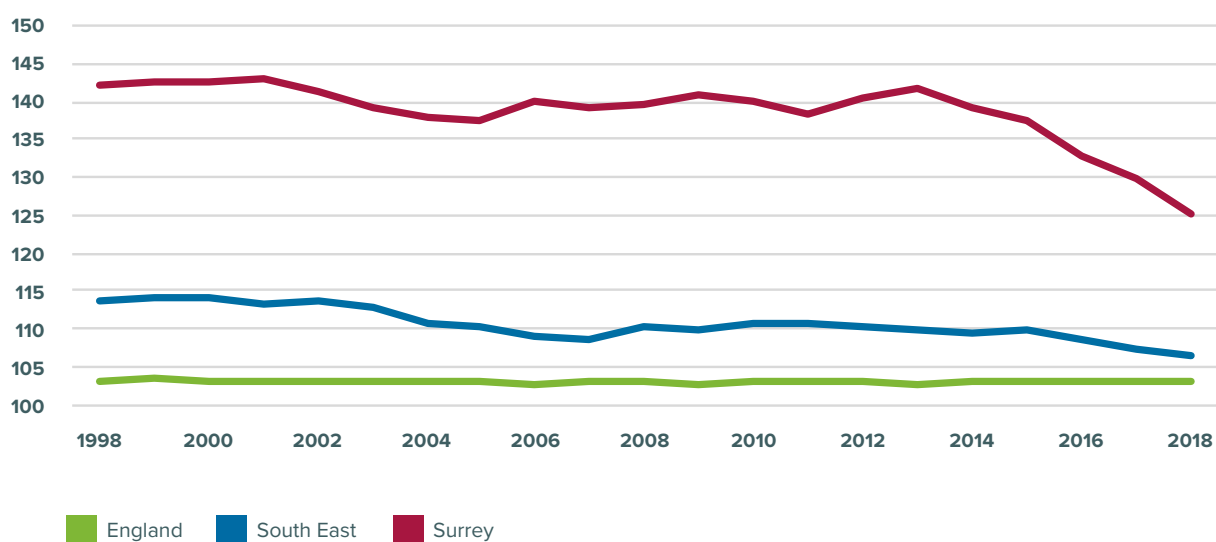
(% Current Prices)



Source: ONS Regional Accounts 2018

GVA Per Head Indices

(100 = UK)



Source: ONS Regional Accounts 2018

In terms of GVA by industry, Surrey's central activities are real estate activities, followed by professional, scientific, and technical activities, and trade and repair of motors. The financial sector is also especially important in East Surrey, where it represents 17% of GVA; while information and communication is key to West Surrey, representing 10.6% of GVA.

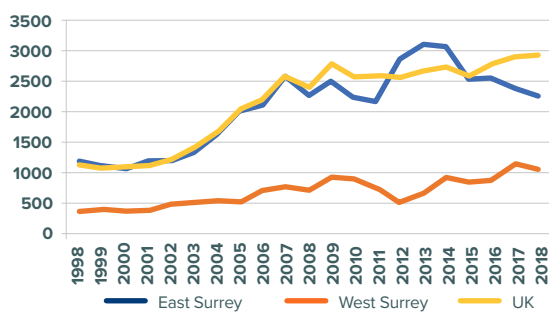
Industry's Share of Regional GVA 2018

	East Surrey	West Surrey	UK	England	South East
Accommodation and food service activities	1.8%	2.4%	2.8%	2.8%	2.6%
Activities of households	0.5%	0.5%	0.3%	0.3%	0.5%
Administrative and support service activities	5.4%	5.2%	5.3%	5.6%	5.5%
Agriculture, forestry, and fishing; mining and quarrying	0.5%	0.2%	1.6%	0.7%	0.5%
Arts, entertainment, and recreation	1.3%	2.3%	1.6%	1.7%	1.6%
Construction	8.2%	7.1%	6.1%	6.1%	6.6%
Education	5.1%	5.3%	5.7%	5.8%	5.9%
Electricity, gas, water; sewerage and waste management	0.9%	3.9%	2.7%	2.5%	3.1%
Financial and insurance activities	17.2%	3.6%	7.1%	7.3%	4.5%
Human health and social work activities	6.1%	6.3%	7.6%	7.2%	6.5%
Information and communication	4.1%	10.6%	7.0%	7.6%	9.5%
Manufacturing	2.3%	4.2%	9.9%	9.6%	8.2%
Other service activities	1.3%	1.9%	1.6%	1.6%	1.8%
Professional, scientific, and technical activities	14.3%	11.8%	7.8%	8.2%	8.0%
Public administration and defence	2.1%	2.1%	4.8%	4.4%	3.8%
Real estate activities	17.1%	16.6%	13.2%	13.6%	15.1%
Transportation and storage	2.0%	2.7%	4.1%	4.2%	4.2%
Wholesale and retail trade; repair of motor vehicles	9.8%	13.3%	10.6%	10.7%	12.2%

Darker blue = Most important industry in each region

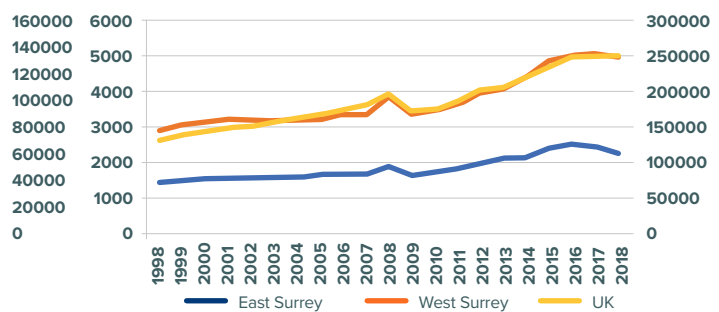
East Surrey's recent drop in GVA values is explained by a significant decline in the value of its financial and insurance activities, as well as a fall in wholesale trade, and more recently, in real estate activities. Other sectors falling in value in East Surrey are information and communication, transportation and storage, the public sector, and construction. From this perspective, West Surrey has enjoyed a steadier cross-sectoral performance, with the exception of manufacturing, which has had a strong downturn since 2016.

Financial And Insurance Activities GVA



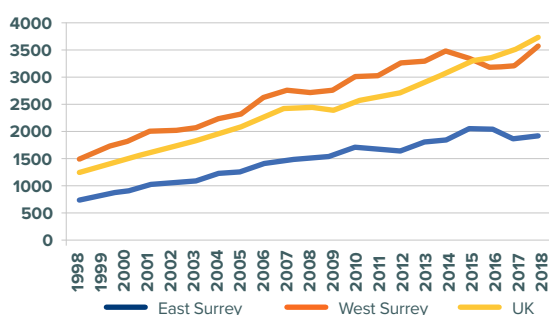
Source: ONS Regional Accounts

Real Estate Activities GVA



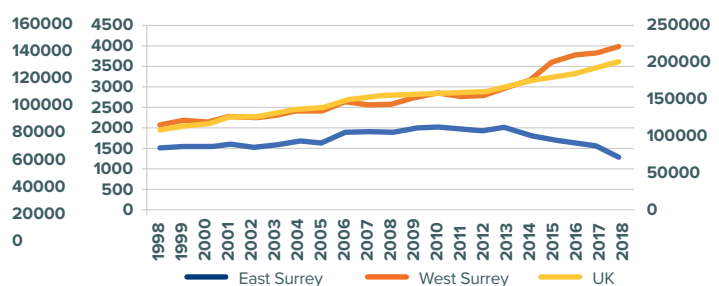
Source: ONS Regional Accounts

Professional, Scientific and Technical Activities GVA



Source: ONS Regional Accounts

Wholesale, Retail Trade And Repair of Motor Vehicles GVA



Source: ONS Regional Accounts

Finance and insurance in East Surrey is not distributed amongst a wide number of enterprises, but rather is concentrated in two large employers. This indicates a lack of resilience in the regional economy with the attendant risk that these two employers may relocate or downsize. By contrast, Gaming in West Surrey is more evenly distributed amongst a wide number of large, medium and small companies, and therefore more resilient as a result.

Economic Activity and the Labour Market in Surrey

The county of Surrey has a population of 1.2 million, of whom around 61% are working age (aged 16-64), with 19% 65 years+. An estimated 81% of Surrey's working age resident population are either employees or self-employed, which is above the UK's rate of 79%. Pre-Covid, Surrey's unemployment rate stood at 2.5%, while the claimant count (which includes Jobseeker's Allowance and Universal Credit claims), stood at 1.2% of the working age population. With the start of the lockdown, the claimant count jumped to 4% in July (still below the 6.4% for the UK).



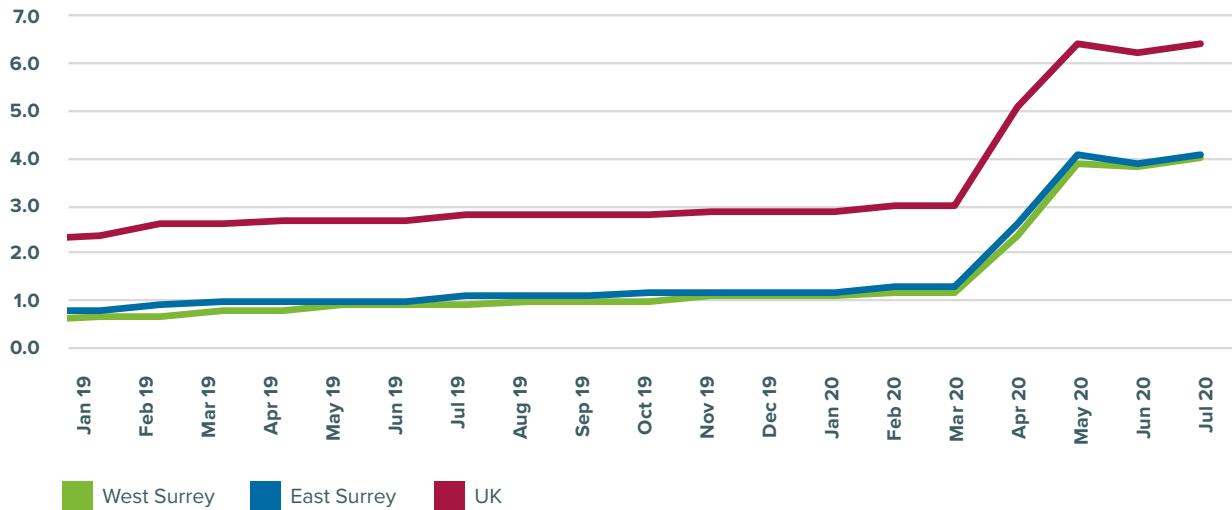
Economic Activity

	UK	Surrey	East Surrey	West Surrey	C2C	EM3
Population	66,796,807	1,196,236	404,749	791,487	2,049,600	1,713,200
Working age population (16-64 years) rate	62.5	61.2	60.2	61.7	61.7	60.6
<i>Change in working age pop. Rate, 2001-2019</i>	-2.5	-4.8	-4.8	-4.8	-2.0	-5.8
Share of 64+ population years	18.5	19.1	20.0	18.6	19.4	20.2
<i>Change in 64+ population rate, 2001-2019</i>	16.8	17.2	16.9	17.2	9.4	27.4
Economic activity rate - aged 16-64	79.0	83.3	84.9	82.5	82.4	82.8
Employment rate - aged 16-64	75.9	81.2	82.6	80.5	79.9	80.6
Unemployment rate - aged 16-64	3.9	2.5	2.6	2.4	3.1	2.7
% who are economically inactive - aged 16-64	21.0	16.7	15.1	17.5	17.6	17.2
% aged 16-64 who are employees	64.8	67.5	66.2	68.2	65.9	68.6
% aged 16-64 who are self employed	10.8	13.4	16.0	12.1	13.4	11.8

Source: ONS APS (latest Apr 2019-Mar 2020), Population Estimates (mid-2019)

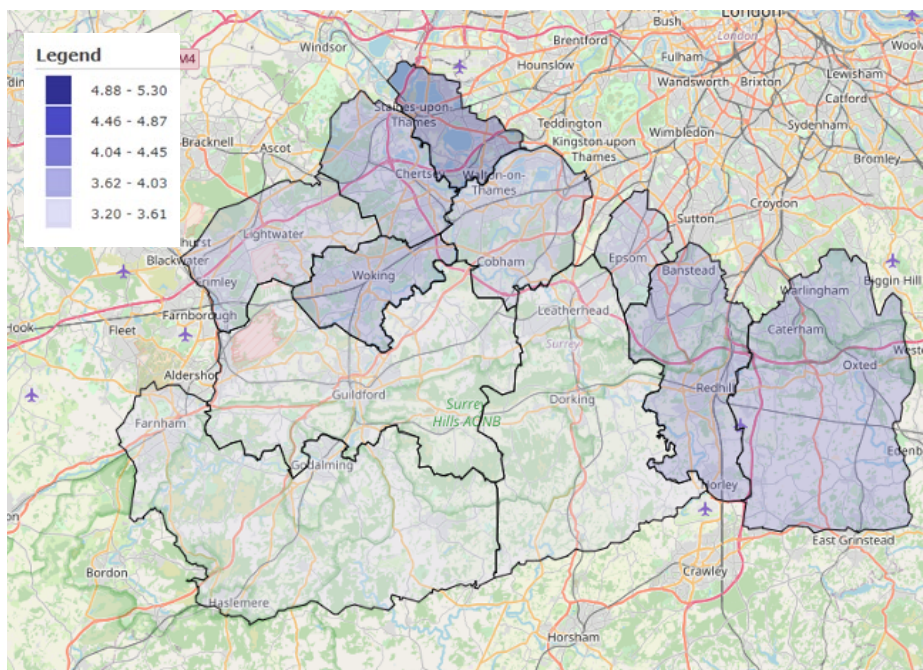
COVID-19 Impact on Claimants

(% of residents aged 16-64)



Source: ONS Experimental Statistics

Within Surrey, Covid has impacted the local labour market in different ways across the various local authorities. Employment in Spelthorne for instance has been the single most affected area, with a claimant rate of 5.3%, followed by Tandridge with a claimant rate of 4.4% in July. Guildford however recorded the lowest claimant rate, at 3.2%.



Source: ONS

Claimants as a Proportion of Residents Aged 16-64

Elmbridge	3.9
Epsom and Ewell	3.9
Guildford	3.2
Mole Valley	3.6
Reigate and Banstead	4.2
Runnymede	4.1
Spelthorne	5.3
Surrey Heath	4.0
Tandridge	4.4
Waverley	3.4
Woking	4.4

The impact of COVID is also evident in the usage of the furlough scheme by Surrey businesses, which had a take-up rate of 30% in August, only slightly below the national average. The reliance on the scheme was largely consistent across local authorities. The furlough distribution patterns also largely echo the Jobseeker's Allowance and Universal Credit claimant counts, where again Spelthorne had a higher take-up (34%) and Guildford lower (29%).



CJRS Furloughed employments by country, region, and local authority (Claims to 31 July 2020)

Country / Region	Employments furloughed	Eligible employments	Take-up rate
UK	9,601,700	30,353,200	32%
Surrey County	167,000	559,000	30%
Elmbridge	17,500	61,700	28%
Epsom and Ewell	10,700	38,000	28%
Guildford	19,800	68,000	29%
Mole Valley	11,500	39,400	29%
Reigate and Banstead	20,300	71,700	28%
Runnymede	13,400	40,800	33%
Spelthorne	16,800	49,700	34%
Surrey Heath	13,600	44,500	30%
Tandridge	11,900	39,200	30%
Waverley	16,200	54,800	30%
Woking	15,200	51,400	30%

Source: HMRC CJRS and PAYE Real Time Information

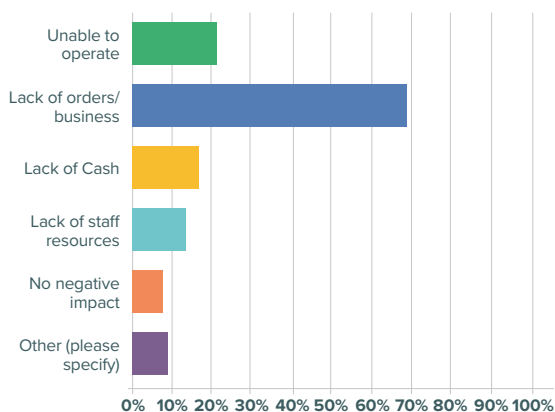
Surrey Chambers of Commerce Outlook

As part of its Covid engagement with its membership, the Surrey Chamber of Commerce has organised monthly surveys of its membership. The third instalment, covering the period of July and early August 2020, provides an understanding of how economic activity in Surrey has been impacted by coronavirus, revealing some of the most pressing issues for Surrey's businesses for 2020 and beyond. We are most grateful to the Surrey Chambers of Commerce for their willingness to add a number of specific questions to this third instalment, allowing key insights to emerge, underwriting and further clarifying much of the findings in this section, and the report more broadly.

Business Activity

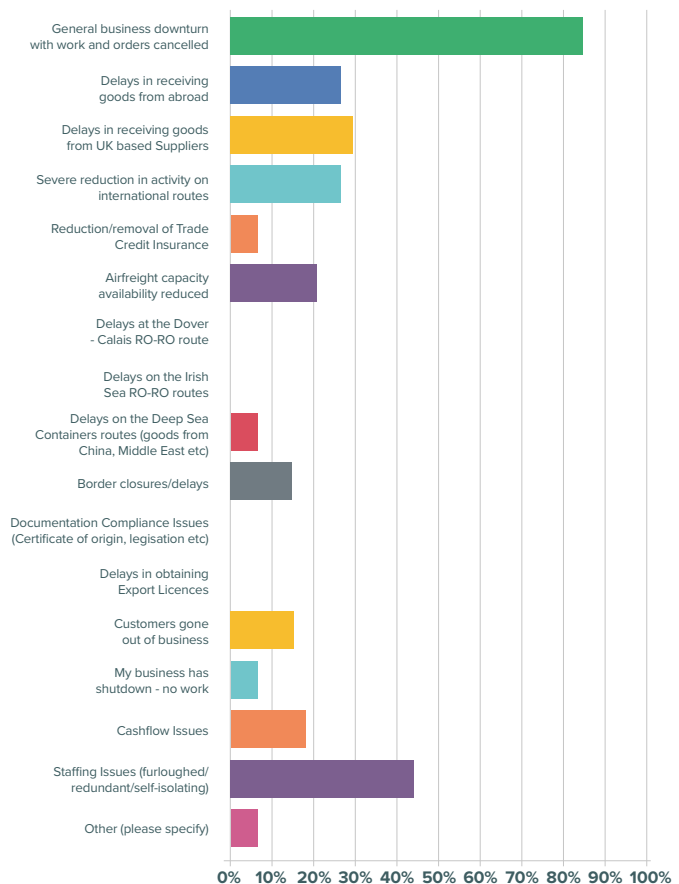
Business activity across Surrey has been affected by a general lack of orders (68.9%), disruptions to usual modes of operation (21%), and liquidity issues (16.8%). Amongst the issues reported most frequently by those surveyed, respondents identified staffing issues (44.1%) followed by delays in receiving goods both from UK suppliers (29.4%) and from abroad (26.47%), as well as severe reductions in activity on international routes (26.47%) and the reduction of airfreight capacity (20.59%).

What Have Been the Biggest Negative Impacts on Your Business From Covid-19?



Source: Surrey Chamber of Commerce

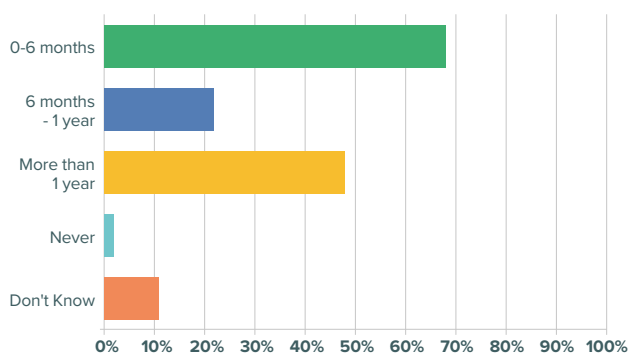
Which of the Following Impacts Has Your Business Experienced as a Result of the Coronavirus Outbreak?



Source: Surrey Chamber of Commerce

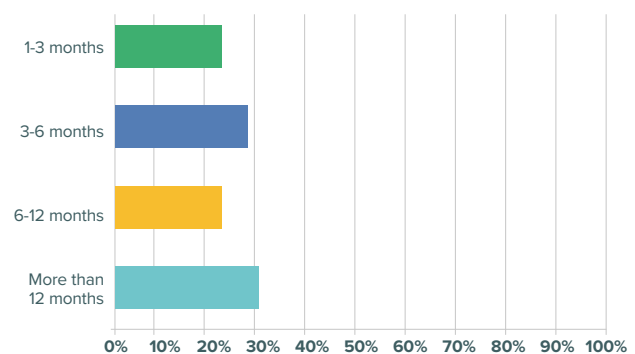
A significant number of business respondents expect it will take them over a year to recover (48%). For most however, cash reserves will last less than one year. In the short-term, the biggest issue therefore is liquidity shortages. 49% of respondents reported that they had reserves for fewer than six months, which is a higher percentage of cash-strained companies than the national figure reported by the BICS survey, 44%. Given the significance of the next twelve months for the recovery of businesses, over 50% of respondents see injections of cash as the main requirement to speed recovery and aid future growth.

How Long do you Think it Will Take Your Business to Get Back to Pre-Covid Turnover Levels?



Source: Surrey Chamber of Commerce

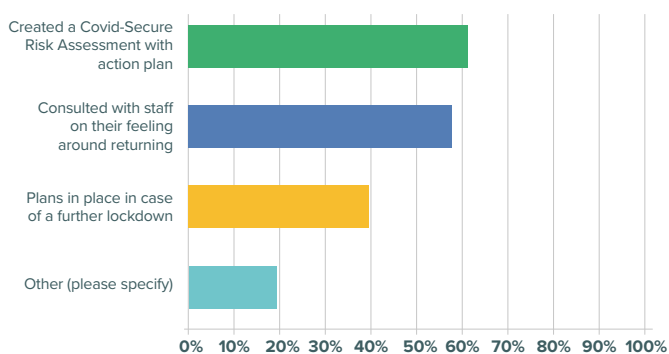
How Long Will Your Cash Last?



Source: Surrey Chamber of Commerce

Nevertheless, there are likely to be some areas of resilience to the downturn. A large share of Surrey's businesses expect to keep employee numbers unchanged, and a significant share have already put in place a Covid-Secured Risk Assessment, together with an action plan for returning to the workplace, with further measures in the event of another lockdown in 2020.

In Your Preparation for a Return to the Workplace Which of the Following Have you Carried Out?



Source: Surrey Chamber of Commerce

In the longer-term, the economic activity of some areas in Surrey are likely to be affected by Brexit. Amongst those surveyed, there was a widespread feeling that Brexit will have a negative impact for businesses, with concerns including bureaucratic costs and reduced business volume. Exporters indicated greater clarity on their sense of Brexit's impact (including loss of access to significant markets, products becoming more expensive, customs paperwork). However, a significant number of respondents in other sectors indicated that they were unclear on the details of how their business could or would be affected (e.g. in the event of a no-deal outcome with the EU in December 2020). This supports research undertaken for elsewhere in this report suggesting that businesses have had little spare time to understand and mitigate potential challenges they will face due to Brexit, as a result of time and resources focused on dealing with Covid.



CLUSTER ANALYSIS





BUSINESS, EMPLOYMENT AND INFRASTRUCTURE



Business, Employment and Infrastructure Introduction

The research undertaken for the business and employment cluster has highlighted a key area of success for the county: people. People are at the very heart of what makes Surrey a unique and great place to do business. The county has a long history of economic success and business growth, that has given it's comparative advantage in the region and a reputation of excellence, globally. A strong entrepreneurial spirit in Surrey has meant that, in recent years, the county had the highest amount of new business birth rates then anywhere in the UK; resulting in a record number of businesses in operation. Consequently changing the economic picture in the last decade with Surrey seeing a flatlining of both economic growth and competitiveness. Coupled with the current challenging context and future challenges ahead, Surrey is at crossroads. It is essential, therefore that there is a shared willingness to adapt, and if necessary wholly change course in the county.

Surrey has a chronic complacency problem, which stifles investment and growth in the business sector. This problem is not only found among key stakeholders in the business community, but across the county at all levels in all sectors. Complacency does a disservice to the people that comprise the cluster and the businesses of all sizes that obtain untapped potential. Current circumstances should not be wasted and the opportunities that Covid and Brexit have given us

to lead the way in delivering a more sustainable and innovative business environment in Surrey should be seized. The business ecosystem in Surrey must be shaped into a more collaborative system that is based on business cooperation on projects that grow businesses and continue to provide high-value and high-worth products and services.

A pattern has emerged within the research that Surrey benefits from cluster cooperation. The Business and Employment cluster is driven by the work of the knowledge, aviation and healthcare cluster and vice versa. The power of knowledge can never be underestimated in business and obtaining it continues to be a challenge in the county as the proximity to London attracts a significant proportion of young talent. London continues to play an important role in the local economy as Surrey's largest neighbour. However, there is a perception that the role of London has diminished in favour of Surrey and that instead of Surrey being close to London, London is now close to Surrey.

Investing in people is an essential part of moving forward; a dynamic skilled workforce is vital in recovery and resilience, particularly in Surrey. Although, at first glance, Surrey's businesses are facing serious challenges and obstacles that have far-reaching effects in the cluster. After meeting with the passionate and dedicated people behind the cluster, I am confident with the correct strategic leadership and collaborative environment, Surrey can thrive.



Key Reports

Enterprise M3 Strategic Economic Plan 2014- 2020

The Enterprise M3 (EM3) zone is well connected at the “heart of a transportation hub” (p.3). This is due to its close proximity to international airports, such as Heathrow and Gatwick, and to its road and rail connections that encompass 75 railway stations. The report separates areas of growth into ‘Growth Towns and Step-up Towns’ (p.5). ‘Growth towns’ include Basingstoke, Guildford, Farnborough and Woking that delivers one-third of the jobs and GVA in EM3 (p.5). ‘Step-up towns’ include Camberley, Aldershot, Andover, Whitehill and Bordon, and Staines-upon-Thames; these are areas of clear economic potential that currently experience barriers to such growth. The report emphasises the region’s primary “Sci: Tech Corridor” that is seen as an economic asset to the region and of great national interest (p.5). This includes the unique 5G research and incubation projects that offers space for further investment in both research and jobs.

These trends point towards the highly skilled workforce that exists in Surrey, contributing to the high employment figures that Surrey enjoys. However, the report highlights the challenges the EM3 region may face in the future in constraining economic growth, including the need to increase innovation and decrease the skills gap in some sectors. In response to these challenges, the report emphasises the need to use ‘Growth towns’ and ‘Step-up towns’ to catalyse a vibrant and high-value local economy that attracts skilled labour from a variety of sectors (p.17). The report uses the 5G Mobile Communications Arrow Project as a case study of the successes of innovation in Surrey’s EM3 LEP region (p.25). Secured funding by the University of Surrey, with a private-led consortium that supports the project, creates a high-value diverse sector within Surrey. The project has the potential to create 4,000 jobs, as well as £1 billion of business investment and infrastructure upgrades in the local area (p.25). The report in addition mentions its strong relationship with Royal Holloway on research such as cyber-security and its support for SMEs.

Coast to Capital Strategic Economic Plan 2018-2030

The Coast to Capital (C2C) economy is worth £50.7 billion to the UK economy and represents a high-value and high-worth regional economy within the South East region of England. The area’s economy is predominantly comprised of micro to small businesses, accounting for 98.5 percent of registered businesses (p.61). This is a higher rate when compared to the UK as a whole, although is comparable to some other LEPs. At a glance, the economy of the area is the seventh-largest of 38 of Local Enterprise Partnerships in England and the 24th fastest growing LEP in England (p.18). However, economic growth is continuing to decline, and labour productivity peaked in the region in 1999 (p.18). The report suggests this lower growth resulted from an over-reliance on the London economy to provide employment opportunities, as well as the increasing living costs that push out local workers on lower wages (p.18). East Surrey is identified within this report as an area of high-value economic activity with both MNCs and SMEs and a highly-skilled commuting workforce (p.9). East Surrey has the highest GVA per hour worked than any other area within the LEP (p.59).

C2C suggest that the region’s competitive advantage is the result of connectivity, integration and creativity. Connectivity is focused predominantly on the location of international hubs such as Heathrow and Gatwick that further enhance the county’s global connections and investment (p.14). Integration is enhanced by the regional economy that C2C finds itself in, alongside relationships with neighbouring LEPs that provide growth corridors. Creativity is the high-value sector of making and exporting physical products that are of high-value to the UK economy. With Gatwick being the second busiest airport in the UK, and the most efficient single-runway airport in the world (p.15), it contributes £1.6 billion directly to the Gatwick local area, helping to keep the local economy competitive by attracting investment for innovation (p.15). The report emphasises the importance of Gatwick airport as an engine for growth and to increase attractiveness for infrastructure development investments by Network Rail and Highways England.

LEP Outlook Report 2019: An assessment of the economic performance of Local Enterprise Partnership geographical areas

The report seeks to bring together respective LEPs economic data and performance in a national picture that can be used by LEPs to adapt the local strategy. UK Local Enterprise Partnerships have contributed over £9 billion worth publicly funded projects since their inception nationally (p.3). LEPs play an important role in attracting and encouraging R&D spending that in turn correlates with an increase in local innovation. LEPs have come to represent functional economic areas that are not represented by institutional structures (p.6). These indicators allow for interpretations of comparative advantages of LEPs over others and this produces further context for these regions to complement local analysis (p.7). The indicator dimensions of the report include; ideas, people, infrastructure, business environment and place and contain sub-indicators within the indicator dimensions (p.8). The ideas dimension is a significant part of the LEPs economic growth, as LEPs area of ability to generate new ideas and exploit knowledge in favour of commercialisation and innovation. A key industrial strategy policy within this dimension is to raise total R&D investment to 2.4% of GDP by 2027 (p.9).

Surrey and East and West Sussex have a relatively average R&D expenditure compared to other English regions (p.13). Enterprise M3 has a significantly high growth of staff in higher institutions and outperforms Coast to Capital, although C2C also has comparatively high growth (p.14). 'People' are an essential part of functional economic areas and local productivity is related to access to a qualified workforce and level of wellbeing and quality of life in the area (p.18). Also, there is a comparatively high level of self-employed in both Coast to Capital and Enterprise M3. EM3 also has one of the lowest unemployment rates out of all LEP regions (p.25). This is supported by a higher level of income in the county, both EM3 and C2C have Median annual pay that is higher than most other LEPs in the UK, however, growth of annual income over the past 5 years is relatively low in comparison to others (p.31).

Improvements and investment in physical infrastructure play an important role in local productivity. This includes roads, rail and airports, but also digital infrastructure such as broadband connectivity that is essential for many SMEs operations. Surrey has a higher than average download speed and a comparatively high number of premises with full-fibre (p.37). Although this does continue to be outperformed by other regions of the UK. The local environment is also an important factor in local productivity, with public green spaces being an important part. Enterprise M3 has one of the highest amounts of public green spaces in the whole country (p.46). The business environment in functional economic areas is an important determinant of prosperity and dynamism in the local economy, it is captured by indicators such as start-up rates and trade balance.

Local productivity is important for business growth, Enterprise M3 has the third-highest GVA per hour worked in the UK and Coast to Capital are 7th (p.49), suggesting them as highly productive regions. West Surrey has comparatively high exports and imports compared to other regions in the UK, such as Birmingham and Oxfordshire (p.59). Although, the value of imports is higher than the value of exports and this is the case with the majority of regions. The report states that Enterprise M3 has an economic specialism in property and Coast to Capital specialise in Health (p.61), the biggest employer in both LEPs is in construction (p.62). The 'place' is just as important as other factors within the local economy of functional economic areas; this includes population flows, cost of living and social infrastructure (p.63). This outlines indicators that feed into all other areas that have been discussed within the report and all link to make a functional economic area prosper.



National and Local Outputs

British Chambers of Commerce

<p>BCC Coronavirus Business Impact Tracker 2020: <i>“Firms vulnerable as government schemes approach end”</i></p>	<p>The British Chambers of Commerce reports that business condition only improved slightly since the historic UK economic contraction in Q2 2020. It also suggested that many businesses are still significantly relying on government support scheme to stem cash-flow. Only 38% of firms reported improved revenues from UK customers (BCC, 2020). The report concludes that government assistance is vital to save businesses from further cash-flow problems and such schemes should be extended as the impacts are still widely being felt by business.</p>
<p>BCC/Totaljobs 2020: <i>“Almost a third of firms will decrease size of workforce in next three months”</i></p>	<p>BCC’s results from the Quarterly Recruitment Outlook reveals a worrying view of expected redundancies. 29 percent of businesses, predominantly SMEs and large firms, expect to decrease the size of their workforce (BCC, 2020). Although the fieldwork was done prior to the Chancellor’s Summer Statement which announced new employment schemes, the primary argument made in the report still stands. Businesses have continued to benefit from the Job Retention Scheme (JRS) and around 70 percent of businesses surveyed had made use of the furlough scheme. However, there are signs of recovery and an increase in vacancies, particularly in sectors such as IT and logistics.</p>

Institute of Directors

<p>IoD News: <i>“Directors’ confidence improves, but investment and hiring intentions still in the red”</i></p>	<p>Business leader confidence has risen and become positive for the first time since March 2020. Directors are more positive and optimistic about their own business and organisation than they are about the wider economy. The Institute of Directors has called for government support to continue and not phase schemes out too quickly, with particular focus to be paid to the labour market. Although there is optimism among business, “firms are still in a great deal of difficulty” (IoD, 2020), with a specific concern over SME indebtedness.</p>
<p>IoD News (September 2020): <i>“More Support for employers needed as furlough bonus unlikely to cut through”</i></p>	<p>One in five business leaders who furloughed staff said that the JRS bonus of £1000 would not help them retain furloughed staff (IoD, 2020). There is scepticism that the phasing out of JRS would be detrimental to the national labour market, with redundancies for many businesses being realistic. To prevent a surge in unemployment, the IoD is recommending a cut in the burden of employment taxes, for example by increasing the employment allowance for small business.</p>

Confederation of British Industry

<p>CBI News (August 2020): <i>“Building a safe and supportive environment that allows offices to reopen”</i></p>	<p>The CBI views ‘the office’ as a vital driver of the UK economy in that they support a wider supply chain, foster better work and productivity, and help train and develop young people. The CBI does suggest that remote working has been effective for businesses and that these elements of success should not be lost. There needs to be a national feeling of confidence about returning to the office which is essential if the UK economy wants to function at full capacity. The government should do more to persuade employees and businesses to move back to their offices to support the local and national economy.</p>
<p>CBI News (August 2020): <i>Manufacturing downturn eases after survey-record dip- CBI</i></p>	<p>CBI’s Industrial Trends survey records a reduction in the pace of decline in manufacturing. Manufacturers are far more optimistic than they were; however, there is still a significant fall in output in sectors that manufacture. This is mainly down to depressed order books and poor activity in the sector and the industry more widely. It is important that the government adopts a strategy that builds a more resilient manufacturing sector.</p>

Federation of Small Businesses

<p>FSB News (September 2020): <i>“Investment in apprenticeships key to economic recovery”</i></p>	<p>Properly investing in upskilling and reskilling people in the UK, would ensure that the labour force is better prepared for the economic recovery. The government’s recent focus on young people through the Kickstart scheme is of paramount importance, as young people have been adversely impacted by the current Covid economic downturn.</p>
<p>FSB News (September 2020): <i>“Small firms call for measures to stem unemployment and support directors as furlough winds down”</i></p>	<p>The JRS has been a huge success and protected many SMEs in the UK from further cash-flow issues. The changing nature of the commercial and business world, however, means that many jobs simply cannot be protected, and redundancies are already happening. Spiralling employment costs has meant that the cost of running a small business has sky-rocketed. It is necessary that the government place small businesses at the very heart of the recovery plan for the UK to ensure their survival</p>



Definitions and Parameters

Definitions

Employment and infrastructure can be understood in Surrey through a local cluster approach, with a cluster being a geographically proximate group of interconnected companies of all sizes in a particular field. Surrey's business cluster can be understood in three different ways: location, competition and economic development. The location of the cluster in the county can be understood through two different paradigms of geography. Internal geography accounts for factors such as housing and infrastructure, and how this influences the business ecosystem. For example, housing in Surrey significantly impacts local business growth as a lack of supply and affordable housing in Surrey results in young talent moving out of Surrey to live and work elsewhere. All Surrey districts are classified as less affordable than the English average and the county median house prices are considerably higher than the national average (ARUP, 2020). External geography is how areas and clusters are located relative to one other. In the case of Surrey, the business and employment cluster benefits from its location relative to London and the business opportunities that its external geography produces.

The presence of London and other neighbouring areas of high-value business clusters surrounding Surrey's borders, attracting many Surrey residents to commute out of the county. More than 40% of residents work outside of the county and nearly a quarter of residents commute into London (ARUP, 2020). Surrey has a well-diversified sectoral mix that is due to the influence of its internal and external geography, this can be demonstrated through the wide range of business opportunities available to businesses located in Surrey internally and externally. Surrey is home to thousands of businesses of all shapes and sizes that make up its business ecosystem that significantly contributes to its regional economy. In 2019, Surrey was home to 65,025 businesses, 24.1% of them being within the professional industry (IDBR, 2019). Surrey has a high-value knowledge-based business sector that helps contributes to the county's high income and employment levels. 83.3% of people in Surrey are economically active between April 2019 and March 2020, higher than both the regional and national estimates (NOMIS, 2020). With the support of Surrey's knowledge cluster, there is an ever-evolving innovation sector that catalyses the local regional economy with cutting-edge and world-leading research and development. In Surrey, this cluster is

represented by the thousands of business that operate within the county, Local Enterprise Partnerships, Chambers of Commerce and associated independent institutions that represent businesses.

Composition

Surrey's business and employment cluster is composed of many important actors that support business and the workforce to drive business and economic excellence. Surrey has a significant number of businesses based within the county, with around 65,025 businesses of all sizes that range from construction to education (IDBR, 2019). Surrey is home to a significant proportion of larger businesses and multinationals. 270 businesses in Surrey employ more than 250 people, however, micro-businesses of 4 employees or less continue to dominate Surrey's business environment making up 81.8% of businesses in the county (IDBR, 2019). Surrey is composed of two Local Enterprise Partnerships, both Coast to Capital and Enterprise M3. They play an important role in shaping the economic and business strategy of their respective regions. Business organisations such as the Chambers of Commerce and IoD are important networking and membership-led organisations that represent and support Surrey businesses to promote business growth and development. Surrey County Council has an important role at the centre of the business environment as an institution to provide businesses with support and being an accessible place for businesses to engage with. Supply chains play an integral part of some businesses in the county, especially with the proximity of both Heathrow and Gatwick but also the major shipping gateways nearby on the south coast. Supply chains often get overlooked but are just as essential as other parts of the operation of a business.

Geographical Perimeters

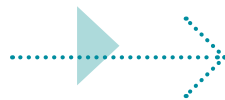
Surrey's geographical location has both positive and negative impacts on the local business and employment cluster. Surrey benefits from good transport connectivity to London, over 75 stations and an average rail travel time from Surrey to London of 30 minutes, coupled with good road connectivity with roads links such as the M25, M3, A3, M23 and A25. Such links mean that Surrey has become a commuter hub for people who work in London and reside in the county. This in turn increases pressure on public infrastructure in the county and contributes to the increasing congestion found in Surrey.

Although Surrey offers residents a high quality of life with low levels of crime and high levels of good health, it also has higher than UK average house prices with an increasing shortage of affordable housing. This means that Surrey remains unaffordable to many who are wishing to move to the county for employment opportunities or to set up a business. Its proximity to London and international gateways has meant that many multinational corporations have significant operations within Surrey, which has increased its global competitiveness.

Map of Coast to Capital



Map of Enterprise M3



As the maps above indicate, Local Enterprise Partnerships (LEPs) divide Surrey into two regions that are distinctively different. Enterprise M3 (EM3) operates in seven districts in West Surrey and includes the business hubs of Guildford, Woking and the Western Corridor in the Blackwater Valley. The region is defined by its cluster of innovation and research centres that drive the regional economy and local business growth. These high-growth areas are well supported by both the knowledge and aviation clusters. Its proximity and connectivity to Heathrow airport continue to make the region an attractive area for investment.

Both the University of Surrey and the Royal Holloway University of London are based within the EM3 region and provide innovation and research knowledge that

feeds into Surrey's business cluster. East Surrey is represented by the Coast to Capital LEP (C2C) that represents four districts, including the business and retail hubs of Leatherhead and Reigate. C2C enjoys proximity and good transport infrastructure that is well connected with London, with the region's business sector reliant on the opportunities that Gatwick airport provides. The airport accounts for a high proportion of employment in the region and contributes to the supply chains of businesses in the region. East Surrey is located between two international airports which creates operational sense for businesses to be based in East Surrey. For example, ExxonMobil is based in Leatherhead as well as its aviation fuels operations which benefit the business being close to two international aviation hubs.

► QUALITATIVE ANALYSIS ◀

Uniquely Surrey: Productivity, Place, People and Connectivity

Surrey's business cluster is a diverse array of sectors and businesses that compete on both a national and international level. Although Surrey does not have a single industry that cuts above the rest nationally, it does have high-value growing sectors in world-class specialisms such as advanced automotive and space and aerospace that are conducting cutting-edge innovation and research, while raising the county's profile as a hub for business growth. To unlock future growth potential in Surrey, investing and innovating in the business cluster is vital. Surrey has a strong and productive economy. However, there are regional disparities between West Surrey and East Surrey, with the former contributing twice as much GVA as East Surrey. Surrey has a relatively high number of businesses per 10,000 people, which is 23% higher than the South East average (ARUP, 2020). Yet, Surrey records lower business birth rate compared to both the regional and national average, with indications that there is a declining desire for businesses to be based in Surrey. Although the county is the base for many large multinationals and medium-sized businesses, there is a higher proportion of micro-sized businesses than the national average. With the changing international and national business environment, Surrey shows it can adapt readily and bring businesses alongside.

Surrey outperforms other areas in the region on many business and employment indicators, with a comparative advantage over others due to the distinctiveness of its high-value and high-worth business cluster. The high rate of economic activity in the area is almost double that of the South East and higher than comparator economies in the region. With a high degree of international competitiveness, Surrey currently has many multinationals that are based in the county, which are enhanced by the high connectivity to two international hub airports. Surrey's location between Heathrow and Gatwick give it a comparative advantage over any other county by having access to two majors gateways that in turn attract investment and innovation. The presence of these gateways supports and create supply chain opportunities that are essential to many businesses in Surrey. Real estate is a growing a significant sector in Surrey's local economy, however, commercial space continues to be a barrier to further business growth. The shift of remote working caused by Covid may reduce the need for commercial space in Surrey. Remote working

has increased in Surrey in the last decade, the amount of floor space allocated per job has fallen consistently since 2008 (ARUP, 2020). Digital Connectivity has become a key part of SMEs operations and productivity levels and is vital to the self-employed, which make up a significant proportion of the employment cluster in Surrey. With the presence of the world-leading 5G Innovation Centre, county-wide digital connectivity can be achieved through the support of digital knowledge and local investment from within Surrey. The county has good coverage of fixed broadband connectivity in high-density population areas and ultrafast broadband coverage is higher than the national and regional averages (ARUP, 2020). However, full fibre availability is low across Surrey and digital connectivity is much lower in rural areas in boroughs such as Mole Valley which has a significant proportion of self-employed.

Surrey Business: Distinctly High Value/High Worth/Uniqueness

Surrey's business ecosystem is both a high value and high worth contributor that sets itself apart from other counties in the region. Surrey is a high-value economy contributing £40 billion GVA per annum (2018), which is the highest county GVA in the South East of England. The UK's service industries account for 80 percent of UK GVA (Library, 2020), and the service sector represents a significant proportion of the Surrey economy. Another significant proportion of employment in Surrey is in knowledge-based businesses. Although no singly dominant industry in Surrey exists, there are clear clusters of sectoral strengths that are both high value and high worth due to their world-class specialisms and innovative growth:

- **Computer gaming industry**
- **AI, digital and data**
- **Pharmaceutical and Life sciences**
- **Advanced manufacturing**
- **Financial and legal services / professional**

Covid, Brexit and Beyond

The business cluster in Surrey is facing multiple challenges that produce obstacles to both business and economic growth and impact the inner workings of the business ecosystem in the county. Covid has

significantly altered the economic landscape of the UK and Surrey, with far-reaching impacts on business. Although over recent decades Surrey has fared comparatively well in past recessions compared to other counties in the UK, the global economic downturn due to Covid has impacted Surrey just as significantly as other counties. As Covid recovery has dominated the decision-making of business leaders in Surrey, many have been unable to prepare for the end of the Brexit transition period on the 31st December 2020. Many businesses lack of preparedness will prove to be a significant and costly challenge in the coming months and adds to the pressure many firms are facing due to Covid.

The role of local and national government in these challenges is seen as a challenge in itself. In particular, the role of local authorities in supporting recovery and preparedness is vital to support business in overcoming the challenges that they face, and a single point of contact for local support and direction would greatly benefit Surrey's businesses. The county also has many internal challenges to its business ecosystem that must be addressed to continue local economic growth. One of the greatest internal challenges is companies leaving Surrey and taking jobs with them, with multinationals such as Canon and Sanofi relocating in recent years to sites in London or the Thames Valley. This creates a key employment challenge, with employees losing their jobs or moving with the operation to the new location. Such relocations represent a loss of international competitiveness for the county, with accompanying losses of local inward investment opportunities. The challenge of the high cost of living and loss of talent to London results in labour shortages in some key sectors in the county, and this has resulted in many firms struggling to hire.

Covid Issues

Covid has introduced significant pressures and challenges to the business and employment cluster that have had impacts on all parts of the business ecosystem.

Cash Flow, Debt & Job Retention Scheme

A key theme that has emerged from businesses facing challenges from Covid is issues with cash flow through the business. Many businesses have seen their revenues drop significantly this year due to reduced

confidence and spending, which has, in turn, caused many to look at internal costs and structures as a way of dealing with financial pressures. Many businesses took advantage of the government's Job Retention Scheme (JRS), which has given them the flexibility to alleviate financial pressures while they are not operating at full capacity. Some have avoided making immediate redundancies because of the JRS, however, when the scheme comes to an end, some are likely to make redundancies due to macro pressures. Other financial schemes and initiatives from the national government have proved inaccessible to many businesses and this has caused frustration among them. There was a reluctance to take on additional debt, thereby minimising financial risk at a time many were already in a poor financial position. The unprecedented government intervention to support business was widely well-received by businesses that were interviewed for this report. Many thought it was necessary for business survival, however, for some businesses the government schemes 'didn't go far enough' in addressing the challenges that they faced due to Covid.

Socially Distanced Business Structures

The introduction of social distancing measures in March 2020 resulted in many companies implementing more remote working and flexible staffing policies. Businesses have reported that remote working has resulted in greater staff productivity and staff engagement is high. Feedback from one business suggested that "remote working" has been an "overall success" and that productivity and staff welfare has increased significantly. Some businesses have used this opportunity to restructure their management team to work more efficiently and cost-effectively, suggesting that Covid has sped up much-needed reform within the businesses as they become more concerned with internal costs. However, there is a sense that the current situation will not represent a permanent shift, while the role of the office remains important for businesses and staff. In-person working allows for personal development and increased creativity that cannot be replicated virtually.

Innovative Office Options & Flexible Working Practices

With this in mind, the future presents an opportunity for more collaborative and innovative shared office space that is complemented with flexible working practices. This has already been championed in Surrey, for example, there is shared office space on the Surrey

Research Park. Covid has forced many businesses to conduct a year's worth of innovation in the space of two months. However, this innovation has been concentrated more heavily in larger firms, while SMEs may not have the resources to innovate at the same pace. The shift to remote working and a new way of living has severely impacted the workforce's mental health. One large business said that the 'mental health crisis' that many businesses will face post-Covid is going to be significant and needs a supported response by business and local authorities.

Covid has provided opportunities for some sectors to emerge as 'winners'. Sectors such as health, life sciences and IT support have not seen a reduction in revenue or business with some reporting a significant increase. These knowledge-based sectors may play an important part in Surrey's post-Covid recovery and resilience. Health-related businesses, in particular, have seen increased pressure to deliver their products and services, whilst innovating parts of their operation to offer Covid-related support. Covid is also likely to leave a community-oriented legacy that is likely to make business more cooperative in the future and increase support in the wider environment it operates in. This may appear in many different forms, such as localising the supply chain that supports local business and thereby minimising the chance of disruption.

The Future High Street

The future of the high street is a continuing problem for many retail centres and Covid has only highlighted the need for change. As more and more people continue to buy online and neglect the high street for more accessible shopping outlets such as retail parks, the need for a high street is becoming redundant. This has been a significant problem across the county and has been exacerbated by the effects of Covid. Thus arises an opportunity to rethink the purpose of a high street and to develop it to suit the 'new normal', which could include using empty retail space as commercial office space or a pop-up collaboration space for small businesses and start-ups. Our research suggests that the differential economic and social impacts of the virus require addressing it through stages, and in particular targeted, possibly sequential policies. Recovery is essential to business, but realisation and resilience must come combined when addressing the impacts, alongside a realisation that business practices and

operations cannot continue as they were before, with a need to change and improve them to support the resilience of the business ecosystem. Covid has brought 'advanced change' that has been much needed in Surrey's business cluster.

Brexit Issues

Whereas Covid prompted a tactical response from business, Brexit requires a strategic approach. Brexit remains a significant challenge for business in Surrey and from the research conducted for this report, there is an ever-increasing concern from businesses over Brexit preparedness. Many firms had planned to use the beginning of 2020 to ramp up Brexit preparations to mitigate the potential impacts. Instead, businesses have spent the past few months overcoming the Covid challenge and many have not had the time or resources to sufficiently prepare for the end of the transition period on 31st December, 2020.

Exports & Skills

Surrey is home to many export-led companies that rely on global supply chains, with some expressing concern over customs delays at the border and the knock-effect that this has on business operations. There is an increased likelihood of a convergence of Brexit and Covid which will intensify the impacts on the business and employment ecosystem. Firms of all sizes have expressed their need and desire "to have continued access to international talent post-Brexit" (Online interview, July 2020). International talent is an essential part of many Surrey-based businesses and tends to be employed in key areas of specialism and world-class innovation. Many businesses in Surrey have to recruit outside the UK to have the ability and resources to innovate. A national immigration policy that values access to international talent is vital to support business growth, particularly for Surrey.

Brexit Uncertainties

The uncertainty over Brexit has meant many businesses have seen applications for vacancies by EU and non-EU nationals reduce significantly. This could place additional pressure on the skills shortage that already exists in sectors within Surrey. However, our research suggests there is optimism among many businesses about the opportunities that Brexit may bring. One of these could be a change in immigration policy that opens up opportunities for more non-EU nationals to

move to the county. A number of stakeholders discussed the need for a simple, useful toolkit provided by either national or local government for businesses to help them address the challenges and changes that Brexit will bring. “Assistance is essential for local business ecosystems, Surrey’s businesses can’t afford to be unprepared for any Brexit scenario in 2021” (Online interview, August 2020). Brexit poses an issue for many in the financial services sector as clients need to be registered in Europe for customer access to European regulations. Some businesses within this sector have found that there hasn’t been a clear output of information by the government or civil service to combat the difficulties over changes to regulations over the transition.

Surrey-Specific Challenges

Surrey’s business ecosystem faces challenges that are due to factors both within the county and its external geography. Proximity to London has proved a significant advantage to the county, but also a significant disadvantage. Surrey continues to be a commuter county that feeds the London workforce, with the resultant positive impact on income levels. However, this has resulted in a brain drain in the county, exacerbating the size of the skills shortage sought by Surrey businesses.

Skilled Labour &. High Cost of Living

The research conducted for this report indicated that the single-most discussed challenge for businesses based in Surrey was the availability of skilled labour in their respective industries. One reason for this is the proportions of young professionals who wish to work in London before seeking employment in Surrey later in their careers. The other key contributor to the skills shortage is the high cost of living, enhanced by the cost of housing in the county. Many businesses in the manufacturing sector struggle to source talent to relocate to Surrey from their traditional hubs such as the Midlands. Some businesses pay staff inflated salaries to incentivise working in Surrey, while others cannot afford such premiums. Such a skills shortage is likely to stifle further innovation and growth in businesses and would contribute to a fall in Surrey’s comparative advantage regionally and competitive advantage nationally.

Diminishing London?

In light of Covid’s various impacts and resultant shifts towards remote working, the importance of London to the Surrey economy may be diminishing, with key opportunities for the county. As more commuters work from home rather than travelling into London, the local economy is boosted. The wider adoption, post-Covid, of more flexible remote working may also persuade many Londoners to move out of the city to be based in Surrey to benefit from a short commute to London, with the quality of life enabled by a more rural setting. Surrey benefits from both good transport and social infrastructures, making it a desirable place to live and work. However, commuting to London has put pressure on Surrey’s transport infrastructure network, which businesses indicate as one of the county’s largest weaknesses. Congestion within the county is a significant problem and one that continues to hold Surrey back. Although road networks provide direct connections to all hubs within the county, they get severely congested, which, in turn, slows down employee productivity. Improvements made here would benefit the county’s business ecosystem significantly.

Public Transport

The public transport network in Surrey was also identified by businesses as representing a significant challenge to business operation. Although connections to London are good, there was as a general concern that connections within the county, particularly from East to West, are inadequate. More joined-up thinking for connectivity here may also help to address other disparities between the two regions. The lack of affordable housing in the county means that junior staff in companies cannot afford to live in Surrey, meaning many commute to and from within or frequently outside Surrey. This impacts staff retention in such positions, putting pressure on businesses. Another significant challenge that many SMEs face in Surrey, is a lack of affordable commercial office space. Our research suggests that many businesses that wish to obtain bigger premises or want to expand their operation have struggled to find suitable sites. Similar to other counties in the region, Surrey has seen an increase in office space being converted into residential space. This, however, restricts businesses and stifles further growth if their operation cannot be expanded in their current premises.

Kick-starting Innovation

Surrey has a reputation as a ‘good place to do business’, however, this is changing. There is a chronic lack of entrepreneurial drive coupled with complacency that continues to be a major challenge to the business and employment cluster. This has been caused by a lack of joined-up thinking on behalf of major stakeholders and a lack of political and social will. This complacency can be seen with the relocation of many multinationals once

based in Surrey to other counties. In particular, the Thames Valley has become an important centre for economic growth with some large businesses choosing to relocate there instead, the decision enhanced by more affordable office space and lower costs of living. A fresh and innovative approach is needed to reverse Surrey’s decline, as the county has become a victim of its success.

Key Cluster Actors

LEPS: Enterprise M3

enterprise m3
Delivering prosperity through innovation



“M3 corridor is the heartbeat of the UK economy”

Richard Maybury, Surrey IoD Chair

Enterprise M3 Local Enterprise Partnership (EM3) covers a globally competitive region of high-growth sectors that deliver an innovative and diverse business ecosystem. EM3 brings together both public and private sector stakeholders, including businesses of all sizes, local authorities and educational institutions. The EM3 regional economy generated £62 billion GDP in 2019-20, with productivity 20 percent higher than the UK average and

regional exports representing 4.5 percent of UK exports (EnterpriseM3, 2020a). EM3 has also proven the ability to perform strongly and adapt to economic shocks. Since 2008, the region has performed well economically and outperformed the majority of LEPs, only being outperformed by Thames Valley Berkshire and London in output increases (Metro-dynamics, 2020a).

EM3 Specialisations

EM3 specialise in partnerships with high worth clusters such as digital enabling technologies, supported with strong cooperation and partnerships between the knowledge and business cluster, particularly the universities and research institutions. EM3 champions a cross-sectoral approach that unleashes the potential of the region that straddles county lines and identifies high-value relationships. The M3 corridor remains an area of high business growth and economic innovation that leads the UK in research and development, with growth concentrated in towns such as Basingstoke and Camberley. The EM3 Growth Hub is strategically based at the Surrey Research Park, and both deliver business advice and support leading to growth as well as internal and external development.

Collaborative Relationships

EM3 have a strong and collaborative working relationship with SCC, and this cooperation is vital in achieving strategic economic goals at the county level. The west of the county is composed of many ‘clusters of excellence’, which include space/satellite development, gaming and

advanced health. The space sector in the EM3 region is a growing sector that has increased by 33 percent since 2016 to encompass 180 space organisations (Metro-dynamics, 2020b). EM3 champions these sectors through a regional approach linking partnerships together that rely upon regional assets and emphasising partner collaboration. EM3 is also geographically significant in that it straddles both Surrey and Hampshire, resulting in the identification of cross-county sectors that benefit from cross-border cooperation and drive local growth.

Strategic Goals

EM3 works best when there is a clear strategic message which allows the region the opportunity to unleash such cross-county potential. However, research indicates there is a challenge in creating a clear strategic message due to the presence of two LEPs in Surrey and confusion over how they relate to one another. In recent years, EM3 has attempted to portray a distinctive message of economic growth and strategy that is ‘for Surrey’ while the work they do for business across the M3 region is primarily for the benefit of both Surrey and Hampshire. Boosting Surrey overall requires a unified vision and approach that pays attention to these high-value sectors that are key regional economic and business drivers. The economic fallout of Covid provides LEPs, along with industry and local government, to lead together on a ‘branding’ strategy that highlights Surrey’s high-value and high-worth sectors.

Covid Challenges

Covid has significantly impacted the M3 region and businesses that operate within it. The worrying unemployment picture in Spelthorne reflects concerns for the wider local economy. EM3 states that their largest threats to the region are sharp drops in business output and cash-flow, as well as mass unemployment with wider economic impacts on the M3 corridor. The other significant challenge and threat to the local economy laid out in their 2020 Impact Analysis is the pressure Covid is placing on already struggling high streets (Metro-dynamics, 2020a).

The Need for Ongoing Support

Our research indicates that there is a common understanding among local stakeholders that further support is essential to support businesses adapt their operations to work around the new challenges that businesses now have to face due to Covid. EM3 are

setting strategy and policy based on scenarios of economic recovery and resilience. This could be coupled with the opportunity that EM3 has to identify industries and businesses which employ many residents from outside the county that are currently remote working. This would, therefore, provide EM3 with the opportunity to build relationships and seek to change their location strategy away from outside the region and bring them into the region. EM3 focuses on the importance of ‘people’ and their capabilities for understanding the impacts of Covid, as well as the recovery opportunities in their August report (EnterpriseM3, 2020b). The EM3 area is “relatively set up for home working”; this is especially in the case in the professional and IT sector (Metro-dynamics, 2020a).

Supporting Surrey’s Strategic Geography

As stakeholders told us time and again, the presence of two international airports adjacent to Surrey, with the changing face of post-Covid aviation, indicates that there will be continued ramifications for the local areas that surround them. The respective challenges of Covid and Brexit will largely impact and change the role of LEPs and local government. It is important that they both adapt and change mutual working practices to achieve more streamlined operations that produce desired outcomes for both business and the region. Improved engagement from businesses, especially multinationals where there are fewer strong relationships than there should be, this would prove invaluable to the work EM3 currently do.

New Partnerships

EM3 would value an enhanced and collaborative relationship with both the University of Surrey and the Royal Holloway University of London; a stronger relationship with the knowledge cluster would allow for a common approach to industry-led innovation and allow academic innovation to be more ‘commercial’. EM3 have also adopted “an exciting innovation and research strategy” that encourages clean and sustainable business growth that leads to carbon net-zero economy (EnterpriseM3, 2020a). The Growth Hub is likely going to take an important role in encouraging businesses to “take advantage of this growth area....to stimulate growth” ((EnterpriseM3, 2020a). EM3 will continue to play a vital role in the economic development and success of West Surrey and the wider region by offering assistance to businesses and institutions in their continuing drive for excellence in business and innovation.

LEPs: Coast to Capital (C2C)

Coast to Capital

The Local Enterprise Partnership that covers East Surrey has been a significant actor in the local business environment, supporting the connection of businesses. The region is not as a single identifiable city region, but “a network of functional economic hubs” (C2C, 2018) worth £50.7 billion GVA, making it the seventh-largest local economy in England (C2C, 2018). C2C is comprised of businesses of varying sizes, from multinational headquarters to high-value SMEs. The employment cluster of East Surrey is dominated by highly-skilled commuters that live in Surrey and work predominantly in London. The role of C2C is to play a central role in championing local economic priorities in order to both create jobs and boost business growth it supports networking and cooperation between key stakeholders in local government and business to create a high worth business ecosystem.

Gatwick Diamond Geography

The location of Gatwick airport at the centre of the region covered by C2C means that a key component of their work is supply chain oriented. The airport plays a key role in the local business ecosystem, supporting many businesses that have collated nearby. Gatwick acts as a regional and national asset attracting innovation, investment and skills to the area that in turn drives economic and business growth. Again, the airport is a significant employer in the C2C region, directly employing 23,800 people, supporting another 60,000 jobs nationally and contributing £2.7 billion GVA to the C2C economy (C2C, 2018). Both data and our interviews confirmed that the Gatwick Diamond is an innovative and dynamic economy that surrounds Gatwick airport that includes East Surrey. Gatwick Diamond Business is a membership-led networking organisation that has represented businesses in the region for over 60 years. The organisation works closely with Coast to Capital as an ‘Alliance partner’; a relationship that will be as important as ever, as the nature of aviation continues to shift.

Public Investment

In recent years, C2C successfully attracted £300 million of public investment into regional infrastructure as well as £1.3 billion of investment in the public and private sectors (C2C, 2020a). A key element of the LEP is the successful ‘Growth Hub’ that provides advice and funding to both small and medium-sized business in order to drive sustainable growth. The ‘Growth Hub’ works closely with national and local government to support business innovation, productivity and growth. It is funded by the national government to offer local businesses free impartial advice, support and investment, as well as strategic leadership to help drive sustainable business success and regional economic growth.

Growth Hubs, Champion Networks and Escalators

The ‘Growth Hub’ team support long-term SME growth through a variety of proven business tools, alongside growth grants, local events and networking. The growth grants programme provides grants for capital investment to drive innovation in scale-up and growth businesses. This has successfully allowed businesses, in particular SMEs, to invest in R&D and grow both their businesses operations and output. The ‘Experts in Residence’ initiative is a collaborative partnership between C2C, NatWest and Microsoft to link the ‘Growth Hub’ support with finance and digital specialists focusing on women in business. The Growth Champions Network and Escalator programme are also both led by the ‘Growth Hub’ and delivered in a particularly effective way. In particular, the Escalator and MD programme supports scale-up businesses, combined with peer-to-peer learning structures and a 20 percent growth criteria. This is delivered in partnership with the MDHUB and allows groups of like-minded peers network and where they can find support and advice that leads to solutions. It has been nationally recognised by BEIS as a successful programme with many successful alumni SMEs that have significantly benefited from both the support of the programme and the ‘Growth Hub’ more widely.



Surrey Chambers of Commerce



Surrey Chambers of Commerce (SCC) is the county's largest independent not-for-profit business support and networking organisation. The organisation connects businesses with opportunities, advice, networking and skills to support their growth and development. It is part of a wider organisation of the British Chambers of Commerce (BCC) representing more than 600,000 businesses nationally in the UK. The SCC is a vital part of the business cluster due to its role as a key hub where businesses can seek advice and support, especially when they are facing significant challenges. The SCC works close cooperation with local authorities and the two LEPs that cover Surrey in order to achieve both consensus and cooperation on important business needs within the county. Feedback from SCC members on the needs and challenges that businesses face helps inform policy-making decisions at both local and national levels.

CoC Covid Support

The SCC specialises in and promotes specific initiatives that aim to promote employment and business growth. The role of the SCC is becoming increasingly vital to the workings of the business ecosystem in Surrey, due to the challenges presented by Covid. The key to post-Covid recovery and resilience will be to cooperate locally, which produces new-found importance for the SCC, particularly through their role as a business support and networking organisation. Being county-wide, it also effectively unites and represents feedback from across the county. The recent SCC-originating Coronavirus Impact Surveys have had higher than expected engagement from businesses providing feedback, predominantly from those based in the hubs of Guildford and Woking, but also providing a cross-sectional representation of the sectors present in the county as a whole. The survey findings suggest that Surrey's businesses are managing to overcome Covid

challenges, alongside significant support from the national government through schemes such as the JRS; 57% of respondents furloughed staff (Commerce, 2020). However, some continue to struggle and feel unsupported by both national and local government. In order to address this, SCC has requested further government support for the self-employed and a simpler process through which businesses can apply for grants and funds. This county-specific feedback helps inform national government through the wider British Chambers network that is a significant stakeholder in British business and lobbies the government on behalf of its members.

Stakeholder Cooperation

Continued cooperation between key stakeholders in Surrey is imperative, particularly in recovering from the impacts of Covid. This means wider representation and partnerships between stakeholders such as the Federation of Small Business, LEPs and the Institute of Directors, which could be institutionalised through a permanent board specifically representing Surrey business matters. This would bring together expertise and voices from multiple areas of Surrey's business ecosystem into a single unified strategic position. This would eliminate duplication of such work across individual Surrey organisations and could assist the elimination of economic and business disparities in the county. Surrey must become more local, as the Covid pandemic has proved the importance of buying local and thereby supporting the community. A strategy that emphasises buying local and selling global would complete a new vision for Surrey post-Covid. Driving local engagement of business is necessary for SCC as it provides further invaluable insights and feedback from the county's business sectors.

Networking and Business Support

Tactical outreach may become the norm for such networking organisation as they attempt to understand the motivations of businesses in different sectors. Surrey Chambers of Commerce conducted a series of surveys to receive feedback from their membership of businesses with the primary purpose of understanding the impact of Covid on the business ecosystem. The most prominent challenge due to Covid that was brought up in the survey was significant cash flow issues that were primarily caused due to reduced order books.

Surrey Chambers Chief Executive Louise Punter said that “financial loans with good conditions are exactly the sort of thing that businesses need” (online interview with Louise Punter, 9 September 2020). The Surrey Chambers also understands that it’s not just financial support that businesses need it is also support from local authorities and cooperation with local business actors and stakeholders through partnerships and networks. Louise suggested that if businesses cooperated through institutionalised networks and brought different specialism, then the general skill level will increase and business can grow further. This can be led with the support of both Local Enterprise Partnerships, IoD, Federation of Small Business and the Chambers to support businesses county-wide.

► CASE STUDIES ◀

AI, Digital & Data Business

Digital technologies in Surrey have become a **significant driver** in economic growth and global competitiveness. This emerging sector has been at the forefront of the national significance that AI and digital technologies is playing in economic activity in the UK. Within this sector, EM3 is a co-investor in the 5G Innovation Centre (5GIC), at the University of Surrey, is the largest open innovation centre for 5G development worldwide. It has become a valuable asset to both Surrey and the wider South region. It has powerful multinational sponsors that have brought investment to the University of Surrey and other SME’s that are connected with the project. Immersive technology is a small but growing sector that exists in Surrey and is part of a wider digital industry and tech hub that is emerging in the county. AR and VR is a high-value industry that has the potential to boost UK GDP and add £62.5bn by 2030 (PwC, 2019). *Diverse Interactive* is an Immersive tech company based at the Surrey Research Park that provides immersive digital solutions to customers through cutting-edge innovative technology. *Diverse Interactive* benefit from a highly-skilled talent pool that exists in West Surrey in digital and technological sectors, this has been catalysed by Guildford’s significant Computer Gaming Industry.

Ramsac



Ramsac is an **IT support services business** based in Godalming and provides SMEs with outsourced IT as a technology provider. With 68 employees, they manage and support IT systems for customers and provides IT strategy and auditing. As a key supplier to many of their clients, Covid didn’t significantly impact the customer base of the business and have maintained the same business as last year. Remote working was made the norm of the staffing policy and worked well and managed to successfully move their current projects to remote working. No government support scheme

was used by the company and no redundancies are currently planned. This is a similar case for most firms in the IT support sector that have managed through Covid and haven’t seen any significant drop in revenue or cash-flow. Although Brexit won’t impact Ramsac directly it does have implications for costs and IT production supply chains from Europe. Ramsac commercial director Dan May believes that the biggest challenge in the coming months is to reinstate a productive office environment and community culture. He sees unplanned communication in the office as an opportunity for personal development and project development inadvertently. This supports an argument that office spaces are still valuable after Covid and that virtual remote working may not be as efficient and a hybrid form of both is needed for a business to succeed and get the most out of their employees.

MMRG

MMRG is a Guildford-based **data analytics company** that specialises in the life sciences sector. With 12 salaried employees, it benefits from a pool of talent because of the proximity to the university and the access to high-skilled people in Surrey. Although MMRG did fair relatively well and didn't make any redundancies or put anyone on the government's job retention scheme it was impacted significantly by Covid. Covid's biggest impact on MMRG is not having the office present in one location, as it doesn't allow for a culture of work to develop. It is the view of Peter Joshua the Managing Director that individuals train and develop more effectively when they are around others in an office and that virtual meetings are less effective as information is only deposited and not advocated. Although the sector in which MMRG operates within has responded far better to Covid due to the ability to be operated remotely. Similar firms in the sector have found it challenging to be able to market and sell their services or goods remotely to potential customers. With the lack of international travel and firm's presence in offices, many consultancy firms may find the next few months a challenging period. MMRG is optimistic that the future can bring opportunities to change the way businesses operate and build new relationships in the 'new normal'.

Brovanture

Brovanture is a **16-year-old software company** that is an Oracle Partner and provides Enterprise Performance Management (EPM) and Enterprise Resource Planning (ERP) solutions to customers across all sectors. Brovanture is a high-value business with a turnover last year of over £4 million and 33 salaried staff and 3 offices in the UK and another in Dublin, Ireland. Covid and Brexit have meant that many firms including Brovanture are in a 'limbo' and are avoiding investing in business development. In turn, this reduces innovation and interest in Brovanture's products and services. Due to challenges of Covid, including remote working the business took advantage of the government's Job Retention Scheme. 5 staff were furloughed during the national lockdown and many of their staff are continuing to work remotely. Brovanture has a diverse workforce and there is a worry that in the future it will be harder to employ international talent. More strategic certainty over the UK's macro future would give firms such as Brovanture time to prepare

and innovate and seek opportunities. The business emphasises the importance of 'People' in their operation and customer base and that business and that the key to business excellence is through investing in 'People'.

Diverse Interactive



Diverse Interactive is a **digital business** that specialises in Augmented Reality (AR) development and Virtual Reality (VR) experience creation and occupies a growing high-value digital sector in the UK. Diverse Interactive is based at Surrey Research Park and has 25 employees. The company made use of the furlough scheme which was useful in retaining staff, however, they weren't eligible for any other government scheme. The sector that Diverse Interactive operates within continues to develop and innovate in immersive business and traditional ways of marketing technology. Diverse Interactive has a true cross-sectoral customer base that allows it to diversify when supporting different industries. Covid significantly impacted the operation and customer base of the business. The shutdown of live events has impacted some of their contracts and has resulted in a delay in stakeholder decisions within the customer base. This has impacted revenue which has reduced over the past four months. They have still managed to operate with 100% of staff being remote, this has been a challenge of productivity and creativity as they develop digital solutions for cancelled events or online event platforms. The challenge that the future brings for Diverse Interactive is the reduction of many companies spending budgets powers and this is most likely to impact the number of contracts that they receive. Although uncertainty remains over Brexit, there are opportunities to be taken from it and can be used as a catalyst to firms such as Diverse Interactive. Surrey provides firms such as Diverse with good infrastructure and skilled talent to an employee.



Snakehive



Snakehive is a Dorking-based e-commerce business selling luxury leather goods. The business has a growing global customer base with a large distribution network in the US as an emerging market. Since its inception in 2009, the business has grown 'organically', and over recent years this has been supported by the C2C Growth Hub through the MD programme. Co-founder Tim Thorp benefited from the programme as it was a "sounding board with other business leaders in the region and helps validate your personal business decisions" (online interview with Tim Thorp, Snakehive,

28 July 2020). The LEP closely cooperate with the Department for International Development to encourage and promote international trade and foreign direct investment to the region. The LEP has been supported by the county council and this could be enhanced in areas such as business engagement within East Surrey. Coast to Capital struggles with a visibility problem, especially among businesses in East Surrey. Many businesses don't have LEPs in their sphere of reference for advice and support and this is further restricted by the county's split in LEPs, creating further confusion and duplication. The strategic aim of C2C that is set out in its Local Industrial Strategy for 2018-2030 is to support sustainable business growth and economic investment. However further business engagement in East Surrey is vital, along with increased cooperation between local authorities, LEPs and businesses.

Computer Gaming Industry

Guildford is home to a growing cluster of over 70 games studios and the largest of its kind in the UK. Interviews with numerous stakeholder confirmed that with collaboration from the University of Surrey, the gaming community has supported research and development and a trend of growth of both small start-ups to larger gaming multinationals. The UK games industry contributed £1.52bn in direct GVA to the UK economy in 2018 (Olsberg SPI/BFI, 2018), which is in fact significantly larger than the UK's fishing industry (MMO, 2018). Sector growth is set to hold up under the current circumstances of Covid and the global economic downturn. Although the sector has experienced operational challenges, especially through remote working which has resulted in lower productivity. The customer base and demand for new products in the Computer gaming industry has increased over the past few months. The sector in Guildford is made up of a significant proportion of small studios that produce high-value products. Seven League Software is a gaming development company based in Guildford. It operates within the cluster of gaming industry companies that are based in Guildford including large operations such as EA.

Seven League Software



Seven League Software is a computer gaming SME based in Guildford with 5 employees with a turnover of £1.3 million. Covid-19 has meant that remote working has become the norm in the company and working from home has raised its challenges. Home-schooling has produced the main challenge that has decreased productivity over the past four months. The concentration of the gaming industry has presented a problem in itself, as hiring is a struggle as much of the young talent are

attracted to the larger gaming studios such as EA in Guildford. Seven League software benefit from the Surrey Research Park as a good place to do business, especially for digital services and with its flexible tenancy agreements. With Seven League Software's largest customer being based in Seattle, USA, it means that face-to-face contact is not possible. This has produced a barrier to an efficient relationship to continue to develop. This represents a growing problem for many Surrey businesses that rely on international travel to do business and we most probably will continue to see a decrease in business travel. This is going to have a knock-on impact on both business traveller numbers at both Heathrow and Gatwick.

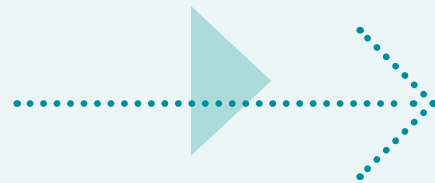


“Guildford is a well-established and sophisticated games industry cluster so in terms of general stability, it should be more resilient than the industry in other areas of the UK, due to the very strong talent and employer base.”

Challenges for Gaming.... With Samuel Read, Games Sector Specialist, Enterprise M3 LEP

There is a strong disparity between the impact on a large developer like Electronic Arts, who have their UK HQ in Guildford but are a US company, and the type of developer that more typically constitutes Guildford's games industry. These smaller companies commonly employ fewer than 50 people, and often fewer than ten people. A divide between these sub-sectors is now exposed. It is harder for SME's and microbusinesses to stand out and market their games because there is such motivation for large companies to market their games under the present circumstances. That said, any developer with a product already launched has seen an uptake in sales.

SME's and Microbusinesses are the game developers we should be most concerned about. 99.5% of UK games companies are officially SMEs (Small to Medium Enterprises), employing fewer than 250 people, which collectively contributed £1.6bn in GVA (UKIE, 2020:9). £339m in GVA is generated by micro-businesses of less than 10 employees, representing 13.7% of the industry total, and employing 3,664 full-time employees (UKIE, 2020:9). They disproportionately depend on being able to secure 'work for hire' style contracts to provide them with the financial freedom to develop their intellectual property. The interest that investors felt towards small



British game developers with original IP ambitions has reduced. Local developers have been told EIS funds have not been topped up and 'risk money' has been withdrawn from investor portfolios. This combined with productivity slowdowns, resulting in delayed production schedules, represents a ticking time bomb for the most innovative UK videogame IP.

The good news is that the University of Surrey's Research Park facilities have been instrumental in enabling facilities like Rocketdesk, who provide affordable co-working space for freelancers and microbusinesses, providing the opportunity to complement the objectives of co-workers through the collaborative community fostered within. These co-working environments are critical, but they are not presently viable as the Business Model relies on densely arranged desks.

Pharmaceutical and Life Sciences

Many pharmaceutical companies are based in Surrey and conduct research and development within the county. The pharmaceutical industry is a high-value sector within the UK economy and contributes around £13.7 billion GVA to the national economy (ABPI, 2016). Both large MNC's and SME's in pharmaceuticals are based in Surrey and benefit from a highly educated workforce and the significance of the knowledge cluster in the county and the cooperation between firms and universities. Pfizer has their UK headquarters in Tadworth, Surrey and is a large employer in the east of the county. Our interview with local MP Crispin Blunt for example highlighted his view (and those of other stakeholders) that Pfizer counts as an important player in the region, demonstrating "clear community-spirit among stakeholders" (Interview, August 2020). Indeed, our research suggests that Covid has only emphasised the important role that the Pharmaceutical and Life sciences sector plays in Surrey and can be used as a future engine for recovery and resilience.

The Naked Pharmacy

The Naked Pharmacy®

Surrey has a large presence of multinational pharmaceutical firms that are concentrated in the county. However, many smaller pharmaceutical firms are high worth and produce unique products. The Naked Pharmacy is Europe's first plant-powered Pharmacy and is based at the Surrey Research Park in Guildford. They are a registered pharmacy that specialised in creating natural remedies from research-led works that are "100% natural and scientifically proven" (Online interview, Kevin Leivers, 8 August 2020). The Naked Pharmacy is a distinctly high worth business that has the potential to continue to grow in size. Europe's first plant-powered pharmacy puts it on the map as a unique firm in an emerging sector of pharmaceuticals. Founder and CEO Kevin Leivers founded the business to make a worthwhile impact in natural pharmacy and to create something that hasn't been created before in Europe. He used his experiences and expertise working for a multinational pharmaceutical company as their Chief Pharmacist to found a uniquely Surrey business. Covid has proven to be relatively seamless for The Naked Pharmacy, as almost all business is conducted virtually and the customer base is continuing to expand. Although, at the start, they had some supply chain issues with the closing of international production lines.

The company were forced to seek another supply chain solution and found a local supplier and reduced the size of the supply chain and strengthening supply chain security. The company has planned for all scenarios regarding Brexit and has been reassured by the advice and guidance of the Department for International trade. Their less formal staffing policy and outsourcing has allowed the business to organically grow and could become a future model for business operations.

Igenomix

Igenomix is a medical diagnostics laboratory specialising in women's fertility and has 13 employees based at the Surrey Research Park. The company offers genetic solutions for specialists to diagnose and treat patients within clinics. Although active research is not conducted at their UK site, Igenomix engages in on-the-job research that allows for the development of their discipline globally. Because the site does not export products to customers, the company does rely on the transfer of testing to overseas research sites. Covid-19 severely impacted Igenomix, by the closure of IVF clinics which saw business fall by about 90% in April. It has since picked up but could be further impacted by further local or national lockdowns that could be imposed. Our interview with the company suggests that the pandemic has resulted in many businesses like Igenomix wanting to become more 'community-oriented', particularly by putting together alternative services. Igenomix for instance wholly repurposed its own laboratory to offer Covid-19 testing. With headquarters based in Spain, Brexit poses an obstacle to the business. There is a worry about the delay that could occur at customs and this would delay the chain of tests that need testing elsewhere in the EU. This may delay results and could impact the customer base significantly for the company.

Advanced Manufacturing

Surrey is home to an innovative and high-worth advanced manufacturing sector that is world-leading and based on a rich history of research and manufacturing in sectors such as the automotive sector. The McLaren Group, based in Woking has led the region in cutting edge technological research and development, whilst also leading on research with other SME's and increasing opportunities for supply chain growth, having established itself as leader of the very best of British automotive innovation. Although Surrey is not a natural manufacturing hub, it does have a reputation for high-value, high-tech, advanced manufacturing. This sector is well supported by inward investment and valuable expertise from the knowledge cluster. Advanced electronics manufacturing in Surrey is a significant sector in county and is made up of SMEs and MNCs that are innovating and investing in R&D in the electronics industry. The advanced manufacturing sector within Surrey is well supported by the presence of two world-leading research-led universities that provide knowledge share and investment opportunities to advanced manufacturing and engineering businesses based in the county.

discoverIE



discoverIE designs, manufactures and supply's bespoke electronic components to customers globally. The global market for custom industrial electronics is estimated at around £20bn each year and the company is listed on the main market of the London Stock Exchange. They specialise in supplying 'growth markets' such as renewable energy and industrial connectivity. The companies head office is based at the Surrey Research Park, where they have 24 employees. They have operations globally, where they employ 4,400 people in principal operating units in the UK, Europe, North America and Asia. 450 of those are based around the UK, including a site in Wokingham. The group is a high-value business, with revenues for the financial year 2019 being £466.4m and a pre-tax profit of £19.5m (discoverIE, 2020). Focusing on high-growth markets, discoverIE are attempting to be as well-placed as possible for future growth, anticipating the continuing trend of global electronics. In-depth interviews with discoverIE highlight their goal as "innovating technology to improve people's lives" (Interview, July 2020), complementing its high-worth objective as a company with community wellbeing at its core. The medical sector is one of its key target markets and is well aligned with the UN Sustainable Development Goals to contribute to better health outcomes.

Covid-19 presented a challenge to the discoverIE and every aspect of the business. They experienced a global factory shutdown due to national lockdowns and revenue dropped between April and June by about 10%. The UK division made use of the furlough scheme for around 60 of their employees, which they deemed as a useful scheme. The staff at the Research Park found working from home worked in its entirety and that they found parts of operations far more efficient when working remotely. Brexit is not perceived as much of a threat to the operation of a business as the Group has little intra-trade between the EU and UK, however, there is a short term risk of issues at the UK border. A shift to WTO terms is not seen as a negative for the Group and may be beneficial in the Long term. Chief Executive Nick Jefferies is optimistic about the opportunities that the current circumstances can bring for the sector and the business. A global stimulus in infrastructure projects and the increasing prominence of the environmental agenda in public and private sector investments may allow discoverIE to increase output and dominate new markets. On Covid Nick Jefferies said "The world will come out of this greener than it went in" (online interview with Nick Jefferies, 23 July 2020).

DiGiCo



DiGiCo is a world-leading leading designer and manufacturer of audio mixing consoles and solutions which are used globally in live events including touring, fixed installations, theatres, houses of worship and by broadcasters. Covid-19 has significantly impacted the company's customer base and operations. The company exports around 85% of its sales internationally and relies heavily on the survival of the live entertainment industry which incorporates theatres, HOW, cruise ships, sports broadcast, live events and fixed installations. The live audio industry all but closed as COVID government restrictions shut down any form of events which has meant a sudden and significant reduction in live audio sales as touring stopped and demand decreased in the sector. Although working from home worked well for some of their staff, they did need to take advantage of the furlough scheme that proved essential amongst those that could not do their jobs from home, particularly at their manufacturing sites. The DiGiCo management team found the JRS easy to navigate and proved a

valuable support during the lockdown period and beyond. Although DiGiCo is suffering due to the slowdown in the live entertainment industry, freelancers in the sector have also been hit hard and will suffer from no income at all as the JRS/loan schemes are withdrawn.

The impact of Brexit is uncertain on the business as it has taken a backseat in recent months but, now that there has been a sudden re-focus on the issue, operational (logistics) and tariffs applied to its products and material supplies could further impact its export performance ongoing. However, there have been opportunities created by the current circumstances, which have included continued innovation from the R&D teams into the next generation of products and services. In some territories, such as certain countries in Asia, demand is slowly recovering and some sectors such as installed audio, have continued to perform well.

Consulting, Financial and Legal Services

Consultancy firms make up a significant proportion of businesses in Surrey and support professional and technical sectors in the county. Consultancy firms benefit from proximity to London and concentrations of knowledge-based professional sectors in Surrey. An example of such a firm is **Aristar Financial Consulting**, which is a Guildford-based consultancy firm that provides financial support to SME recruiters. Financial services have become a large sector of the business cluster within Surrey. Many financial services companies are based in Surrey due to its proximity to the global financial capital of London. The sector is supported by a highly-skilled workforce and high-value and vibrant business ecosystem that exists in the county. Our research indicates that the industry also includes SMEs that support the work of financial services. In recent years Guildford has seen an increasing concentration of legal services that has brought new investment from larger firms. **DMH Stallard** is an award-winning mid-market law firm that is based in London and South East. The formation of the Guildford office in recent years occurred through mergers of long-established local firms. Its focus is on providing quality legal advice to clients and supporting them to achieve their strategic goals. The presence of the office in Guildford gives DMH Stallard an excellent base from which to develop strong, long term relationships within the Surrey market and business community, which it views as strategically important to the future of the firm. Through its "Guildford 2021" plan for growth, it has continued to expand its roster of successful local business and individual clients, and talented lawyers.

Gold-i



Gold-i is a software development company that has 35 employees based at the Surrey research park. It is a global leader in trading technology and supporting the operation of financial markets and specialise in cryptocurrency. The business represents a growing FinTech sector in the UK that has the potential to expand in value and worth as the economy continues to digitalise and innovate financial markets. Gold-i has received numerous awards including the Queen's Award for Enterprise Innovation- the first FinTech firm in the UK to win the award. Although volatility in the markets is good for business, the extremes of volatility that occurred over the global lockdown in March and April have since returned to levels of normality and account openings have increased significantly. Covid has made the management of Gold-i far more cost-conscious and focuses more on the cash flows through the businesses. The research interviews conducted for this report has illustrated seen a trend of many SMEs looking internally to change operations and management style in response to Covid and Gold-i have done this effectively. Brexit means that companies such as Gold-i can't attract enough international talent as there has been a significant reduction of EU nationals applying for vacancies.

Aristar Financial Consulting



Aristar is a Guildford-based firm that provides a remote finance team for SME recruiters, as well as a strategic Finance Director resource on an ad-hoc basis. With 25 employees and recent growth of 5 over the lockdown period in April-May. There was no financial impact of the Covid on the business and they have seen this as an opportunity. The business has accelerated structural changes and workflows within the management team freeing up the senior managers to spend more time advising clients as they navigated through this critical

period. Restructuring of leadership and management teams has been a common occurrence that has surfaced during this research project. Many have had to look at structural changes within their organisation and management team to make the business more efficient and cost-effective. A more collaborative approach by local authorities would engage businesses such as Aristar into the local business ecosystem and increase the share of business-to-business knowledge and innovation within sectors and across sectors.



RGP

RGP is a Godalming-based transport planning and infrastructure design consultants across all sectors. RGP is a part of the knowledge and professional-based cluster that dominates the Surrey business ecosystem. With 20 employees and spread over two offices, one in Godalming and a small office in London. There is a growing cluster of the industry in the county. Director Chris Blamey suggested this is due to "a pocket of expertise in Surrey and a wider market for development projects in London and the south-east of England" (Online Interview with Chris Blamey, 28 July 2020). At the beginning of the year and after the 2019 UK general election there was an upturn in projects and there had been increased optimism in the development sector. However, the lockdown due to Covid-19 resulted in a decrease of new enquiries, this is something that has been highlighted across sectors. For firms such as RGP, Covid-19 put many projects on hold and the uncertainty over the future caused the biggest concern. Our research indicates however that even now there is optimism among consultancies including RGP that a new upturn in enquiries is expected in September and October 2020.

The operational challenge of remote working was overcome quickly at RGP and all have managed to work from home successfully. Many consultancies' experience payment issues, which impact the flow of cash through the business. Some customers significantly delay payments from 30 days to 90 days and some clients don't pay at all. An assumption is made within the business that not all the money will be paid and this

impacts other operational decisions and investments within the company. This would mean SMEs would have to take legal action to retrieve any owed funds; this takes up time and money and is not worth it for many SMEs. In terms of strategic asks relevant to SMEs in Surrey therefore, the view of Mr Blamey is that “any assistance that can be given to SMEs to ensure that invoices are paid in a timely manner, and in the event of default the ability of SMEs to pursue bad debts is simplified and less costly, would allow SMEs to make more positive and riskier decisions including growth and expansion” (Online interview, September 2020).

Multi-National Corporations (MNCs) in Surrey

Surrey Multi-Nationals

When discussing the unique business environment across the county, it is vital to include the large multi-national corporations (MNCs) that are based in Surrey. Surrey is home to over 540 multinational businesses (InvestInSurrey, 2020), these MNCs range from pharmaceutical to engineering headquarters and represent high-value industries. They play an important driver-like role in Surrey by increasing the county’s international competitiveness as an economic area; this in turn attracts inward investment. Inward investment is important for business in the county as new investment can be spent on R&D. For example, engineering multinationals benefit significantly for investment in R&D and there is a view in the industry that “**investing in R&D is investing in the future**” (RAEng, 2020). This is an important factor to think about when collating a strategic recovery plan for regions such as Surrey. The county’s high-quality of life, close proximity to London and in turn, the rest of the UK; two international airports and talent-driven workforce have all assisted in making Surrey the home for prestigious businesses like *Phillips* and *Atkins SNC Lavellin*. It is difficult to ascertain the physical value that they corporations bring, but it does serve as a helpful reminder that in addition to the high-value, high-worth businesses that make up such diverse sub-clusters in Surrey, the county has a unique selling point for businesses basing themselves here.

Covid Impacts

Multinationals in Surrey have been severely disrupted due to Covid with key parts of the production process and supply chain being impacted. Social distancing rendered parts of the in-house production unfeasible and reduced the output and increased the timescale

of production. The 2-metre rule has adversely affected those multinationals that manufacture in Surrey and is stricter than continental Europe where a 1-metre rule exists and businesses are adapting more effectively. MNCs have been looking within the structure of their business to highlight areas where the firm could be more cost-effective in response to the global economic downturn due to Covid. This has been in the form of restructuring and reassigning roles and responsibilities, but also a significant reduction in the workforce in response to reduced cash-flows in the company. Due to payment policies of businesses, especially MNCs, their payment terms operate usually between 30-90 days. This has meant that the financing of many business’s supply chains did not collapse overnight. Many multinationals, including in Surrey, have attempted to secure financial support from to raise cash to secure cash flow problems. Like many businesses, MNCs took advantage of government support, such as the Job Retention Scheme which proved vital for many to operate cost-effectively. The Covid risks and impacts are clear; the key to capitalising on the opportunities depends on the autonomous capacity of the business itself. Covid has forced many businesses to rethink their business plans and structures. The opportunity and emergence of the ‘Green Agenda’ give companies the chance to innovate while they attempt to recover post-Covid. Other opportunities include taking a multi-purpose look at shifting what the operation can do in terms of prime outputs and related specialisms, exploring both research and innovation on the one side and new partnerships post-Covid on the other.

Brexit Impacts

Brexit poses many risks to Multinationals in Surrey but is regarded by many largely as manageable and more medium-term, but in some cases, the risks are unknown or uncertain. Customs and tariffs are likely going to be the largest risk, especially for companies that export and depend on seamless trade. In some cases, Brexit presents opportunities for business and employment development. Opportunities include shifts to immigration policies that allow for the flow of international talent that is a crucial part of many knowledge-based businesses in Surrey, that have a significant proportion of employees that are from all parts of the world. The internal geography of Surrey and its concentration of Multinationals have benefited the wider county’s economy and the ability to provide collaboration partnerships with businesses of all sizes. However,

many have struggled to employ and attract young talent to work in Surrey due to the proximity of London and the high cost of living within the county. This is a common issue for businesses of all sizes in the county and it continues to significantly impact the flow of talent in the local business ecosystem.

Philips

Philips is a Dutch multinational and was formerly one of the world's largest electronics company, but currently specialises in health technology. Philips UK & Ireland base in Guildford had been an integral part of the business ecosystem in Guildford and contributed to the local workforce with 250 members of staff. Its planned move to Farnborough next year will see its Guildford, Basingstoke and Chichester site moved onto one site. Many considerations led to the move, one being the housing cost perspective, as Farnborough is far more affordable for Philips and their employees who tend to be young graduates. In recent years, there has been a trend appearing as multinationals have moved their operations outside of the county. The trend has seen many relocate to central London or other high growth regions such as the Thames Valley.

Philips was well prepared for the impact Covid had on office spaces and the need for widespread remote working. Flexible hours and physical and mental health support were put into place in response to the challenges of working from home. There are areas of the business operation that can't be done effectively virtually and that office space hasn't become redundant in business. However, under the current circumstances, employee feedback surveys have produced the highest scores for engagement. Employee roles were revised and switched into new roles or additional responsibilities and this was seen preferable to other alternatives such as furlough. This restructuring was undertaken due to differing demand for staff from each section of Philip's portfolio and turbulent customer demand and sales patterns. Brexit has presented some challenges to Philips. Other than the uncertainty around timing, access to international talent will prove the largest challenge to the business. Phillips has found is a struggle to recruit diversity in talent (particularly in terms of ethnicity). The business has benefitted from taking on apprentices and training talent. Currently, they have 20 apprentices in multiple departments in the business and 20 graduates who have a route to permanent positions.

Atkins/SNC Lavellin

ATKINS

Member of the SNC-Lavalin Group

Atkins is a multinational company which is owned by Canadian engineering firm SNC-Lavalin Inc. Atkins is a large design, engineering and project management consultancy with circa 20,000 employees around the world. The company work on many global infrastructure projects. Atkins has been involved in projects such as the London 2012 Olympics and design and analysis for Airbus' A350 XWB aircraft. The company opened a new office facility in Woodcote Grove in Epsom in early 2020 on the same site where it was first based in the 1960s. The engineering consultancy employs circa 2,000 employers in their office in Epsom, Surrey. Remote working has been successful over the past few months and this has allowed for Atkins to continue with day-to-day business operations and still have the ability to develop the projects that have continued.

Covid

The firm has benefited from the use of Job Retention Scheme to minimise redundancies. Atkins has responded to remote working by implementing further physical and mental health policies to create a healthy environment to work in both in the office and at home. Other firms have expressed the worry that they have for the mental health of employees, especially when they are working remotely. Many including Atkins have sought psychological support built-in to the company structure and flexibility when working from home. This allows individuals to have the freedom to manage their home life and work-life better. With a market-oriented customer base, the wider implications of Brexit may impact the increase of new contracts.



Cluster Cross-overs: Business and Higher Education

The advantage of using ‘clusters’ as an approach to the local analysis of Surrey is the ability to identify cluster cross-overs which visibly drive both high value / high worth economic growth, and which transform in many cases into ‘Surrey drivers’, giving the county genuine added-value at national and global level. The uniqueness of Surrey’s business and employment cluster is that it is driven through its connections and relationships between other clusters. The knowledge cluster has a significant role to play in Surrey as the business landscape is dominated by professional knowledge-based companies that benefit from the presence of world-class Universities, business hubs and research facilities. This relationship plays an important role in local business development in areas of specialism that Surrey has a comparative advantage in such as Gaming. The success of Surrey’s business relies on sectoral clusters of excellence. Firms have benefited from each other’s presence in a concentrated location. This allows businesses to share knowledge and skills and benefit from shared networking of personnel. Surrey Research Park includes over 150 firms that are based at the park and represent the essence of a business ecosystem that is based on communal cooperation. Businesses have the opportunity to grow from the knowledge and research cluster into a commercialised research business.

Surrey Research Park



The Surrey Research Park is a major centre of excellence in technology, science and engineering, and is “widely regarded as the best of its kind” (UKSPA.org). The Park is owned and managed by The University of Surrey and is just a stone’s throw from the University’s main campus and the centre of Guildford. The 70 acre

(28.33 ha) low-density development provides a high-quality working environment, with room for further expansion (UKSPA.org). Over 150 companies, numbering 4,800 employees, located in 30 buildings on the Park, are engaged in a broad spectrum of research, development and design activities in a range of technologies (UKSPA.org). Businesses in all sectors conduct cutting-edge innovation and development at the research park and this drives local business growth. As a University of Surrey Enterprise, they provide added value for business through their incubation hub, R&D initiatives and recruitment and training support.



Pioneering Impacts

The Surrey Research Park is the first Science Park to have undergone the newly formed UKSPA ASPIRE performance review process, which revealed that the Park contributes an estimated annual contribution to the regional economy of between £450m and £625 million (UKSPA.org), rated as outstanding. In 2016-17 the University and its Research Park generated almost £1.75 billion GVA for the UK and supported 17,800 jobs, including 13,900 in the county and 11,200 in the Borough of Guildford (UNIVERSITY OF SURREY IMPACT AND CONTRIBUTION 2018-2019 REPORT, p. 20). Furthermore, in 2018/19, the Research Park added £1.4m to R&I activities – double the average of the previous four years (p2).

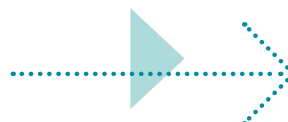
New Business Incubators

The Research Park is also home to the SETsquared Surrey Incubator, which has supported 165 start-ups to raise over £13million and generated over 560 jobs in the regional economy in 2018. This incubator was the largest in the SETsquared partnership in 2018 and,

therefore contributed significantly to the partnership achieving the ranking of UBI Global Number 1 university business incubator for the third consecutive year (p16). In 2018, there was £23million worth of collaborative funded enterprise programmes in progress, with approximately £700,000 of income brought into the university (p16). The hub aims to accelerate the growth of start-ups, develop the entrepreneurial talent of students and help academic researchers realise the commercial impact of their work. The award-winning incubator has demonstrated its excellence in knowledge exchange and transfer between business and universities. This enhances the comparative advantage of Surrey and drives local business growth and contributes to the diverse local economy. The Park has a dedicated Partnership team that seeks to form strategic relationships and collaborations, especially in areas of specialism that are both high worth and high value. The University of Surrey's work on employability and placements has given it a reputation for high industry engagement in the county that has had benefits for both students and businesses.



KINETRICS



Kinectrics

Gnosys was a research and development company specialised in advanced materials development for the energy sector based at the Surrey Research Park. It has recently been acquired by Canadian multinational Kinectrics. The company was founded as a spin-off commercial company of the University of Surrey employs 16 employees and specialises in the research and development of electrical utilities. The company relies on innovation and the knowledge-base of its employees, 13 of which have PhDs. The presence of the University of Surrey and the Research Park has been significantly beneficial for Kinectrics as the share of knowledge is invaluable for business and product development. This demonstrates the intertwined role that both the business and knowledge cluster have that produces competitive advantages among sectors within Surrey, that drive the local economy. The acquisition by Kinectrics signifies the important role that foreign investment plays in Surrey's business ecosystem that drives local innovation and high-value growth.

Cluster Cross-overs: Business and Aviation & Healthcare

Surrey's proximity to Heathrow and Gatwick means that the Aviation cluster and the business cluster work hand in hand to drive local economic growth. Supply chains and access to international travel are vital to the inner workings of the business ecosystem in the county and have been a factor contributing to Surrey's reputation as 'a good place to do business'. In employment terms, a significant proportion of labour force in Surrey is employed either directly or indirectly by the two airports, meaning a change in the circumstances in staffing would cause ripple effects throughout the county. Surrey's excellence in the healthcare cluster crosses over to the business cluster in many forms. Surrey is home to many health and life sciences businesses that benefit from skilled local labour and institutions such as Universities to share knowledge and expertise. Surrey has been an important base for many large pharmaceutical companies such as Pfizer and GlaxoSmithKline, which have in turn given Surrey a national reputation for a centre for health and pharmacy.



Dunsfold Park

Dunsfold Park

Dunsfold Park is a unique business park and active aerodrome located near Cranleigh, Surrey. This former military airfield is now a successful business park that is home to over 100 companies and some 1,100 workers that represent many different sectors of industry from automotive to education and environmental. Dunsfold Park is managed by The Rutland Group which was founded by its Chief Executive, Jim McAllister, in 1984. His vision for a place that nurtured talent and innovation in a community-oriented spirit has produced a business park that offers a model for business excellence and growth for Surrey. The diverse and communal environment that exists at Dunsfold has allowed for a flourishing business ecosystem that supports growth among its various sectors. It's important that local government and LEPs champion the idea of pulling businesses into a sense of community and that cooperation is prioritised to achieve business growth and development.



Connectivity & Creativity

With its proximity to the business hub of Guildford and its connectivity to London, it is able to pull resources from each other cluster of excellence. For example, Gordon Murray Design Ltd has facilities located onsite for research, development and vehicle construction in the automotive industry. This cutting-edge research in a number of fields contributes to the comparative advantage of Surrey and is a driver in the business ecosystem. The park is home to many organically grown

small businesses that have benefitted from their surroundings. Jim McAllister is a great supporter of young start-ups and individuals with an entrepreneurial and innovative spirit and has accommodated these activities at the Business Park. SMEs and start-ups make up a significant proportion of the businesses landscape in Surrey and will drive local recovery. He suggested that there is often a general feeling of “distrust in innovation in the county” and that this must be overcome to maximise the business ecosystems growth potential.

Embracing the Green Agenda

Dunsfold Park also has truly embraced the ‘Green’ agenda by taking steps to make the site more environmentally friendly with the development of Bioethanol and generating their energy from their on-site solar farm and Anaerobic Digestion plant (A.D.). The nature of Dunsfold Park is changing; a new Garden Village has been given the go-ahead for a first phase of 1,800 homes with a provision for up to 2,600 in the approved Local Plan. The future development includes shops and local services infrastructure, an education hub and an advanced wellness and health

centre. The creation of the Garden Village is inclusive of both the business and residential communities and helps alleviate the issue of chronic lack of housing for employees in Surrey. It will continue to keep and enhance its ‘Green’ credentials by preserving the abundance of nature that surrounds the site of the development and for example, working with the Wey and Arun Canal Trust to bring the nearby canal back into use.

Long-Term Refurbishment

The project also includes a long-term plan for the refurbishment and redevelopment of the business park so as to increase facilities for local businesses to thrive in the years to come. Covid-19 has revolutionised the way we view how both businesses and individuals benefit from a local community spirit. In this respect, the development at Dunsfold Park is a sign of the future and could be an indication of a ‘new normal’ of post-Covid relationship between community and business. Dunsfold Park and the work of The Rutland Group is a glowing case study and an exemplar of how a great combination of a business and community spirit makes a strong case for sustainable growth in the future.



Future-Proof Business: Denbies Wine Estate

Wine production in Surrey is a small, but a growing sector that has the potential to become a significant driver in the local economy. Surrey has become a premium wine region and is part of the expansion of the wine industry in the South of England. The wine industry employs 1,800 FTEs in Surrey and has increased in both popularity and size (WINEGB, 2019). English wine has become more competitive internationally than ever before and the collection of vineyards and wineries based in the Surrey Hills have seen growth in output and business. The Denbies Wine Estate is a family-owned business since 1984, based in Dorking, Surrey, it has since become one of the largest wine producers in the UK. Denbies has won multiple gold awards for sparkling wine production and first-ever gold for an English rose wine, allowing it to increase its international competitiveness.



New Opportunities

The estate offers an array of services other than wine production which include tours, events, restaurant and a newly opened hotel with 17 rooms. As Denbies is multifaceted it was impacted by the Covid pandemic and economic downturn in many forms. The vineyard had to continue to be operational and external wine sales continued for three months over. Government schemes such as business rates relief, JRS and the 'Eat out to help out' have allowed the Denbies to continue to operate and resolve certain cash flow issues. Over 80% of the 175 members of staff were

furloughed, allowed Denbies to have the flexibility to bring staff back when they needed and to be far more cost-effective with staffing costs and has meant that no redundancies are currently planned. However, recent months have provided many opportunities for the Denbies estate. The recently opened hotel has seen a significant increase in bookings as more people nationally are remaining in the UK for their summer holidays and this is likely to be a positive impact on the wider hospitality sector in Surrey that has been significantly impacted by the Coronavirus lockdown.

Multipurpose Applications

The uniquely multipurpose nature of the Denbies estate has proved to be a strength and allowed for them to diversify to fit with the 'new normal'. The approaching withdrawal date for the UK to leave the European Union won't impact Denbies as significantly as others in the sector. This is because much of its contingency planning was completed last year regarding capital equipment and upfront supplies to increase back-up stock. Although, there is a worry that Brexit may reduce the number of EU nationals that are applying for jobs at Denbies and it may be difficult for the company to fill roles. This may increase the cost of employment, which is also pushed upwards due to the affordability of the county to live in. This means the costs of Denbies are far higher than other competitors who may be based in other wine regions in the UK such as Kent.

Future-Proof Policy: Apprenticeships

Across all sectors, businesses in Surrey frequently struggle to find people with the skills they need, especially young skilled talent. There is a perception that young talent is attracted to working in London and that the proximity of the capital has proved disadvantageous to the supply of skilled labour in the county. An important part of addressing this talent shortage and increasing the opportunities for local economic growth is to emphasise the significant importance of apprenticeships. Former Minister for Skills and Apprenticeships, and former MP of Guildford, the Rt. Hon. Anne Milton believes that local authorities have a significant role to play in the promotion and delivery of apprenticeships, working hand-in-hand with providers and local business. Interviewed at length for this report, Milton argued that more can be done to promote and incentivise apprenticeships at all levels allowing progression to degree-level apprenticeships to persuade more people in Surrey to opt for an alternative route to higher education. An increase in the number of apprentices in Surrey is likely to result in locally grown skilled talent staying in Surrey, becoming important assets to a Surrey-based business. Milton concluded by observing that “Every business in Surrey should have an apprentice and whether SMEs or larger business, they can build their success through the apprentices they employ” (online interview with Anne Milton, 24 August 2020).

ALPS: Association of Learning Providers in Surrey



ALPS is a member organisation who work with private training providers and the four FE colleges in Surrey to support and represent them at various meetings, these include the Employment and Skills Boards, The Local Enterprise Partnerships, Federation of Small Business and the Chamber of Commerce. We help to support employers in finding the correct training provider and support employers with levy transfer. ALPS also runs the ASK project which is the Apprenticeship Support and Knowledge product into schools, this supports learners, parents and teachers in widening their knowledge of the apprenticeship offer. Apprenticeships have increased in popularity in recent years as a credible alternative to ‘traditional’ forms of education such as A-Levels and conventional University degrees. ALPS have always suggested that Surrey requires a hub where employers can come and find the educational offers which are available, an example of this would be the new government initiatives which have been released during Covid, employers are very confused with the offers available and would like one shop to discuss which then means that impartial advice is being offered to potential participants. This would then lead to

more opportunities within the area which would help to support the Surrey community and bring important stakeholders around a natural hub for skills and apprenticeships.

NatWest

An important part of the success of apprenticeships is the role that businesses play. NatWest is a large employer of apprentices in Surrey and nationwide. In 2015 NatWest had 300 apprentices nationwide which has since risen to over 500 current apprentices, since 2015, over 550 have moved into permanent roles. NatWest’s former Director of Corporate and Commercial Banking in Surrey Peter Quilter champions the role of apprentices in the success of the local business ecosystem. He said that “NatWest took apprentices on not because of the levy, but because it was good business sense and brought diversity to the office environment” (online interview with Peter Quilter, 20 August 2020). Apprentices brought knowledge and expertise and there is a share of this knowledge with permanent staff and vice versa, which supports personal development in all parts of the organisation. He believes that the levy could be available for a variety of options, including to spend on a permanent apprenticeships manager that can organise the apprenticeships programme thoroughly. The levy transfer could also be conducted in a far more effective way and this could be in the form of a local ‘clearing house’ or national organisation that supports the transfer of funds.

► QUANTITATIVE ANALYSIS ◀

Business Base

The Surrey economy is built on over 65,000 workplaces, characterised by high business density in key areas, with over 800 businesses per 10,000 working age residents, compared with the national average of 616. While the number of VAT or PAYE businesses grew by 0.9% in March 2019, compared to 2018, this is still well below the 1.8% growth rate achieved by the UK. Surrey's businesses are characterised by a visibly high percentage (91.3) of micro-businesses, employing fewer than 10 people. This same trend appears to cross Surrey in terms of its LEP business, with Coast of Capital representing 91% of micro-businesses, and EM3 90.6%.

Business Size

A key trend is the division over business size. The number of Surrey micro-businesses has been increasing over the past ten years, while the number of small and medium-size firms (SMEs) has been falling. While an increase in micro-business could be linked to enhanced innovation opportunities and high numbers of start-ups (including spinouts given Surrey's entrepreneurial culture), the slow growth of enterprises and the higher risk of businesses deaths (both micro and SMEs) poses strong challenges for both the immediate resuscitation and medium to long-growth of the Surrey economy.

Business Distribution (Workplaces) by Size of Business, 2019

	Total	Micro (0 to 9)		Small (10 to 49)		Medium-sized (50 to 249)		Large (250+)	
	Number	Number	%	Number	%	Number	%	Number	%
UK	2,718,435	2,431,995	89.5	233,960	8.6	42,000	1.5	10,480	1.6
England	2,360,790	2,114,965	89.6	200,065	8.5	36,500	1.5	9,250	1.6
Surrey	65,025	59,345	91.3	4,565	7.0	845	1.3	270	1.3
West Surrey	43,560	39,660	91.0	3,110	7.1	620	1.4	200	1.4
East Surrey	21,465	19,680	91.7	1,460	6.8	220	1.0	80	1.0
Coast to Capital	92,670	84,325	91.0	6,890	7.4	1,140	1.2	290	1.2
EM3	80,455	72,890	90.6	6,120	7.6	1,135	1.4	320	1.4

Source: ONS UK Business: activity, size and location (IBRD). Notes: Total= No. of Enterprises (UK VAT and/or PAYE) that were live in March 2019. Darkest blue = highest % of business in a column.

Business Health

Data from the ONS Business Demography (which counts the number of active businesses at any point during the year) confirms that – even before Covid - Surrey was slowly losing the ability to sustain a healthy and dynamic business base. This is a key message, and one that needs serious attention to both mitigate Covid fallout and provide adequate post-recovery support. The growth of new companies in Surrey has been

developing below both the national and Southeast England average since 2014. While growth rates themselves have been largely positive, the county as a whole has experienced a fall of 0.8% in the total number of active business in 2018. This ongoing underperformance has been widespread across Surrey, with Epsom and Ewell as the only location where rates have held up, or above UK and Southeast levels.

Annual Growth Rate of Active Enterprises for 2015 to 2018

	2014	2015	2016	2017	2018
UNITED KINGDOM	4.2	4.7	6.1	3.3	0.5
GREAT BRITAIN	4.3	4.8	6.1	3.2	0.5
ENGLAND AND WALES	4.3	5.0	6.3	3.3	0.3
ENGLAND	4.4	5.0	6.4	3.3	0.2
SOUTH EAST	3.4	4.3	4.3	1.9	0.7
Surrey County	3.3	4.2	2.8	1.6	-0.8
Elmbridge	4.1	4.9	3.5	2.1	-0.1
Epsom and Ewell	3.7	6.8	4.5	4.0	0.9
Guildford	3.0	3.7	3.7	1.3	-1.4
Mole Valley	2.3	2.9	0.7	0.7	-1.3
Reigate and Banstead	5.2	4.3	5.2	2.1	0.0
Runnymede	0.9	4.3	3.8	8.0	-4.1
Spelthorne	8.8	4.1	-2.2	-2.4	-1.3
Surrey Heath	1.8	4.4	1.5	0.0	-0.7
Tandridge	3.0	4.1	2.6	1.9	0.6
Waverley	-0.8	3.1	1.8	0.7	-1.1
Woking	5.5	4.5	5.0	0.8	-0.8

Source: ONS, Business Demography 2018. Notes: Active Business had either turnover or employment at any time during the reference period. Darkest red = lower growth rate in a column/year. Darkest blue = highest growth rate in a column/year.

Attracting Businesses

As evidenced by the change in business births which stood at 1% between 2013 to 2017, Surrey is also losing capacity to actually attract businesses relative to other UK destinations; with significantly lower scores than the 10% achieved at national level, but also below the 2.1% level for the Southeast.

Equally however, as evidenced by both the data and our interviews, Surrey is still viewed as a good place to do business in the UK and in the Southeast, as seen in the high survival rates across a five year period. This suggests that the underlying problems concern the composition of start-ups (of all sizes), the sector

in which new companies begin trading, and various incentives - from inward investment to support from local government and business – that new companies are either offered, or are able to offer.

Nevertheless, care needs to be taken not to take for granted the idea that “business can succeed in Surrey”. Within Surrey, Epsom and Ewell have done best in sustaining a solid business base. However, even here, the drop in one-year survival rate between 2013 and 2017 has been the highest. On the other hand, Spelthorne provides a significantly poor outlook for new establishments with the worse survival rates in Surrey. As such, Spelthorne also has experienced the strongest decline in business births.

Business Births and Survival Rates

	Births 2017	1-year Survival %	Years of Survival Rates since 2013						2013 to 2017	
			Births 2013	1-year %	2-year %	3-year %	4-year %	5-year %	Change in Number of Births (%)	Change in 1- year Survival
UNITED KINGDOM	381,885	89.0	346,275	93.5	75.1	60.9	51.2	42.4	10.28	-4.46
GREAT BRITAIN	375,030	89.1	341,420	93.6	75.2	60.9	51.2	42.4	9.84	-4.54
ENGLAND	339,345	89.1	308,565	93.6	75.1	60.9	51.2	42.5	9.98	-4.51
SOUTH EAST	51,965	90.1	50,895	94.0	76.9	63.2	53.4	44.6	2.10	-3.90
Surrey County	8,470	90.3	8,375	94.0	77.8	63.6	53.4	44.5	1.13	-3.71
Elmbridge	1,260	90.5	1,235	93.1	77.7	63.6	51.4	44.1	2.02	-2.64
Epsom and Ewell	505	91.1	505	97.0	80.2	65.3	57.4	49.5	0.00	-5.94
Guildford	895	88.8	845	92.9	76.9	65.1	55.0	45.6	5.92	-4.07
Mole Valley	600	90.0	605	95.0	79.3	66.9	56.2	45.5	-0.83	-5.04
Reigate and Banstead	970	89.7	900	93.9	77.8	65.6	56.7	46.1	7.78	-4.20
Runnymede	845	91.1	530	93.4	77.4	62.3	52.8	45.3	59.43	-2.27
Spelthorne	625	91.2	825	94.5	77.0	52.7	41.8	32.1	-24.24	-3.35
Surrey Heath	555	91.9	610	95.1	79.5	65.6	57.4	48.4	-9.02	-3.19
Tandridge	600	90.8	615	94.3	79.7	66.7	54.5	46.3	-2.44	-3.48
Waverley	920	89.7	1,010	93.6	76.7	65.3	55.4	46.5	-8.91	-3.89
Woking	695	89.9	695	93.5	75.5	61.9	51.8	43.9	0.00	-3.60

Source: ONS, Business Demography 2018.

Surrey has continued to attract high-growth enterprises, in particular Guildford, Runnymede, Surrey Heath, Tandridge and Waverley have seen their numbers go up. This is particularly good for the economy as it boosts employment.

Count of High Growth Enterprises for 2015-2018

	2015	2016	2017	2018	Change from previous year		
					2016	2017	2018
UNITED KINGDOM	12,180	13,665	13,165	13,965	12.2	-3.7	6.1
GREAT BRITAIN	11,915	13,325	12,875	13,645	11.8	-3.4	6.0
ENGLAND AND WALES	11,085	12,415	12,030	12,740	12.0	-3.1	5.9
ENGLAND	10,650	11,910	11,535	12,225	11.8	-3.1	6.0
LONDON REGION	2,410	2,720	2,640	2,850	12.9	-2.9	8.0
SOUTH EAST REGION	1,830	1,990	1,930	2,030	8.7	-3.0	5.2
Surrey County	275	290	280	300	5.5	-3.4	7.1
Elmbridge	35	30	30	30	-14.3	0.0	0.0
Epsom and Ewell	10	10	10	10	0.0	0.0	0.0
Guildford	45	45	45	50	0.0	0.0	11.1
Mole Valley	25	20	25	25	-20.0	25.0	0.0
Reigate and Banstead	20	25	20	20	25.0	-20.0	0.0
Runnymede	25	30	25	30	20.0	-16.7	20.0
Spelthorne	20	15	10	15	-25.0	-33.3	50.0
Surrey Heath	20	35	35	40	75.0	0.0	14.3
Tandridge	15	15	15	20	0.0	0.0	33.3
Waverley	30	35	40	35	16.7	14.3	-12.5
Woking	30	30	25	25	0.0	-16.7	0.0

Source: ONS, Business Demography 2018 *High growth enterprises are all enterprises with average annualised growth greater than 20% per annum, over a three-year period. Growth is measured using employment.

Business Composition

The largest share of enterprises in Surrey are found in the **professional, scientific and technical industries** (24.1%), followed by the **information and technology sector** (13.1%), then **construction** (12.7%), and **business administration and support services** (9.7%), illustrating overall how key the knowledge economy is for the Southeast region, and Surrey in particular.

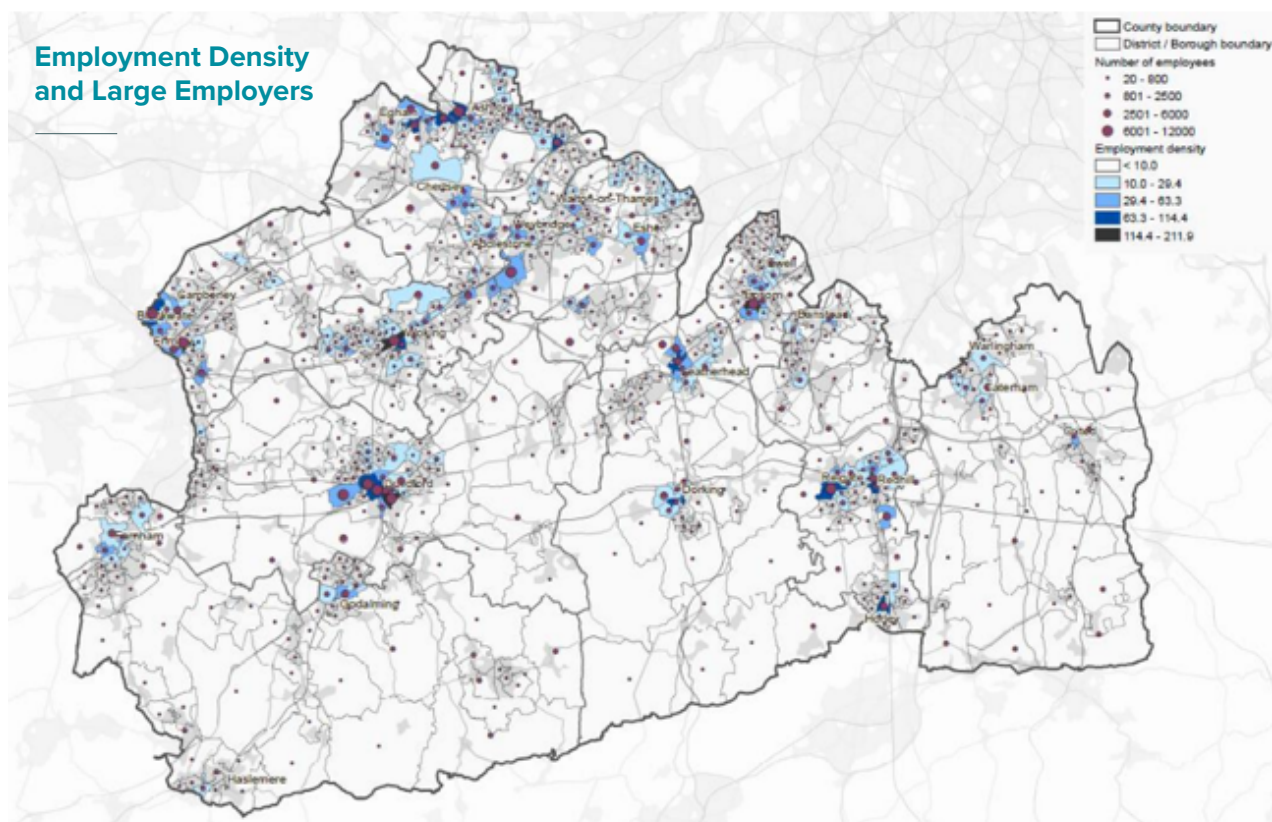
Share of Enterprises by Industry (%), 2019

	UK	England	Surrey	West Surrey	East Surrey	C2C	EM3
Agriculture, forestry & fishing	5.5	4.2	1.3	1.1	1.7	2.1	2.7
Mining, quarrying & utilities	0.5	0.5	0.4	0.4	0.3	0.4	0.4
Manufacturing	5.1	5.0	3.4	3.4	3.3	4.1	4.1
Construction	12.6	12.7	12.7	11.4	15.4	13.9	12.0
Motor trades	2.8	2.8	2.4	2.4	2.4	2.4	2.6
Wholesale	3.8	3.9	3.5	3.4	3.5	3.5	3.5
Retail	7.7	7.7	5.3	5.2	5.3	8.5	5.4
Transport & storage (inc postal)	4.1	4.2	2.5	2.7	2.0	2.3	2.8
Accommodation & food services	5.8	5.5	3.5	3.5	3.4	4.9	3.7
Information & communication	8.3	8.9	13.1	13.8	11.7	11.0	12.9
Financial & insurance	2.2	2.3	3.0	3.2	2.6	2.0	2.6
Property	3.7	3.8	3.6	3.7	3.4	3.4	3.6
Professional, scientific & technical	17.4	17.9	24.1	24.5	23.2	19.8	23.2
Business administration & support services	8.4	8.7	9.7	9.5	10.1	9.1	9.0
Public administration & defence	0.3	0.3	0.1	0.1	0.2	0.2	0.3
Education	1.6	1.7	1.7	1.7	1.7	1.9	1.8
Health	3.8	3.7	3.3	3.1	3.5	3.8	3.2
Arts, entertainment, recreation & other services	6.4	6.4	6.6	6.7	6.4	6.8	6.4

Source: ONS UK Business: activity, size and location (IBRD).

Employment in Surrey

Major employers in Surrey are primarily located in Guildford, and Reigate and Banstead. Large employers are found outside Surrey, with a large percentage of jobs for Surrey residents located at around Heathrow and Gatwick.



Employment by Local Authority District within Region (2018 Thousands)

Local Authority District	Full time employees			Part time employees			Total employees			Total employment		
	Public	Private	All	Public	Private	All	Public	Private	All	Public	Private	All
Elmbridge	1.8	37.4	39.2	1.9	18.0	19.9	3.7	55.4	59.1	3.7	57.3	60.9
Epsom and Ewell	3.0	15.8	18.8	2.2	8.9	11.1	5.2	24.7	29.9	5.2	25.6	30.8
Guildford	8.8	46.8	55.7	4.8	21.0	25.8	13.7	67.9	81.5	13.7	70.3	84.0
Mole Valley	2.0	28.7	30.7	1.8	12.4	14.2	3.8	41.1	44.9	3.8	42.6	46.4
Reigate and Banstead	6.9	39.5	46.4	4.1	17.7	21.8	11.0	57.2	68.2	11.0	58.8	69.8
Runnymede	4.7	34.5	39.1	3.2	15.8	19.0	7.9	50.3	58.1	7.9	51.2	59.0
Spelthorne	2.3	23.2	25.6	1.6	10.2	11.8	3.9	33.4	37.3	3.9	34.4	38.4
Surrey Heath	4.8	33.1	37.9	5.1	13.4	18.5	9.9	46.5	56.4	9.9	47.5	57.4
Tandridge	1.5	17.4	18.9	1.3	10.4	11.7	2.8	27.8	30.7	2.8	29.3	32.1
Waverley	1.7	29.1	30.8	1.9	17.3	19.1	3.6	46.4	50.0	3.6	48.5	52.1
Woking	2.6	28.9	31.5	2.0	12.6	14.6	4.6	41.5	46.1	4.6	42.5	47.2

Source: ONS BRES

Residents in Surrey work predominantly in the **service sector**, as illustrated in the latest ONS Annual Population Survey. Nearly 30% of Surrey's population currently work in the **public sector, education, and health sector** combined, while over 20% work in **finance**. Surrey's workplace distribution – as published in the Business Register and Employment Survey (BRES) – illustrates that the county's largest employers are found in the **health sector** (12.9%), **professional, scientific, and technical activities** (12.5%) and **education** (9.1%).

Within Surrey, professional and education employment is evenly distributed. East Surrey has a larger share of the workforce in health (15.6%), construction (7.2%), and finance (6.7%). West Surrey on the other hand has a larger share of employment in hospitality (7.2%), communication (7%), retail (9%), wholesale (5.2%), and manufacturing (5%).

Percentage of Workforce Employment by Industry, 2018

	England	Surrey	East Surrey	West Surrey	C2C	EM3
Agriculture, forestry & fishing	1.3	0.7	1.0	0.6	1.1	0.7
Mining, quarrying & utilities	1.2	1.0	1.4	0.9	1.2	0.9
Manufacturing	7.9	4.5	3.3	5.0	4.8	5.8
Construction	4.8	6.2	7.2	5.7	5.1	5.8
Motor trades	1.9	2.1	1.9	2.0	1.8	2.2
Wholesale	4.1	5.0	3.9	5.2	3.7	5.1
Retail	9.4	8.4	7.8	9.0	10.3	8.8
Transport & storage (inc postal)	4.9	2.9	2.8	3.0	5.1	3.0
Accommodation & food services	7.5	6.7	5.6	7.2	7.6	7.7
Information & communication	4.3	6.4	5.0	7.0	4.1	6.9
Financial & insurance	3.4	3.8	6.7	2.5	4.1	2.6
Property	1.9	1.5	1.7	1.5	1.7	1.6
Professional, scientific & technical	9.0	12.5	12.2	12.5	8.5	11.1
Business administration & support services	9.0	8.4	8.9	8.2	8.9	8.3
Public administration & defence	3.8	2.1	2.2	2.2	4.1	2.5
Education	8.6	9.1	8.9	9.2	9.3	8.8
Health	12.5	12.9	15.6	12.0	13.8	12.1
Arts, entertainment, recreation & other services	4.5	5.8	5.0	6.2	4.9	6.1

Source: Nomis, ONS Business Register and Employment Survey (BRES); * includes Real Estate employment

Employment Trends in Surrey

Recent trends in employment indicate that booming industries in Surrey have historically included construction, manufacturing and finance in West Surrey, and business administration, arts and construction in East Surrey. But underlying trends are important. West Surrey for instance has been losing employment in real estate, public administration, and mining and quarrying. East Surrey's workforce fall has been more widespread across several industries, but with notable pockets in finance, real estate, information and communication as well as education.

Change in Workforce Employment, 2015-2018

	England	Surrey	East Surrey	West Surrey	C2C	EM3
Agriculture, forestry & fishing	2.0	0.0	0.0	0.0	0.0	-16.7
Mining, quarrying & utilities	14.8	-33.3	42.9	-50.0	37.5	-30.0
Manufacturing	2.3	8.3	0.0	5.3	7.7	2.3
Construction	7.1	16.1	8.3	21.1	15.4	18.9
Motor trades	5.2	9.1	0.0	0.0	6.7	13.3
Wholesale	4.6	0.0	-12.5	-4.5	-5.7	0.0
Retail	-1.5	-2.0	-6.7	0.0	0.0	1.5
Transport & storage (inc postal)	7.6	0.0	0.0	0.0	7.1	4.5
Accommodation & food services	8.8	-2.5	-9.1	3.6	-1.5	-1.7
Information & communication	4.5	-5.1	-10.0	-3.4	-5.3	-5.5
Financial & insurance	-0.1	4.8	-7.7	11.1	-5.3	5.3
Property	5.7	-25.0	-25.0	-25.0	-21.1	-20.0
Professional, scientific & technical	5.9	0.0	4.8	-3.8	7.1	2.4
Business administration & support services	3.3	2.1	14.3	-2.9	16.2	6.8
Public administration & defence	0.1	-14.3	0.0	-10.0	12.5	-5.0
Education	0.7	-3.6	-5.9	-2.6	2.5	-5.6
Health	3.4	2.7	0.0	6.7	-0.8	4.5
Arts, entertainment, recreation & other services	1.8	0.0	12.5	-3.8	4.9	2.2

Source: Nomis, ONS Business Register and Employment Survey (BRES); * includes Real Estate employment

Covid Impacts on Business Closures and Creations in Surrey

To get a clear picture of the impact of COVID-19 on business in Surrey, both national and regional databases were consulted (see Parts 4 and 5). Recent ONS reports indicate that at the time of writing, wholesale business closures have not yet appeared to have increased as a direct result of the pandemic, although the birth of new businesses in Q2 2020 was slightly slower than in Q2 2019 in line with heightened uncertainty about the future and low business confidence¹. It is highly likely however, that increasing numbers of Covid-related business closures are likely to occur in the second half of the

year, taking into account the time for a business to close, and the reporting processes themselves suffering delays. For Surrey, increased closures might translate in loss of businesses and employment in the sectors in which COVID-19 has taken a toll, such as hospitality with 7% of the workforce and 3.5% of enterprises, art and entertainment with 5.8% of the workforce and 6.6% of businesses, retail with 8.4% of the workforce and 5.3% of businesses. It is worthwhile noting that apart from the arts and entertainment sector, Surrey has a lower share of both employment and businesses in key industries and hence, the impact of the pandemic is likely to be lower here than nationally.

Independent Survey Work (Carried out by Dayton Bell)



Dayton Bell surveyed a number of key businesses across Surrey, in order to assess the impact of both Covid and Brexit on their activities. At least two thirds of respondents have accessed the government's furlough scheme, and about half have used the business support programme. Many firms in the arts, leisure and restaurant sector have relied on both schemes. At the time of the survey in late August, most firms were operating at reduced capacity at an average of 65%. The survey reveals that firms operating at less than 50% capacity have relied on both schemes for support. These figures suggest that government aid has been critical to supporting Surrey firms and without this support, these firms might not have been able to

continue trading. Looking ahead to the ensuing twelve months, respondents are primarily worried about survival, supply chain disruptions and their customer base. Given that Surrey-located customer bases are strongly connected to the overarching attributes of location, proximity to London, entrepreneurial culture, high business growth, skilled workforce and high standard of living, sustaining both professional employment and household income throughout the pandemic is essential, and further government support may well be needed to achieve it.

Brexit

The survey also provided information on how businesses expect to be affected by Brexit. There seems to be diversity in terms of general preparedness as well as overall expectations of disruption. Firms in the arts and entertainment, manufacturing and waste sectors for instance are anticipating a largely negative impact, and most feel they are not prepared for the end of the transition period. Construction firms appear confident that they will not be impacted by Brexit, and there is a general feeling that the construction sector is prepared to continue operating. Enterprises in the automotive and real estate sector are confident the impact of Brexit will be broadly positive for their business, and that they are prepared for trading outside the EU.

¹ <https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/conditionsanddiseases/articles/coronaviruscovid19roundupeconomybusinessandjobs/2020-07-02>

Sector Survey Responses

Location Sector	Guildford Manufacturing	Haslemere Food	Guildford Food	Dorking Transport	Leatherhead Waste	Guildford Real Estate	Reigate Wholesale
Has Covid-19 had an impact on your business?	Yes	Yes	Yes	Yes	Minor	Yes	Minor
Have you made use of the UK Government's Job Retention Scheme (furlough scheme)?	Yes	Yes	Yes	No	No	Yes	No
Have you made use of the UK Government's business support scheme	No	Yes	No	Yes	No	Yes	No
At what capacity would you estimate your firm is currently operating at?	75	25	33	80	95	80	90
What opportunities and challenges do you foresee in the next 12 months for your business?	Profitability	Survival	Survival	Supply chain	Supply chain	Profitability	Customers
Why is your business based in Surrey?	Customers	Customers	Customers	Access	Access	Customers	Customers
Do you anticipate Brexit to have an impact on your business?	Neither	Neither	Negative	Neither	Neither	Positive	Positive
Do you feel prepared for the end of the transition period with the European Union?	No	Yes	No	No	No	Yes	Yes
Does your firm rely on local aviation or aviation-related supply chains?	No	Yes	No	Yes	No	No	No
Do you foresee your workforce undertaking international travel in the next six months?	No	No	No	No	No	No	No
What percentage of your workforce have attended a university in the county	0	0	0	0	10	10	0
Does your business benefit from close proximity and connectivity to London?	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Sector Survey Responses Cont.

Location	Caterham	Guildford	Reigate	Leatherhead	Weybridge	Cobham	Woking
Sector	Manufacturing	Arts & Entertainment	Transport	Construction	Automotive	Transport	Real Estate
Has Covid-19 had an impact on your business?	Yes	Yes	Yes	Yes	Minor	Yes	Yes
Have you made use of the UK Government's Job Retention Scheme (furlough scheme)?	Yes	Yes	Yes	Yes	No	Yes	Yes
Have you made use of the UK Government's business support scheme	Yes	No	Yes	Yes	No	Yes	No
At what capacity would you estimate your firm is currently operating at?	90	10	50	50	100	75	75
What opportunities and challenges do you foresee in the next 12 months for your business?	Customers	Survival	Profitability	Profitability	Customers	Profitability	Supply chain
Why is your business based in Surrey?	Customers	Customers	Customers	Entrepreneurial	Customers	Customers	Customers
Do you anticipate Brexit to have an impact on your business?	Negative	Negative	Negative	Negative	Positive	Negative	Positive
Do you feel prepared for the end of the transition period with the European Union?	No	Yes	Yes	No	Yes	Yes	Yes
Does your firm rely on local aviation or aviation-related supply chains?	No	No	Yes	No	No	Yes	No
Do you foresee your workforce undertaking international travel in the next six months?	No	No	No	No	No	No	No
What percentage of your workforce have attended a university in the county	10	10	0	0	0	0	0
Does your business benefit from close proximity and connectivity to London?	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Sector Survey Responses Cont.

Location	Epsom	Woking	Sunbury	Epsom	Ashted	Godalming	Horley	Ascot
Sector	Manufacturing	Waste	Manufacturing	Construction	Food	Arts & Entertainment	Food	Construction
Has Covid-19 had an impact on your business?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Minor
Have you made use of the UK Government's Job Retention Scheme (furlough scheme)?	Yes	No	No	Yes	Yes	No	Yes	No
Have you made use of the UK Government's business support scheme	Yes	No	No	Yes	Yes	No	Yes	No
At what capacity would you estimate your firm is currently operating at?	60	75	75	50	50	75	20	85
What opportunities and challenges do you foresee in the next 12 months for your business?	Supply chain	Customers	Customers	Supply chain	Profitability	Survival	Survival	Customers
Why is your business based in Surrey?	Customers	Customers	Customers	Travel	Customers	Family	Customers	Customers
Do you anticipate Brexit to have an impact on your business?	Negative	Negative	Negative	Neither	Neither	Negative	Negative	Neither
Do you feel prepared for the end of the transition period with the European Union?	Yes	No	No	Yes	Yes	No	No	No
Does your firm rely on local aviation or aviation-related supply chains?	No	No	No	No	No	No	Yes	No
Do you foresee your workforce undertaking international travel in the next six months?	No	No	No	No	No	No	No	No
What percentage of your workforce have attended a university in the county	0	0	0	0	0	0	0	0
Does your business benefit from close proximity and connectivity to London?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

KNOWLEDGE





Knowledge Cluster Introduction



The key message of the knowledge cluster is of impressive innovation, but with a tendency to rely on established structures rather than future needs. The research objectives that have been achieved to date are the result of novel initiatives set up previously by individuals and groups, who were firmly focused on investing in the future. Whilst the rewards of their efforts are still being reaped now, this must not create complacency about the importance of continual investment in research and innovation. Despite the challenging times, in order to maintain and improve a trajectory of growth in the knowledge cluster capability, we must set our sights on the distant future. What is vital to understand is that a highly skilled workforce, technological advancements and thriving research institutes take years to cultivate.

Complacency is an issue that plagues Surrey's knowledge cluster, particularly as the attainment gap in Surrey's education system is one of the largest in the country, despite the county being among the most affluent. Such disparities are simply unacceptable – the county cannot move forward and develop sustainably if a large proportion of our future workforce are being kept at a disadvantage. Closing the attainment gap in Surrey by improving opportunities for disadvantaged children needs to be at the top of

the priority list for anyone who wishes the knowledge cluster - and the county - to prosper.

Also inherent in the knowledge cluster is a lack of strategy. Across the experts interviewed for this report, the desire for an overarching, visible strategy - whether that be between entities, or with local or national government was a recurring theme. Strategy is the most critical part of maintaining a growth trajectory, and the desire to collaborate, engage and innovate is clearly present in the Surrey knowledge cluster. However, without strategic facilitation, the county's expertise and resources will not be fully utilised. In common with any investment opportunity, there is a risk that it will not always produce expected dividends and an element of trust is required, particularly in times where budgets are under scrutiny. However, the alternative is far worse – to not address the problems identified in this cluster will not risk a loss, it will ensure it.

Knowledge is embedded in Surrey, and it is clear that the level of talent and dedication that has emerged whilst embarking on this project is something the county can be proud of. However, there is clearly a great deal of progress to be made. The voices of the people featured in this report offer an insight into how best this can be achieved.



Key Reports

BEIS - UK Research and Development Roadmap (2020)

In the next few months the proposals in this Roadmap will be developed into a comprehensive R&D plan working closely with the devolved administrations (where plans cover or impact on their devolved policy responsibilities). The report highlights the fragility of the funding for universities being significantly based on the recruitment of international students – something that is likely to decrease significantly in the fallout of the pandemic. Equally, UK government ambitions clearly indicate the desire to **take “bigger bets” – on a small number of ambitious programmes and institutes in genuinely transformational areas of science and research**, with a desire to highlight Surrey as a transformative area for the future. The report also includes some insight into investments - with at least £800 million to set up a unique and independent funding body for advanced research, modelled on the US’ Advanced Research Projects Agency (ARPA). This new body will back breakthrough technologies and basic research by experimenting with new funding models across long-term time horizons.

The report refers to ‘levelling up’ across the UK in terms of R&D, with Surrey positioned as an aspirational model rather than as part of a zero-sum game losing out to the North. There is also a recognition of the need to champion exceptionally talented people, especially those with protected characteristics or from disadvantaged backgrounds. For example, there are approximately 7% BAME managers, directors and senior officials in academic and non-academic higher education positions. A key goal is the establishment of a ministerial R&D Place Advisory Group, comprised of expert stakeholders, to propose and interrogate opportunities, challenges and analysis to inform decision-making. The UK is in negotiations with the EU to participate in the next generation of European research and innovation programmes starting in 2021: Horizon Europe and Euratom R&T (p42). If the UK does not formally associate to Horizon Europe or Euratom R&T, the government suggests it will implement ambitious alternatives rapidly after January 2021 and address the funding gap. As a first step it will launch a new ‘Discovery Fund’ offering sizeable grants over long periods of time to talented early, mid and

late-career researchers, whether already in the UK or coming here from anywhere in the world, to pursue discovery-led, ground-breaking research (p43).

The Sutton Trust - Covid-19 And Social Mobility Impact Brief #2 (2020)

At university, 30% of students report that they are less able to afford to study because of the pandemic, with those in non-Russell Group institutions more likely to have financial concerns. 34% of students report that they have lost a job, had reduced hours, or not been paid for work completed during the current crisis. Looking ahead, financial issues are not restricted to current university students. The financial consequences of the coronavirus crisis could have a significant impact on the affordability of university to the next generation of students. A decline in the ability of parents to support students financially, coupled with the likely lasting damage to the part-time jobs market, alongside the already high levels of debt associated with university, all have a significant potential to damage access to Higher Education. The pandemic could also shift behaviour by encouraging more students to attend universities close to home, to save on the costs of living in student accommodation. This may mean missing out on a university that better reflects the interests and aspirations of prospective students. Given the existing geographical patterns of university attendance, this is likely to have the most negative impact on those from less well-off backgrounds.

GovNet Events: The State of Higher Education: Post-Lockdown and Post-Brexit (2020)

Universities have been badly affected by the COVID-19 outbreak. Many are finding it difficult to maintain consistency within educational delivery and to sustain high student recruitment numbers (p5). Most notably, the pandemic has completely changed the nature of HE delivery, resulting in challenges surrounding safety for students and staff, staying up to date with current information and guidance, moving from traditional teaching methods to e-learning without compromising quality, and reallocation of funding affected by fewer student recruits (p5). Online learning and assessments present a solution to many of the problems regarding social distancing and student safety (p6). However, it has exposed a number of obstacles that need quickly

addressing, namely access to resources and lack of designated study areas. Moreover, students from lower-income bands may not be able to afford the same technological experiences as other students (p6). This makes digital accessibility a huge focus for universities wanting to create online learning options. To make the online assessment portion of COVID-19 response fairer, the report suggests an increase in the time allowed to complete exams, creating many possible submission avenues and ensuring research and revision resources are made widely available and easily accessible (p6). However, this move will also require universities to consider features such as 24/7 back-end IT support, Learning Management Systems (LMS) and Cybersecurity enhancements (p9).

Brexit also poses many challenges to HE, whether the outcome is hard, soft or no-deal. It's possible there will be a decline in EU students studying in the UK post-Brexit (p8). Similarly, the amount of EU nationals employed by HE providers will fall. Significantly, if Brexit were still to include access to Horizon and Erasmus+ schemes, the negative affects of leaving the EU may be lessened for HE. Fortunately, the UK is still an attractive study option because of its world-renowned teaching standards, and the introduction of the two-year post-study visa for international students will further increase the desirability of higher education in the UK (p8). Nonetheless, there is deep uncertainty regarding the economic impact of Brexit, compounded by Covid, on UK's job market and how this will affect the influx of talent (p8).

Definitions and Parameters

Definition: The Surrey knowledge cluster refers to the geographically proximate (either in Surrey or connected to Surrey) collection of interconnected companies and associated institutions in a particular field, linked by commonalities and complementarities (Porter, 2000:16). Knowledge clusters can also be characterised as a system or web for technological innovation, encompassing research and development (R&D), innovation, cross-disciplinary skills, and education. Organised by local initiative around universities and other public research institutions with original R&D topics and potential, the system also features participation by companies both inside and outside the region.

A knowledge cluster brings together networks of individuals in academia as well as the private and government sectors through project planning, joint-research, and exchanges of ideas. As such, the knowledge cluster does not just refer to the aggregation of research institutes, but is also vital in measuring how well these bodies interact, connect and collaborate with one another.

Outsourcing skills and innovation are cost-effective and efficient ways to keep a competitive advantage. This cluster has a particular focus on higher education; however it recognises that in order to sustain and improve research and innovation in higher education institutions, investing in education at primary and secondary levels is critical. In Surrey, the cluster is represented by the University of Surrey, Royal Holloway University of London (RHUL), the University of Creative Arts (UCA), and all associated and independent institutes, research and data analysis centres. Surrey's position at the forefront of cutting-edge technologies means that the county is well-placed for emerging opportunities in 5G, space and satellite technology, agri-tech, creative industries, and electric and autonomous vehicles, amongst others.

Composition: The largest elements in Surrey's knowledge cluster are the county universities, including the University of Surrey, Royal Holloway (University of London), and the University of Creative Arts (UCA - Epsom and Farnham branches), and the University of Law (Guildford campus). The University of Surrey specialises in a variety of subjects including hospitality and leisure management/tourism, telecommunication engineering, aerospace engineering, transportation science and technology and veterinary sciences. Meanwhile, Royal Holloway is rated globally in the top ten for the disciplines of Drama, Earth Sciences, Geography, Maths, Media, Modern Languages, Music, and Psychology. UCA is an emerging leader in creative knowledge, with a range of specialisms including publications in art, design and visual culture history and theory; curation in art, design and craft; and creative practice in fine art, photography, film, animation, craft, performance, design and the built environment.

Beyond the universities are research parks, centres, institutes and regional research networks, all of which add enormous value to the regional and national economy. The 5G Innovation Centre for instance (5GIC), though formally attached to the University of Surrey, is the world's largest academic research centre dedicated to next-generation mobile and wireless connectivity with a 5G test bed demonstrating emerging 5G technologies. Surrey Satellite Technology Ltd (SSTL) is the world's leading small satellite manufacturer: a spin-off company initiated by the University of Surrey that is now owned by Airbus. Another exciting addition to Surrey's technological capabilities is Geospatial Information Services (GIS), best represented by Alcis. Operating as key **drivers to the Surrey economy** are the two regional research networks: the South East Physics Network or SEPnet (preserving STEM subject excellence) and Southern England Technology Triangle or SETsquared (a business incubation network coordinated by the University of Surrey, the University of Bath, the University of Bristol, the University of Southampton and the University of Exeter).

Foundations: Investing in knowledge is the key to successful future growth. The Organisation for Economic Co-operation and Development (OECD) average for pre-Covid R&D intensity is 2.37% GDP, but the UK is currently only 1.66% (NESTA, 2020:5). The UK government has committed to matching the current OECD average by 2027, pledging an increase in public spending to £22 billion by 2025. It is critical that R&D is understood as the necessary first phase of any process leading to technological innovation. The experience and the knowledge accumulated thanks to R&D activities enhance innovation for any research institution. Ultimately, investment in R&D will create advancements in technology and future capabilities which would be eventually translate into new products, processes, and services. As this report illustrates, investment in R&D activities not only provides new knowledge directly but also makes centres and businesses more able to acquire and assimilate related R&D output from other similar bodies (Tallman et al., 2004:262).

Covid, Brexit and Beyond

The challenges facing the knowledge cluster are immense and far-reaching. The physical impact of Covid brought face-to-face teaching, conferences and field research to a complete stand-still, impacting many research projects and institutions. The major disruption to teaching and learning across primary, secondary, further and higher education institutions will have a profound effect going forwards, not least on the mental wellbeing of students and staff. Many prospective students are choosing to delay their university entry and those who have recently completed their courses face an unforgiving job market. Moreover, the urgent demand for Covid-related studies has caused other projects to be placed on pause temporarily, or in some cases permanently, which will stall the UK's R&D capacity if not addressed. Financially speaking, the knowledge cluster will feel the squeeze from the safety restrictions of the pandemic. Although there are online solutions to some aspects of HE, Universities UK has stated the sector is facing losses that could amount up to £790 million, usually generated by accommodation, catering and conferencing (GovNet Events, 2020:4). There will also be the impact of the 100% fall in international students which amounts to a loss of £6.9 billion in income for HE providers (GovNet Events, 2020:4). Brexit, although seemingly eclipsed by the pandemic, will also have repercussions on the number of students coming from both EU and non-EU countries, a key source of UK HE funding.



► QUALITATIVE ANALYSIS ◀

High Value/ High Worth Areas

Surrey is a key contributor to the UK's overall international competitive advantage. Within the UK, London, the South East and parts of the East of England are among the most productive regions in Northern Europe (NESTA, 2020:9). The most R&D-intensive regions of the UK – in the East of England and the South East – feature high levels of spending from both public and private sectors. In these prosperous regional economies, public and private sector spending reinforce each other, leading to vibrant innovation systems and high productivity. Surrey is a key part of the UK's competitive advantage, with specialisms including AI, space and satellites, geospatial technology, information security, human and animal health, and gaming acting as regional and even national drivers for both the economy and innovation. Clearly universities in particular are critical drivers for R&D. In addition cross-cluster initiatives in which R&D and business conjoin, such as the Surrey Research Park (Guildford) operate as critical anchors to grow new business and expand established ones. Research parks essentially operate “as unique incubators of research and innovation and represent a serious incentive to prospective companies and investors” (Malcolm Parry, Surrey Research Park Managing Director and CEO).

Why are These Economic Drivers?

Higher education institutions contribute to economic growth in many ways. In particular, university-enterprise collaborations can provide a wide range of benefits to both sides of the partnership. In terms of research, academics can apply their research and see tangible impacts, along with enabling access to new skills, data or equipment. Businesses can improve performance through deployment and application of new techniques and technologies developed by researchers, reduce the risk of investment in research and extend the resources available to the business. Investment in collaborative R&D also delivers real benefits to the UK, driving growth and productivity improvements for firms and high-quality research outputs (WECD, 2018). Although universities

have substantial interaction with industry, there is a ‘frustrated desire’ to further widen and strengthen collaboration (Innovation South, 2017:6). Businesses look to higher education for the next generation of people to meet future skills needs, as well as incorporating academic research and expertise (WECD, 2018:2). Universities also need businesses links to ensure both the relevance of course offerings and to provide real-world applications, through new products and services, for academic research (WECD, 2018:2).

Uniquely Surrey: Productivity, Place, People and Connectivity

Surrey's place-based distinctiveness also enhance the Knowledge Cluster. Surrey's affluence, attractiveness, typically high quality of life and proximity to London together make it is a desirable place to live. About 85% of the county is countryside and around 70% is designated as Metropolitan Green Belt (SCC, 2017:9). A total of 44,800 hectares of the county is covered by national landscape designations including the Surrey Hills Area of Outstanding Natural Beauty (AONB) and the High Weald AONB (SCC, 2017:9). However, situated between Greater London to the north, the South Downs National Park to the south west and Gatwick Airport to the south, Surrey is also the most urbanised shire county in England. Surrey's reputation historically is a top-performing local economy, with high productivity output, strong growth rate and a diverse business base that represents key growth sectors such as advanced manufacturing/engineering, business and professional services, pharmaceuticals, life sciences and healthcare and other niche and emerging sectors (SCC, 2017:9). The county workforce and residents also benefit from its strategic location relative to London, in conjunction with the proximity to Heathrow and Gatwick Airports and the network of road, rail and air links. Because of this place-based competitive advantage, Surrey is generally well-placed in creating and retaining skilled workers.



► CASE STUDIES ◀



University of Surrey | The academic heritage of the University of Surrey can be traced back to the founding of the Battersea Polytechnic Institute in 1891. In 1956, the Institute was among the first to receive the designation 'College of Advanced Technology' and in 1966 the University of Surrey received its Royal Charter (Surrey Advantage, 2017:8). Since then, the academic span of the University has broadened to incorporate the humanities, arts and social sciences without losing its traditional strengths in science, engineering, and industrial engagement. The University of Surrey specialises in a variety of subjects including hospitality and leisure management, telecommunication engineering, aerospace engineering, transportation science and technology and veterinary sciences.

The University of Surrey is one of fourteen HEIS recognised by the National Cyber Security Centre

as a centre of excellence for cyber security research, launched both a vet school (2015) and the Veterinary Health Innovation Engine (vHive), a multi-disciplinary centre for digital innovation in animal health, was awarded the Queen's Anniversary Prize for excellence in the field of food and nutrition (2017), enjoys global recognition for work on sustainable tourism in the School of Hospitality and Tourism. Multidisciplinary outputs include the Surrey Sleep Research Centre and the Centre for Vision, Speech and Signal Processing, internationally recognised for its work in audio-visual machine perception research. Cutting edge work in the social sciences incorporate local, regional and national impacts made in the areas of business, politics, economics law and sociology, as well as the nationally-renowned Guildford School of Acting. In 2017, the University received a Gold rating in the 2017 Teaching Excellence Framework (TEF), recognising outstanding teaching and support for students. Surrey's researchers attract over £30m in research awards every year, with a robust yearly increase in research grants and contracts income, an overall portfolio income of £82.4 million.

Key Stats (2018-19)

- **£1 billion GVA generated and 12,230 jobs in the Borough of Guildford**
- **£1.2 billion GVA generated and 14,490 jobs in the County of Surrey**
- **£1.8 billion GVA generated and 19,430 jobs across the UK**
- **£78 million overall research and innovation income**
- **100+ community-focused projects and initiatives**
- **120,000 UniSurrey alumni**
- **85, 130 people attending UniSurrey public events**
- **£7.5 million raised in philanthropic donations**
- **£2.5 million in students bursaries to lower income households**
- **3000 students on formal placements around the world**
- **18,200 Surrey school and college students collaborating via Widening Participation & Outreach initiatives**
- **3,144 employees, 15, 974 full-time students, 12,200 students living in Guildford (on and off campus)**
- **6% reduction in carbon emissions**

University of Surrey Covid-19 Research Funding

The University of Surrey has distributed £250,000 of UKRI Industrial Strategy Challenge funds (via a mixture of grants and equity investments) into approximately seventy SMEs on the Surrey Research Park to financially support these businesses through the impacts of Covid. In addition, the university has been awarded the following funds in respect of its Covid-oriented research:

- £70k Engineering and Physical Sciences Research Council Impact Acceleration Account (IAA) to the School of Veterinary Medicine & CVSSP
- £35k Impact Acceleration Account (IAA) to the School of Veterinary Medicine & the Advanced Technology Institute
- £31k IAA to the Department of Chemistry
- £10k HEIF to the School of Veterinary Medicine
- Pending approval on another £50k Higher Education Innovation Fund (HEIF) to the School of Veterinary Medicine
- Approximately £75k HEIF to the Health Research Theme Lead, Professor Deborah Dunn-Walters to support Covid-19 research on a range of projects
- UniSurrey spin-out companies: up to £50,000 in Innovate UK funding (such as SAMMI-Select Ltd).

UniSurrey: Employability & Careers (E&C)

A key asset of the E&C department at the University of Surrey is that of the Professional Training Year (PTY). Now a definitive 'Surrey Specialism', the PTY placement programme connects more than 1200 students annually with a host of local and international stakeholders, from local SMEs to global industries, providing them with the opportunity to spend a year working in industry and other organisations to develop their professional, academic and personal potential. These placements are built on the university's long heritage of sandwich degrees, giving students a valuable head-start in job-seeking, supporting the university's goal of contributing to student employability, resilience, confidence, and digital acumen in the workplace.

Key Stats (2018-19)

- 3,000 students on overall placements (2018-19)
- 1,277 students on a Professional Training Year in 2019-2020
- 2,300 placement providers in the UK and overseas
- 1,30 students on placements in NHS trusts, 213 at Royal Surrey County Hospital, 489 on veterinary placements (2018-19)

Recent UniSurrey Placement Companies include: Warner Bros, BAE Systems, Toyota, Yakult and the Defence Science and Technology Laboratory (Dstl).



Location of Professional Training Placements 2018-19



11% - International
14% - Europe
11% - Rest of UK
64% - London and South East



2020: University of Surrey wins the National Placement Award for the Second Year in a Row

For the second year in a row, the Employability and Careers Team have been recognised for their support and approach to maximise these placement opportunities. The Best University Placement Service (Over 500 Placements) award celebrates the tireless and invaluable contributions made by a centralised university placement service in the UK to help more than 500 students apply and maximise their work experience opportunities. Surrey was described by the judges of the NUE Awards as running 'a well-drilled and successful placement programme with over 1,200 students going on placement every year.'

Ben Karkera, Mechanical Engineering BEng (Hons):

"My Professional Training placement was at BAE Systems – Submarines, in Barrow, Cumbria. The site is where the UK's nuclear submarines are designed and built. I spent my time in three engineering departments within different areas of the business, gaining experience in a range of engineering roles and teams....The highlight for me was the pride in being given responsibility, and being able to complete work to a high standard. By the end of my placement I really felt a part of the team, and as though I was contributing in a meaningful way".

UniSurrey's Professional Training Year (PTY) counts as a Surrey driver, facilitating and institutionalising high-quality and sustainable academia – industry collaboration, underwriting investment in future workforce, enabling widespread graduate recruitment and unique to Surrey.

Covid Challenges for Employability: Frances Gow, Head of Employability & Careers, University of Surrey



The effects of the pandemic hit the university first before it hit the UK, because of overseas students on placements. Many Surrey students were laid off or furloughed from their placements, with many fewer advertisements than usual for placements for next year. The university is expecting at least a 50% reduction in placements for next year, so we're trying to increase student employability without physical placements. The impact of placements between sectors has varied. Technology students have been less affected and

healthcare placements have continued, whereas those on placement with businesses such as Enterprise Rent-a-car were very badly affected, with most staff put on furlough. The hospitality and tourism industry has seen significant damage and The Guildford School of Acting (GSA) has been very badly affected; many placements were cancelled, and some students who were in mid-placement struggled to make up enough hours to fulfil the placement year. More widely, students who rely on part-time work to support their studies have also been affected. UniSurrey is offering students a lot of opportunities to make the most of this difficult time, including a digital careers fayre, several virtual workshops by Bright Network and an employability award in which students build up a portfolio that fit a professional skills framework.

UniSurrey and Digital Collaboration

One of the five core values promoted by the University of Surrey is collaboration. The university is steeped in collaboration-based research and outreach, from AI and 5G developments, to its Professional Training placement programme, pioneered over 40 years ago. The key message in this respect is a simple two-pronged approach: “collaboration has always been the defining force of what we do... [combining] the strength of our business partnerships, while our many world-leading scientific discoveries have been enabled by a willingness to work across disciplines and boundaries” (Professor Max Lu, *A World of Collaboration*, 2019:3).

The university has embedded its specialisms in local and regional business partnerships. Despite being wholly unique to the research and innovation composition of the University, there is an abiding sense that discoveries, industry applications and commercialisation work hand in hand, whether via large consortium organisations or smaller one-to-one relationships. The university’s specialisms are also uniquely business-oriented, and change the look of degree pathways themselves, including the Surrey Innovation and Digital Enterprise Academy (IDEA) which is the first of its kind in Europe, offering a two-year undergraduate degree geared at immersing students in entrepreneurial structures from

day one. The university has also successfully developed a number of strategic partnerships in research and innovation, including most recently the 5G Innovation Centre (5GIC), which has brought together over 25 leading industry partners and 30 small or medium-sized enterprises (SMEs) to develop next generation wireless telecommunication technologies. The 5GIC contributes significantly to the UK’s national strategy on digital connectivity.

5G Innovation Centre (5GIC) | The 5G Innovation Centre (5GIC) is the UK’s largest academic 5G wireless communications infrastructure research centre. The 5GIC houses 170 researchers in a purpose-built building (Innovation South, 2017:18). Facilities include the world’s leading open and independent testbed covering 4km², providing indoor and outdoor environments for broadband mobile and the Internet of Things (IoT). The main co-investors in the 5GIC include leading international communications firms such as Vodafone, Telefonica, Huawei, Fujitsu and Samsung. The centre, since its opening, has attracted further national and international investors and partners from both the public and private sector. The Centre also includes 26 corporate members and 250 small and medium-size enterprises in its wider network (EM3, 2018).

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The 5G Innovation Centre (5GIC) is the UK’s largest academic 5G wireless communications infrastructure research centre.

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In December 2016, 5GIC launched the 5G mobile network emulator at the Basing View innovation hub in Basingstoke in partnership with SETsquared, Basingstoke and Deane Borough Council and high-tech start-up Gematech, with funding from Enterprise M3 LEP (Innovation South, 2017:18). The emulator allows start-ups and businesses working on mobile applications to develop systems capable of operating on the 5G system and will be accessed through SETsquared's digital hubs as part of its Digital Business Acceleration Hub programme (Innovation South, 2017:18).



5G Research is vital for permitting AI-enabled future connectivity for 5G. Surrey needs to be the home for 5G skills and training, viewed as “crucial if the UK government wishes to set up a decidedly national rather than international ecosystem for its current and future 5G aspirations” (Online interview, University of Surrey staff, July 2020). This chimes with current UK government preferences to reduce overall supply-chain dependence on other countries providing 5G hardware and software. This means working alongside Surrey-based MNCs and SMEs in terms of their 5G needs and being in a place [as universities] to provide both hardware/software components as well as the skills and training to implement them from a bottom-up, rather than top-down, and preferably UK-owned perspective. 5G needs to be regarded less as a 21st century bolt-on but rather as organically connected to the emerging intra-communication needs of contemporary Britain.

5GIC International Partners Include: 5GIC international partners include: Samsung, BT, Vodafone, Cobham, BBC and EE

5GIC is a key Surrey driver, bringing together world-leading research, Academia – Industry Collaboration, high-tech innovation, international collaboration, and uniquely based in Surrey.

Surrey Centre for Cyber Security

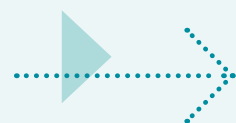
This Centre was established by the University of Surrey to bring together cyber security activities across the University. It is one of nineteen Academic Centres of Excellence in Cyber Security Research recognised by the UK Government's National Cyber Security Centre in partnership with the Engineering and Physical Sciences Research Council (EPSRC). It applies formal modelling to create methods and techniques which mitigate cyber security threats, using a range of approaches to develop solutions that will enable society and industry to benefit from advanced technology in a secure way. The centre's research themes include: blockchain and distributed ledger technology, cryptography, privacy and authentication, secure communications, security verification and trusted computing and systems.



Covid Challenges & Cyber Security: Professor Steve Schneider, Director of the Surrey Centre for Cyber Security

The increase in working from home has led to more critical awareness of cyber security, because the home environment is less secure. People are using their home equipment which may not have the latest security update, and is not maintained by a dedicated IT team, so there is a greater possibility of viruses. My key research interest is in electronic voting, and because Covid has strengthened the desire for remote alternative to in-person activities, there has been pressure on the academic community to find a solution for the security issues around electronic voting. It may be a key enabler in helping people to participate in voting. However, the cyber security challenges around electronic voting still exist (in particular digital identity, secrecy of votes, processing of the votes to prevent tampering and ensure accurate recording, and preventing malware from altering votes).

There has been no difficulty in recruiting and retaining staff because cyber security is a live and active area and there are always new challenges. Cyber security cuts across many other areas of technology which all have a cyber security need, so there are always fresh research challenges and opportunities. Funding streams have been delayed in the current environment but not cut. We are grateful for the recognition over the last ten years of the importance of research to keep us leading in this space, but we need to maintain this level of investment as other international actors are becoming ever more active, the world is becoming ever more connected with the Internet of Things, and our national infrastructure is also becoming increasingly connected and dependent on software. The way that we build secure systems and secure existing infrastructure is still an active field of research.

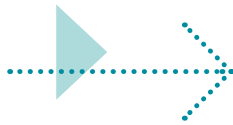


Space and Satellites

The University of Surrey is a genuine UK pioneer in space and satellite technology, connecting businesses, technology and ideas in the field of space for almost 40 years, and most recently specialising in active debris removal technology. Key research funding in this respect includes a £4.8 million grant from Research England to form the Space Research and Innovation Network for Technology (SPRINT), bringing together Leicester, Southampton, Edinburgh, the OU and Surrey.

Surrey Space Centre | The Surrey Space Centre is a world leading Centre of Excellence in Space Engineering. Beginning in 1979, pioneering small satellite activities, the Surrey Space Centre has gone on to push the boundaries of low-cost small satellite applications and generated leading research. It has a mission to create and disseminate knowledge that leads and underpins the progress of space engineering and its applications in the space sector, and to maintain our leadership in cost effective space engineering.

A current high-profile mission the Centre is leading on is RemoveDEBRIS, which is aimed at performing key Active Debris Removal (ADR) technology demonstrations to find the best way to capture the estimated 40,000 pieces of space debris that is orbiting Earth.



Surrey Satellite Technology LTD (SSTL)

In 1985, Surrey Satellite Technology Ltd was formed as a spinOFF company (from the Surrey Space Centre at the University of Surrey) to transfer the results of research into a commercial enterprise. The company grew steadily and has worked with a wide range of international customers and partners, building and launching ~70 satellites for 22 countries over the following three decades. In 2009, Airbus bought the majority shareholding from the University of Surrey. SSTL is a wholly owned subsidiary of Airbus. SSTL's innovative approach to the design, build, test and operation of spacecraft pioneered and led the small satellite industry that today has become known as "NewSpace". Based within the Surrey Research Park, and Hampshire location, SSLC has 350 employees, and boasts 1 billion in exports, with partners including the Ministry of Defence, plus partner states including Nigeria, Algeria, Thailand, China, Russia and Chile.

Stating that "diversity in the workspace is very important for creativity and innovation"(Interviews, 2020), Sir Prof Martin Sweeting, Founder and Executive Chairman of SSTL is dedicated to continued support of university-based academic research and training in Space Technology.

SSTL partners include Airbus, ESA, NASA, Telesat and Honeywell.

SSLC is a key Surrey driver, emblematic of long-standing academia-industry collaboration, high-tech innovation, which has in turn generated international collaboration, and is based in Surrey.





**Covid Challenges for Space:
Francesca Caramelle, Trade & Investment
Coordinator at EM3**

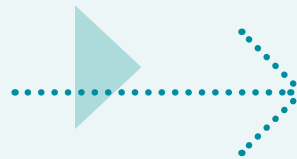
Space is a multi-dimensional industry, with subsectors reacting to and dealing with Covid-19 in different ways. Some companies within the EM3 patch saw their supply chains being completely disrupted; without being able to travel and physically meet sub-contractors, they could not finalise any outstanding product, resulting in missed deadlines, and contracts being cancelled or delayed.

On the other hand, the downstream sector proved to be very resilient and able to adapt and work remotely. Some of these companies recruited new staff members and took on new interns; they also tried to be pro-active and entrepreneurial, developing new products and ideas. However, self-employed and start-ups within the space sector faced some difficulties. This was largely because they did not qualify for any of government's support schemes.

The EM3 Space Sector counts more downstream companies than manufacturing; this is probably why Surrey's space and satellite industry is more

resilient than other parts of the UK. There are approximately 182 space organisations across the EM3 Region. Out of these, 38% are downstream – including earth observation enabled technologies, telecommunications, GPS & Navigation Systems. 42% of the sector is made up of support organisations, including research centres, academic institutions, consultancies – either engineering, technology. 17% of the sector is high-value manufacturing and includes players like Airbus and BAE Systems. The EM3 region is not particularly strong in upstream, representing only 3% of the overall industry.

Brexit will probably affect space. According to a recent London School of Economics report (De Lyon & Dhingra, LSE, 2020), sectors that have not been heavily affected by the pandemic are likely to be threatened by Brexit. Rather than working on physical products, companies in the EM3 space sector could instead rely entirely on satellite data sets, providing services to partners and the public around the world.





Royal Holloway

Royal Holloway, University Of London (RHUL) | Based in Egham, Surrey, Royal Holloway was formed from two Colleges, founded by two social pioneers, Elizabeth Jesser Reid and Thomas Holloway. They were among the first places in Britain where women could access higher education. Bedford College, in London, opened its doors in 1849, and Royal Holloway College's stunning Founder's Building was unveiled by Queen Victoria in 1886 – it remains the focal point of the campus. In 1900, both colleges became part of the University of London and, in 1985, they merged to form what is now known as Royal Holloway. The campus is frequently named as one of the most beautiful campuses in the world; with numerous teaching and study spaces, bars and cafés, high-quality accommodation, and sports facilities,. The campus is just 40 minutes by train from central London, and seven miles from Heathrow Airport. RHUL also has a central London base at Bedford Square in Bloomsbury.

Key Stats

- **10,593 students (of which 8,481 are from the UK or European Union and 2,086 are international)**
- **1,772 members of staff**
- **£481.2 million contributed to UK economy (1.5%), including £60.7 million overseas income attracted to the UK**
- **£167 million benefitting the Borough of Runnymede, including 3,400 jobs**
- **£221 million benefitting the Surrey, including 4,462 jobs**
- **c. £58.5 million: RHUL employee spend in the UK, £7.1 million within the Borough of Runnymede**
- **£4.1 million worth of contracts to local companies in Surrey and Runnymede**

Paul Hogg (Professor of Materials Engineering) and **Mark Pearson** (Head of Knowledge Exchange and Enterprise, Research and Innovation, Royal Holloway, University of London)



Royal Holloway is a key driver across many areas, particularly that of information security, machine learning, quantum physics and digitalisation. Cyber security, entailing the protection of data from theft, damage or disruption, is arguably the single largest challenge for the world's growing digital economy and an area seen by RHUL as vital. The overall value of the UK cyber security market has been estimated by the UK government (BEIS) as £2.8 billion. With its world-leading

Msc in Information Security, its Information Security Group (see below), a GCHQ/EPSC recognised Academic Centre of Excellence for Cyber Security Research, and Doctoral Training Centre for Cyber Security, RHUL is strongly placed to lead both Surrey and the UK in cyber security research and market developments, as well pushing collaboration in the area of quantum technology.

Information Security Group (ISG)

Founded in 1990, ISG is a GCHQ/EPSC recognised Academic Centre of Excellence for Cyber Security Research (ACE-CSR). It is one of the largest groups of its type in the world. It hosts one of only two UK, National Cyber Security Centre (NCSC) supported Centres for Doctoral Training in Cyber Security (CDT), and its MSc in Information Security is recognised by GCHQ/NCSC. ISG research areas include, conventional and post-quantum cryptography; computer and software systems security; IoT and vehicular security; critical infrastructure security and testing; human aspects and privacy; smart cards, smartphone, hardware and embedded systems security; network, communications, access and cloud security; blockchain and big-data integrity and privacy (Innovation South, 2017)

ISG research facilities include the Smart Card and Internet of Things (IoT) Security Centre, founded in 2002 with support from Giesecke & Devrient, and Vodafone, which researches into security issues associated with smart cards, mobile devices, RFID, near field communication and general embedded/ implementation systems (Innovation South, 2017:21). The Systems Security Research Lab (S2RL) researches into novel techniques and community tools to protect systems from a broad range of threats, particularly from malicious software. S2RL has received support from EPSRC, Intel and EUFP7 (Innovation South, 2017:21).

The ISG also works with many industry partners and governments on sponsored research and consultancy, for example a recent project with GE Aviation to identify security requirements for wireless avionics, and an

interdisciplinary project sponsored by GSK to investigate why employees click on phishing links (Innovation South, 2017:21).

Surrey Drivers: Driven by key expertise in cyber security at RHUL, with key connections to regional and national universities, this innovation centre combines much of the upcoming industry-based requirements in both 5G, AI and cyber security. Funded in part by EM3, it provides a uniquely collaborative space for academia and industry while ensuring students are involved. Key intra-university specialisms here include data analytics, the demand for which is now enormous, but “industry itself is largely unready in terms of the data analytic skillsets they need” (July 2020 Interview), representing another key opportunity to produce Surrey-specific graduates specialising in this area, and the centre itself as a key county-based hub for both research and collaboration. Two options exist: early-career graduates, as well as offering mid-career ‘up-skilling options’ (e.g. executive/corporate masters).

RHUL Cyber Security: In 2019, Royal Holloway joined five universities from the UK, the United States and Japan to establish a new consortium to tackle the growing international challenges facing cyber security experts in our increasingly connected world (Royal Holloway, 2019). The International Cybersecurity Centre of Excellence (INCS-CoE) will serve as a hub for international cyber security research, advocacy, and education, helping governments develop global cyber security standards, conduct research to stay ahead of evolving threats, help train students to handle the cyber security challenges of the future (Royal Holloway, 2019).



Covid and ISG: Professor Keith Martin, Information Security, RHUL

The biggest impact will be the dramatic reduction in research capacity, given that a huge amount of focus will be spent on teaching and student experience. The other main effects are not exclusive to the ISG and reflect the effect of lockdown on the university, with changes to assessments and administrative adjustments, making it a hugely disruptive period. In terms of actual cyber security research more broadly, the issues that we are trying to tackle are largely the same, but they have become more pervasive where people are relying much more upon technology. Importantly, another key impact of the pandemic on the cyber space that is highly relevant is to do with usability – are people staying happy and healthy using technology all day rather than face-to-face interactions?

SuperFab @ RHUL: Nano Fabrication Facility

Royal Holloway's Department of Physics includes established world-leading expertise in superconducting nanophysics and nanotechnology. In recognition of this, the team were awarded funding for the creation of a new UK Centre for Superconducting and Hybrid Quantum Systems (UK-CSQS).

The UK-CSQS collaboration, with founder members Royal Holloway, the National Physical Laboratory and the Quantum Technology Centre at Lancaster University brings together the UK's most experienced and well known scientists working on superconducting quantum technologies (Superfab Website). The co-funding from the Engineering and Physical Sciences Research Council (EPSRC), NPL and JEOL, establishes Royal Holloway as the national centre for nanofabrication in the rapidly advancing field of superconducting quantum electronics.

Superfab advanced clean room and nanofabrication facilities include: JEOL JBX-8100FS, electron-beam lithography, Plassys e-beam metals deposition, Sputtering and etching, Optical lithography, Device characterisation, ISO class 5 cleanroom facility. Superconducting quantum technologies include: a Qubit foundry, Hybrid devices and sensors, Artificial quantum systems, Quantum optics, quantum limited amplifiers and quantum metrology, Materials discovery and exploitation, Cryogenic and microwave measurement expertise.

Bringing together high-tech innovation, industry-academic collaboration in an enterprise that is wholly unique to Surrey, SuperFab products include Pilot Manufacture, Low temperature Facilities mK, HyQuid Technology Qubit Foundry and Consultancy activities.

The Digital Organisation and Society (DOS) Research Centre

The Digital Organisation and Society (DOS) Research Centre is an interdisciplinary group of researchers whose work focuses on developing a critical understanding of the implications of digital technologies for work, organisations and society. Through individual and collective research, the Centre provides insights into the complex relationship between human practices and digital artefacts, and generates responsible impact through influencing the development of organisational, Governmental and global policies around the use of digital technologies. DOS' three elements include:

- **Digital technology, organization and work**
- **Digital economy and innovation**
- **Digital inequality, ethics and cyberactivism**

The Centre is hosted by Royal Holloway's School of Management, but includes members from other Schools across the College who are conducting innovative and impactful research on this topic. DOS is a key Surrey driver, bringing together a wide range of interdisciplinary research focusing on relevant and impactful areas.

Covid Impact on Digitalisation: Dr Yingqin Zheng, Co-Director of DOS



The relative resilience of digital work is indicative of the social consequences of digital discrepancies under the pandemic. The adaptability of individuals to remote working may influence both working and health-related issues affects both individual and societal wellbeing. DOS' focus on digital inclusion explores in how digital technology intersects with various dimensions of social inequalities, e.g. gender, age, class. We've seen how digital inequality separates and worsens conditions along social, economic and ethnic lines. In a pandemic, existing socio-technical discrepancies are often magnified, and diverse forms of exclusion, marginalisation and vulnerabilities emerge. As digital researchers it is important to research how digital technology transforms organisations and society, not just as 'solutions' and 'innovations', but also how it is intertwined in exacerbating social exclusion and inequalities, and how it could be used to build resilience for individuals and communities.



The Centre for Research into Sustainability (CRIS) at Royal Holloway

The Centre for Research into Sustainability (CRIS) is a multidisciplinary, international group of researchers and educators actively engaged with the understanding of social, ethical, economic and environmental

sustainability, by focusing on Gender and Social Change, Global Impact Chains, Precarious Work and Modern Slavery, and Alternative Economies. Producing world-leading research in:

- **Accounting for Sustainability**
- **Responsible Consumption**
- **Responsible Business**

Currently, CRIS members are conducting a research project that will explore the narratives and lived experiences of disabled workers during the COVID-19 pandemic.

University Of Surrey & Royal Holloway Collaboration

In-depth discussions between UniSurrey and RHUL were a number of key themes, all based on the overarching importance of synergistic partnerships. Both HEIs cooperate on a wide and exciting range of areas, regarding each other as natural counterpart in disciplinary and regional terms. UniSurrey and RHUL collaborations thus demonstrate the following characteristics:

- **Complementarity:** between disciplines, research, contacts, etc. For example, UniSurrey has access to RHUL's world leading MRI facilities which enables collection of structural MRI, including Diffusion Tensor Imaging (DTI), functional MRI (fMRI), Magnetic Resonance Spectroscopy (MRS) as well as Arterial Spin Labelling (ASL).
- **Uniqueness:** areas that define them as competitively distinct (e.g. cyber security, AI, 5G, healthcare, etc.)
- **Infrastructure Compatibility:** hardware and software synchronicity, e.g. 'living labs' projects.
- **Highly Educated Workforce:** boosting the level of potential staff/researcher interactions, ensuring a continuing output of high-quality excellent motivated and industry ready students to meet the skills needs of the County.

Advanced Digitisation: both HEIs possess and collaborate on distinct, co-owned 'Surrey specialisms'

in the area of advanced and developing digitisation. The combined result is a county-based potential to produce and enhance work on a range of digitised products and services, including digital citizens, digital students as well as contributing to the UK's overall digital strengths.

The University of Surrey is known as a leader in the development of 5G communication technology which is vital if business is to develop safe autonomous systems, implement industry 4.0 supply chain connectivity, develop smart towns and cities and enable future AI-based digital health care systems. High speed, reliable communication networks will however never reach their potential if they are not secure from cyber-attack and Royal Holloway has been an acknowledged research leader in cyber security, with expertise in the development and application of encryption, protocols, malware protection and post quantum cryptography. Both universities are simultaneously developing expertise in machine learning and artificial intelligence and developing multi-disciplinary teams to support the emerging new industries in creative digital technologies and gaming. The combined resources of the two universities provide regional industry with an unparalleled opportunity for accessing the expertise, guidance and training needed to develop and implement the next industrial revolution.

AI & Machine Learning

The University of Surrey has an impressive history of research into machine learning, the most recent of which have been the rapid developments in the area of AI. AI industries are intriguingly cross-sectoral and

cross-disciplinary, encompassing digital healthcare, aerospace and gaming to name but a few. The impact has been one of “pivoting of AI Research in Surrey towards development and testing” as well as “real-world applications including data, dementia care” (Interview, August 2020). AI development presently relies upon proximity to London, so unlike other areas, “being regional isn’t the remit”. Despite much funding, public and private, London as well as a desire to “partner with the best” are presently driving AI developments in Surrey. Equally, research indicated a real preponderance of regional specificity to Surrey-based AI developments, based on high-tech skills and innovation emerging from the two universities as well as other local companies. In terms of building a more comprehensive AI@Surrey brand, enhanced partnerships with LEPs, the Chambers of Commerce and local/national government were all suggested by interviewees as methods of effectively underwriting the costs of continued research and innovation, identifying new growth areas of AI-based skills, and industry-based needs (e.g. in new AI-specific courses and training) to produce AI-literate graduates and AI-aware citizens.

UniSurrey Case Study: Centre for Vision, Speech and Signal Processing (CVSSP)

CVSSP is a flagship research centre at the University of Surrey, within the Faculty of Engineering and Physical Sciences. Founded in 1986 by Prof. Josef Kittler it aims to advance the state of the art in audio-visual AI, multimedia signal processing and computer vision, with a focus on image, video and audio applications.

- One of the largest research centres in the UK focusing on audio and visual AI
- Expertise: computer vision, digital signal processing, machine learning and artificial intelligence, computer graphics, robotics, human computer interaction, medical image analysis and multimedia communication.
- Currently ranks 1st in the UK, 3rd in Europe and 11th in the world in Computer Vision (CSRankings)
- Track-record of world-leading advances in audio and visual AI leading successful to ground-breaking technologies with UK industry
- Director: Professor Adrian Hilton
- Over 170 members comprising academic and support staff, postdoctoral research fellows, visitors and PhD students
- Research income: in excess of £26m (EPSRC, InnovateUK, EU, industry and charities)

Professor Mark Plumbley

Head of School of Computer Science and Electronic Engineering, Professor of Signal Processing, University of Surrey



Regionally, CVSSP has strong links with the University of Southampton, particularly in the field of spatial audio work, where it has collaborated on a 5-year programme, along with the BBC (www.s3a-spatialaudio.org).

The partnership aims to unlock the creative potential of 3D sound to provide immersive experiences to the general public at home or on the move. S3A has pioneered a radical new listener centred approach to 3D sound production that can dynamically adapt to the listeners’ environment and location to create a sense of immersion. CVSSP is undoubtedly a key Surrey driver, encompassing high quality academia – industry, and public-private collaboration, cross-sectoral impact, cutting edge hi-tech innovation.

CVSSP Partners/Collaborators include the BBC, HomeOffice, NHS, Adobe, Samsung, HP, Sony, Foundry, Figment, Parkopedia



Covid Challenges and AI Research: Professor Adrian Hilton, Director of CVSSP

The wider impact of the pandemic is primarily around investment and the mechanisms to support research available with companies; restricted company budgets have an immediate knock-on effect. Computational research, in terms of driving new technologies, is less disrupted. However, engagement with industry is becoming more difficult. A particular area of concern is PhD funding for research in collaboration with industry to ensure that our research addresses long-term business challenges. This relies on match-funding commitments from companies which has become increasingly challenging to secure with both SMEs and major corporations. There is an increased demand for advanced PhD level skills in AI from industry, but a reduction in the potential for industry to support the

training and research. Sectors such as the creative industries, where production has been on hold during the lock-down, have strong demand for technologies which increase efficiency in content production such as virtual production and intelligent toolsets. The increase in demand has out-stripped available funding resulting in reduced success rates. AI needs highly skilled individuals and currently this demand outstrips supply.

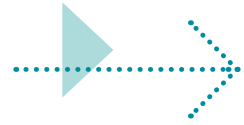
Training people is the major way in which we can drive the UK's AI industry, to prevent the loss of capacity both to large MNC's (Google, Amazon, Facebook etc). Without highly qualified AI personnel, the UK won't be able to meet the demand to supply skills into industry to drive innovation, or academia to drive research, and this will limit the UK's ability to lead the technological transformation of AI across all sectors for the benefit of society and the economy.

Brexit may also affect AI. In Europe we are one of the major players within the sector and there is still a European desire to work with the UK. The current expectation is that we will become more like Switzerland with EU collaborative projects directly funded by the UK government. AI research is international, and if our close international linkage with Europe reduces this will lead to a skills and knowledge deficit for the UK.

Machine Learning @ RHUL

Royal Holloway's Department of Computer Science is one of the UK's leading centres for research into algorithms and complexity, distributed and global computing, machine learning, and software language engineering. The Department offers a range of innovative research outputs from cloud physical infrastructure and middleware through to machine learning-based data analytics and AI, which has been generating many collaborations with industry and organisations; an example of which is the partnership with **Centrica** established in 2013. Since its creation in the 1990s, the Department has developed both fundamental theory and practical algorithms that have fed into the analytics methods and techniques that are in use today – for example, several patents granted to **Google** and other companies cite Royal Holloway publications (Innovation South, 2017:22).

Further examples of industrial applications include automated target identification (with QinetQ), fault diagnosis (with Marconi Instruments/FRI), biomarker discovery (with CIPHERGEN Biosystems), anomaly detection (with Thales UK), missing values and imputation (with Office for National Statistics), abdominal pain treatment (with Western General Hospital, Edinburgh), smart meter analysis (with British Gas). More recently, strong collaborations have also been established with **Facebook, Google, IBM and NASA** in areas such as concurrency control, large-scale and cloud-based systems, cognitive and autonomous agents, and automated planning, scheduling and domain-independent search control with applications in surveillance operations, disaster response missions, and space operations (Innovation South, 2017:22).



University for the Creative Arts

With particular educational and research expertise in, for example, Business for the Creative Industries, Fashion, Design, and Creative/Digital Technologies, Games/Animation/Film/Virtual and Special Effects, and exceptional technical facilities and resources, the University provides confident, talented and diverse graduates to the creative industries world-wide, a sector worth £112 billion gross value added to the UK economy

annually. University for the Creative Arts' (UCA) expertise in creative technologies - video games design and technology, film and animation, virtual and special effects, virtual and augmented reality - is world-class. The video games sector alone accounts for more than half of the UK's entire entertainment market and is worth £3.86 billion to the UK economy (Creative Industries Federation).

Key Stats

- **UK's No.1 Specialist Creative University**
- **UCA drives economic growth in the region by attracting around 7,000 home and international students per annum**
- **UCA directly employs c. 800 establishment staff and many sessional and visiting discipline experts.**
- **Regional collaborations; UCA partners with Royal Holloway on the three-year AHRC Creative Industries Cluster. Its core project -**

Story Futures – brings together HEIs and world-leading creative and technologies companies (including regional SMEs) SMEs to tackle the challenge of next generation story-telling, harnessing technologies including augmented, virtual, mixed and cross reality (AR, VR, MR, XR), smart devices and artificial intelligence to engage audiences in new experiences.

Business School for the Creative Arts

The UCA Business School for the Creative Industries (based at Epsom) is the first of its kind in the UK. This exciting expansion of a creative portfolio builds on the university's long tradition of collaborating with employers to cultivate leadership, entrepreneurial and strategic planning skills. Business School courses combine creative development with business approaches, allowing students to develop the innovative, high-level professional understanding needed to embrace the specialised leadership challenges and opportunities within the creative industries. Student learning is problem-based and commercial, combining theory and research with high-level practical skills. UCA alumni work in marketing, advertising, copywriting, buying, art directing, PR and more, with graduates employed by global brands including Marks & Spencer and Volkswagen.



The Centre for Sustainable Design (CfSD) at UCA

The Centre for Sustainable Design was established in 1995 at UCA Farnham and is led by Martin Charter, Professor of Innovation and Sustainability. The Centre has undertaken a wide range of international, national and regional research and knowledge transfer activities related to sustainability, innovation and design www.cfsd.org.uk/research. Current research interests include grassroots innovation and the emergence of community-centred workshops, Circular Economy, eco-innovation and SMEs and the development of localised innovation solutions utilising materials from



waste plastic fishing nets and ropes based in North Atlantic fishing communities www.circularocean.eu

UCA is a key Surrey driver, encompassing unique modes of academia – industry collaboration, across a wide range of high-quality technological and creative outputs entailing multi-sectoral GVA, as well as being unique to Surrey.

Covid Challenge: Professor Catherine Harper, Deputy Vice-Chancellor, University for the Creative Arts

Although public-facing creative industries have been some of the hardest hit during the pandemic, Deputy Vice-Chancellor of University for the Creative Arts (UCA), Professor Catherine Harper states that the sector 'is buoyant' both because of its innate ability to 'apply creative thinking to form solutions to societal problems' and because of enormous appetite for its products and interventions. She notes that 'we need now to look forward', which is exactly what UCA is doing: the university has geared up to support students through the pandemic by giving them the best experience possible.

Catherine noted that "UCA professors and lecturers saw some of the most creative work emerge and UCA's online graduate showcase provides us with compelling proof that creatives flourish under extreme



circumstances". UCA has further demonstrated its value by contributing directly to help in the pandemic: students and staff have variously produced PPE (masks, scrubs and also 3D printed components for face shields, face visors and ventilator parts for the NHS) volunteered in care provision, responded to the need for building safety plans as well as designing post-Covid built environment solutions for 'sanitised living'. Creative technologies or 'CreaTech', one of UCA's areas of significant research and practice expertise, is growing ten times faster than the sector average and could account for nearly 40% of employment in the sector by 2030. The public, business and industry response to technologies during the pandemic – seen in the growth of automation, cloud computing, smart sensors, online consumer/audience behaviour, gaming and digital entertainment – amply demonstrates how mainstreaming, embedding, applying, adapting and monetising digital technologies is now central to the 'new normal'.

Surrey's Regional Research Networks

SETsquared is a unique enterprise partnership and a dynamic collaboration between the five-leading research-led UK universities of Bath, Bristol, Exeter, Southampton and Surrey. SETsquared operates five Business Acceleration Centres, adjacent to each university's campus. The aims of the SETsquared Partnership are:

- To accelerate the growth of high-tech start-up companies through the five business incubation centres;
- To develop the entrepreneurial talents of students at the five partner Universities;
- To help academic researchers realise the commercial impact of their work.

Ranked as the Global No. 1 Business Incubator, SETsquared provides a wide range of highly acclaimed support programmes to help turn ideas into thriving businesses. Since launching in 2002, SETsquared has supported over 4,000 entrepreneurs helping them raise £1.8 billion from investment opportunities. Independent research carried out by Warwick Economics has estimated the economic impact of SETsquared-supported companies to £8.6 billion, with the creation of 20,000 jobs, by 2030 this is set to grow to £26.9 billion.

SETsquared Case Study: Liquid Vision

Liquid Vision Innovation specialise in scientific product design and development, chemical analysis, and optical sensor technology. With expertise spanning a range of scientific and engineering disciplines, it offers a unique consultancy service. Liquid Vision is developing the next generation of optical sensors suitable for in-situ deployment in distributed networks. Their applications areas span a range of industries, including environmental monitoring, industrial process control, and food and drink. In July 2017 Liquid Vision Innovation was awarded 12-month EDRF incubation support for virtual membership of SETsquared Surrey. Shortly after, the company was awarded Innovate UK/ERDF support for business mentoring through innovate2succeed. Liquid Vision has recently received Horizon 2020 funding through the INCluSilver project to do a more detailed investigation on the polyphenol content of extra virgin olive oil, with a focus on healthy ageing and personalised nutrition.

SETsquared & Covid: Caroline Fleming, Centre Director of SETsquared Surrey and Interim Co-Director of Innovation Strategy, Head of Incubation and Enterprise



SETsquared: the importance of Surrey partnerships

Throughout this period, I have been in regular contact with Enterprise EM3 LEP, Guildford Borough Council, as well as other business support groups like Surrey Chambers, FSBs, British business bank, British business Angels Association, and Centre for Entrepreneurs, sharing intelligence on how our members are affected and supporting them to lobby government for support. Initially we were lobbying for all businesses to get access to the grant that were initially only for those that pay business rates. This has not yet come about, but the increase in fast access grants has filled much of this gap. Digital business solution providers span many sectors and many were affected by the retail, leisure and tourism closures, but were themselves not able to access the support. These companies have seen their pipeline of sales dry up as businesses can no longer afford subscriptions to the digital service, or no longer have a strong enough customer base. We are supporting them to uncover free but effective solutions or Covid specific solutions to retain the customer base that should hopefully then rebuild in the coming months.

Surrey's Regional Research Networks

SEPnet The South-East Physics Network, or SEPnet, is an association of physics departments at universities in the South-East of England. Its partners include Queen Mary, Royal Holloway, the University of Southampton, the University of Surrey, the University of Sussex, the University of Hertfordshire, the University of Kent, the Open University and the University of Portsmouth. Associates include the University of Oxford, the University of Reading, and Rutherford Appleton Laboratory. SEPnet was founded to provide support to hard sciences departments in danger of closure, as well as physics students with little or no opportunity to connect with industry; this has now expanded to include maths students. All SEPnet universities offer eight-week, employer-funded or joint-funded paid summer placements to second and third year undergraduates which are taken up by 75 students per year in the summer.

SEPnet is a world-beating example of bringing together industry and university-based research and innovation, granting students placement-based opportunities to get vital, industry-based experience. Students with such experience are at an advantage in the jobs market, not just through gaining technical skills in practice but also in terms of networking, interpersonal skills and an awareness of what opportunities are available to them. This is particularly critical for physics students, with employers reporting the need for enhanced practical skills including complex problem-solving, complex numerical and statistical, role-specific and high-level communication skills (Benson, SEPnet, 2020).



Alcis adds a complimentary layer to Surrey's 5G and AI specialisms. As a Geographic Information Service provider, **Alcis is one of five global companies who provide this service to the UN, and the only UK supplier.** This makes Alcis extremely unique to Surrey and a clear strategic driver for the country as a whole. Alcis uses commercial satellite imagery to understand when and where events on the ground have taken place, and where change is occurring, in areas that are inaccessible to humanitarian workers. Using Earth Observation (EO), Alcis is able to identify and quantify objects without having to go to the location on the ground to see them¹. Using tools like Alcis Collect, comprehensive data can be collected and entered directly into information systems, from mobile phones, removing the risk of human error. Using geographic data analysis, surveys can be planned to ensure they capture the actual beneficiaries, or a broad spectrum of respondents, so avoiding human bias that can creep in, particularly in complex operating environments.

¹ EO is the practice of collecting data about earth from space, covering sensors and systems predominantly found in satellites, but also in aircraft or other aerial platforms.



Covid Impact: Richard Brittan, Alcis Managing Director

In relation to Covid, Alcis is conducting a number of projects to support better understanding of the direct and indirect effects of the pandemic. Alcis is currently maintaining a public Covid dashboard of key indicator data for Afghanistan, in English and Dari, for laptops and mobile devices. We are also supporting UNICEF with the building of information management tools and delivering capacity development to a number of UNICEF Country Offices in Latin America and Africa. These tools are designed to support the collection of data by UNICEF Country Offices around their respective Humanitarian Action for Children covering Covid, migration as well as Nutrition, Water, Sanitation And Hygiene (WASH), Shelter, Health and Education. The work conducted by Alcis around the direct and indirect impact of Covid on the heroin trade in Afghanistan is far-reaching and global in its impact (see When the Water Runs Dry at <https://www.alcis.org/our-work>). With between 260,000-300,000 heroin users in the UK alone, understanding and monitoring the fluctuations in the sale of the Class-A drugs is critical to efforts to dismantle it (Rowlatt, BBC, 2020).



Knowledge Cluster Challenge: Closing Surrey's Attainment Gap

Surrey is not a county that is typically associated with poverty. However, research from The Community Foundation For Surrey reveals many pockets of high need communities experiencing poverty, often adjacent to areas of high prosperity (Surrey Uncovered, 2017:9). In some local neighbourhoods, income deprivation affecting children is as high as 41%. Approximately 27,000 children and young people, over 10% of the 0-19 population, live in poverty in Surrey (Surrey Uncovered, 2017:6).

Deprivation often leads to a poverty of aspiration and opportunity resulting in a continuing cycle of overall poverty. For those children receiving free school meals, achievement of 5+ A-C GCSE grades halves compared to all state funded pupils. Children from economically deprived backgrounds have significantly more educational and mental health problems and poorer social and work outcomes (Surrey Uncovered, 2017:9). In 17 local neighbourhoods in Surrey, 30% or over of children live in poverty (Surrey Uncovered, 2017:8)

Covid Challenges: Currently, disadvantaged students are thought to be around 18 months behind their advantaged peers. This means that it will take an additional 18 months for a young person from a disadvantaged background to be at the same level academically as their advantaged colleagues.

The impact of the pandemic on disadvantaged children will exacerbate these problems and likely increase the gap significantly.

“We need recognition of these students – it has taken a pandemic to really see the disparity between the haves and the have-nots. It's systematic, at every level of education. The education disadvantage gap starts when children are conceived.”

Hollie Baker, Deputy Head of Widening Participation and Outreach at University of Surrey



► QUANTITATIVE ANALYSIS ◀

Surrey has a higher than average **proportion of the workforce** employed in the education sector, broadly balanced between both East and West Surrey, and the spread of the EM3 and C2C. LEPs, although more than double the number of **knowledge-based businesses** in the county are based in the west of the county. With 1,125 knowledge-based businesses situated in Surrey alone, the education sector represents a key dimension of the Surrey economy.

	UK	England	Surrey	East Surrey	West Surrey	C2C	EM3
% workforce employment in Education 2018	8.5	8.6	9.1	8.9	9.2	9.3	8.8
Total business counts in Education 2019	44,490	40,460	1,125	360	760	1,735	1,415
Education GVA Current Prices 2018	109,118	94,706	2,271	675	1,596	3,530	2,825

Source: ONS BRES, UK Business Counts, GVA

Knowledge Employment Base

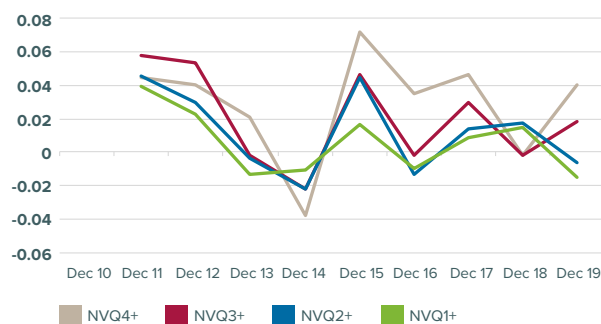
Surrey has a highly educated labour force compared to the national average. Upper-band National Vocational Qualifications (NVQ) has been driving the growth in employment in the last few years. One of the main components of Surrey's robust knowledge-based economy is therefore employees with NVQ3+ or NVQ4+ education.

Percentage of Employment by Education Level (Aged 16-64, December APS)

Area	NVQ4+	% with NVQ3+	% with NVQ2+	% with NVQ1+	% with other qualifications (NVQ)	% with no qualifications (NVQ)
United Kingdom	40.2	58.4	75.6	85.5	6.6	7.9
Surrey	51.8	67.7	82.3	89.9	5.1	5.0
East Surrey	53.6	70.5	85.1	91.5	3.3	5.2
West Surrey	51.0	66.3	80.9	89.1	6.0	4.9
Coast to Capital	46.6	64.7	80.7	89.3	5.1	5.6
Enterprise M3	49.0	66.2	82.4	90.8	4.9	4.3

Source: ONS APS

Surrey Employment Growth by NVQ

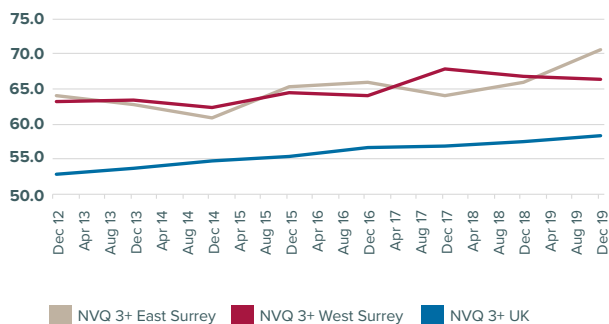


Source: ONS APS

Skilled Employees

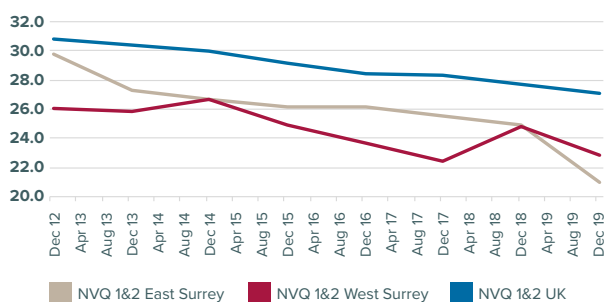
As expected from a knowledge-based economy, good proportions of Surrey's population is employed in executive-level occupations, including managers, directors and senior officials (16.1%), as well as professional occupations (26.9%) and technical occupations (19.8%). As indicated in the table below, these patterns are common across both East Surrey and West Surrey, and together remain above the UK. Equally however, this range and proportion of employment are more strongly represented in the EM3 LEP area than C2C, which may indicate a need to ensure responsiveness to the cluster's regional needs.

Employment Share - High Skilled (% NVQ 3 & 4)



Source: ONS APS

Employment Share - Low Skilled (% NVQ 3 & 4)



Source: ONS APS

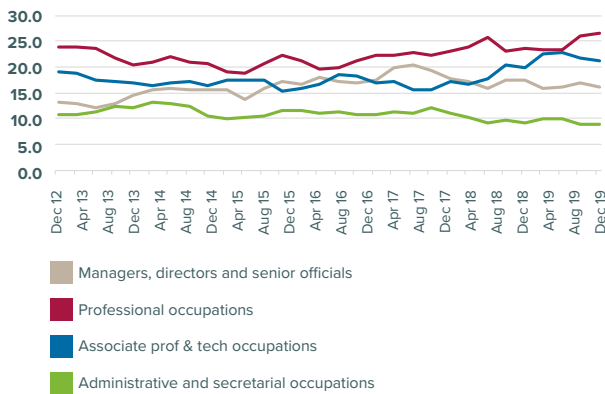
Percentage of Employment by Occupation (SOC2010)

	UK	Surrey	East Surrey	West Surrey	C2C	EM3
Managers, directors and senior officials	11.5	16.2	16.1	16.2	13.3	15.6
Professional occupations	21.5	26.9	26.5	27.2	23.8	25.5
Associate prof & tech occupations	14.6	19.8	21.2	19.1	17.5	18.2
Administrative and secretarial occupations	9.7	9.0	9.0	8.9	10.2	9.2
Skilled trades occupations	10.0	6.3	6.0	6.5	7.9	7.6
Caring, leisure and other service occupations	9.0	8.5	8.1	8.7	8.3	8.7
Sales and customer service occupations	7.1	4.4	4.0	4.6	7.1	5.0
Process, plant and machine operatives	6.1	2.8	2.3	3.1	3.7	3.6
Elementary occupations	10.2	5.6	6.0	5.4	7.5	6.3

Source: ONS APS (latest Apr 2019-Mar 2020)

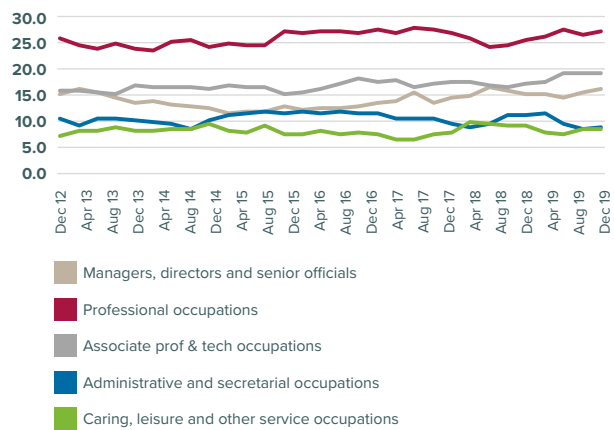
Compared to lower skill occupations, higher skill occupations represent a stable and consistent force of employment across the county. Both East Surrey and West Surrey have seen increases in the weight of high-skilled occupations over time, while low-skill occupations as a whole have remained little unchanged.

East Surrey - High Skill Occupations



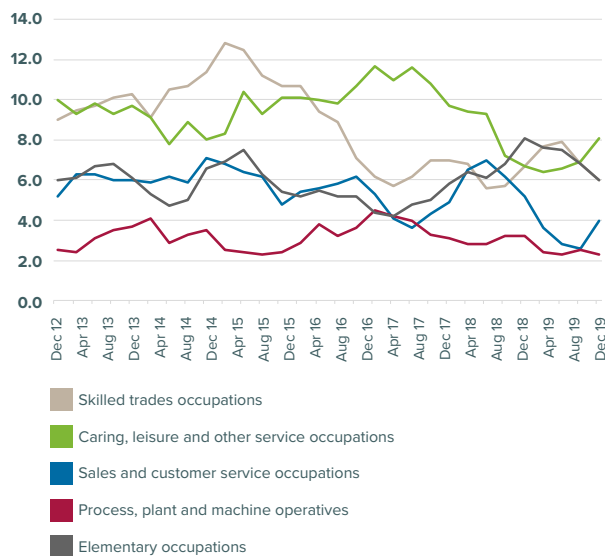
Source: ONS APS

West Surrey - High Skill Occupations



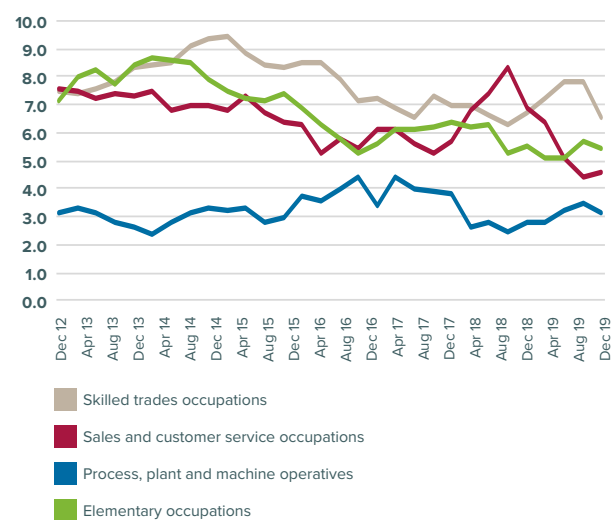
Source: ONS APS

East Surrey - Lower Skill Occupations



Source: ONS APS

West Surrey - Lower Skill Occupations



Source: ONS APS

R&D Expenditure

The Southeast region represents the highest levels of both government spending, and UKRI R&D spending across England, Scotland and Wales, revealing both the region's competitive profile but a potential dependency that could translate into post-Covid economic regional vulnerabilities. Although business spending on R&D remains high compared to much of the UK (including London), and despite the quality of the knowledge cluster embodied by Surrey itself, the Southeast is however being gradually outpaced in overall R&D expenditure by the East of England.

Country and Regional Breakdown of Expenditure on R&D in the UK: BySector of Performance, 2018

Current prices	Sector performing the R&D				£ million
	Government & UKRI ^{1, 5}	Higher Education ²	Business ³	Private Non-Profit ^{4, 5}	
United Kingdom	2,460	8,740	25,048	823	37,072
North East ⁵	..	250	443	..	780
North West ⁵	..	749	2,031	..	2,950
North East and North West ⁵	211	999	2,474	46	3,730
Yorkshire and the Humber	120	597	921	3	1,641
East Midlands	90	348	1,769	2	2,209
West Midlands	74	455	2,744	12	3,285
East of England	279	927	5,141	251	6,598
London	569	2,058	2,906	353	5,886
South East	643	1,262	5,031	93	7,029
South West	262	452	1,752	17	2,483
England	2,249	7,098	22,738	777	32,862
Wales	14	342	430	-	786
Scotland	181	1,126	1,356	43	2,706
Northern Ireland	17	174	524	-	715

Source: Office for National Statistics

Across the two LEPs covering the region, higher education spending on research and development is uneven, and below the cross-LEP national average. However, a key asset for Surrey's knowledge cluster is the sustained integration of a range of innovative industries, illustrating good trends of academic-industry partnership in key, driver-like areas, including space, information communication technology, digital services and high-value manufacturing. Business enterprise's own spending on research and development thus far outstrips the national LEP average in the EM3 area, with Innovate UK grants again rewarding the area's distinct strengths in space, materials and manufacturing, and digital services.

EM3

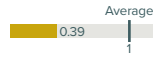
C2C

Research And Higher Education

Higher Education
Spending on R&D
(HERD)¹



Higher Education
Spending on R&D
(HERD)¹



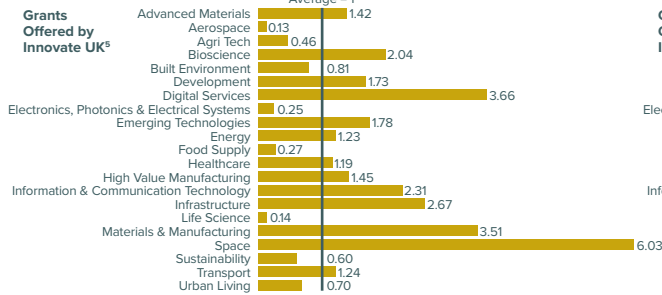
Source: Smart Specialisation Hub

Innovation In Knowledge And Business

Business Enterprise
Spending on R&D
(HERD)²

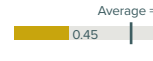


Grants
Offered by
Innovate UK³

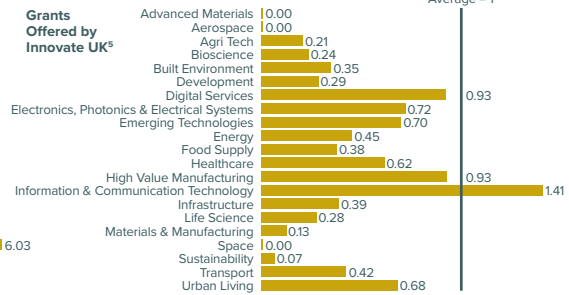


3. Figures are from Scopus, 2015-2017. London is excluded due to the high concentration of universities. Benchmarking is relative to the highest LEP, with London excluded.

Business Enterprise
Spending on R&D
(HERD)²

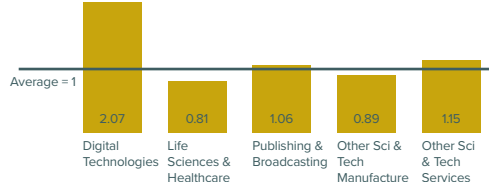


Grants
Offered by
Innovate UK³



5. Figures are for March 2014 to March 2018 and were extracted on 22nd March 2018 from Innovate UK's Website.

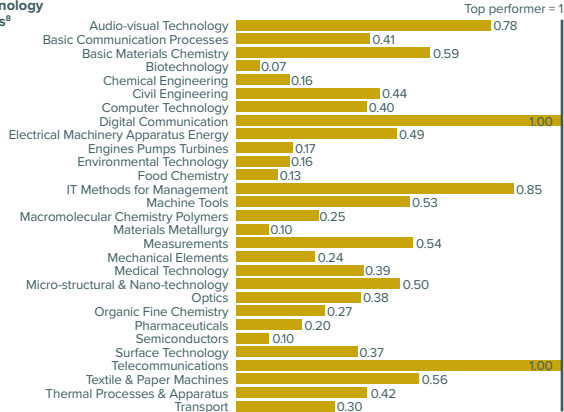
Employment
by Science &
Technology
Category⁴



Number of
Innovation Active
Firms⁷



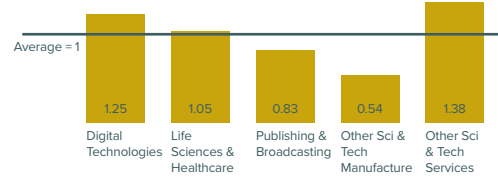
Number of
Inventors on
Patents Across
Various
Technology
Areas⁶



6. Figures are extracted from the Inter Departmental Business Register by ONS for 2016.

7. Figures are based on special tabulation from UKCIS 2017 using Secure Research Services.

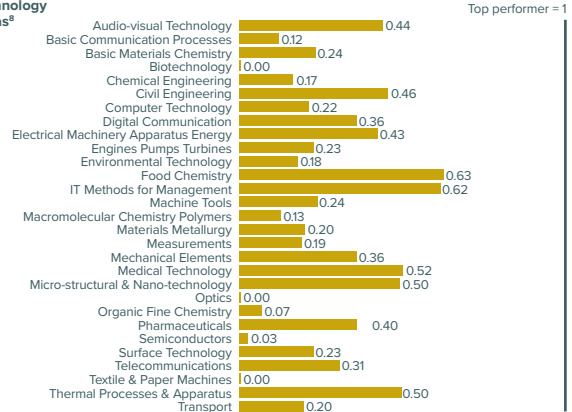
Employment
by Science &
Technology
Category⁴



Number of
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Firms⁷



Number of
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Various
Technology
Areas⁶

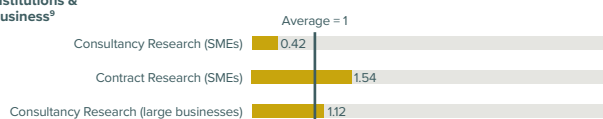


8. Figures are from IPO for 2015-2017. Benchmarking is relative to the highest LEP, with London excluded. London is excluded from the Figure due to patents being registered with HQ in London.

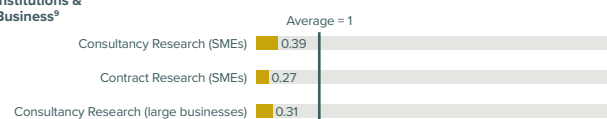
Source: Smart Specialisation Hub

Research And Business Interaction In Innovation

Interactions
Between HE
Institutions &
Business⁸



Interactions
Between HE
Institutions &
Business⁸



Source: Smart Specialisation Hub

Both LEPs are also host to innovative patents for inventors in areas which reflect the region's key strengths in telecommunications, information technology and digital communication. While higher education institutions do interact with business in both LEP areas, there is considerable scope for an increase- particularly in engaging SMEs - with resultant benefits for both parties.

Impact of Covid on the Knowledge Economy

Covid has had an uneven impact on Surrey's knowledge economy. To some extent, the full sense of the potential drop-off in terms of students, student fees, as well as corollary areas of income (e.g. accommodation) will not be fully known until the autumn 2020 semester is fully underway. The change from standard in-classroom teaching to 'hybrid' models combining online learning with bespoke web-based exercises and in-classroom teaching is likely to affect both income numbers, retention numbers, as well as differentials between home, EU and international students due to ongoing quarantine restrictions and a general lack of confidence in travelling. These trends will therefore apply at some stage, and to some degree, to all three of the HEIs explored in this cluster. Equally however, on the basis of the survey undertaken for this report, Covid appears to have left some education providers largely untouched, with 80% of respondents reporting operating at full capacity (end of August). What is interesting about this trend is that the other proportion have utilised the government furlough (20%) and business schemes (25%) respectively.

60% reported Covid having no outright negative impacts on their business. Indeed to some extent, some knowledge-based enterprises see Covid-19 as an opportunity for further innovation in the year ahead. 40% see a positive way forward, possibly resulting in both wholesale pedagogic overhauls and/or increased funding in Covid or related research. As an example, some of the University of Surrey's spin-outs have won up to £50k Innovate UK funding recently (such as SAMMI-Select Ltd) since the outset of the pandemic. The University of Surrey has also distributed £250k

of UKRI Industrial Strategy Challenge funds into about 70 SMEs on the University's research park to help financially support them via a mixture of grants and equity investments. 60% of the knowledge-based businesses surveyed valued being located in Surrey due to ease of access to their customer base. 80% said that they benefitted from reliable connections to London; with a further 87% believed that they employed graduates from HEIs within Surrey.

Brexit

Regarding Brexit, knowledge-based businesses remain sanguine about the outlook after the transition period is over. 2 respondents felt that Brexit would have a negative impact on their business; 6 felt it would have a positive impact, while 7 felt it would have neither positive nor negative effect. 40% forecast positive opportunities over the next 12 months, 13% foresaw difficulties however, namely that of survival.



Sector Survey Responses

Location	Guildford	Reigate	Guildford	Chertsey	Cranleigh	Woking	Woking
Sector	Knowledge						
Has Covid-19 had an impact on your business?	No	No	Minor	No	No	Positive	No
Have you made use of the UK Government's Job Retention Scheme (furlough scheme)?	No	No	No	No	No	No	No
Have you made use of the UK Government's business support scheme	No	No	Yes	Yes	No	No	No
At what capacity would you estimate your firm is currently operating at?	100	100	100	100	100	100	100
What opportunities and challenges do you foresee in the next 12 months for your business?	Recruiting	Profitability	Growth	Survival	Supply chain	Profitability	Recruiting
Why is your business based in Surrey?	Customers	Travel	Customers	Q of Life	Customers	Prosperous	Customers
Do you anticipate Brexit to have an impact on your business?	Neither	Positive	Positive	Neither	Neither	Positive	Negative
Do you feel prepared for the end of the transition period with the European Union?	Yes	Yes	Yes	No	Yes	Yes	No
Does your firm rely on local aviation or aviation-related supply chains?	No	Yes	No	No	No	Yes	No
Do you foresee your workforce undertaking international travel in the next six months?	No	No	Yes	No	No	Yes	No
What percentage of your workforce have attended a university in the county	5	0	10	15	5	10	10
Does your business benefit from close proximity and connectivity to London?	Yes	Yes	Yes	Yes	Yes	No	Yes

Sector Survey Responses Cont.

Location	Tadworth	Dorking	Guildford	Redhill	Leatherhead	Ashted	Guildford	Woking
Sector	Knowledge							
Has Covid-19 had an impact on your business?	Minor	No	Yes, significant	No	Some	No	Some	Yes
Have you made use of the UK Government's Job Retention Scheme (furlough scheme)?	Yes	No	Yes	No	No	No	No	Yes
Have you made use of the UK Government's business support scheme	Yes	No	No	No	Yes	No	No	No
At what capacity would you estimate your firm is currently operating at?	90	100	80	100	100	100	100	95
What opportunities and challenges do you foresee in the next 12 months for your business?	Supply chain	Profitability	Growth	Survival	Profitability	Acquisitions	Growth	Supply chain
Why is your business based in Surrey?	Customers	Entrepreneurial	Customers	Customers	Customers	Q of Life	Customers	Customers
Do you anticipate Brexit to have an impact on your business?	Positive	Neither	Neither	Negative	Positive	Neither	Positive	Neither
Do you feel prepared for the end of the transition period with the European Union?	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes
Does your firm rely on local aviation or aviation-related supply chains?	No	Yes	Yes	No	No	No	Yes	No
Do you foresee your workforce undertaking international travel in the next six months?	No	No	No	Yes	No	No	Yes	Yes
What percentage of your workforce have attended a university in the county	0	5	10	10	5	5	10	10
Does your business benefit from close proximity and connectivity to London?	No	Yes	Yes	Yes	No	Yes	Yes	Yes





AVIATION



Aviation Introduction

Surrey, and the United Kingdom more broadly, faces an uphill climb to return to its pre-Covid growth levels. As of autumn 2020, the UK continues to battle with the economic fallout of national lockdown combined with a variety of restrictive measures to address the very real public health concerns. Yet, as the Government's Job Retention Scheme (CJRS) begins to wind down, and job redundancies start to mount, there is no single sector within the British economy as exposed as aviation. Aviation has in recent decades dealt with acute short- and long-term stress points, from the disruptive 2010 eruption of the Icelandic Eyjafjallajökull volcano through to the seismic shifts caused by the September 11th terrorist attacks in New York, to longer-term concerns over climate change and achieving net zero climate emission targets in the coming years.

Yet, no forecast model, no expert or analyst, no civil servant or government minister, nor even a medical official would have been able to predict the sheer scale of the impact that the Covid-19 pandemic could have caused to aviation across the globe. For arguably the first time in the post-war world, nations have imposed stringent border controls, including the shutting down of immigration from non-nationals in some instances. As a result, it has been harder to travel in 2020 than at any stage in the last century, with the demand for aviation plummeting.

During the month of April 2020 for instance, UK passenger numbers were down 97% compared to April 2019. For the month of July, Heathrow Airport operated at 20% capacity compared to the previous year. As of September, UK arrivals from 67 separate countries are now considered exempt from a mandatory 14 day

quarantine, ensuring that arrivals from 140+ nations and territories are subjected to it on arrival. As the data indicates, this drop-in demand has been catastrophic, and the scale of job losses announced in aviation have been more pronounced than any other sector in the British economy. Virgin Atlantic has reduced their pre-Covid staff by approximately 40%, while Gatwick Airport has announced consultations on job losses that are likely to total 1,350 through a combination of voluntary and involuntary redundancies from a pre-Covid level of 3,200. Heathrow Airport has announced intentions to change the terms of up to 4,700 employees contracts with pay cuts in the region of 15-20%.

Surrey has always considered it a comparative advantage to have the two largest airports in the UK, within the outer boundaries of the county. In Heathrow, it has Europe's largest airport and a notable base for global travel. In Gatwick, it has diverse point to point services across Europe and, pre-Covid, a fast growing long haul network, particularly in the low cost market that plays a significant role in the positive quality of life for residents.

Throughout the research of this cluster, opportunities have arisen to speak to key representatives and decision-makers from both airports as well as the wider aerospace industry across Surrey and the South East. The conversations have been blunt and the messages have been stark. Aviation, a key strategic sector for Britain that accounts for 40% of non-EU trade in value, with the ability to achieve post-Brexit trading ambitions, is on the verge of irreversible decline and potential collapse, unless significant and swift shifts are made in the coming weeks and months. The work laid out throughout this cluster underlines its significance to Surrey and the region more broadly.



Key Reports

Transport Select Committee (2020) *The impact of the coronavirus pandemic on the aviation sector, HC 268.*

Key Point: Provides a summary of the economic damage caused by the Covid-19 pandemic on the UK aviation sector, including the outlined job losses and declining passenger number, before concluding with a series of recommendations for rescuing the industry.

As part of its ongoing enquiry into the impact of the Covid-19 pandemic on the transport sector, the Transport Select Committee undertook a specific report into aviation by drawing on written evidence submissions by a wide range of stakeholders and a series of more bespoke oral evidence submissions by key stakeholders, including airports, trade bodies, airlines and representatives from the Department for Transport, including the Aviation Minister. Key findings in the report include the 97% reduction in passenger flights at the peak of national lockdown (p.8), the potential loss of over £20 billion in revenue over the year (p.8), the discrepancy in business rate suspension for airports in England when compared to the devolved administrations and the threat of widespread job redundancies across the sector (p.1). The report also draws attention to the intrinsic value of the aviation sector to the wider UK economy, including in transportation of trade and in knock-on industries like tourism, and its broader strategic importance (p.7). Whilst lacking a direct analysis of the significance of aviation on the local economy, it does include a detailed national outlook, including drawing on evidence throughout as submitted by Heathrow Airport.

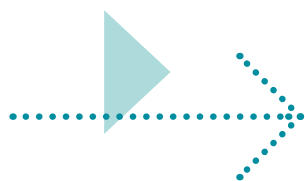
Oxford Economics (2020) *The economic impact of reduced activity at Heathrow Airport: A report for the Heathrow Community Engagement Board.*

Key Point: An in-depth analysis of the economic footprint of Heathrow Airport on the immediate vicinity around it, including areas such as Hounslow and Spelthorne, alongside a three-scenario projection on return to growth over the next decade.

As part of work commissioned by the Heathrow Community Engagement Board in July 2020, the Oxford Economics report provides a granular analysis of the economic linkage between the six local authority areas that fall in the immediate vicinity of the airport (Ealing, Hillingdon, Hounslow, Slough, South Bucks and Spelthorne). The report estimates that in 2019, Heathrow Airport directly supported 76,000 jobs, with this growing to 133,600 in total when accounting for supply chain and consumer spending effects (p.2). It forecasts that passenger numbers will not return to pre-Covid levels until 2023, with imports and exports not returning until 2026 and 2027 respectively (p.3). As part of this, Oxford Economics estimates that in a “upside scenario”, employment will be down by 32,900 jobs, and in the “downside scenario”, a drop in employment of 62,900 jobs, with an estimated decline in GVA of between £3.6 and £6.9 billion (p.3-4). The figures, analysis and forecasts used in this research is utilised in the quantitative section of this cluster.

Hatch Regeneris (2020) *Covid-19 Impact Assessment: Gatwick Diamond.*

Key point: An economic analysis of Covid-19 on the partnership that forms the Gatwick Diamond of West Sussex and East Surrey. The report forecasts a 37% loss in GVA in quarter 2 of 2020, 2% ahead of the OBR’s prediction, with a further 19% in quarter 3 (p.13).



As part of a series of Covid-19 impact assessments for partnerships and consortiums across Sussex, Hatch Regeneris analysed the impact of the pandemic on the Gatwick Diamond consortium area, which includes the local authority areas of Epsom & Ewell,

Mole Valley, Reigate & Banstead and Tandridge. The report draws attention to the high-growth sectors that form a significant economic contributor to the local economy, including MedTech, professional services, digital economy and aviation (p.3). The report forecasts a loss of 12.8% of GVA across the Gatwick Diamond, stating that a growth rate of 2.7% per annum would be required over the next five years to return to pre-Covid levels (p.3). It estimates that one in ten jobs in the Diamond are linked to the economic activity of Gatwick Airport, underlining the key catalytic impact of the future recovery in relation to the airport. A more pessimistic forecast based on a 90% reduction in slot traffic over the next two quarters at the airport predicts a 16% drop in local economic output over the year (p.15).

Definitions and Parameters

Definition: The aviation sector is a key economic catalyst of the British economy that underpins a key strategic role owing to the geographical constraints of the island. Unlike rail, aviation has a key dependency on international travel, with the facilitation of passenger movement a notable area of challenge over the last two decades. In the initial outbreak of Covid-19, it is evident that the spread of the illness was accelerated globally by the ease of travel offered by aviation and evidenced in the measures undertaken by nations in either reducing travel from areas deemed “high risk” or in some case, outright shutdowns of their national borders.

Composition: The aviation industry is a broad-based sector of the economy that draws on the activity of the airlines, airports, the manufacturing industry that underpins these innovations and the respective supply chains that feeds all three outputs. In respect to the first

two, namely airlines and airports, the successes of the duo can be interlinked, although airlines are more prone to failure as opposed to the infrastructure-based airports in times of normality. Manufacturing is rather more complex to track as a result of an integrated, globalised economy. There are an estimated 230,000 employees in the sector, operating at over 40 commercial airports (Transport Select Committee, 2020a, p.11). It has been estimated that in Europe, every person employed in aviation supports a further 4.7 jobs, demonstrating the significance of the trickle-down effect of aviation (Ibid, p. 11).

Airports¹

The county of Surrey finds itself strategically linked to Britain’s two largest airports, Heathrow and Gatwick Airports respectively. Combined, the two airports accounted for 127 million passengers in 2019, accounting for 42% of the total airport passenger haul in the UK. Heathrow Airport alone is responsible for approximately 80 million passengers, a total that makes it the seventh busiest airport in the world and the busiest in Europe. Yet, in the month of April and May 2020, during the height of the Covid-19 pandemic, both airports were operating at approximately 3% of their ordinary capacity when compared to the previous year. This cost is estimated to be worth approximately £20 billion in 2020, making aviation one of the most vulnerable sectors of the UK Economy (Transport Select Committee, 2020a, p.1).

¹Whilst not analysed in this report, it is also worth noting that Blachbusche Airport, Lasham Airfield and Redhill Aerodrome form notable aviation hubs for Surrey.

IATA Rescue Plan for UK Aviation (IATA, 2020)

The International Air Transport Association (IATA) wrote to the British Prime Minister on the 10th September, setting out a four-point plan that needed to be enacted urgently in order to safeguard 820,000 jobs and ensure the UK does not lose “its coveted position as the 3rd biggest global aviation market”.

1. A testing regime, to unlock travel from high-risk countries.
2. A review of the infection threshold for quarantine that is fully transparent and aligned with international passengers.
3. A suspension of Air Passenger Duty.
4. Extending the furlough scheme for the airport transport sector until border restrictions are lifted and the industry has a chance to recover.

Airlines

Whilst airports serve as the infrastructural base of aviation, airlines serve as the service providers. The United Kingdom as a whole is home to two of the largest passenger airlines in Europe in British Airways and EasyJet, with Virgin Atlantic, Ryanair and Wizz Air headquartered or managing significant operations in the country. The passenger airline industry has been decimated by the Covid-19 pandemic, with the combination of restrictions on travel and low passenger confidence seeing previously unfathomable financial losses. As a direct result of this, widespread redundancies have been announced throughout the passenger airline sector. British Airways announced

in the summer that it intended to cut 12,000 jobs (approximately 25% of its total workforce), with this followed up by an announcement in September of a confirmed 8,236 redundancies, which were “largely voluntary” (The Telegraph, 2020a).

In addition, Virgin Atlantic has reduced its staff by 3,500 and a further 1,150 redundancies planned from a pre-Covid-19 level of 10,000 (BBC, 2020b), although EasyJet scaled back plans to make 700 pilots redundant (circa 30%) after a combination of part-time contracts and voluntary redundancies were accepted (The Telegraph, 2020c).

It is also important to note the lucrative air cargo trade, which in recent months has seen passenger aircrafts deployed to deliver emergency contracts for medical equipment, such as Personal Protection Equipment (PPE), highlighting a degree of resilience in trade. It is estimated that 40% of non-EU trade by value is done by air (Transport Select Committee, 2020a, p.9). Indeed, this high-value trade is reflective in volume, where it accounts for just 1% of total goods shipped (Transport Select Committee, 2020a, p.9). Intriguingly, it is worth noting that 95% of trade carried through Heathrow Airport is done via passenger planes, whilst Gatwick is 100% of trade via passenger planes (Oxford Economics, 2018b, p.1).



Manufacturing

It is important to note that the UK is a significant base for manufacturing. Analysis carried out by the trade association ADS Group estimates there are 374,000 jobs, built on £46 billion of exports and £30 billion of value across aerospace, defence and security (ADS, 2019, p.4; ADS, 2020, p.2). Aerospace manufacturing directly supports 114,000 jobs, with 94% of output being exports worth £31.8 billion, with a 75% to 25% split between civil and defence (Ibid, p.7). At a more regional level, the South East is estimated to be hold 13,500 jobs in aerospace manufacturing, with the 39,000 jobs in defence the highest of any region in the UK (Ibid, p.4). Analysis by Cirium recently revealed that globally, 42% of twin-aisled and 28% of single-aisled air craft manufactured by Boeing and Airbus are currently grounded, resulting in a sharp drop in future orders and a total of 30,000 job losses across the two companies globally (The Telegraph, 2020b). Domestically, Rolls-Royce confirmed 3,000 job losses across its civil aerospace operations, with 50 out of 120 customer service facing roles at Heathrow Airport forming part of the redundancies (BBC, 2020a).

Supply Chain

Any industry as large as aviation would have an integrated supply chain, a unique collation of businesses that all play significant roles in ensuring the economic successes of airports, airlines and manufacturing. For the purpose of this report, it has been difficult to get down into any real granular detail as to what scale this takes, but from research undertaken, we can begin to assemble a picture. Heathrow Airport spends approximately £1.4 billion per annum in its supply chain, whereas Gatwick Airport spends £300 million, with £100 million accounting for businesses within the Gatwick Diamond area. It has been suggested that at Heathrow, 300 jobs are dependent on each aircraft, underlining the fabric that ties everything together (The Telegraph, 2020d). Sadly however, supply chains have been no different in showing frailty in relation to Covid-19.

The aviation services company Swissport announced in June plans to reduce its workforce by half, consulting on plans to bring in 4,556 job redundancies from a total UK workforce of 8,500 (BBC, 2020). Analysis by the Centre for Cities underlined the frailty by revealing that over half of jobs in Crawley were deemed to be at risk, due to the dependency on sectors considered to be at higher very high risk from Covid-19 (Centre for Cities, 2020).



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Impact: Covid-19 represents the gravest threat that aviation has had to endure since its inception, with losses at mid-August totalling £90 billion globally, in comparison to £30 billion during the 2007-08 financial crises.

Recovery: The aviation industry will see the fastest recovery in domestic travel, followed by short-haul and eventually long-haul travel. Similarly, those visiting relatives will be the quickest to resume traveling, with leisure following shortly behind. Business travel, in particular long-haul business travel, faces a serious and sustained period of recovery as innovations in digital communication, coupled with deteriorating finances across the global economy, seeing companies scale-back costly expenditure.

Cargo: With the significant drop in travel from March onwards, many passenger companies have shifted to the transporting of cargo. Over March and April, this was largely focused on the delivery of Personal Protective Equipment (PPE), although has expanded since to a broad base of products including perishable items. Typical cargo planes can carry approximately 100 tonnes of cargo, whereas large wide-body aircrafts can carry around 45 tonnes of cargo with seats removed. It was noted that widebody aircraft are unlikely to make a return for passenger use before 2024.

Education: The University of Surrey has developed a strong reputation for a variety of courses under the broader auspice of tourism, including a Masters in Air Transport Management. Student typically came from Asia (circa 50%), although Africa was seen as an emerging market, whilst those from the UK comprised around 5-7% of student numbers.

► QUALITATIVE ANALYSIS ◀

High Value/High Worth

Aviation plays a key role for the county of Surrey. It serves as an important direct employer, with both Heathrow and Gatwick employing thousands of workers who reside across the county. It also has a more implicit catalytic role - driving investment and growth into the local economy, greatly assisting other sectors of the Surrey economy. A key theme of our interviews is the enormous reliance of Surrey's business on both airports, and in particular Heathrow. Heathrow Airport is in many ways its own unique municipality, supporting an economic output that rivals some of the largest cities across the UK.

Aviation's successes are therefore Surrey's successes. The county has a profound interest in the post-Covid resuscitation and future expansions of the two airports and associated airlines. Consideration needs to be given to net-zero objectives and the competing roles that both Heathrow and Gatwick offer, yet both offer strategic opportunities for the future growth of Surrey and the nation.

Uniquely Surrey: Productivity, Place, People & Connectivity

Surrey is uniquely placed from a geographical perspective as it is at the centre of the two largest international airports in the United Kingdom. In the case of Heathrow Airport, it has the largest airport in Europe and the seventh largest in the world, a transit hub that due to the UK's placement, is able to connect North and South America with Asia, Africa and Europe. Gatwick Airport has been at the heart of innovations within the airline industry, namely that of low-cost airlines, and serves as the largest base for EasyJet and home to Virgin Atlantic. Indeed, Gatwick's reputation as a leisure gateway may make it more robust in the post-Covid economic recovery, in particular with its greater dependency on the European market, although the recent decision by Virgin Atlantic to close down its Gatwick operation for at least two years underlines potential frailty (online interview with Dr Frankie O'Connell, 14th August 2020).

Collectively, Heathrow and Gatwick are the major players in Britain's historically strong aviation sector which has resulted in the largest aviation network in Europe and the third largest in the world, accounting for 2.2 million flights in 2018 and 80% of inbound visitors (Transport Select Committee, 2020a, p.9).

This in turn has played a highly significant role in developing the economic robustness of Surrey, forming a catalytic impact for growth and playing an important role in attracting investment into the area, in particular from large Multi-National Corporations (MNCs). It has also ensured that Surrey has the unique distinction of arguably being the most connected English county with the world, benefiting from an integrated, globalised economy that has allowed innovation and entrepreneurship to take hold.

Covid, Brexit and Beyond

As has already been demonstrated throughout this cluster write-up, the Covid-19 pandemic presents a very real threat to the future of the aviation industry. The sheer scale of proposed job losses across the aviation industry, in particular the passenger airlines sector, will have a real and substantive effect on the local and national economy. Surrey has always considered it a positive to have the two largest airports in the UK on the outskirts of the county boundaries, but Covid-19 presents a nightmare scenario of particularly aggregated decline unlike in ordinary economic downturns.

On Brexit, the aviation industry seems largely buoyant, possibly due to the sheer scale of Covid-19 in comparison. Airlines, who once feared losing access to European and British markets, have bought Air Operator Certificates (AOC) which ensure that regardless of the outcome of the Free Trade Agreement talks, they can continue to operate. Of greater concern will be the need to negotiate an Open Skies Agreement with the USA, with the UK currently included in the EU's agreement – it remains to be seen whether a US Presidential election year presents political sensitivities to an agreement being struck.

The aviation manufacturing sector has concerns over the impact that the loss of access to the Single Market and customs barriers may have on integrated supply chains, in particular for companies such as Airbus. Furthermore, a no-deal exit would mean UK originating products would be deemed "rest of world" and create significant headaches for content under Rules of Origin which allow manufacturers to access lower tariffs. This could alleviate an already depressed outlook for manufacturing post-Covid in the UK.

► CASE STUDIES ◀

BAE Systems

BAE System is a British multi-billion pound, multinational business that works across the aerospace, security and defence sectors. It was formed in 1999 following the merger of British Aerospace and Marconi Electronic System, reporting a profit of £1.6 billion on a turnover of £18.3 billion in 2019 (BAE Systems, 2020). Globally, BAE employs 86,000 workers, with 34,100 employees in the UK and spends approximately £3.7 billion in the domestic supply chain (Oxford Economics, 2019, p.4).

At a county-level, the Guildford site is BAE's ninth largest in the UK, employing 850 full-time employees (Oxford Economics, 2019, p.46). Further BAE sites can be found at Frimley and New Malden, which employ 560 and 250 employees respectively (Ibid). This takes BAE's presence in Surrey to at least 1,660 employees, a significant footprint that doesn't account for possible smaller sites in the county. Interestingly, when broken down by residence based on parliamentary constituency, no Surrey locale features, suggesting that either BAE System workers are spread out across the county or, more likely, a significant number of workers commute to the sites of Guildford, Frimley and New Malden from outside Surrey. Finally, it is estimated that BAE Systems spend approximately £30 million per annum in procurement spending across 23 suppliers in the parliamentary constituency boundaries of Woking (Ibid, p.44).

Farnborough Aerospace Consortium

The Farnborough Aerospace Consortium (FAC) is the regional arm of the ADS Group trade body, representing aerospace, security and defence manufacturing across the South East and East of England. It is estimated to have approximately 150 members, with over half located across Surrey and Hampshire (online interview with FAC, 7th July 2020). It serves as a crucial connector between SMEs, national government policy and global ambitions. The FAC is an advocate for the Women in Aviation and Aerospace Charter, a pledge to improve the gender disparity in the industry and provide greater opportunities to women.

London Biggin Hill

London Biggin Hill Airport was formed during the First World War as a RAF base and would serve as a military base until 1959. Commercial use would grow and with the passage of the 1986 Airports Act, a limited company was formed. In recent years, it has seized on a lucrative business market which is the second largest in the world (after the USA) and alongside Farnborough Airport, accounts for over 50% of business travel across the South East (Transport Select Committee evidence submission, 2020, p.1). Biggin Hill has also developed a thriving business complex, home to 70 companies which employ over 1,000 people and contribute more than £70 million in GVA.

Farnborough Airport

Farnborough Airport is considered the true home of aviation, serving as the first airfield in Britain when founded in 1908. Farnborough served as a key military base of operations for practically all of the 20th century, only beginning commercial operations in 1989. The biannual Farnborough International Airshow is a globally renowned trade show which brings over 80,000 trade visitors and 1,500 exhibitors from around the world. The airport accounts for approximately 30,000 aircraft movements per year, which alongside London Biggin Hill form a key base for private business travel in the South East. It is also the home to the Department for Transport's Air Accidents Investigation Branch. Commercially, Farnborough is the home to 52 businesses which collectively employ over 1,000 people.

Case studies continued

YOUR LONDON AIRPORT
*Gatwick***Gatwick Airport**

Unlike most airports in the South East, Gatwick Airport has had commercial ties since its inception in the late 1920s as an aerodrome. The Crawley-based airport has Surrey-based roots, falling in the boundaries of the county until 1974 when it was redrawn to West Sussex. It is Europe's 9th largest airport and employs around 25,000 staff, with a further 20,000 believed to be indirectly employed in the local economy (Gatwick Airport, 2018a, p.2). Historic data suggests 19% of Gatwick staff (circa 4,300) are estimated to live in the county of Surrey, with 1,700 in Reigate (Gatwick Airport Limited, 2016b, p.27). 50% of Gatwick Airport's workforce is estimated to be in the immediate surrounding area, namely those within 10 miles (Acuity Analysis, 2020, p.13). It's believed that in Crawley alone, 18% of its labour force works in aviation (Centre for Cities, 2020), with around 1 in 10 jobs in the Gatwick Diamond dependent on the sector. It's estimated that the airport has an annual economic output £1.5 billion, with a further £1.1 billion indirectly. Approximately, £7.5 billion worth of trade passes through the airport, supporting an estimated £7.2 billion of UK GDP and 113,800 jobs across the country (Oxford Economics, 2018b, p.4). Approximately 22% of exporting businesses are estimated to be in either the Gatwick Diamond or Coast to Capital LEPs, with both intriguingly accounting for a greater rate of exports to outside of the UK when compared to the national average (58.5% to 51%). Supply chain data provided by Gatwick Airport has showcased the significance of activity on the local economy, with approximately £100 million spent in 2019 on local supply chains. The GU and RH postcodes combined account for £74 million, although it should be noted that the latter transcends the county boundaries across East Surrey and West Sussex.

In Covid-19 terms, Gatwick Airport has been left particularly vulnerable. Within days of the UK Government imposing lockdown measures, it reduced its operations to one terminal. It is estimated that the disruption at Gatwick will play a key role in a 12.8% loss in GVA to the local economy, with a 16% reduction in local economic output in 2020 (Hatch Regeneris, 2020, p.3 and p.15). More worryingly, many airlines either substantially reduced or outright stopped operations from Gatwick as the sector sought to consolidate operations. Virgin Atlantic has announced it intends to stop operating from Gatwick, whilst concerns existed over British Airway (Transport Select Committee, 2020a, p.8), although these have since alleviated. The economic downturn at Gatwick Airport presents serious concerns and may act as a crescendo for the local economy. In 2019, Gatwick Airport Limited employed 3,217 employees, with a combination of fixed term contract terminations and voluntary redundancies reducing this by approximately 750 by July 2020 and further restructuring announced in August 2020 which may lead to around 600 compulsory redundancies, taking Gatwick's direct workforce down to 60% of pre-Covid levels (online interview with Gatwick Airport, 6th August 2020). In July, approximately 80% of Gatwick Airport's staff were on the CJRS, with all Gatwick Airport Limited staff also reduced to 80% pay and hours for the period April to December 2020. Gatwick estimates that direct job losses at the airport could total between 8-10,000.

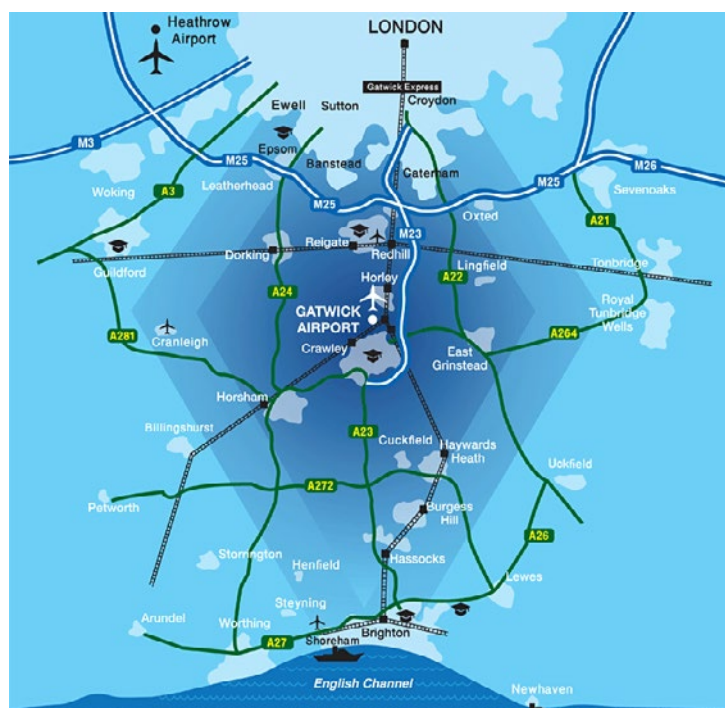
Travel corridors were initially seen as a means to build consumer confidence after the easing of national lockdown, but the decision to remove Spain from the exemption list at the beginning of August has seen any post-lockdown confidence erode. Spain represents 20% of Gatwick Airport's total airport traffic and accounts for two million passengers during the summer months (online interview with Gatwick Airport, 6th August 2020). The low-cost carrier EasyJet underpins the current economic activity at Gatwick, accounting for 80% of traffic (Ibid).



Gatwick Diamond

Gatwick Diamond is a business-led partnership of local stakeholders formed in April 2003 with the mantra of promoting business growth in the vicinity of Gatwick Airport. The geographical make-up of the area covers West Sussex and East Surrey, including Reigate & Bansted, Mole Valley, Epsom & Ewell and Tandridge. Approximately 700,000 residents live in the 400 million square miles of the Gatwick Diamond. With 45,000 businesses and £24 billion GDP-, the Gatwick Diamond is one of the strongest regional economies in the UK. At £63,500 per worker, the area is 16% more productive than the British economy (online interview with Gatwick Diamond, 4th August 2020).

As already referenced in the key reports section of this cluster, research commissioned by Gatwick Diamond is estimating a loss of 12.8% in GVA in 2020 (Hatch Regeneris, 2020, p.3). One in 10 jobs in the Gatwick Diamond depend on airport activity, with areas adjacent to the airport anticipated to feel the greatest impact (Ibid, p.3 and p.4). The Gatwick Diamond has a greater concentration of sectors impacted by the Covid-19 pandemic, ensuring it will feel a greater disproportionate impact when compared to the Coast to Capital area; with GVA forecasted to fall to £5.5 billion in quarter 3 of 2020 (Ibid, p.5 and 10). It is estimated that 76,000 jobs across the Gatwick Diamond are dependent on the economic activity of Gatwick Airport (online interview with Gatwick Diamond, 4th August 2020).



Map of Gatwick Diamond
<http://www.gatwickdiamond.co.uk/the-gatwick-diamond/map.aspx>

Case studies continued

Heathrow

Heathrow Airport

Heathrow Airport formally began operations in 1930 as a commercial aerodrome before converting to an airport in 1946. Since then, it has stood as Britain's largest airport and the seventh largest globally, with circa 84,000 directly employed at the airport and hundreds of thousands more in supply chains and knock-on sectors (Acuity Analysis, 2020, p.15). In 2019, it accounted for 81 million passengers out of a UK total of 300 million, with £141 billion worth of trade passing through the airport (Heathrow Airport to the Transport Select Committee, 2020), close to the far more freight centric outputs of the Port of Dover and the Folkestone Eurotunnel terminus. Heathrow has been described as a unique driver for the entire UK economy and as a "national asset", with 40% of long-haul flights from the UK and a high proportion of company headquarters within 30 miles of the airport (online interview with Heathrow Airport, 25th August 2020).

The Covid-19 pandemic threatens to severely disrupt Heathrow Airport's strategic position as a key global aviation hub. Heathrow anticipates it will receive 30 million passengers over 2020, a drop of over 50 million, with 65 million passengers in 2021 and a return to pre-Covid levels in 2022 (online interview with Heathrow Airport, 20th August 2020). About one third of destinations that are currently key to how Heathrow builds cargo connections are on the UK Government's "high risk" register. During the peak of national lockdown, Heathrow was serving 5,000 passengers daily, largely repatriations, and the delivery of Personal Protective Equipment (PPE) (Ibid). Due to the reduction in daily flights, it has consolidated its operations to one runway and two terminals. The aforementioned job redundancies of Swissport and Rolls-Royce staff at Heathrow demonstrate that even the unique robustness of Heathrow is acutely vulnerable to Covid-19, with the British Airways staff reductions inevitably likely have the greatest impact on Heathrow-based staff due to the airline operated Terminal 5. Heathrow has reduced the size of its management team by one third in an attempt to protect as many lower-paid jobs as possible (online interview with Heathrow Airport, 25th August 2020). Heathrow's CEO John Holland-Kaye has been a vocal critic of the Government's quarantine measures on inbound arrivals, calling instead on reciprocal air bridges where possible (Transport Select Committee, 2020a, p.14). However, of more positive note, has been the confirmation that Heathrow has £3.2 billion in liquidity, which it estimates to be sufficient to maintain business operations for a minimum of 12 months, even without passengers (online interview with Heathrow Airport, 20th August 2020).

Heathrow has recently been at the forefront of trialling testing on arrival at a charge of £150 per passenger (Ibid). This has been used as an initiative following the successful implementation to date of a similar practice in Germany, although the costs are picked up by the federal government. Results have been shared with the UK Government in the hope that quarantine could be waived in exchange for a negative test or, at the very least, a reduce quarantine period, in order to begin to restore confidence in flying once again. Currently 70% of Heathrow's destinations are countries deemed high risk, a problem that presents an "existential threat not just to the South East, but to the nation" (Ibid, 25th August 2020).

As part of its Covid-19 response programme, Heathrow Airport commissioned Oxford Economics in July to examine the economic impact that reduced aviation activity could have on the local economy. The analysis found that in 2019, employment at Heathrow Airport was estimated to be worth £12.5 billion in GVA and accounting for one in six jobs in the local economy (Oxford Economics, 2020, p.2). In total, 32,600 local residents were estimated to be directly employed at the airport, with 2,8000 of employees residing in Spelthorne primarily concentrated in passenger services, baggage handling and air cabin crew (Ibid, p.4,p.10 and p.11). A further 700 Spelthorne residents are understood to be involved in direct off-airport employment, with the broader economic activity of Heathrow Airport understood to account for 10.6% of residents' jobs in the Surrey borough (Ibid, p.13 and p.14). A variety of the data found in the Oxford Economics report is illustrated in the qualitative section of this cluster.

Cluster crossovers

As demonstrated throughout this cluster, aviation is both a major economic contributor to the national and local economy but also a key strategic sector that is crucial for future growth. Interviews carried out through the research of this report and supplemented by the Deyton Bell survey has highlighted the attractiveness for business in being located close to two major international airports. It is evident that aviation has a catalytic impact on business, helping to grow the economy immediately around it, and the sheer scale of Manor Royal business park and the Gatwick Diamond highlights the interlinking relationship between business and aviation.

In regard to knowledge and innovation, the opportunity to cross-collaborate and export value products with ease was highlighted by Surrey Satellites Technology Ltd, with a high dependency on activity at Heathrow Airport in particular a key factor in their success.

Finally, the Covid-19 impact on healthcare, in particular the lack of PPE, during the peak of the crisis and the reliance to import medical equipment from foreign suppliers, saw commercial passenger operators such as British Airways and Aer Lingus chartered by Governments to deliver critical stock. The simple fact remains that aviation remains the quickest means of transportation readily available and will likely be at the forefront of the delivery of a Covid-19 vaccine.

► QUANTITATIVE ANALYSIS ◀

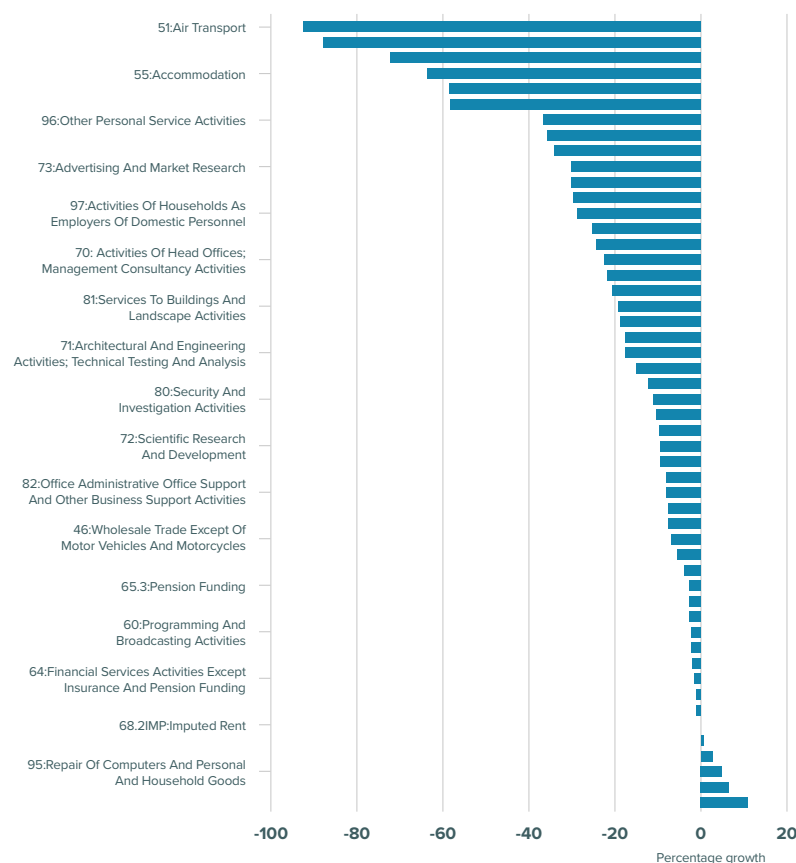
It is perhaps unsurprising that aviation has been at the forefront of the economic impact by travel and lockdown restrictions introduced by the UK government to mitigate the spread of Covid-19. This demonstrated by air transport being the single most affected sector of the services industries, with output in July remaining at 7.7% of its February level.

The fall in activity is more clearly observed in the fall in number of passengers from abroad, which fell by nearly 100% in April, May and June for almost every world destination.

GDP in Select Sectors

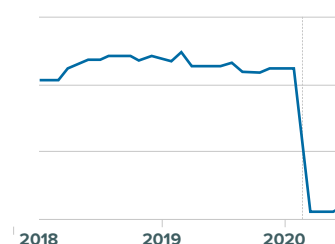
Most of the services industries remained below their February 2020 level

Services industries, monthly growth, seasonally adjusted, UK, July 2020 compared with February 2020



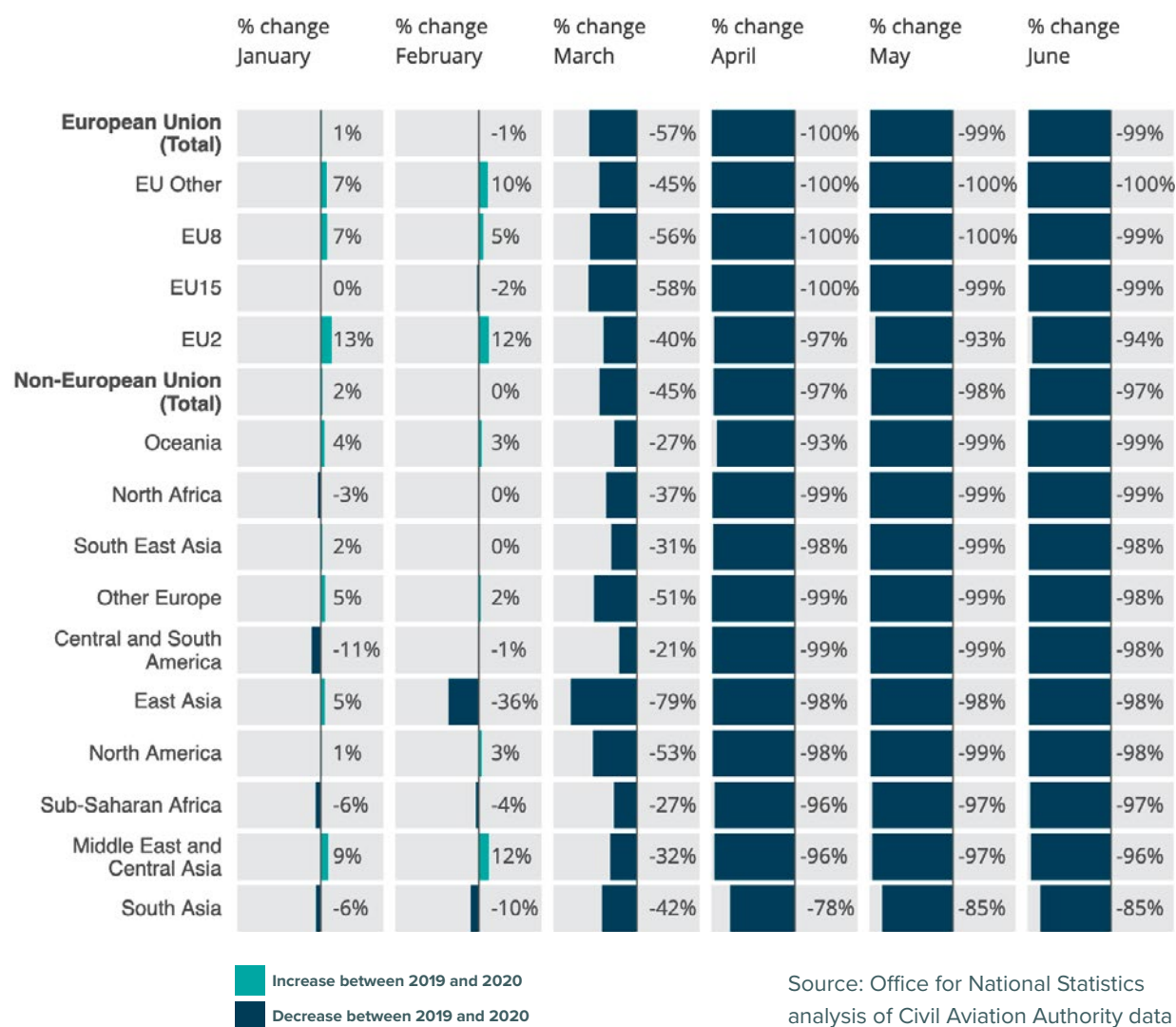
Source:
Office for National Statistics –
Index of Services

Air Transport



There Has Been Widespread Decline in International Air Travel to the UK Since March 2020

Annual percentage change in monthly air passenger arrivals at airports in the UK from airports in regions of the world, January to June 2020



Gatwick has been the most affected airport, with the drop in passengers (-94.1%) and flight numbers (-89.6%) being the largest compared with July 2019, but also when compared with the annual aggregate January until July (-71% and -65.9%). Heathrow had a large drop in the number of passengers in July (-88.8%), as the government stepped-up quarantine restrictions for passengers returning from summer destinations. However, the drop in the accumulated January to July figures (-53.3%) has been in line with other major European airports, suggesting that it is in more recent months that Britain has started to lag behind its European counterparts.

British Airports Lagged Behind Their European Competitors in the Month of June

Passengers				
	Jul-20	% change 2020/2019	Jan-Jul	% change 2020/2019
GATWICK	280,475	-94.1	7,829,335	-70.97
HEATHROW	866,655	-88.8	16,298,569	-65.0
Paris-CDG	1,728,481	-76.7	15,778,876	-63.9
Paris-Orly	681,721	-78.1	6,404,981	-66.4
Frankfurt	1,318,502	-80.9	13,496,253	-66.7
Schiphol - Amsterdam	1,339,122	-80.1	14,417,378	-65.1
Madrid	990,899	-83.3	12,348,980	-64.9
Flights				
	Jul-20	% change 2020/2019	Jan-Jul	% change 2020/2019
GATWICK	2,882	-89.6	56,443	-65.9
HEATHROW	11,924	-71.7	129,440w	-53.3
Paris-CDG	18,240	-60.6	342,439	-30.8
Paris-Orly	5,193	-74.9	133,867	-41.4
Frankfurt	15,372	-67.4	134,065	-55.2
Schiphol - Amsterdam	15,704	-64.9	131,656	-54.1
Madrid	10,708	-72.5	104,568	-57.6

SOURCE: CAA AIRPORT STATISTICS, Heathrow, ADP, Fraport, Aena, Schipol

Whilst passenger numbers plummeted to 3% and air transport movements fell to approximately 12% in April when compared to the previous year, air cargo has proven to be more robust. It dipped to approximately 38% of 2019 levels in April, before rebounding to 60% in May and since holding relatively steady at 63%.

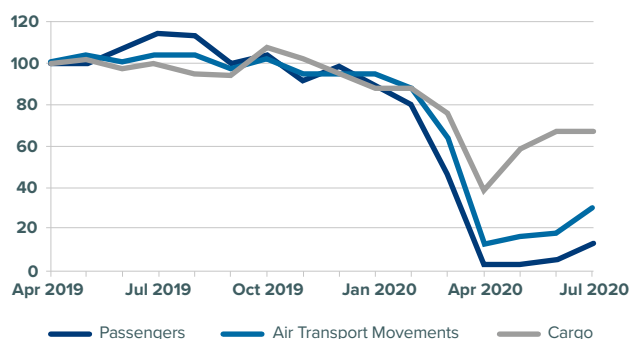
Based on Oxford economics projections:

The overall effects on the Surrey economy will depend on the length of the pandemic, but UK air passenger flows are expected to be more severely affected than in other countries, and will not recover 2019 levels until 2023.

Air Passenger Flows, Heathrow, April 2019 to July 2020

Heathrow traffic

(April 2019 = 100)

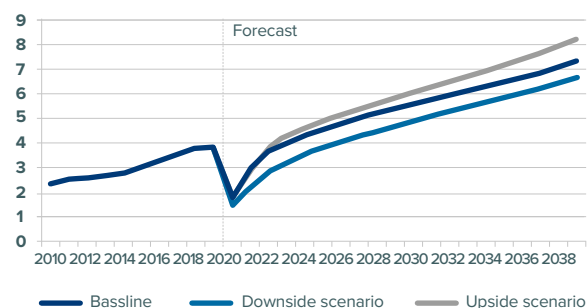


Source: Heathrow Airport

Air Passenger Flows, Global 2010 to 2039

Global passengers

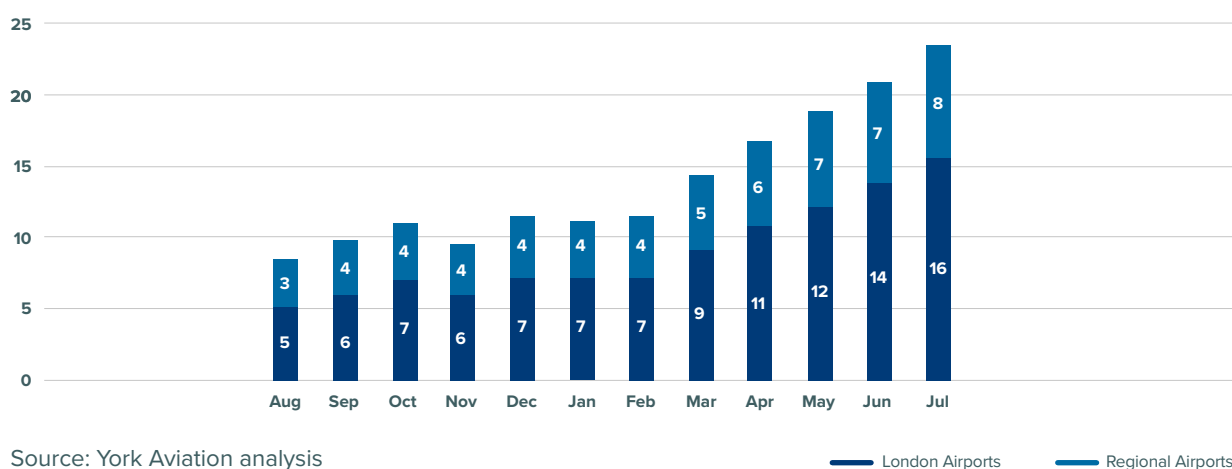
(bn)



Source: Tourism Economics

However, it is worth noting that analysis carried out by York Aviation that London airports will lead the national recovery when compared to their regional counterparts and in turn, the overall economic impact on Surrey may be somehow muted by it.

Baseline Passenger Demand at London Airport and Regional Airports



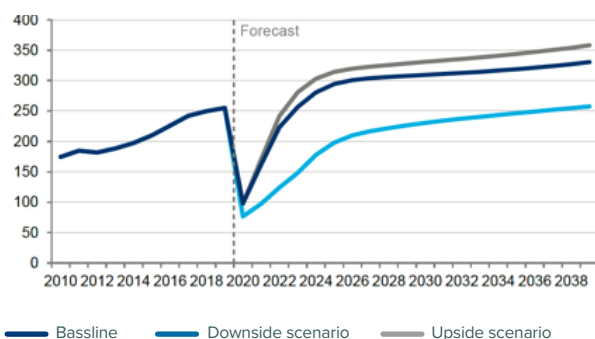
Source: York Aviation analysis

Under the first two forecasts, it is anticipated that UK air passenger flows recover by late 2022 or over the course of 2023. However, in the worst case scenario, it is anticipated that UK passenger flows may not recover for two decades.

Air Passenger Flows, UK 2010 to 2039

UK passengers

(mn)



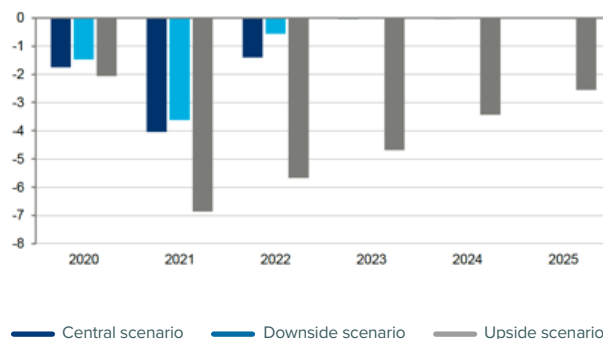
Source: Tourism Economics

Utilising its forecast models for in relation to total GVA impact as per 2019 levels, Oxford Economic anticipates significant reductions in GVA until at least 2022, and possibly a series of contractions until 2025. In the worse-case scenario, the contraction in 2021 alone would be £6.9 billion, or 12.6% of the local economy of Heathrow Airport.

Total GVA Impact, Alternative Scenarios, 2020 to 2025

Total GVA relative to 2019

(£bn, 2016 prices)



Source: Oxford Economics

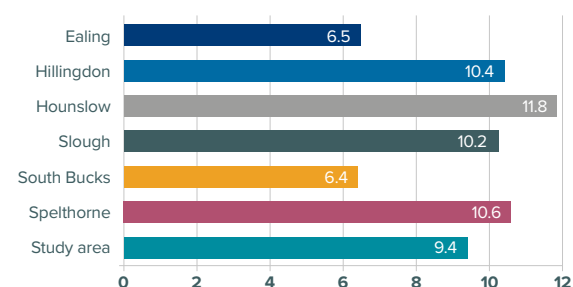
Employment

As the bar chart illustrates, Spelthorne has the second highest dependency (10.6%) on Heathrow Airport as a share of total residential employment across the local areas immediately around the airport. This is despite a more modest 2,800 jobs related to direct on-airport employment at the airport, the second lowest in the same study area.

Share of Total Resident Employment, Study Area, 2019

Resident employment

(%)

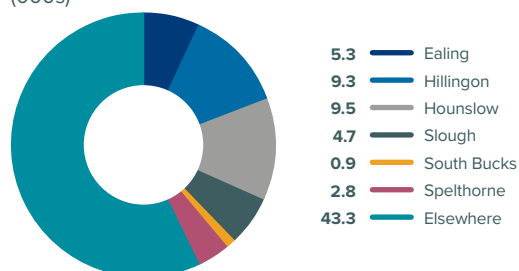


Source: Oxford Economics

Estimated Direct on-Airport Employment at Heathrow Airport by Location of Residence, 2019

Jobs

(000s)



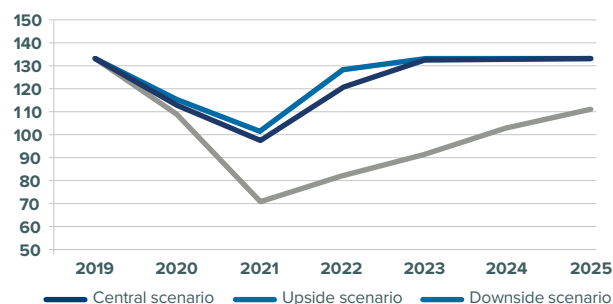
Source: Oxford Economics

Under its first two projections, Oxford Economics forecasts a reduction in total jobs relating to Heathrow Airport in the approximate region of 35,000 in 2021, before rebounding to pre-Covid levels in 2022 and 2023 respectively. However, the most pessimistic outlook forecasts a reduction of nearly half (47%) of the workforce, with pre-Covid employment levels not returning until 2026 at the earliest.

Total Jobs, Alternative Scenarios, 2019 to 2025

Total jobs

(000s)



Source: Oxford Economics



Aviation Business Survey

The commissioned survey of Deyton Bell highlights the impact of Covid-19 on aviation businesses in Surrey. At least 66% have utilised the CJRS, with an anecdotal case of one business furloughing 41 out of 45 staff. On a peculiar note, 80% stated that they were operating at full capacity, suggesting that the CJRS may be being utilised as a means of protecting the financial prospects of the respective company over the coming months. A further 80% of respondents have used the Government's business support scheme, showcasing the dependency the sector currently has on Whitehall policymaking.

40% of respondents saw probability as the largest concern for the next 12 months, with a further 27% concerned over survival. 100% of respondents rely on local supply chains and 66% of respondents employed graduates from universities within the county. Only 33% of businesses foresaw their employees undertaking international travel in the next six months, although all bar one respondent stated that they benefited from close proximity to London.

Brexit

When asked about the potential impact of Brexit, there was large disparity in the answers – more than for any other cluster. One third responded for each possible answer, namely that it would have no impact, it would have neither a positive nor a negative impact, and it would have a positive impact respectively. In turn, 66% stated that they felt prepared for the end of the transition period.

Sector Survey Responses

Location	Godalming	Woking	Redhill	Leatherhead	Horley	Woking	Chertsey
Sector	Aviation						
Has Covid-19 had an impact on your business?	Yes	Yes	Yes	Yes	Yes	Minor	Yes
Have you made use of the UK Government's Job Retention Scheme (furlough scheme)?	Yes	Yes	Yes	No	Yes	Yes	No
Have you made use of the UK Government's business support scheme	Yes	Yes	Yes	Yes	Yes	Yes	Yes
At what capacity would you estimate your firm is currently operating at?	100	100	100	100	100	100	100
What opportunities and challenges do you foresee in the next 12 months for your business?	Profitability	Profitability	Supply chain	Supply chain	Customers	Profitability	Recruiting
Why is your business based in Surrey?	Customers	Customers	Customers	Customers	Customers	Access	Customers
Do you anticipate Brexit to have an impact on your business?	Negative	Neither	Negative	Neither	Positive	Positive	Positive
Do you feel prepared for the end of the transition period with the European Union?	No	Yes	No	No	Yes	Yes	Yes
Does your firm rely on local aviation or aviation-related supply chains?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Do you foresee your workforce undertaking international travel in the next six months?	No	No	No	Yes	No	Yes	No
What percentage of your workforce have attended a university in the county	0	0	10	10	5	10	10
Does your business benefit from close proximity and connectivity to London?	Yes	Yes	Yes	Yes	Yes	Yes	No

Sector Survey Responses Cont.

Location	Horley	Egham	Egham	Woking	Guildford	Horley	Dorking	Reigate
Sector	Aviation							
Has Covid-19 had an impact on your business?	Yes	Yes, significant	Yes	Yes	Some	Devastating	Some	Yes
Have you made use of the UK Government's Job Retention Scheme (furlough scheme)?	Yes	No	Yes	Yes	No	Yes (41/45 staff)	Yes	No
Have you made use of the UK Government's business support scheme	Yes	Yes	No	Yes	Yes	Yes	No	Yes
At what capacity would you estimate your firm is currently operating at?	90	100	80	100	100	100	100	95
What opportunities and challenges do you foresee in the next 12 months for your business?	Survival	Profitability	Survival	Survival	Profitability	Survival	Profitability	Supply chain
Why is your business based in Surrey?	Customers	Access	Customers	Entrepreneurial	Customers	Customers	Customers	Customers
Do you anticipate Brexit to have an impact on your business?	Negative	Neither	Negative	Negative	Positive	Negative	Positive	Neither
Do you feel prepared for the end of the transition period with the European Union?	No	Yes	Yes	No	Yes	Yes	Yes	Yes
Does your firm rely on local aviation or aviation-related supply chains?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Do you foresee your workforce undertaking international travel in the next six months?	No	No	No	Yes	No	No	Yes	Yes
What percentage of your workforce have attended a university in the county	10	0	5	0	0	0	10	5
Does your business benefit from close proximity and connectivity to London?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes





HEALTHCARE AND EPIDEMIOLOGY

Healthcare and Epidemiology

This report has granted me the opportunity to speak with a wide range of representatives from various organisations that sit within the healthcare cluster in Surrey. This has enabled me to gain their insights into the critical issues facing the sector as well as the new opportunities for growth from a broad spectrum of perspectives. Overall, it is clear that the healthcare cluster in Surrey has performed astoundingly well, enduring the overwhelming pressures exerted upon it in terms of soaring demand for services, health risks for key workers, difficulties in supply chain and procurement and widescale restructuring.

These successes can be linked to the strength and resilience of the healthcare infrastructure in Surrey and its affluent and healthy population. Nevertheless, these successes should not overshadow the immense physical and emotional strain placed upon those on the frontline and the human cost of the pandemic. Likewise, Covid-19 has exacerbated the deeply embedded health inequalities within our communities, demonstrating a disproportionate impact on the most vulnerable groups of society such as Black, Asian and minority ethnic (BAME) communities. Despite these challenges, many agencies have boasted growth, increased collaborative working and maintained levels of high performance in terms of patient outcomes. Surrey boasts a pioneering

research base which was quickly mobilised to support the national demand for clinical research and analysis on the virus. The sheer scope and diversity of the research taking place in Surrey in the fields of both human and animal health demonstrates its leading role in driving research, development, and innovation within these fields. Likewise, the third sector has played an integral role in the provision of responsive and preventative services within the local community and has benefitted from enhanced partnership working across the sector and alongside National Health Service (NHS) organisations and local authority.

The healthcare and epidemiology cluster is undeniably a core pillar of Surrey's thriving identity and there has been no other time in which this has been clearer. Covid-19 represents one of the most significant global health emergencies in our history and the health sector has directly faced its most severe impacts and demonstrated its capabilities to rapidly respond and remain true to its core values of care and innovation. The health cluster therefore represents a vital area for future investment to ensure that it can maintain its high standards and quality of patient care, research and development and become increasingly resilient to future threats such as pandemics and the impacts of Brexit.



Key Reports

HM Government. (2018) Industrial Strategy: Life Sciences Sector Deal 2.

Key Point: Summarises the contribution of the life sciences sector to the UK economy alongside new plans to invest in the sector and promote collaboration.

Grounded within the Industrial Strategy, the second Life Sciences Sector Deal outlines the progress made in achieving the targets of the first deal in 2017 through government and sector-specific investment in life sciences research and development in the United Kingdom (UK) (p.2). The report situates the UK within a highly specialised and high-worth life sciences landscape comprised of “an outstanding research base in world-class universities; significant capabilities in clinical and translational medicine in the NHS; longitudinal health datasets; the largest biotech cluster outside the United States; a highly-productive and skilled workforce; and strong capabilities in emerging fields, such as digital health and artificial intelligence” (p.4). Likewise, the life sciences industry represents a high-value sector of the UK economy “contributing over £70 billion a year and 240,000 jobs across the country” (p.3).

The report (p.53, Figure 1) also provides a geographical analysis of the distribution of the UK’s vibrant life sciences industry, revealing that the South East of England boasts the highest employment (56,480) and turnover (£18,731m) of all UK regions, highlighting the region’s distinctiveness within the sector. To capitalise on these strengths and opportunities, the second deal incorporates new commitments to strengthen partnerships with “industry, universities and charities” whilst recognising the NHS as a pivotal delivery partner (p.2).

This includes aims to establish the Health Advanced Research Programme, strengthen the UK’s clinical research environment, intensify research and development (R&D), establish the UK as a global hub for advanced therapies manufacturing and promote NHS innovation and collaboration to stimulate health research and ultimately improve patient outcomes and economic growth. This report is lacking in a Surrey specific analysis, instead focusing on the South East region. However, this report provides a key document which has underpinned investment in health research and innovation such as within the University of Surrey.

The distribution of the UK’s vibrant life sciences industry¹⁵

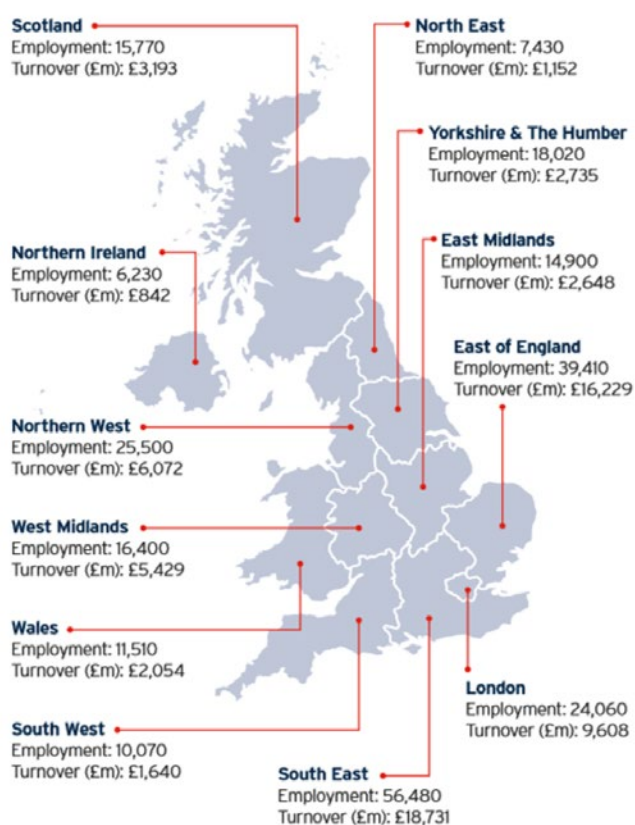
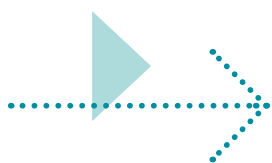


Fig 1.



NHS Confederation. (2020) Getting the NHS Back on Track: Planning for the Next Phase of COVID-19.

Key Point: Identifies the key challenges facing the NHS due to Covid-19 and proposes changes to policy and practice for recovery.

The NHS has been forced to rapidly adapt and transform in response to the enormous pressure that Covid-19 has exerted on its services and delivery of care. This report identifies the key challenges confronting local NHS organisations, and proposes changes to policy and practice to resume the numerous services that have been affected by the pandemic. The first key challenge identified is funding to ensure that NHS organisations can meet the rising demands from Covid-19 and support exhausted staff (p.3). Capacity constraints are also a key obstacle, as hospitals are running at significantly lower rates of occupancy and therefore private sector support is required alongside an effective test and trace system to provide reassurance to frontline staff. Likewise, rehabilitation should become a key focus as the Covid-19 response progresses to meet the needs of patients requiring social care, respiratory and psychological treatment (p.4). Furthermore, the pandemic has exposed the deeply entrenched health inequalities which must be tackled through targeted interventions. Additionally, lighter-touch regulations and inspections should be maintained post-Covid-19 to allow greater autonomy and flexibility. The report recognises the impact of Covid-19 in accelerating transformational change through partnership working and it highlights the need for this momentum to be maintained to develop stronger integrated systems. Lastly, the management of public expectations is enforced as a key objective to sustain public support.

The NHS Confederation urges the Government to extend emergency funding across all sectors of the NHS, continue block contracts and provide urgent capital investment in areas such as mental health and social care (p.8). The report states that there are currently over four million people on the waiting list for NHS treatment and therefore it is vital that secondary

care capacity is expanded (p.9). This could be achieved through arrangements with the private sector, the maintenance of the Nightingale Hospitals to respond to future outbreaks and the establishment of a longer-term capacity building programme (p.10-11). Likewise, the report highlights the need to invest resources into rehabilitation of Covid-19 patients, maintain lighter-touch regulation and performance management systems, continue effective partnership working to drive transformation and ensure consistent communication from political leadership for public awareness and transparency (p.4-5).



Surrey Community Action (SCA). (2020) Part One: Surrey's Voluntary Sector Covid-19 Impact and Resilience.

Key Point: This report details the significant detrimental impact of the Covid-19 pandemic on the voluntary, community and faith sector (VCFS) in Surrey alongside the more positive developments that it has stimulated.

There are approximately 3,648 registered not-for-profit organisations located in Surrey and it is estimated that there are around 6,000 organisations within the VCFS and Surrey County Council (SCC) in Surrey, employing around 18,000 people and 425,000 volunteers and interns (p.7). SCA summarise both the short-term and long-term impacts of Covid-19 on the VCFS and the community needs and partnerships that have emerged as a result.

Regarding short term impacts, the VCFS has experienced wide-ranging discrepancies in demand for services with some organisations being overwhelmed by a soaring demand whilst others have experienced sharp reductions in demand for their services (p.9). Organisations have also had to manage reductions in income as the Covid-19 restrictions have limited opportunities for public fundraising, which accounts for almost half of the voluntary sector income (SCA, 2020, p.10). Nevertheless, statutory funders such as SCC have committed to grants and contracts, accounting for one-third of voluntary sector income, which have limited the overall short-term impact on funding for the VCFS (p.10). In terms of staffing and organisational management, around twenty-four percent of paid VCFS staff in Surrey have been furloughed, whilst some charities who cannot access the scheme have been reducing employee working hours relative to their role (p.15).

In terms of capacity, sixty-three percent of the VCFS in Surrey has had to cut some or all of their services, whilst fourteen percent were uncertain of the impact on their services. The VCFS has been supported by the huge increase in volunteers across Surrey during the pandemic (p.19). Numerous new groups have also been set up within local communities to support the Covid-19 response, with forty-three new groups recorded on the Covid-19 Mutual Aid website and 250 organisations recorded by SCC. Notably, the total number of such initiatives is likely much higher as many have not

registered via these platforms (p.20). Despite the huge contributions made by such groups, there are also concerns that they lack the necessary skills, capabilities, and experience to deliver services safely which highlights the importance of the VCFS support.

To respond to community needs during the Covid-19 crisis, VCFS organisations have had to adapt their services, transitioning from face-to-face delivery to remote delivery via email, telephone, and video conference. Some organisations are, however, struggling to access the tools required for remote delivery, whilst some services cannot be effectively translated onto online platforms (p.21). Likewise, remote services are not accessible to all beneficiaries as many lack access to computers, tablets, or smartphones or may be inhibited by data costs or lack of computer literacy (p.21). The VCFS is additionally facing the challenge of supporting community groups that are facing greater impacts and unique challenges due to Covid-19, such as individuals from BAME communities, older generations, economically disadvantaged people and those with disabilities (p.22)

Despite these challenges, Covid-19 has also created some positive impacts, including a rise in partnership working and agility within the VCFS and between sectors (p.23). This is evident in the co-ordinated response to the pandemic, and VCFS organisations have welcomed being treated more equally amongst statutory partners as well as being recognised for the unique skills, experience and perspectives they can offer. The rapid response to Covid-19, however, also creates concerns that some essential “voices and perspectives will be unavoidably missed” in the process (p.24) as well as the risks of burnout amongst staff and subsequent mental or physical ill-health which may have long-term consequences for the VCFS workforce (p.22).

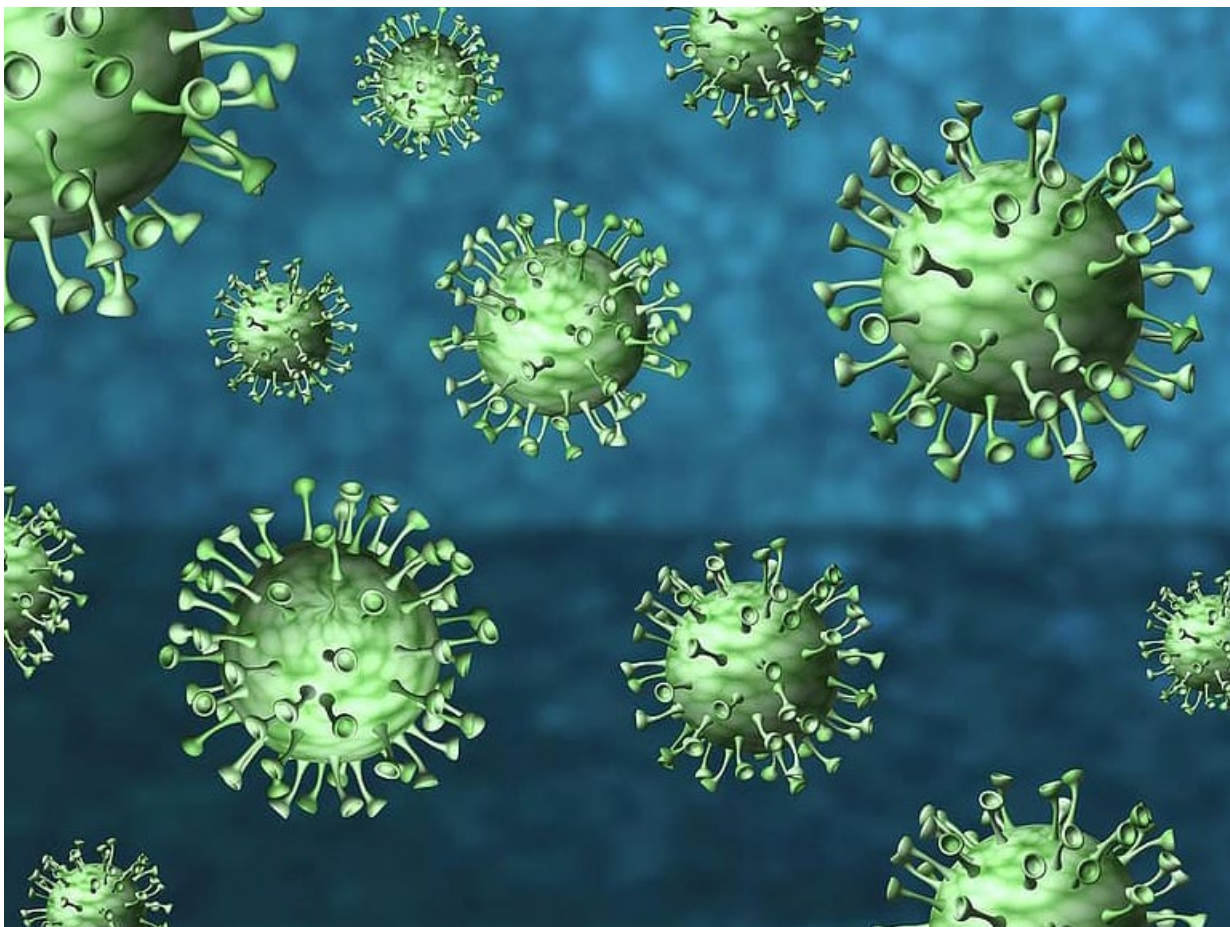
The longer-term impacts of Covid-19 on the VCFS are largely uncertain which is “hampering recovery planning” (p.26). Organisations are anticipating further income reductions and capacity constraints however, there is also a renewed sense of community resilience as local communities have supported themselves, fully independent of VCFS and public sector involvement. Therefore, the VCFA and partners must “harness this community spirit and support it to continue” to ease the overall pressure on services (SCA, 3030, p.29).

Definition and Parameters

Definition: The healthcare and epidemiology cluster encapsulates the pioneering research, innovation and clinical practice taking place across Surrey that reflects both a high-value and high-worth sector, distinguishing the county when compared to others. A diverse range of highly qualified and specialist networks contribute towards the health cluster, comprising NHS trusts and organisations, academic health research networks, academics, research institutes, industry, and the VCFS. The health cluster offers a key area of opportunity and strategic advantage for Surrey in the promotion of post-Covid-19 recovery and growth, not least due to its central role within the national response both in terms of critical care for patients and in the development of treatments for the virus through research and clinical testing.

Composition: The health and epidemiology cluster is comprised of a diversity of institutions, trusts, businesses, and partnerships in both the private and public sector, and within academia and industry.

Within the field of academia, the University of Surrey is a key player, having been rated one of the top eight UK institutions for biosciences, health sciences, psychology and veterinary research by the UK Research Excellence Framework (REF, 2014). The Faculty of Health and Medical Sciences (FHMS) is recognised for its world-class research, encompassing the School of Bioscience and Medicine, the School of Health Sciences, the School of Psychology, and the School of Veterinary Medicine. Royal Holloway University of London (RHUL) (2020a) is also a key institution, with an internationally recognised School of Biological Sciences comprising over thirty permanent academic staff members, thirty postdoctoral Research Fellows and Assistants and around forty postgraduate students. The Psychology department is situated within the newly founded School of Life Sciences and Environment, providing a uniquely multi-disciplinary approach to research that incorporates life sciences, social sciences and humanities (RHUL, 2020b). The Interoception and Social Understanding Lab (Insulab) is a psychology lab specialising in emotion, interoception and social processing research.



The **clinical research sector** is also thriving in Surrey with the state of the art facilities within the Surrey Research Park and the various clinical research networks and partnerships within the NHS Foundation Trusts and the National Institute for Health Research (NIHR) Clinical Research Network Kent, Surrey and Sussex (CRN KSS). Surrey Clinical Research Facility (CRF) and Clinical Trials Unit (CTU) are a key research resource for the FHMS at the University of Surrey (2020e) which deliver clinical trials and studies at all phases, having held MHRA Phase 1 accreditation since 2010.



Royal Surrey County Hospital (2020) is a regional centre for Surrey, West Sussex and Hampshire and is a “tertiary specialist centre for ear, nose and throat surgery and Maxillofacial surgery whilst also attracting UK wide referrals for specialities such as urology”.



Ashford and St Peter's Hospitals NHS Foundation Trust (ASPH) (2019) was established in 1998 and serves a population of more than 410,000 people living in the boroughs of Runnymede, Spelthorne, Woking and parts of Elmbridge, Hounslow, Surrey Heath and beyond and employs approximately 3,800 individual members of staff.



Surrey and Borders Partnership NHS Foundation Trust (SABP) (2020a) was formed in 2005 and it is the leading provider of health and social care services for people of all ages with mental ill-health and learning disabilities in Surrey and North East Hampshire and drug and alcohol services in Surrey and Brighton. All of these NHS trusts are partners within the Surrey Heartlands Health and Care Partnership which represents an integrated care system in which health and care

organisations, local authorities and others join in partnership to collectively take responsibility for improving resource management, the quality of care services and the local population's health.

Surrey Research Park (SRP), a University of Surrey enterprise, provides a vibrant research and business community, enabling the university to gain invaluable links with industry whilst also providing businesses on the park with access to useful networks of academic expertise and research capabilities. Twenty one percent of companies at SRP are located within the life sciences sector and twenty-nine percent of SRP's overall monetary value is within this sector (University of Surrey, 2020c, p.11). This includes the Surrey CRF and CTU, MedPharm, The Whiteley Clinic and Eurofins County Pathology. Alongside this, the sub-cluster of **animal health** in Surrey is thriving, with a pioneering network of **animal health research institutions**, government agencies and university-led innovations. The Veterinary Health Innovation Engine (vHive) is a research centre, start-up and incubator situated at the University of Surrey that was supported by a co-investment of £8.5 million in resources dedicated to promoting the digitalisation of animal health. vHive has strong partnerships with Zoetis Centre for Digital Innovation, Surrey Business School, The University of Surrey's School of Veterinary Medicine, the 5G Innovation Centre and a range of other national and international universities. The Animal and Plant Health Agency (APHA) is an executive agency of the Department for Environment, Food and Rural Affairs (Defra) responsible for safeguarding “animal and plant health for the benefit of people, the environment and the economy”. APHA has headquarters in Weybridge, Surrey, and it employs 2,200 staff (Gov.uk, 2020) with a network of six Veterinary Investigation Centres including the University of Surrey's Veterinary Pathology Centre as a partner post-mortem provider. The Pirbright Institute is a world-leading Centre of Excellence in research and surveillance aiming to prevent and control virus diseases in farm animals and viruses that spread from animals to humans.



Within the **VCFS**, The Community Foundation for Surrey (CFS) has been bringing together local donors across Surrey for over fifteen years to enable positive change within the community for disadvantaged and vulnerable groups. CFS (2020a) awards hundreds of grants every year, totalling over £2 million in 2019-20.



Together we can

Foundations: The health cluster is defined by the core values and principles of its constituent agencies. The NHS (2013) introduced the 'Compassion in Practice' joint strategy to transform the provision of care in all healthcare settings built upon the six core values of care, compassion, competence, communication, courage, and commitment. Within the third sector, the Community Foundation of Surrey (CFS) (2020c) strives to be ambitious, professional, supportive, empowering and proactive in its mission to grow local philanthropy to tackle issues within the local community and to change lives. Within academia, the University of Surrey's (2017) 'Corporate Strategy' summarises its core objectives "to be a leading global university renowned for the outstanding quality and impacts of its graduates and research, together making great contributions to society".

Key Challenges: Despite the pioneering developments and innovation taking place within the health cluster, there are also significant challenges and areas of vulnerability across Surrey that are often overlooked due to the county's reputation of wealth and prosperity. Health inequalities are key, with significant pockets of deprivation and poverty largely being overlooked. For example, the Community Foundation for Surrey (CFS) (2017) highlights that within seventeen local neighbourhoods in Surrey, thirty percent or more of children live in poverty, and in two local neighbourhoods, income deprivation affecting children has reached forty-one percent. Surrey's population also suffers from high levels of mental health challenges, child obesity and one of the highest levels of domestic abuse in the country. Additionally, Surrey has a very high proportion of older generations, and this demographic suffers key challenges including social isolation and dementia. The healthcare cluster is dependent on a strong workforce of practitioners, clinicians and physicians, yet there are national shortages of health workers which poses a threat to the delivery and quality of care. Notably, the NHS went into the Covid-19 crisis with an existing shortage of nurses, doctors and allied health professionals in health and social care, and the pandemic has only exacerbated the strains on this workforce alongside the future threats of Brexit.



► QUALITATIVE ANALYSIS ◀

High Value/ High Worth Areas

The healthcare and epidemiology cluster represents a highly specialised sector that plays a key role in stimulating research and development, contributing to the economy, and ultimately promoting and sustaining a healthy national population. The high value components of the health cluster lie mainly within the employment opportunities it creates and its role in maintaining a healthy population. In March 2020, there were 452,000 people employed in professional scientific and technical

activities as well as 596,000 in human health and social work activities in the South East of England (ONS, 2020), highlighting the highly-productive and skilled workforce in the region. The life sciences industry is an important pillar of the national economy "contributing over £70 billion a year and 240,000 jobs across the country" (HM Government, 2018, p.3). In the South East of England, the life sciences industry is thriving with the highest regional proportion of people employed in life sciences jobs at 58,400, comprising 24% of the industry

nationally, highlighting a key regional distinctiveness in this sector. The NHS (2020b) is one of the largest employers in the world, and the largest employer in Europe, with a total workforce of 1.3 million people. Due to its national and regional influence, as well as its sheer scale and size, the NHS represents a significant economic force in local communities, spending billions on goods and services each year and controlling significant land and physical assets which provide it with significant economic power in local communities (Reed et al., 2019, p.2).

The health and epidemiology cluster also represents a significantly high-worth sector. This is evident in the knowledgebase it stimulates within a diversity of areas including physical and mental health, epidemiology, therapeutics, clinical practice, diagnostics, and nutrition. Gee and Cooke (2018, p.1) assert that such research is considered “a ‘core function’ in UK health service organisations” and can “promote cost effectiveness and knowledge creation”. The NHS is a key force in the diffusion of knowledge through the delivery of post-graduate education and training, with Health Education England (HEE) (2020) South East supporting over 38,000 learners across a broad range of health and care learning environments. The NHS Long Term Plan (2019, p.75) enforces that health research “enables prevention of ill-health, earlier diagnosis, more effective treatments, better outcomes and faster recovery” whilst ‘research-active’ hospitals are shown to have lower mortality rates, with the benefits of research extending beyond study participants to all patients within the hospital. The cohesive and innovative health research base in the UK has a key role in the fight against Covid-19; for example, the NHS Health Research Authority (HRA) (2020) asserts that “research is helping us to develop diagnostic tests, treatments and vaccines and to prevent and manage the spread of the virus”. The NHS HRA (2020) is focusing on Covid-19 specific research studies and has implemented a fast-track approval process to ensure that research can be conducted as quickly as possible.

Uniquely Surrey: Productivity, Place, People and Connectivity

Surrey possesses a comparative advantage in healthcare and epidemiology as it is home to an extremely specialised and coordinated healthcare network that includes NHS trusts, government health agencies, private clinics, research institutes and

universities. This healthcare research network is facilitated by Surrey’s access to specialised inputs, such as the county’s highly skilled workforce offering a specialist knowledgebase. Surrey has an outstanding research base within the world-class universities of the University of Surrey and Royal Holloway University of London, both internationally recognised for their research and innovation. Their pioneering health departments promote research and development and provide a foundation of research and teaching excellence for the health cluster in Surrey. Additionally, the University of Surrey’s enterprise, Surrey Research Park, offers cutting-edge facilities, bridging the gap between academia and industry in Guildford to promote cross-sector connectivity. Likewise, there are a range of pioneering research institutions that contribute towards the specialist knowledge base of the county through the provision of specialised training, education, information and knowledge exchange, and technical support. Surrey also boasts strong capabilities in emerging fields, such as digital health and artificial intelligence which is pioneering within the University of Surrey’s Veterinary Health Innovation Engine (vHive). Furthermore, Surrey is a hub for animal health with the university’s School of Veterinary Science, the Pirbright Institute and the Animal and Plant Health Agency (APHA) all situated within close proximity to each other and therefore strongly interconnected through various research partnerships and collaborations. This again enforces the significant “role of location in competitive advantage” (Porter, 2000, p.15). The geographic concentration of knowledge-intensive research institutes, industry and NHS networks in Surrey promotes internal competition and innovation and provides it with a comparative advantage nationally in terms of regional connectivity.



NHS trusts and organisations in Surrey also offer a vital platform for clinical research and development, forming the healthcare infrastructure of the county. For example, the Surrey Heartlands (2020a) Health and Care Partnership was one of the first fourteen integrated care systems in the UK which provided a new model for health collaboration. These trusts also ensure the maintenance of high standards of health and social care within the local community. Surrey has a higher life expectancy than the national average and the proportion of residents who experience a long-term limiting health problem or disability is lower in all eleven of Surrey's local authority areas than both the regional and national averages (ARUP, 2020, p.19), which in turn reduces pressures on the local health infrastructure.

Covid, Brexit and Beyond

Covid-19 has created huge detriments to the health cluster in Surrey, with far-reaching implications for not only the general population, but also the workforce, healthcare infrastructure, third sector, industry, education and research community. The healthcare infrastructure and the third sector within the county have experienced the most significant impact, creating immense pressures in terms of demand for services and an overwhelming strain on both resources and

the workforce. Furthermore, Covid-19 has exacerbated health inequalities that already existed in the county, having a disproportionate impact on disadvantaged groups such as BAME communities. Despite these challenges, Covid-19 has also created a wealth of opportunity for many agencies in the healthcare cluster. Health research has pioneered with hundreds of Covid-19 specific research projects emanating from the local universities and research institutes. Likewise, industries in the health and life sciences sector have experienced huge growth, offering their services towards the national Covid-19 response and benefitting from increased public awareness of health.

Brexit is likely to have far-reaching consequences for the healthcare workforce as it may impact prospects for future recruitment of healthcare professionals from Europe. It may also create challenges for supply chains, increasing the need for stockpiling if shipping delays are prevalent. In terms of the research community, EU research funding grants will be threatened and research collaborations with European partners may be undermined. However, from a positive perspective, it will likely encourage researchers in the UK to look beyond Europe for partnerships, enabling opportunities for more international collaborations to be fostered.



► CASE STUDIES ◀

Public Health England (PHE) South East... with Dr Michael Baker, Deputy Director of Healthcare Public Health

Challenges: The scale of the Covid-19 challenge was the main concern for PHE South East, which resulted in them rapidly upscaling their long-established services and practices. This entailed the recruitment of a significant number of new staff, training them and building on existing networks.

Opportunities: The widescale implementation of online platforms such as Teams enabled collaborative working to become easier and more accessible. Dr Baker suggested that PHE South East has been sharing more data than ever before and that there seems to be more trust developed amongst partners. Flexible ways of working have also been beneficial for both the workforce and the delivery of services. Moreover, Covid-19 has provided a welcome spotlight to expose the health inequalities which are often hidden in largely affluent areas, encouraging these issues to be prioritised on the national agenda.

Uniquely Surrey: Surrey has a strong public health team with SCC working closely with the NHS, within a devolved partnership with Surrey Heartlands. PHE South East also benefits from a strong relationship with the Surrey Public Health Local Authority team and wider NHS partners, enabling a rapid cross-sector response. In terms of outcomes, there is evidence to suggest that Surrey has performed better nationally because of the demographics of its population. Surrey's lower levels of deprivation within its population is likely to have contributed to lower incidence of Covid-19. Likewise, although Surrey has a high proportion of older people, it has not been disproportionately affected by Covid-19 because this demographic is largely affluent and healthy, both of which serve as protective factors against Covid-19.

NHS Trusts

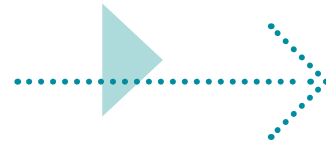
NHS (2020a) trusts and organisations have been at the forefront of the Covid-19 national response and have implemented “the fastest and most far reaching repurposing of NHS services, staffing and capacity in our 72-year history” involving a reconfiguration of healthcare services, a huge expansion of critical care support, rapid implementation of PHE/NHS Infection Prevention and Control guidance and new clinical guidelines and a widescale redeployment of staff.

Angela Richardson, MP for Guildford, stated that the healthcare infrastructure in Surrey has coped extremely well with the pandemic and “if anything, hospitals overachieved as they were not eligible for some of the emergency grant funding” (Online interview, 14 August 2020). Moreover, **Jeremy Hunt, MP for South West Surrey**, suggested that the NHS as a whole has performed outstandingly in response to Covid-19. Surrey benefitted from being hit by the virus later than London, enabling local authorities to have more time to prepare for the outbreak and placing less pressure on the Surrey system overall. Likewise, Surrey has fewer areas with a high concentration of people enabling slower rates of transmission.

In terms of concerns over NHS supply chains of PPE, Jeremy Hunt highlighted that Lord Deighton has made huge progress in resolving these issues. Furthermore, the Health and Social Care committee has launched an enquiry into NHS workforce burnout, aiming to tackle the growing issues of mental ill-health and post-traumatic stress disorder (PTSD) amongst NHS staff following the peak of the pandemic. In response to the issue of workforce shortages, the Government have not yet published the long-term workforce projections which did not feature within the NHS People Plan. Therefore, there is a pressing need for robust, independent projections to kickstart training and planning of the future healthcare workforce. Jeremy Hunt suggested that if the social care workforce continues to be under-resourced, increases in domestic unemployment may provide a future recruitment pool.



Surrey and Borders Partnership NHS Foundation Trust (SABP)

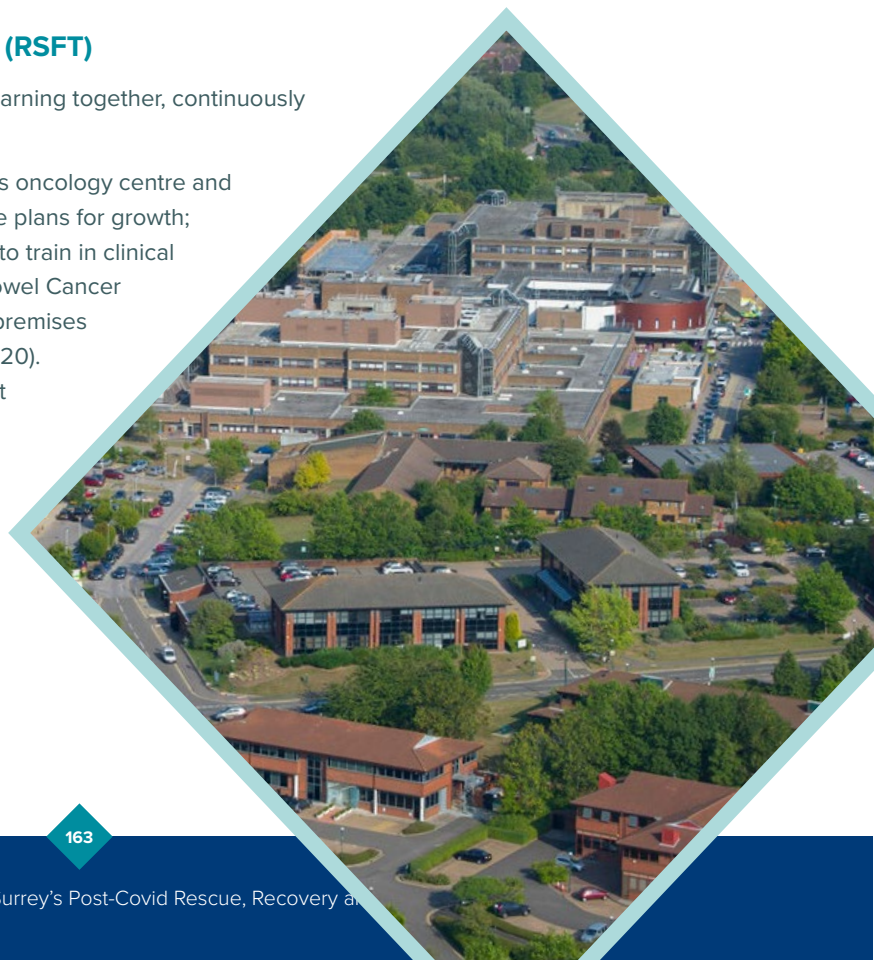


Fiona Edwards (top left), Chief Executive of SABP and Professor Helen Rostill (top right), Director of Innovation, summarise that Covid-19 has stimulated a rise in collaborative, cross-sector partnerships within the trust, involving social care, voluntary sector and product providers to develop more innovative ways to support patients, particularly in terms of mental health. These collaborations have promoted the development of a range of research studies and surveys investigating the general experiences of Covid-19, its impact on health, lifestyle, the workforce, family functioning and emotional wellbeing. SABP (2020b) is supporting the national effort to fight Covid-19 by conducting a survey with the University of Surrey investigating the psychological impact of Covid-19 and its effect on emotions, behaviour and wellbeing. There is also a study being launched with the Surrey multi-ethnic forum analysing Covid-19 related health inequalities within BAME communities and their experiences of the pandemic. Professor Rostill and Fiona Edwards highlight the importance of recognising that the majority of Covid-19 government messaging and warnings have been delivered in English, failing to account for the large BAME population in the UK who may not have English as their first language. Alongside this, Sight for Surrey have enforced that the Westminster government's Covid-19 briefings failed to provide interpretation for those with visual and hearing impairments.

The Royal Surrey NHS Foundation Trust (RSFT)

Values: RSFT (2020) focuses on caring together, learning together, continuously improving and excelling together.

The Royal Surrey County Hospital has a world-class oncology centre and research department with ambitious and innovative plans for growth; an increasing number of staff are being employed to train in clinical and academic roles. The hospital also hosts the Bowel Cancer Screening Programme (BCSP) Southern Hub with premises on the Surrey Research Park in Guildford (SCRI, 2020). Likewise, the Minimal Access Therapy Training Unit at RSFT is one of only three training centres in the country and is considered an international centre of excellence in key-hole surgery (Royal Surrey County Hospital, 2019, p.6).



Jacqui Tingle, Professional Director of Nursing & Midwifery and Director of Infection Prevention & Control at Royal Surrey NHS Foundation Trust



Strategic Command and Teamwork: At the beginning of the Covid-19 outbreak, the trust implemented a rapid strategic response, dividing responsibilities within the senior leadership team with one team focusing on managing Covid-19 and the other ensuring that 'business as usual' procedures took place for as long as possible. NHS trusts implemented a strategic command as part of the emergency planning, utilising a command and control methodology with levels of responsibility to identify gold, silver, and bronze command responses.

The Infection Prevention and Control team recognised their need to be visible due to the high levels of anxiety amongst staff, who naturally felt concerned about their work environment risks and their own exposure to the virus due to the high numbers of Covid-19 admissions. This was managed through a seven-day working pattern and the implementation of Public Health England's guidelines of phase management. The Rescue and Recovery phase is currently driving the trust to catch up on procedures that were on hold during the pandemic as well as focusing on diagnostics. As a cancer centre, Royal Surrey is also ensuring that cancer patients are following their trajectories for their pathways.

Workforce Safety: The trust prioritised the health and safety of its workforce, ensuring that there was never an occasion where staff went into practice without the right level of PPE based on PHE guidance. Regular communications and webinars were sent out to staff with a focus on the trust's achievements and areas that required more support. The importance of disseminating positive new stories was noted to boost morale; for example, Royal Surrey performed well in terms

of Covid-19 survival rates and its principle of early adoption of 'continuous positive airway pressure' (CPAP) management (assisted ventilation) is now being incorporated into a number of clinical trials and research papers.

Challenges: There are several strategic lessons to learn about the management of the NHS supply chain. The trust operated with a degree of uncertainty over which supplies were arriving and when, and there was no control over the quality or quantity of the PPE that arrived. As a result, the trust ensured that nothing was sent out into the wards unless it went through an internal quality assessment. Likewise, if the supply chain was unable to provide the necessary equipment to keep staff safe, the trust was forced to look for alternative suppliers. This led to challenges such as inflated costs for PPE with companies profiteering from the pandemic.

Stephen Barnett, Associate Director of Research, Development and Innovation, summarised that pre-Covid-19, there were roughly 200 clinical research projects active within the trust, including early-phase clinical trials in oncology, observational studies and studies in innovation. Many research studies and clinical trials were put on hold at the beginning of the pandemic to ensure participant safety. Despite this, NIHR has launched a range of urgent Covid-19 related public health research projects. The trust currently has twenty Covid-19-related trials and studies underway, and is working with colleagues across Kent, Surrey and Sussex to establish the infrastructure for the delivery of Covid-19 vaccine trials and to rebuild the research (primarily clinical trials) that was taking place prior to Covid-19.

Restructuring: Significant change occurred at pace within the trust to respond and create the capacity required to meet the projections of Covid-19 patient admissions. This involved the restructuring of wards and infrastructure upgrades to accommodate patients. Additionally, new drive-through pharmacies and remote consultations that reduced contact with patients but still allowed for services to be delivered were instigated.

Leadership: "One of the most overriding themes was the strength of leadership that engendered empowerment amongst staff to implement rapid changes safely" (Online interview with Stephen Barnett, 26 August 2020). There was strong leadership among intensive therapy unit colleagues who embraced the

approach of CPAP and executives who felt it was important to have a visible presence among their clinical teams. Despite the fact that their roles provided an opportunity for them to remain at a distance due to Covid-19 precautions, they always ensured there was a rolling programme of leadership.

Key example: The Chairman of RSFT, Sue Sjuve, volunteered to work in the wards as a Healthcare Assistant. She gave visible leadership by being there and experienced working on the wards; this was viewed in very high regard by staff.

Ashford and St Peter's Hospitals NHS Foundation Trust (ASPH)

ASPH has been extensively analysing all admissions for Covid-19 identifying the risk factors, creating a model to predict outcomes and calculating the risk for the region, whilst also analysing staff antibody data. In line with government policy, ASPH terminated all non-Covid-19 related trials, however some trials with minimal impact on intervention and patient participation began to gradually restart after the peak of the pandemic.



Professor Pankaj Sharma, Director of Research and Development at ASPH reflected on the fact that Surrey is an advantageous base for his research as a geneticist because it has a stable population which provides an ideal dataset for his work.

Challenges: In terms of research and development within the trust, Brexit is likely to hinder access to important EU research grants. For example, Professor Sharma currently receives €3.5 million towards his research project, however post-Brexit, this funding is no longer guaranteed.



Surrey Heartlands Health and Care Partnership

Scope: Surrey Heartlands integrated care system (ICS) covers most of Surrey, including areas overseen by NHS Surrey Heartlands Clinical Commissioning Group, along with all local NHS organisations and Surrey County Council. The ICS serves a population of approximately 1.1 million within areas of East Surrey, Guildford and Waverley, North West Surrey and Surrey Downs, accounting for over eighty-five percent of the Surrey population (Surrey Heartlands, 2020, p.7).

Budget: Combined health revenue allocation of over £1.5 billion and combined social care and public health budget of £317 million (Surrey Heartlands, 2020, p.7)

Vision: "To work together with the people of Surrey Heartlands to improve health and care by supporting and enabling people to be healthier, providing high quality and accessible care and creating partnerships that work better for the people we serve and those who provide care" (Surrey Heartlands, 2020, p.7-8).

Surrey Heartlands was one of the first fourteen of the new ICS' introduced in the UK, and it is expected that that all health and care areas will operate in this way by 2021. It was the second ICS with a devolution deal, enabling it to gain greater control over budgets and accountability in local decision-making. Surrey Heartlands has already achieved particularly notable successes, including the development of an award winning 24/7 Maternity Advice line, the transformation of diabetes care services, the introduction of collaborative teams across health and adult social care to improve hospital discharge, and the use of cutting-edge technology to improve the quality of life of dementia patients living at home (Surrey Heartlands, 2020a, p.3). It is also leading the Covid-19 restore and recovery programmes across Surrey.

**Surrey Heartlands Workforce Transformation:
with Lucy Moreton, Workforce Transformation
Manager for Training.**



The Surrey Heartlands Workforce Transformation team were directed under the Local Resilience Forum (LRF) to manage the three workforce groups as part of the response to Covid-19, including training, welfare, and maximising staff. The focus of Lucy's training sub-cell was to bring together education leads from health and social care organisations who could host students in order to establish what preparations their workforce needed to support the Covid-19 response. The two main areas of training required were upskilling NHS staff moving to different departments as well as new staff and critical care training. However, there was low engagement from acute trusts who wanted to conduct critical care training independently rather than as a system. It was agreed that the priority was the provision of an induction programme to accommodate healthcare assistant roles (non-registered) and nurses requiring professional training. The University of Surrey provided site space, facilities and tutors for the training and Central Surrey Health (CSH) already had put together an induction pack with available resources.

Opportunities and Challenges: Covid-19 has presented an opportunity for the team to achieve its main aim of building stakeholder engagement and strong relationships with the entire ICS, and momentum for this has continued. However, there are limitations

on what can be achieved due to Covid-19; for example, placement opportunities have changed, and some organisations and community providers are no longer able to host students. Likewise, Brexit could create a huge threat to the healthcare sector's diverse workforce as it will likely impact the International Nursing and GP Programmes.

Surrey Heartlands Covid-19 Response

Across Surrey Heartlands (2020b), new and different procedures have been implemented to minimise the spread of the virus and to ensure there is capacity to care for Covid-19 patients alongside their recovery and rehabilitation. These include the adoption of virtual and telephone appointments/ consultations in general practice, hospitals, mental health services and community services. Additional support is also being provided to care homes through the Surrey LRF and additional hospital capacity has been added through partnerships with local partners. Alongside this, Surrey Heartlands has assessed community and rehabilitation needs, organising a cross-sector team to develop a temporary facility for Covid-19 rehabilitation at the NHS Seacole Centre at Headley Court.

**Accelerating Digital Developments and Solutions in
Surrey Heartlands... with Katherine Church, Joint Chief
Digital Officer for SCC and Surrey Heartlands ICS.**



Uniquely Surrey: Surrey has worked together as an integrated system to overcome boundaries and ensure that no one fell through the inter-organisational gaps during the Covid-19 pandemic. Surrey Heartlands represents a digitally advanced system which is evident in the rapid deployment of digital products that we have seen during the pandemic. For example:

- **Digital Wellbeing Platform:** Developed through a collaboration with SCC, eighteen local voluntary sector organisations and the Mental Health Trust, this platform provided some of the services that were available face-to-face pre-Covid-19 such as counselling sessions, drop-ins and Zumba classes online.
- **Remote Monitoring Smart Meter and AI Platform:** The deployment of devices that connect to the smart meter in the home to alert families if vulnerable loved ones have not moved or used electricity in the home during lockdown.
- **Accelerating the Digitalisation of Care Homes to Overcome the Physical Boundaries of Lockdown:** As care homes were locked down with no visitors permitted, vulnerable residents were disproportionately impacted, struggling to gain adequate healthcare, and becoming increasingly socially isolated. In response, Katherine's team worked to accelerate virtual consultations within care home settings, with accuRx providing NHS Digital approved econsultation systems. Video consultations have now been adopted by roughly ninety percent of GPs to ensure that patients can gain access to primary and secondary care through a range of channels. Additionally, Surrey became an early adopter of the NHSX pilot programme for Facebook portals to be distributed free of charge into care homes. This programme enabled eighty portals to be distributed with exceptional success, enabling residents to gain a sense of human connectivity with their families and friends through the easy-to-use and intuitive functionality on the devices. Online training to better equip care home staff was also offered, with a range of courses surrounding new topics such as infection control, end of life and verification of death; ninety homes were signed up for this training within five weeks.

Challenges:

Digital inequality: Katherine Church highlighted the inequalities in accessing high speed broadband in Surrey, particularly in terms of the digital infrastructure in rural areas; some care home residents struggled to access the internet. Her team are working with SCC on the superfast broadband voucher scheme and rolled out NHSmail and Microsoft Teams for secure communication platforms for staff and residents.

Channel Shifting: Whilst Covid-19 has promoted the acceleration of digitisation, face-to-face consultations have largely been replaced with telephone and virtual consultations (VCs), effectively leading to a channel shift rather than a radical re-think of how and where services are delivered. This was implemented rapidly by necessity, but at times fails to account for patient preferences and needs. As we progress, many people are becoming keener to attend face-to-face consultation for some appointments and therefore, we need to think carefully about how and when we design virtual consultations into our customer journeys as one out of many ways in which we bring services closer to people, meeting their needs. Furthermore, VCs should be considered a transformative tool, but not as an end point for all patient care.

Educating the Public: There is a need to educate the public to enable a better understanding and acceptance that there are equally safe and valid ways of engaging with clinicians, and that an escalation pathway exists whereby a patient may see a practitioner face-to-face if essential. Without this, the blanket use of remote and virtual consultations is likely to drive an increase in attendances to urgent care which will in turn place increased strain on the local health infrastructure.





Dr Jo Armes, Lead for Digital innovation in the ARC; Reader in Cancer Care and Lead for Digital Health in the School of Health Sciences at the University of Surrey, echoed Katherine Church's insights, highlighting that due to the limited preparation and planning for the transition to VCs, there must now be a focus on assessing the situation and implementing strategies to sustain the use of VCs whilst ensuring that patient needs are met. Likewise, she reflected on the challenges of digital health inequalities which restrict access to virtual services for disadvantaged groups. Moreover, privacy issues can also arise when other people are present in the room when VCs take place alongside the challenges associated with sharing devices. Dr Jo Armes also commented on the challenge that acute hospitals face as they plan to return to business as usual with the NHS 'Rescue and Recovery' phase. This involves reconvert operating theatres back to normal after serving as intensive care units during Covid-19 so that waiting-lists can be prioritised however, these reversion plans may be interrupted by a second wave. This reflects the shift towards restoring non-Covid-19 health services whilst maintaining continued vigilance and the ability to quickly repurpose and 'surge capacity' when required.



NIHR Applied Research Collaborations (ARC) Kent, Surrey and Sussex

Established: July 2019

NIHR | Applied Research Collaboration
Kent, Surrey and Sussex

Members include higher education institutes, sustainable transformation partnerships, Academic Health Science Network (AHSN), Clinical Research Network, primary care networks, public health, local authorities and the NHS.

Impact: The NIHR ARCs support applied health and care research, responding and meeting the needs of local populations, and local health and care systems. The NIHR (2020, p.1) ARC Kent Surrey Sussex (KSS) is one of the fifteen ARCs in England and is part of a £135 million investment by the NIHR to improve the health and care of patients and the public. The ARC KSS is led by Sussex Partnership NHS Foundation Trust and Professor Stephen Peckham at the University of Kent (NHS Sussex Partnership, 2020). It focuses on key regional challenges including social deprivation mainly located in coastal towns, GP practice closures, a higher than average number of children in care and associated mental health concerns in children and young people, a higher proportion of older people and the highest concentration of people with dementia in the UK.

The four key research themes within ARC KSS include

- 1) Living Well with Dementia and Healthy Ageing** – led by Kath Sykes
- 2) Primary Care and Community Health Services** – led by Sam Fraser
- 3) Starting Well: Children and Young People's Mental Health** - led by Becca Randell
- 4) Social Care**- led by Becky Sharp

There are also four cross cutting themes which include: public health, digital, health and social care economics and co-production. These themes provide a unique opportunity to identify and investigate health inequalities and key areas of regional vulnerability, providing geographical analysis to highlight the areas of need that require additional resources to be channelled into.

Starting Well: Children and Young People's Mental Health... with Becca Randell, Implementation Lead.



This research theme aims to improve the early detection and intervention of mental health problems in children and young people (CYP) through identifying screening strategies for those at particularly high risk, critical periods for delivery of intervention and measures to shape targeted, preventative and developmentally appropriate interventions.

Kent, Surrey and Sussex AHSN in partnership with ARC KSS have conducted a thematic analysis on the responses from several questions within the 'Your Voice Matters' survey project developed by the User Voice and Participation Team within SCC which recruited 1,207 CYP in primary and secondary education across Surrey. The survey asked a range of questions on different issues including views on environmental spaces, health, the Covid-19 societal impact and concerns for the future from March to May during the peak of the pandemic. The findings can be used to identify potential causes of both happiness and concern for pupils, highlighting critical issues that need to be tackled. For example, primary school students expressed the highest concern for school related problems, with bullying being cited by thirty-two percent of respondents as a further reasoning for their concern (KSS AHSN, 2020, p.11). Likewise, mental health concerns accounted for more than double the number of responses when compared to physical health concerns, and eleven percent mentioned concerns over safety (KSS AHSN, 2020, p.11). Secondary students were most likely to express concern over their education and performance at school with some also referencing concern over societal pressures (KSS AHSN, 2020, p.12). Moreover, respondents referenced the need

for better mental health services and career advice alongside better park facilities (SCC UVPT, 2020, p.26-37).

Covid-19 specific research has also been funded through ARC KSS including, the DisCOVeRY research project based at the University of Sussex, analysing the psychological impact of Covid-19 on CYP in high risk and hard to reach groups across the region. Additionally, another research project is currently investigating care leavers' experiences of lockdown and how services can better support them to progress afterwards, focusing on housing, employment, and service support issues which will result in guidance co-produced with care leavers. The 'Zoom or Room' project is also assessing the effectiveness and guidance for in-person versus online video interaction guidance for CYP with an Autism Spectrum Condition. These examples showcase the vital role of the ARC KSS in funding and supporting research projects, and specifically Covid-19 research which is currently essential to support the restoration and recovery of local mental health services.

Living Well with Dementia and Healthy Ageing... with Kath Sykes, Implementation Lead.



This research theme aims to promote KSS as a leading region for dementia research and to translate this into improved care to support healthy ageing and living well with dementia (NIHR, 2020). The region is strategically placed to target this, with a higher proportion of older people and a higher concentration of people living with dementia than the national average.

Current Research Studies Include:

- **Technology Integrated Health Management (TIHM) Covid-19 Extension Study** – TIHM was led by Surrey

& Borders NHS Foundation Trust involving a collaboration with the University of Surrey, RHUL, KSS AHSN, the Alzheimer's Society, local Clinical Commissioning Groups, charities and ten technology companies. It was a two-year project which developed assistive technology for people living with dementia to enable them to live in their homes for longer. In response to Covid-19, this initiative has received funding to distribute the service model to 1,000 people living with dementia and their carers living at home, providing home sensors and monitors to measure oxygen saturation and temperature to monitor their health and wellbeing at home.

- **Time for Dementia (TFD)** – This is a longitudinal study supporting medical students, nurses, and healthcare professionals to better understand dementia through the analysis of people living with dementia over a period of two years. A sub-study has been added analysing the impact of Covid-19 on those families with 250 families recruited.

Primary Care and Community Health Services ... with Sam Fraser, Implementation Lead.



The KSS region has a growing population of people requiring management and support in primary care which places significant pressures on GP practices and community services (NIHR, 2020). This research theme aims to complete the development of a world-first regional primary care facility which will support those with complex needs system-wide.

Covid-19 Research Projects:

- **Re-scalable Solutions for Reprocessing PPE** - This project explores strategies to reduce the environmental impact of PPE and overcome supply chain and procurement issues.

- **Evaluation of the Acceptability and Sustainability of Digital Models of Care Delivery, Particularly From a User Perspective.** ARC has a strong focus on tackling health inequalities across the region and there is the potential for the rapid deployment of digital technology to further widen the inequality gap and exclude those in the greatest need due to limited access to online services. This study analyses whether digital inequalities have the potential to increase the social divide and how accessibility to services could be improved for disadvantaged groups.
- **Mental Health Support Service Accessibility** - This study considers how to ensure that people receive the care they need for example through providing infrastructural developments such as telephone masts, mobile data provisions, phone connections and handsets. Limited access to these basic provisions can exclude people from care and therefore, it is vital that access is improved to tackle health inequalities.

Social Care: with Becky Sharp, Implementation Lead.



Social care is a growing challenge for British society with an ageing population and changes in family care availability. Huge variations and inequalities exist in the availability of social care services within and between local authorities. Furthermore, Covid-19 has exposed the severe issue of under-funding and under-resourcing of our care system and the under-valuing of its care workforce. This research theme aims to analyse how change in social care service provision impacts service users, their families, carers and others.

Covid-19 Research Projects:

- **Community-based Volunteering in Response to Covid-19** - A study investigating how a community-

based volunteer workforce can be rapidly and safely implemented, and their impact on providing support for self-isolating and vulnerable members of the community. This involves comparisons between the 'GoodSAM' NHS volunteer response and the community sector response. It aims to assess how the voluntary sector might support our care system going forward as part of recovery programmes focusing on older people and socially and economically deprived communities.

- **Development and Implementation of a Culturally-appropriate Living Resource to Support BAME Communities Through the Life of the Covid-19 Pandemic** - This study aims to support BAME communities who have been disproportionately impacted by Covid-19 through increasing health awareness and understanding of advice, particularly among older people.
- **How can Community-based Care Settings for Individuals Vulnerable to Covid-19 Mortality be Supported in Receiving Returning or New Clients?** This is a mixed-methods study based at the University of Sussex however, Surrey will also be included in the analysis. It will explore processes to allow patients to receive services safely both in care homes and domiciliary care through the implementation of guidance. A study is also taking place analysing the movement of domiciliary workers and spread and infection control, focusing on supporting the care sector to implement PHE guidance.



Third Sector

Community Foundation for Surrey

Established: 2005

Location: Guildford

Values: The Foundation strives to be ambitious, professional, supportive, empowering and proactive.

Vision: To build a strong movement of local philanthropists, connecting them with local charitable organisations- together they ensure that every individual in Surrey has hope.

Key Achievements: Generated £25 million to benefit community groups and individuals in Surrey, having built an endowment of £12 million to ensure that donor giving continues to make a sustainable, lasting impact.



Together we can

Uniquely Surrey: CFS is strategically placed to be able to identify and understand the key challenges facing local communities in Surrey and offer direct assistance to charities on the frontline tackling these issues. Surrey is a wealthy county with a large population of people with the capacity to give, enabling a large network of generous donors to be guided by the foundation.

Laura Thurlow, Chief Executive of CFS, emphasised that the Covid-19 pandemic gave rise to a more urgent sense of need within the community which in turn stimulated an increase in giving. **Dr Jim Glover OBE, Pro-Chancellor of the University of Surrey, and Trustee of CFS**, likewise highlighted that Surrey has more volunteers per head of the population than anywhere else in the country. The Covid-19 pandemic encouraged over 10,000 volunteers to contribute, offering their time, and setting up local neighbourhood charities to support the national effort. Consequently, charities have been awash with opportunities to use the volunteer workforce. RHUL's (2017) Community Action, for example, was granted a Queen's Award for Voluntary Service in 2017, recognising its achievements in helping to build strong communities by inspiring students to volunteer and leading projects to support local organisations. Likewise, the University of Surrey is making a considerable contribution in terms of volunteering within the Guildford borough.

Challenges: **Dr Julie Llewelyn, Chair of the Hambledon Community Fund within CFS and Member of the Foundation's Grants Policy and Marketing and Development Committees**, highlighted the significant health inequalities in Surrey and the disproportionate impact of Covid-19 on BAME groups. Additionally, Covid-19 has had a detrimental impact on people's mental health, particularly due to anxiety caused by the economic challenges it has created. Dr Llewelyn identifies fragmentation in the third sector as a key challenge which forces charities to compete for funding at the expense of collaboration.

Impact on the VCFS: CFS (2020b) has listened to the community and has identified the key issues and concerns within the VCFS resulting from Covid-19. These include significant loss of income from all sources, significantly increased demand for services, lack of resilience in organisations due to both staff and services being stripped to minimal essential levels, the human costs of the pandemic and the long-term impacts on communities. With lockdown restrictions beginning

to ease, organisations are gradually starting to deliver face-to-face services, but they require adequate supplies of high-quality PPE to do so. Furthermore, the nature of the pandemic forced many organisations to implement rapid responses "often basing decisions on severely limited guidance", which has had a lasting impact on the services they can offer. Many charities were already suffering from inherent understaffing and they have therefore struggled to manage the unprecedented demand for services that have emerged due to Covid-19, and this is only likely to grow. For example, The National Emergencies Trust (2020) reported that **"one in eight people living in the UK - roughly seven million people - expect to seek support from a charity or voluntary body in the next twelve months as a direct result of challenges created by the Covid-19 pandemic"**.



Opportunities: Despite these challenges and hardships, Covid-19 has revealed the VCFS' capacity to adapt quickly while remaining committed to supporting vulnerable groups. Covid-19 has enabled new opportunities with positive outcomes such as more collaborative working in the third sector. Various actors within the third sector in Surrey have come together to support one another in original ways. The Surrey Wellbeing Partnership is a key example, comprising voluntary sector organisations working alongside the NHS to empower parents to meet the emotional needs of children, young people, and families during the pandemic. This increased collaboration is enabling charities to benefit from being more aware of what

other local charities offer, so clients can be referred to other services when necessary. The CFS' 'Hidden in Plain Sight' webinars are also a key example of collaborative working, covering regional issues such as domestic abuse, children and young people's mental health and isolation and vulnerability among elderly people. These webinars offer a valuable resource for charities to raise awareness and educate the public about these pressing issues.

The importance of the third sector in the Covid-19 response cannot be overstressed. Furthermore, there is an urgent need to sustain and invest in local organisations across Surrey to protect against the

severe income losses and overwhelming demand for services so that they can continue to deliver critical support to those most vulnerable within the community. SCC (2020) is helping to achieve this goal, with the Community Projects Fund (CPF) which will be launched in the autumn involving a "huge local engagement programme" to provide £100 million in community funding over five years to local projects across the county. The council will engage with the VCFS and local councillors in Surrey to ensure that the fund targets local needs across Surrey. Furthermore, it will provide an important mechanism in the Covid-19 recovery phase to support and empower local communities.

Cluster Cross-Overs: Health, Research, and Education

The health and epidemiology cluster has various crossovers with other clusters in Surrey. For example, there are considerable overlaps between the health cluster and the knowledge cluster in the form of the health-specific research and innovation generated by universities, research institutes and NHS research teams alongside the delivery of health science education and training.

Covid-19 has impacted health research and education, forcing a widescale shift to online platforms so that students and researchers can work from home. Most clinical research and trials have as a result been terminated or postponed, however, there has been a national push for Covid-19 related clinical research which has created new opportunities for research and collaborations within certain areas. Brexit is also likely to create obstacles to EU research funding streams which contribute significantly to research mobilisation and it is also likely to undermine or change research relations with partners in Europe.

The University of Surrey

The Faculty of Health and Medical Sciences (FHMS) produces high-level students studying Healthcare Practice, Paramedic Science, Nursing and Midwifery with four-hundred students graduating from its professional programmes each year. The university's nursing courses have been ranked top five in the UK and fourth in the UK for research quality by the Complete University Guide's

(2020) subject league table for 2021. The BSc (Hons) course in Paramedic Science, developed in partnership with the South East Coast Ambulance NHS Foundation Trust, enables students to take part in excellent Professional Training placements and they also have access to new multi-million-pound facilities including the new Surrey Clinical Simulation Centre for more immersive training opportunities within the Kate Granger Health Sciences Institute.

FHMS quickly mobilised during the beginning of the pandemic to divert their research into Covid-19 related issues to support the national research effort. There have been over one hundred projects underway or completed across a range of departments within the University of Surrey covering key themes of immunology, antibodies, vitamin D and mental health. The university has also made a huge contribution to the international, national and regional response to Covid-19 with approximately 170 student nurses from FHMS opting to work at Royal Surrey County Hospital and a large-scale operation to produce visors, non-invasive ventilator valves and mask filters as well as the provision of anaesthetic ventilators, car park access, IT support, bio equipment/consumables, PPE, chemical components for Covid-19 testing and loans of patient lockers. The university has also provided access to labs and the Kate Granger simulation facilities alongside staff to deliver SURGE training courses to upskill nurses.

Professor Melaine Coward: Head of the School of Health Sciences and Interim Executive Dean of FHMS at the University of Surrey.



Professor Coward has been conducting policy related work with NHS England during the Covid-19 pandemic and has been involved with a small group working with the Chief Nurse to review the seven point plan which informed the deployment of nurses and midwives during the crisis.

Student Experience, Teaching Delivery and Placement Opportunities:

Despite the national decision to send second- and third-year students on to placement as paid members of staff during the pandemic, Professor Coward contended this decision due to her personal safety concerns for the students. She made the institutional decision to only send third year students from the University of Surrey on to placements and she gained support from the professional regulator for this decision. FHMS has managed to provide all third-year students with placements, resulting in them either qualifying early or in September as planned, which is a significant achievement. Second year students have been concentrating on theory so will spend most of their final year in clinical practice with a return every fortnight for touch points. First year students have experienced the most significant impact, being yet to gain any clinical practice. In response, the school is planning to buddy up incoming second - and third-year students so that they can support one another. FHMS students have expressed concern about expectations of their knowledge levels and the risks involved in the sector and as a result, the school has planned for them to come to campus for simulated practice before being sent out onto placements. Likewise, the personal tutors' rapport with students

has been highlighted as critical in the support and safeguarding of students. Significantly, paramedic students were greatly affected as they were moved into walk-in centres and emergency departments rather than the ambulance setting that they have been training for.



Covid-19 and Social Care: "Care homes have been tarnished as dangerous areas which will create long-term recruitment challenges within the care sector" (Online interview with Professor Melaine Coward, 24 August 2020). Furthermore, Covid-19 has revealed the necessity for healthcare to be integrated with the care and community health sector. Likewise, the changes implemented within emergency departments have already shown evidence of benefits to patient outcomes for example, a more streamlined approach enabled better outcomes for stroke victims.

Uniquely Surrey: Surrey Heartlands is a high performing ICS, benefitting from close networks of cross-sector representatives. At the beginning of the Covid-19 pandemic, this network was mobilised to coordinate the regional response and the awareness and knowledge of what each agency could offer enabled a strong response.



**The Impact of Covid-19 on Nurses and Midwives...
with Professor Jill Maben, Professor of Health Services
Research and Nursing at the University of Surrey.**



Professor Jill Maben is involved in the 'Impact of Covid-19 on the Nursing and Midwifery Workforce' (ICON) longitudinal national survey assessing the physical and mental health implications of Covid-19 on nurses and midwives across the UK. The initial findings published from the second survey reveal that eighty-eight percent of the 4,063 participants expressed concern surrounding personal risks and risks to family members during Covid-19 due to their clinical role (RCN, 2020). Maben et al. (2020) have produced guidance for nursing team members offering strategies to support their psychological wellbeing, emphasising the importance of peer and team support and measures for managers and organisation leaders to implement.



Professor Maben highlighted the growing signs of poor psychological wellbeing and PTSD among healthcare workers and the lack of communications surrounding staff wellbeing provisions. Likewise, it is recognised that

NHS staff lacked the time, headspace, and energy to access support services during the most challenging period of the pandemic. However, there is now a crucial need for such services to be mobilised to ensure that staff have access to counselling, therapy and other necessary services. Moreover, Professor Maben expressed a key concern in terms of workforce burnout post-Covid-19, suggesting that many people may leave the nursing profession due to feelings of demoralisation and lack of support, in terms of government support with PPE and pay rises and some discontent with members of the public who failed to comply with lockdown restrictions, and who continue to ignore government Covid-19 rules. Furthermore, she reflected on the damaging impact of the 'hero' narrative on NHS staff as it undermines their ability to show vulnerability and seek support. Resilience has thus become an individual responsibility rather than a collective one, enforcing a culture of "institutional silencing" within the NHS, creating further obstacles for staff to voice their concerns and access vital support networks (Adams et al., 2020).

**Immunology Research... with Professor Deborah
Dunn-Walters, Professor of Immunology and School
of Biosciences and Medicine Director of Research;
British Society for Immunology (BSI) Trustee and
Chair of BSI Immunology and Covid-19 Taskforce.**



Professor Dunn-Walters specialises in researching the repertoires of antibodies in health and disease and the changes that occur in the immune system when it ages; areas which have become extremely pertinent during Covid-19 pandemic. Professor Dunn-Walters now chairs the British Society for Immunology Covid-19 Taskforce on Immunology and is involved in the national effort to co-ordinate immunology research on Covid-19. The taskforce recently produced a briefing note on the

long-term immunological health consequences of Covid-19 and are currently working on the next document focusing on immunological ageing and Covid-19. She is also involved in a research study sampling blood samples supplied from Frimley Park Hospital to monitor the immune response to Covid-19 in response to a call from members of the British Mass Spectrometry Society (Struwe et al. 2020) to join the Covid-19 Mass Spectrometry Coalition in order to share knowledge and data.

Professor Dunn-Walters has played a key role in mobilising research within the university, setting up a Teams site for Covid-19 research grant opportunities that has 190 members, and assisting with the dispersal of university start-up funds for Covid-19 related research. Covid-19 has encouraged more collaboration between immunologists and virologists, including some within the School of Veterinary Medicine and the Pirbright Institute. The university's initial closure created challenges and slowed down the launch of some research projects, however the university has made a huge contribution to support research and implement the necessary changes to teaching delivery.

Vitamin D Research... with Professor Susan Lanham-New, Head of the Department of Nutritional Sciences and Registered Public Health Nutritionist.



The University of Surrey's Department of Nutritional Sciences is ranked first in the UK for research quality and second for graduate prospects (The Complete University Guide, 2020a) and was awarded the 2017/2018 Queen's Anniversary Prize for Higher and Further Education for its excellence in the field of food and nutrition (Meredith, 2017). Professor Susan Lanham-New, is currently investigating the scientific link between vitamin D, immune health and whether it is associated with the risk of contracting Covid-19 or in the treatment

of Covid-19. She advises the Government including the Cabinet Office and Ministry of Defence and is a Member of the Scientific Advisory Committee on Nutrition (SACN) which is the Government Committee responsible for the dietary health of the UK population. She has recently led an international Consensus Paper, bringing twenty academics together to discuss the scientific evidence base surrounding Vitamin D and Covid-19 which was published in the British Medical Journal (Nutrition, Health and Prevention) and is the lead paper quoted on the Royal College of Physicians (RCP) website with respect to Vitamin D and Covid-19.



Lanham-New et al.'s (2020) report investigates the role that vitamin D may play in treating infections, concluding that although a link has been found between avoiding vitamin D deficiency and improved immune function, there is currently no strong science base that confirms that vitamin D has reduced the likelihood of contracting Covid-19 specifically. Nevertheless, Lanham-New et al. (2020) highlight that vitamin D is essential for good health and that people in northern latitudes (such as the UK) are more likely to be deficient in vitamin D, particularly in winter months or if confined indoors, and therefore they recommend following healthy lifestyle strategies and eating a balanced diet. Furthermore, there is recognition that low vitamin D status may be exacerbated during the Covid-19 pandemic due to limited exposure to sunlight during lockdown. Therefore, Lanham-New et al. (2020) recommend taking a vitamin D supplement at a dose of 400IU [10mcg] per day in line with Public Health England's advice if self-isolating as well as taking a vitamin D supplement at this dosage during the winter months when no vitamin D can be made from sunlight exposure due to the reduced UV strength of the sun (from October to March). Professor Lanham-New is also working alongside colleague Dr Andrea Darling with the Surrey Biobank Team to explore the impact of ethnicity, body composition, smoking and vitamin D on Covid-19 cases and negative controls (University of Surrey, 2020a).

Surrey Clinical Research Facility (CRF) and Clinical Trials Unit (CTU)

Established: 1999

Location: Guildford

Uniquely Surrey: The CRF is closely linked with Surrey Clinical Trials Unit (SCTU) which provides “expertise in study design, project management, data systems and data management and statistics” (University of Surrey, 2020e). Its foundations within the University of Surrey enable important collaborations between academic experts and leaders in a diversity of disciplines who can contribute their expertise during protocol development, clinical conduct, and data analysis. Moreover, the CRF's sleep laboratories provide a unique capacity to conduct overnight studies on patients.

Professor Skene emphasises that Surrey CRF is the only non-NHS clinical facility taking part in the Covid-19 vaccine trial, highlighting its reputation for expertise, capacity, and high-quality facilities.



Surrey CRF was selected to take part in a Covid-19 vaccine trial led by the Imperial College London involving the recruitment of forty volunteers to receive two doses of the vaccine (Meredith, 2020a).

Covid-19 has provided new opportunities for research into the pandemic itself and impacts for example, “our passport to return to our offices was that we were able to conduct Covid-19 related research” (Online interview with Professor Simon Skene, 19 August 2020). Nevertheless, Professor Skene recognises that the university has a strong prioritisation programme for research projects and the financial pressures on higher education due to Covid-19 will force the university to prioritise efficiency. Nevertheless, he is confident that clinical research programmes will be protected due to their critical nature.

Dr Hassanin suggested that Covid-19 has increased people's willingness to take part in clinical trials as they have become aware of their importance.



Likewise, Surrey CRF has access to a uniquely large proportion of healthy, fit, older people in Surrey which was an important demographic for the Covid-19 vaccine trial.



Royal Holloway University of London (RHUL)

The Department of Psychology at Royal Holloway has been ranked fifth in the UK for its research quality (The Complete University Guide, 2020c). This has enabled the department to develop a range of different research projects focusing on Covid-19 and behavioural science (RHUL, 2020c).



Insulab

Location: Department of Psychology,
Royal Holloway University of London.

Dr Jennifer Murphy,
Collaborator and Principal Investigator.



Dr Rebecca Brewer,
Principal Investigator & Senior Lecturer at RHUL.



Dr Federica Biotti,
Postdoctoral Researcher.



The Insulab team conduct research on interoception which refers to the ability to perceive the internal sensations of the body such as hunger, thirst, and pain. Their research aims to investigate interoception in relation to a range of mental health measures and clinical conditions for example, it can be applied to depression, anxiety, eating disorders and autism spectrum disorders.

Covid-19 Research: Insulab (2020) has launched a survey exploring the impact of Covid-19 on people's interoceptive ability, comparing longitudinal data on people's mental health and bodily awareness pre- and post-Covid-19. The results from this research will contribute to understandings of the mechanisms of interception whilst also revealing some of the effects of the Covid-19 pandemic on people's mental health and wellbeing. If the results demonstrate a correlation between interoceptive atypicalities and increases in mental health difficulties during the pandemic, this could be targeted for future interventions.

Challenges and Opportunities: The Insulab team have faced an array of challenges due to Covid-19, not least because all clinical trials have been postponed. Covid-19 has made it increasingly difficult to recruit new participants for research studies, and the team expressed concern that this

Insulab Cont.

will likely hit specific participant groups more dramatically, such as high risk groups of older people and those with underlying health conditions or pregnant women. Insulab has adapted by engaging with participants online through surveys with images, videos and audio files and focusing more on reviews, qualitative research and secondary data. However, research on interceptive processes ideally requires measures to be taken objectively by measuring the physical state of the body, which cannot be carried out online. This has restricted the types of research that can be conducted and has put many research studies on hold including neuro and physiology studies as well as anything requiring specialist equipment. Additionally, online surveys are difficult to conduct with children which means

that developmental psychology research is likely to be particularly restricted. The team reflected on the huge increase in funding available for Covid-19 specific research which has made it easier to mobilise research projects if Covid-19 can be integrated into them. However, this comes at the expense of other clinical research which is not Covid-19 related, which in turn is restricting certain fields and likely diverting early career researchers into different areas of research, which could have a long term impact on wider psychological research. Alongside this, Covid-19 has encouraged the development and strengthening of international collaborative networks via online communications however, these may be undermined or impacted by Brexit.

Animal Health Sub-Cluster

The School of Veterinary Medicine at the University of Surrey is ranked eighth overall in the UK and second for student satisfaction. The veterinary department features state of the art facilities including the Veterinary Clinical Skills Centre, the Veterinary Biomechanics Laboratory and the £11 million high-containment Veterinary Pathology Centre which has one of the largest pathology capabilities “matched only by a few other places in the UK” (University of Surrey, 2020d).



Professor Alasdair Cook (below, top), Head of Department of Veterinary Epidemiology and Public Health at the University of Surrey and Head of vHive and Professor Roberto La Ragione (below, bottom), Professor of Veterinary Microbiology and Pathology; Head of the Department of Pathology and Infectious Diseases; Deputy Head of School of Veterinary Medicine, both view Surrey as an area of comparative advantage within animal health. For example, students within the School of Veterinary Science benefit from the university's partnerships with the Veterinary Medicines Directorate, the Pirbright Institute, APHA, PHE, RHUL and over sixty veterinary practices, including the renowned Fitzpatrick Referrals practices. Three of the largest practices in the UK are also based in Surrey, highlighting its leading role in animal health.



Dr Ilknur Aktan, Programme lead for Veterinary Medicine and Science and previous Senior Tutor for Pre-clinical years, stated that engagement was high

during online lectures and practicals, and lecturers used innovative teaching formats such as conducting clinical examinations on stuffed toys to engage their students during the pandemic. For the final year students who were out in practices, the school moved to a format of 'virtual Intramural rotations (IMR)' placements. These virtual placements were hosted through Microsoft Teams, working with small student tutor groups being led by one or more of the Veterinary Clinical Teaching Fellow Team, with contributions from the Clinical Instruction Mentors. Some students were disadvantaged during online examinations as they faced technical difficulties however, they were able to submit self-extenuating circumstances forms and resit the paper. Likewise, students have struggled to gain professional training year placements (extramural studies) due to many cancellations which has created widespread anxiety across the cohort. However, the school worked with the professional body to provide students with online alternatives. The school will be adopting 'hybrid education' from September 2020 comprising a blend of online and campus-based learning, with practical classes delivered face-to-face.

Professor Roberto La Ragione and the team from the School of Veterinary Medicine at the University of Surrey are working in collaboration with Lancaster University, Brunel University London, GB Electronics Ltd, Inovo Robotics and Unique Secure to develop an inexpensive, rapid, point-of-care diagnostic test that can inform people if they have Covid-19 in thirty minutes (Meredith, 2020a).





Veterinary Health Innovation Engine (vHive)

Established: 2016

vHive offers a case study of a university-based innovation championing the digitalisation of animal health. Its research aims to bridge the gap between the commercial and academic sector. vHive is leading in the development of transformational digital analytics tools to improve animal wellbeing and provides a platform for networking in animal health, research validation, business insights, workshops and project management, grant funding assistance and digital platform and app creation, striving towards building a closely connected animal health cluster in the local area. The Data Innovation Hub for Animal Health (DIHAH) is an information and communication technology environment developed through vHive, aiming to promote data sharing for data owners and researchers.

During the Covid-19 pandemic, the School of Veterinary Medicine benefitted from vHive's digitally aware team who assisted with a smooth transition online. Teaching and examinations were adapted for online delivery using video content and online simulations, leading to a minimal impact overall on teaching delivery. The largest impact of Covid-19 on vHive has been on its large international project in Sub-Saharan Africa; the Africa Livestock Productivity and Health Advancement (ALPHA) initiative, in which fieldwork has been cancelled, postponed, or redesigned for online delivery.

Despite these challenges, Covid-19 has stimulated new opportunities for research and innovation for example, vHive and the School of Veterinary Medicine organised 'The Companion Animal Open Data Hackathon' offering a unique platform to "propose and accelerate innovative solutions to monitoring, diagnosing and controlling Covid-19's impact on the animal health community and industry" (University of Surrey, 2020b). Looking to the future, Professor Cook expressed concern over Brexit and the difficulty of sustaining and building strong links and alliances with researchers across Europe, alongside accessing EU research funding grants. Additionally, he suggested that Brexit may threaten the UK's food standards as well as regulatory affairs surrounding the group development of medicines and vaccines which could in turn pose a significant threat to collaborative research networks. However, more optimistically, it will likely enable more freedom in terms of wider international links, with partnerships already being built with institutions in Canada and the US.





The Pirbright Institute

The Pirbright Institute's facilities offer a national capability and are unique within the UK, providing external organisations worldwide with access to their scientific skills base and state of the art facilities located in Woking. The Pirbright Institute has global collaborations with research and academic institutions, government agencies, multilateral organisations, and non-governmental organisations to facilitate knowledge exchange, research and development. The institute offers a diverse range of services to stakeholders including governments both in the UK and overseas, industry bodies and international agencies. These services include arthropod supplies, diagnostics and surveillance, disinfectant testing, flow cytometry and cell sorting and training courses alongside a range of products. The Pirbright Institute is working on Covid-19 focused science research programmes for example, the Coronavirus group are developing designs of sustainable methods to control infectious diseases in chickens. Their approaches are helping to gain a better understanding of the disease and how to design

better vaccines to combat infectious bronchitis virus which significantly impacts the global poultry industry.

Covid-19 Response and Challenges with... Dr Tobias Tuthill , Head of Understanding and Preventing Viral Diseases Programme at The Pirbright Institute.

The Pirbright Institute responded to Covid-19 by loaning high throughput diagnostic equipment to the UK's National Coronavirus Testing Centre in Milton Keynes. Over sixty of Pirbright's diagnostic staff and scientists volunteered at seven Public Health England testing sites across the country and at the Royal Surrey County Hospital. Pirbright initiated several new research projects on understanding the SARS-CoV-2 virus, and on testing the responses to Covid-19 vaccines in pigs, including those currently in UK clinical trials by the University of Oxford and Imperial College London. Pirbright operates high containment virology laboratories with highly trained staff and such facilities have been in high demand. In terms of challenges in Surrey, it is an expensive location for attracting expertise and it has poor, expensive public transport outside of commuting to and from London. In addition, Brexit is likely to create obstacles to EU research funding and the institute will be less able to attract the best talent. Pirbright has also lost its EU Reference Laboratory Status which in turn leads to reduced global influence within the sector.





Animal & Plant Health Agency

Animal and Plant Health Agency (APHA)

APHA is a national organisation with sites throughout the UK. The central laboratory and headquarters based near Weybridge is an internationally recognised centre of scientific excellence, hosting over twenty International Reference Centres. The agency specialises in diseases of livestock, wildlife, and plants with significant programmes of research and surveillance encompassing major animal and zoonotic pathogens, surveillance systems for new and re-emerging threats and significant expertise. APHA contributes to the close network of animal health specialists in Surrey, with close links with the University of Surrey, supporting teaching and hosting students for training placements and research projects (Chambers, 2019). APHA has significant academic collaborations including with the University of Surrey, which gives access to a range of disciplines including social sciences, psychology, and computing. **Kath Webster, Director of Scientific Services at APHA**, asserted that the exchange of employees between APHA and Pirbright offers opportunities for people to gain new skills and experiences. Likewise, Surrey inevitably benefits from its proximity to London which serves as a base for many animal health academics, forming a powerful life sciences hub.

APHA and Defra used their international disease monitoring system when Covid-19 first appeared in China and began to quickly prepare tests for the virus for when it reached the UK. As Covid-19 was identified as not primarily an animal health risk,

the organisation focused on offering their expertise and capabilities to support the Covid-19 testing services in the human health sector. A number of staff members from the Weybridge site volunteered to be relocated to the Covid-19 mega-lab developed in Milton Keynes to help set up testing systems and train new colleagues, with the facility becoming an operational lab very quickly. APHA also delayed some lower priority studies to divert its efforts into the Covid-19 response and its international development programmes have had to be adapted due to the travel restrictions.



In terms of the Covid-19 impact on the wider animal health sector, Kath Webster reflected on the industry concerns over the organisation of seasonal labour alongside approaches to divert produce to local markets and food stalls rather than the hospitality sector. The sector will also see impacts from the UK's exit from the EU at the end of 2020. There are concerns surrounding funding and ensuring that Public Sector Research Establishments (PSREs) like APHA can bid collaboratively with academic partners and other Institutes. Kath Webster argued that the current system discourages collaboration despite the fact that different institutions want to be able contribute their skills to joint projects. Brexit has also meant that APHA is no longer the EU Reference Laboratory, which has resulted in a loss of income and influence; however as a world reference centre for many diseases, the organisation will focus on more international projects which will in turn create new opportunities.

Cluster Cross-Overs: Health and Business

The health cluster overlaps with the business cluster due to the employment opportunities provided by the various health organisations such as the NHS and the life sciences sector including health-based medical and pharmaceutical companies within the commercial sector. This is evident in the case study of the Surrey Research Park which hosts a diversity of health-specific clinical research enterprises which sit both within the health cluster and the business cluster.

Surrey Research Park

The Surrey Research Park is a major centre of excellence in technology, science, health and engineering for a range of start-ups, small or medium-sized enterprises (SMEs) and multinationals. The following presents a brief overview of industry leads in the healthcare sector, which collectively represents a very real driver for the Surrey economy.

The Whiteley Clinic

The Whiteley Clinic

Established: 1999

Location: Surrey Research Park, Guildford.

Number of Employees: 21 employees with another ten consultants and nine vascular technologists employed on practising privileges.

External Investment/Support Received: Knowledge Transfer Partnership Grant 2015-2018, Innovate UK, and £2,000 grant from the University of Surrey during the Covid-19 pandemic.

Impact: The Whiteley Clinic is the UK's leading vein clinic providing expert treatment of varicose veins and related conditions based on award winning research.

The following case study is an example of a private clinic based on the Surrey Research Park that represents a highly specialised and world-renowned centre at the forefront of research and treatment of veins. The Whiteley Clinic has won numerous international, national, and regional awards alongside being rated outstanding by the Care Quality Commission. The Whiteley clinic focuses on four key areas of treatment including varicose veins,

venous leg ulcers, pelvic congestion syndrome and aesthetic phlebology. The Whiteley Clinic is the only clinic in the UK, and one of six in the world, with a high-intensity focused ultrasound machine to conduct revolutionary, non-invasive ultrasound treatment on veins. The clinic also offers pioneering treatments for Pelvic Congestion Syndrome, helping to tackle the issue of misdiagnosis of women's chronic pelvic pain.



Professor Mark Whiteley, the founder of the Whiteley Clinic and the Whiteley Protocol[®], is a Consultant Venous Surgeon and Consultant Phlebologist and performed the first endovenous “keyhole” surgery for varicose veins in the UK in 1999, which is now the National Institute for Health and Care Excellence (2013) recommended technique for treating veins. He also performed the first Microwave Varicose Veins Ablation in Europe in 2019 and set up the College of Phlebology to train doctors and nurses how to treat leg ulcers and

The Whiteley Clinic cont.

varicose veins. The Whiteley Clinic relocated to the Surrey Research Park in 2003, becoming the first clinical research unit on the park and other medical clinics and centres have since used the Whiteley Clinic's proximity to open on the park. This demonstrates the clinic's key role in developing Guildford as a key hub for healthcare in Surrey. The clinic also offers a key example of a "knowledge-intensive" industry, funnelling its profits into research studies and information exchange through presentations and webinars.

Covid-19 Response: At the peak of the Covid-19 pandemic in March, the Whiteley Clinic was forced by public pressure in the media to close. It has since been running at fifty percent capacity, holding video

consultations with patients, and running international online webinars for educational purposes. The clinic struggled financially due to Covid-19 as it was unable to receive a 'Coronavirus Business Interruption Loan' as it had invested too much money into research. Consequently, the clinic has already lost approximately £1 million in gross income this year, but it gained support from the University of Surrey with a £2,000 grant. In term of Brexit, Professor Whiteley predicts a minimal impact on his clinic, arguing that "medicine is international" and as a world-leader in the field of veins, he is better known internationally than in the UK (Online Interview with Professor Mark Whiteley, 24 July 2020).





MedPharm

Breaking through boundaries

**MedPharm: with Dr Rob Turner,
General Manager**



MedPharm is a world-renowned leading contract provider of dermatological, nail, eye, airway, mucosal membrane and transdermal product development services based at the Surrey Research Park.

Over the past twenty years, MedPharm has cultivated a worldwide reputation for delivery of exceptional solutions for its clients to help overcome the complexities of topical and transdermal product development.

Covid-19 response: MedPharm implemented a rapid response to the Covid-19 outbreak in January before the UK entered lockdown, following a risk assessment based on their previous experiences of SARS. This included the implementation of changes in work rotas, transitioning to online platforms and stockpiling important laboratory chemicals as precautionary measures. This safeguarded the company and their staff, enabling no confirmed staff cases within the company and no need to furlough or make staff redundant. Despite the challenges of the pandemic, MedPharm has been able to continue to increase capacity and revenue. MedPharm (2020) also contributed to the national effort to fight Covid-19 by redirecting its twenty years of formulation and manufacturing expertise as well as resources to produce hand sanitiser for forty-seven local organisations such as hospitals, care homes and schools during the pandemic.





County Pathology

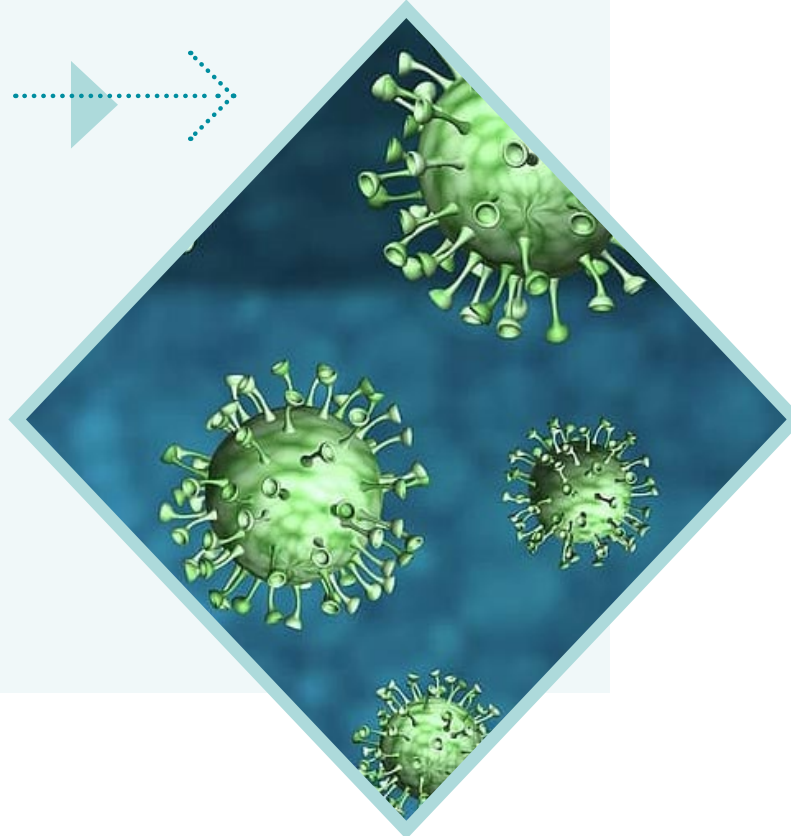
Eurofins County Pathology (ECP)... with Tom Polkey, General Manager.

ECP is an accredited independent diagnostics laboratory in Guildford working with clinics, hospitals and health screening companies across the country. It is involved in blood analysis, both venous and home collection kits, more commonly known as capillary blood finger prick testing

Covid-19 Response: ECP was expecting growth pre-Covid-19, planning to move to larger premises at the Surrey Research Park on Priestley Road, with one wing being dedicated to County Pathology. The company initially ran Abbott assays for Covid-19 antibodies and has recently started running Roche assays which were previously only available to the government and NHS as they were newly developed. With the growing demand for testing services, ECP took on a new unit at the Tech Research Centre. ECP is also taking part in a Government Covid-19 antibody testing survey, aiming to build a better understanding of Covid-19 antibodies, whether people retain them, and if they offer immunity to other strains of the virus. ECP is currently preparing another premises for this antibody survey which will expand sample capabilities by over 1000 percent and involve a recruitment drive, including 36 local lab assistants and two further biomedical scientists to run this lab. ECP has evidently benefitted from its position within the sector during the Covid-19 pandemic, with increases in demand for testing, analysis and a general increase in the public's awareness of health. Tom Polkey expects this to continue in the future, but this is largely dependent upon whether a vaccine is developed.

Uniquely Surrey: ECP's location next to the Royal Surrey County Hospital offers a clear advantage and it also benefits from a close relationship with the facilities management team on the park who have provided opportunities for infrastructural development. The company also has a close relationship with the University of Surrey, currently hosting two industrial placement students from the university. Surrey benefits from its proximity to London, which offers a fluid recruitment pool, with roughly sixty percent of ECP staff being recruited from London and forty percent from Surrey.

Challenges: Brexit could pose a challenge to ECP in term of its supply chain as it depends on imports of materials such as reagents, plastics, and laboratory consumables. Until the customs arrangements become clear, the business will continue to follow its plan for preparedness through stock building and developing plans with its key suppliers to ensure adequate supplies. Likewise, Covid-19 may create shortages in Europe, however measures are in place to ensure ECP is prepared for this.





► QUANTITATIVE ANALYSIS ◀

Surrey Economy: Health Sector

Workforce & Business

The health sector represents a key pillar of the national economy, comprising 12.9% of the UK workforce in 2018. This same trend is similarly reflected in Surrey, with 12.9% of workers employed in the health sector. The majority of businesses in Surrey are found within the industry of human health activities : 1,250 in total. There are also 650 social work (excluding accommodation) businesses, 220 more in residential activities (e.g. including care homes) and a further 120 in veterinary businesses.

There is a higher concentration of health sector businesses located in West Surrey than East Surrey. For example, West Surrey hosts almost double the number of veterinary businesses (80) than East Surrey (45) . When taking into consideration the role of Local Enterprise Partnerships (LEPs), a higher proportion of health sector industries sit within Coast2Capital (455) in comparison to EM3 (255), which represents an interesting reversal of the historic disparities between the two regions.

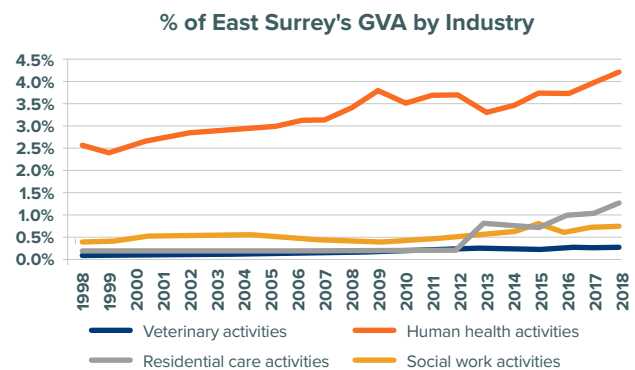
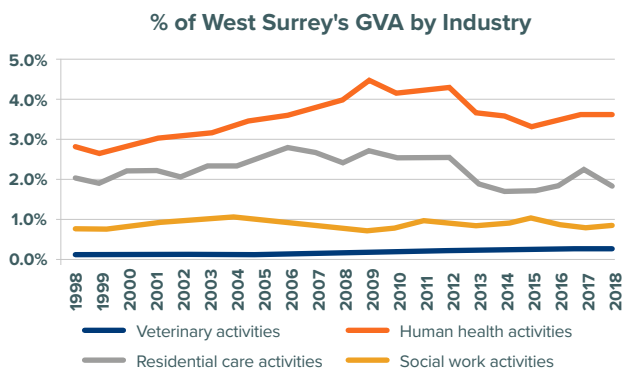
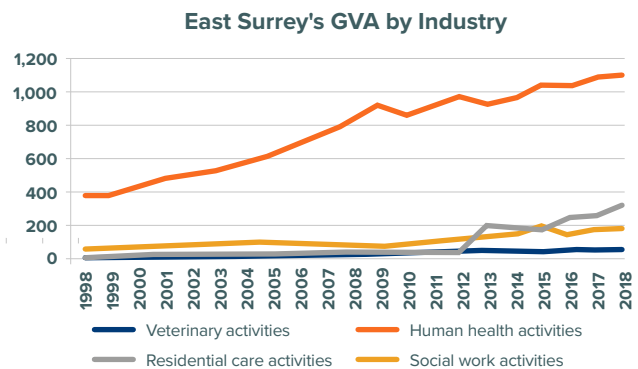
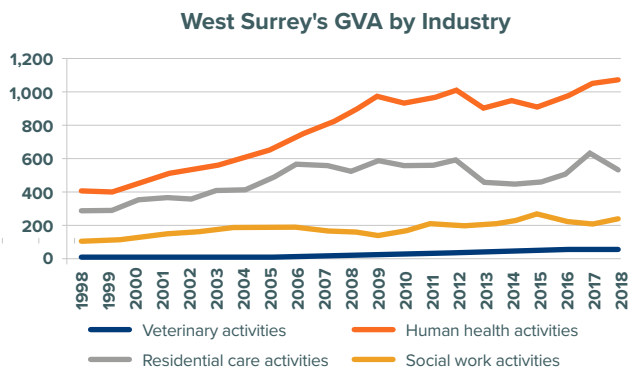
		UK	England	Surrey	East Surrey	West Surrey	C2C	EM3
% workforce employment in Health 2018		12.9	12.5	12.9	15.6	12	13.8	12.1
Registered Businesses 2019	Veterinary activities	4,010	3,390	120	45	80	170	140
	Human health activities	55,740	49,385	1,250	430	815	1,960	1,465
	Residential care activities	10,480	9,240	220	100	120	455	255
	Social work activities without accommodation	35,780	29,775	650	225	425	1,105	830
GVA Current Prices 2018, £ million	Veterinary activities	3,542	3,092	102	38	64	-	-
	Human health activities	98,107	81,043	1,655	564	1,091	3,429	2,881
	Residential care activities	20,445	16,148	712	163	549		
	Social work activities without accommodation	26,559	21,851	339	92	247	683	501
	Total	148,653	122,134	2,808	857	1,951	4,112	3,382

Source: ONS BRES, UK Business Counts, Regional Accounts

Healthcare: GVA by Industry

Health industries are high-value sectors, contributing over 6% to Surrey's GVA and approximately 7.6% to the national economy. In 2018 for example, Surrey's human health activities industry represented the highest overall value in terms of healthcare GVA nationally. Residential care activities had a significantly higher GVA in West Surrey (£549mn) in comparison to East Surrey (£163mn), with C2C again boasting a higher GVA within the sector, in line with its higher number of registered businesses.

From an historical perspective, the graphs below indicate that in the 20 years spanning 1998 to 2018, both East and West Surrey have witnessed a gradual increase in GVA in all health sector industries: with rises from 400 to 1,091 in West Surrey, and from 200 to 564 in East Surrey. From sub-county perspective, the residential care industry in West Surrey has enjoyed a much higher GVA than in East Surrey. However, there are also peaks and troughs to be noted. In 2012 for example, the residential care activities industry in East Surrey demonstrated sudden growth, increasing from 0.1% to 0.8% GVA in a single year, reaching 1.25% in 2018. Social work activities and veterinary activities have seen a more gradual increase in GVA over the period across both regions.



Source: ONS Regional Accounts

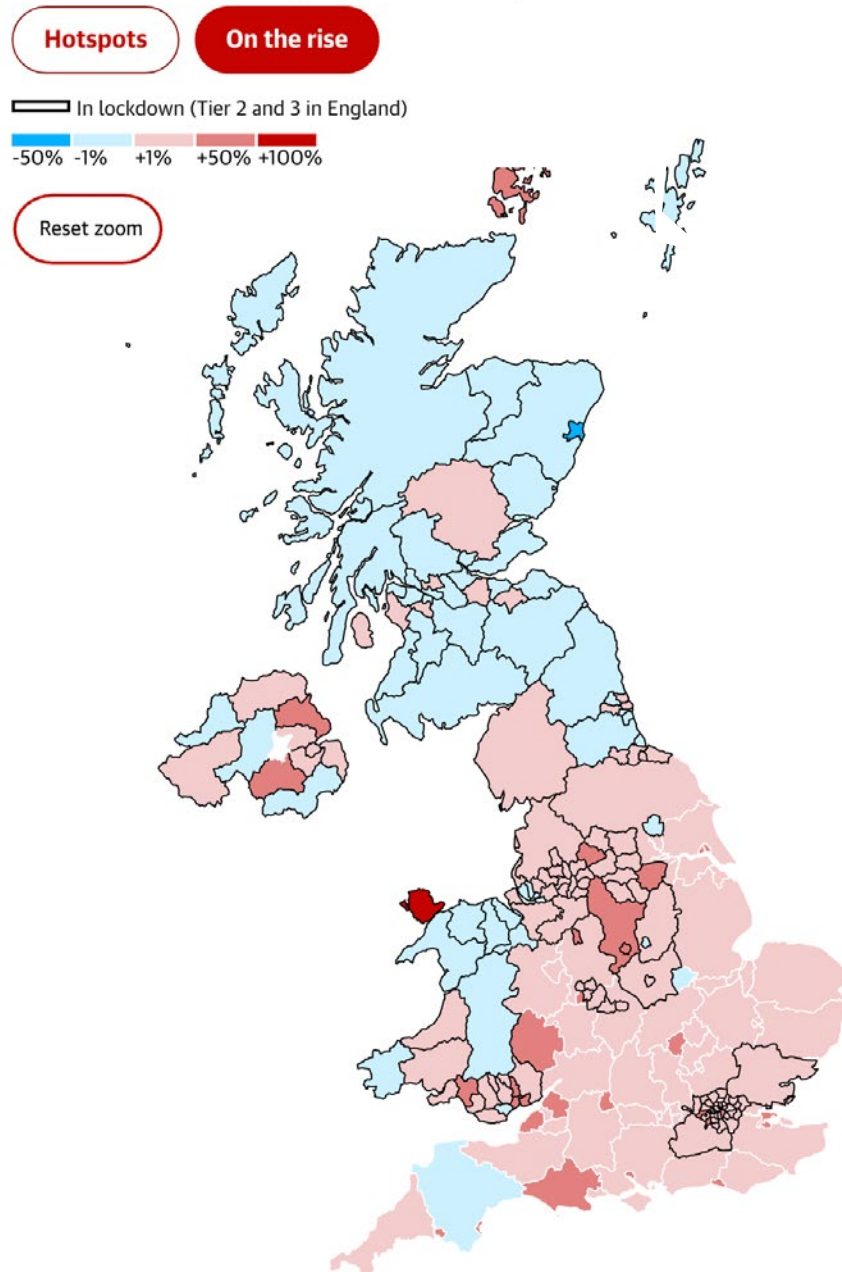


UK Covid Snapshot

The value-coloured map highlights on a daily basis the areas across the UK where Covid-19 has risen. Surrey has seen low increases in new cases of Covid-19 since the initial outbreak in March 2020, registering lower than average counts in comparison to other areas across the country (where in some cases the increases have been over 200%, shown as dark red). Given the risks of further increases in community transmission across both Surrey and neighbouring counties, as well as the Greater London area, localised lockdowns may be implemented to slow the transmission rate.

UK: New cases in the last week

Click to show data for each area, double click to zoom in, click "reset zoom" to zoom out



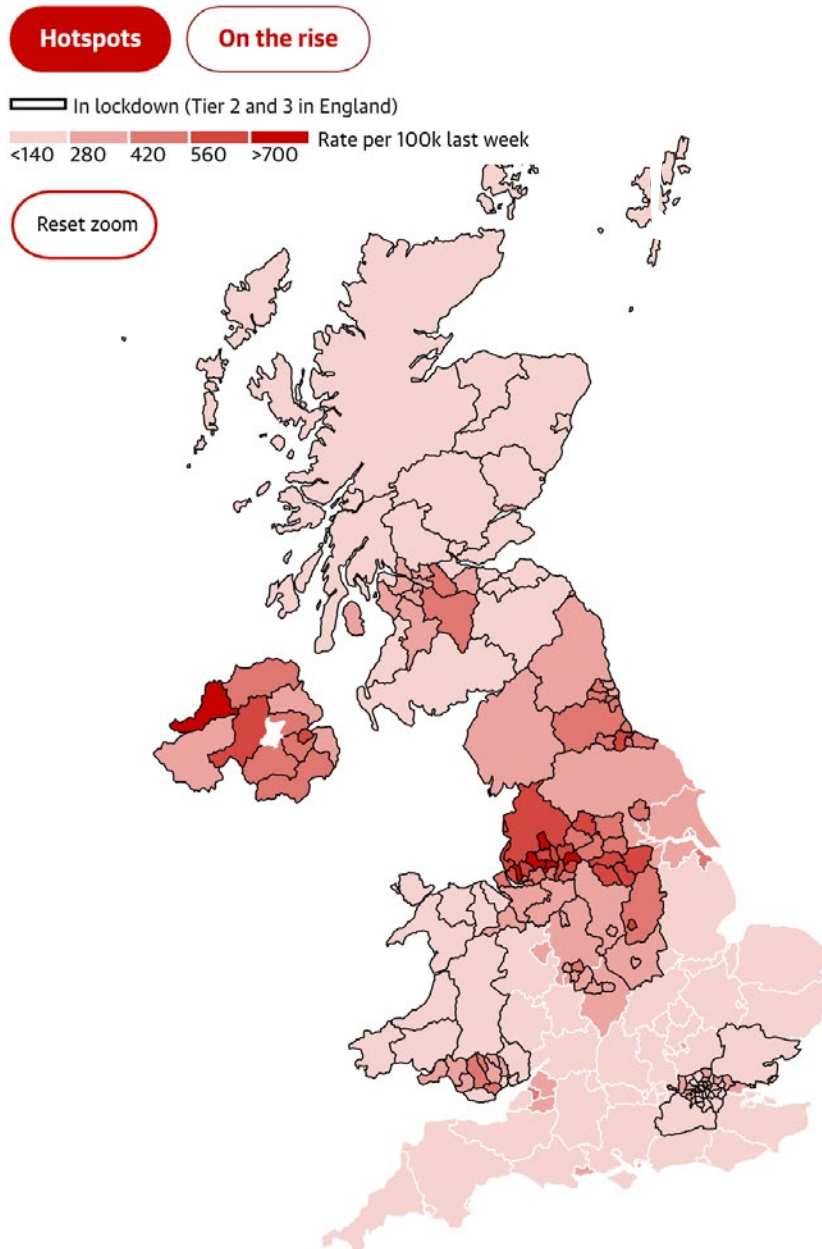
Data: data.gov.uk for cases in the seven days to 22 October 2020. Lockdown As reproduced daily by The Guardian.

Local Hotspots

The value-coloured map of local hotspots provides a useful comparative per county, illustrating the number of new Covid-19 cases per 100,000 of the population. At the time of writing, the density of cases in Surrey was still low compared to other parts of the UK. For example, in the last week (updated 10 October 2020), Surrey had 63 new Covid-19 cases per 100,000 of the population, while most affected areas had over 600 cases per 100,000 people. In general, the Southeast has seen a lower concentration of Covid-19 cases in comparison to areas of Northern England, Scotland and Northern Ireland placing Surrey at less immediate risk if these trends continue.

UK: New cases in the last week

Click to show data for each area, double click to zoom in, click "reset zoom" to zoom out



Data: data.gov.uk for cases in the seven days to 22 October 2020. Lockdown As reproduced daily by The Guardian.

Covid-19-related Deaths in Surrey

The graph below illustrates the trend in the percentage of Covid-19 deaths from the total number of deaths in Surrey between January to August 2020. Surrey saw the highest proportion of Covid-19 related deaths during the peak of the pandemic (April and May), with a peak of 41% of total deaths related to Covid-19 recorded in May. This has since gradually decreased with a few smaller peaks recorded between May to July.

% COVID-19 Deaths over All Deaths in Surrey

(Weekly figures)



Source: ONS & owns calculations. Data on occurrences for 2020 up to a week ending 29 August

Covid-19-related Deaths per Local Authority in Surrey

The table and chart below display the proportion of Covid-19-related deaths from the total number of deaths within each local authority in Surrey. Epsom and Ewell (18%), and Reigate and Banstead (17.7%) together had the largest share of Covid-19-related deaths recorded across all deaths within their district boundaries. However, at the time of writing, the highest number of Covid-19-related deaths in Surrey were actually recorded in Reigate and Banstead (181) and Waverley (141). Runnymede however had the lowest proportion of Covid-19-related deaths from total number of deaths within the county at 12.5%, and the lowest number of Covid-19-related deaths overall in Surrey at 73.

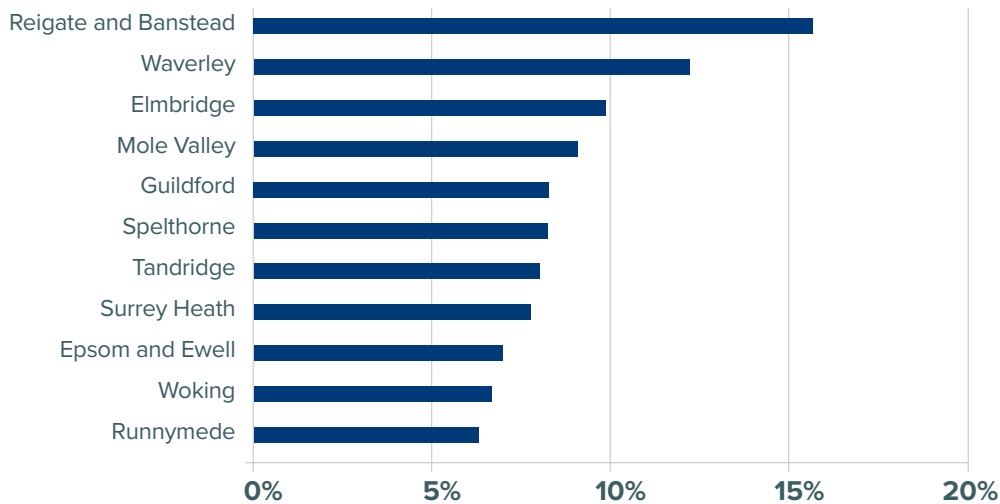


Total Deaths	Covid-19	All	% Covid-19 over total deaths	% Surrey's Covid deaths
Elmbridge	114	811	14.1%	9.9%
Epsom and Ewell	81	451	18.0%	7.1%
Guildford	96	762	12.6%	8.4%
Mole Valley	105	717	14.6%	9.2%
Reigate and Banstead	181	1020	17.7%	15.8%
Runnymede	73	580	12.6%	6.4%
Spelthorne	95	624	15.2%	8.3%
Surrey Heath	90	646	13.9%	7.9%
Tandridge	93	622	15.0%	8.1%
Waverly	141	893	15.8%	12.3%
Woking	77	592	13.0%	6.7%
Surrey's Total	1146	7718		



Source: ONS & owns calculations. Data on occurrences for 2020 up to a week ending 29 August

Covid-19 Deaths in Local Authorities as % of Surrey's Covid Deaths

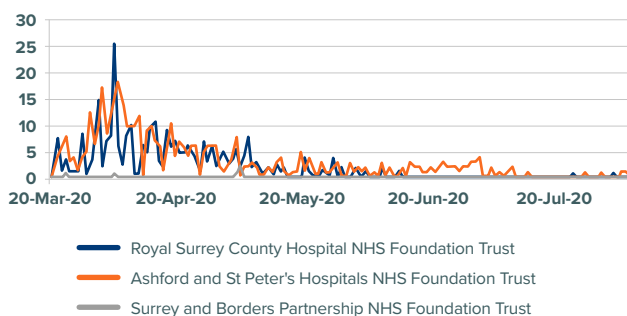


Source: ONS & owns calculations. Data on occurrences for 2020 up to a week ending 29 August

NHS Trusts in Surrey: Diagnosis Rates

The following graph illustrates that Royal Surrey County Hospital NHS Foundation Trust (RSFT) diagnosed the highest number of inpatients with Covid-19, with over 27 diagnosed in a single day in March. Ashford and St Peter's Hospitals NHS Foundation Trust (ASPH) reflected a similarly high rate of diagnoses, with 19 inpatients diagnosed in a single day in March. Surrey and Borders Partnership NHS Foundation Trust (SABP) experienced lower rates of diagnosis, with up to 3 patients diagnosed in one day. The graph indicates that following a peak of Covid-19 diagnoses in mid-March, diagnoses began to reduce gradually across all the trusts, reaching much lower levels from May to July. RSFT has seen a continuation of higher levels of Covid-19 diagnoses, registering up to 4 diagnoses per day towards the end of June.

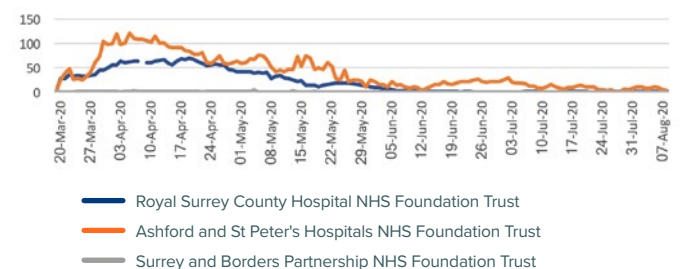
Diagnoses - Total Number of Inpatients Diagnosed with Covid-19 (Last 24hrs)



Total beds occupied by confirmed Covid-19 patients

Ashford and St Peter's Hospitals NHS Foundation Trust had the highest number of total beds occupied by confirmed Covid-19 patients in comparison to Royal Surrey County Hospital NHS Foundation Trust and Surrey and Borders Partnership NHS Foundation Trust, with up to 120 beds at one time occupied during various periods between March and April. RSFT saw the second highest number of total beds occupied, with 70 beds occupied at stages during the peak of the pandemic. SABP however experienced a lower rate of total bed occupancy by confirmed Covid-19 patients, with roughly 7 beds occupied at the beginning of March.

Total Beds - Occupied by Confirmed Covid-19 Patients (as at 08:00)

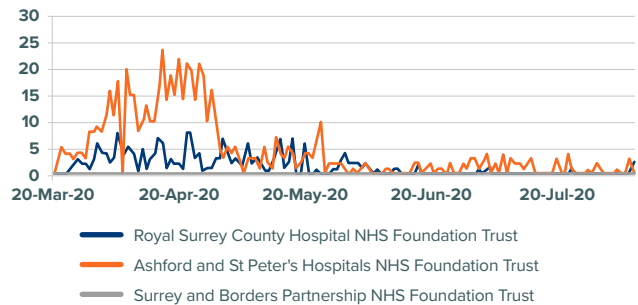


Source: COVID-19 NHS Situation Report, published on 13 August 2020

Discharges

ASPH discharged the highest number of confirmed Covid-19 cases from hospital, with up to 24 discharges in one day in April. Towards the end of April, patient discharges began to fall, in line with overall reductions in Covid-19 inpatient diagnoses and occupied beds, with a slight increase towards the end of May. RSFT experienced slightly lower levels of daily patient discharges during the peak of the pandemic, with the highest number reaching 8 in March to April. SABP have had no confirmed Covid-19 cases discharged throughout the period.

Discharges - Total Confirmed Covid-19 Cases Discharged From Hospital (Last 24hrs)



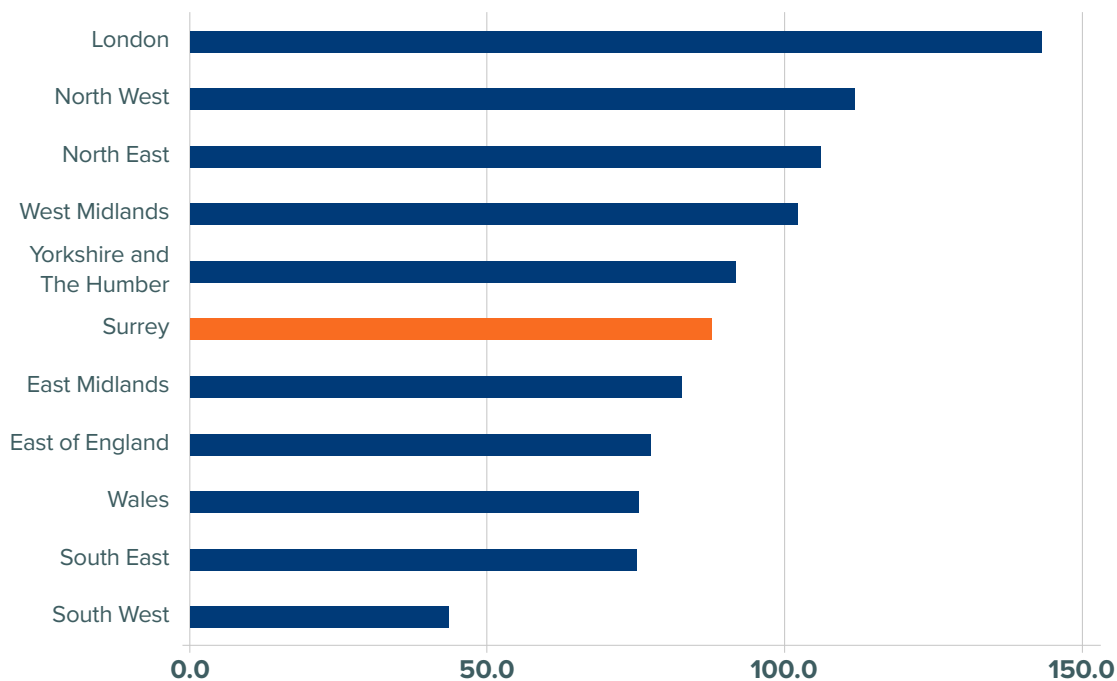
Source: COVID-19 NHS Situation Report, published on 13 August 2020.

Age Standardised Mortality Rate: Deaths Involving Covid-19 Between March And July 2020

When examining Covid-19 age-standardised mortality rates (a measure of socioeconomic deprivation that incorporates both the differences in the age distribution of the population and age-specific mortality rates), Surrey performed well in comparison to other regions in England. Nevertheless, Surrey registered a higher average rate of deaths per 100,000 of the population in comparison to the Southeast region as a whole.

Covid-19 Age-standardised mortality rates in England and Wales

(per 100,000 population, deaths occurring between 1 March and 31 July 2020)



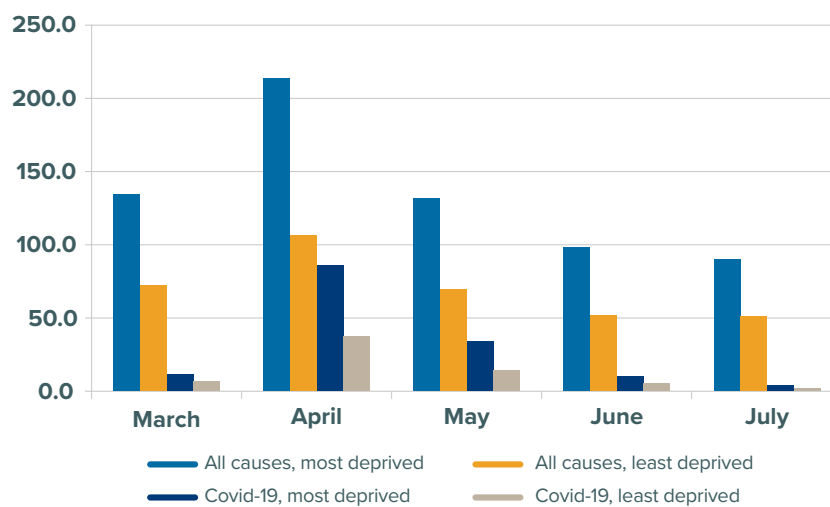
Source: ONS - Deaths involving Covid-19 by local area and socioeconomic deprivation

The lower age-standardised mortality rate can be explained by low levels of deprivation found across in Surrey. Covid-19 deaths are higher among areas considered to be the most deprived. In terms of broad socio-economic indices. In England as a whole, the mortality rate in the least deprived areas (decile 10) was less than half of the mortality rate in the most deprived areas.

The Coronavirus (Covid-19) Has Had a Proportionally Higher Impact on the Most Deprived Areas of England

Age-Standardised Mortality Rates, All Deaths And Deaths Involving The Coronavirus (Covid-19), Index of Multiple Deprivation, England, Deaths Occurring Between 1 March And 31 July 2020

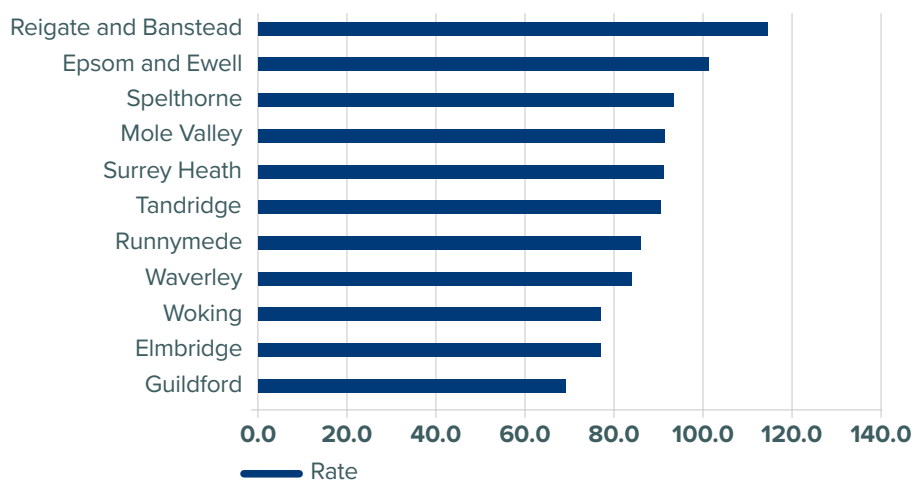
(per 100,000 population)



Source: ONS - Deaths involving Covid-19 by local area and socioeconomic deprivation

Covid-19 Age-Standardised Mortality Rates In Surrey Local Authorities

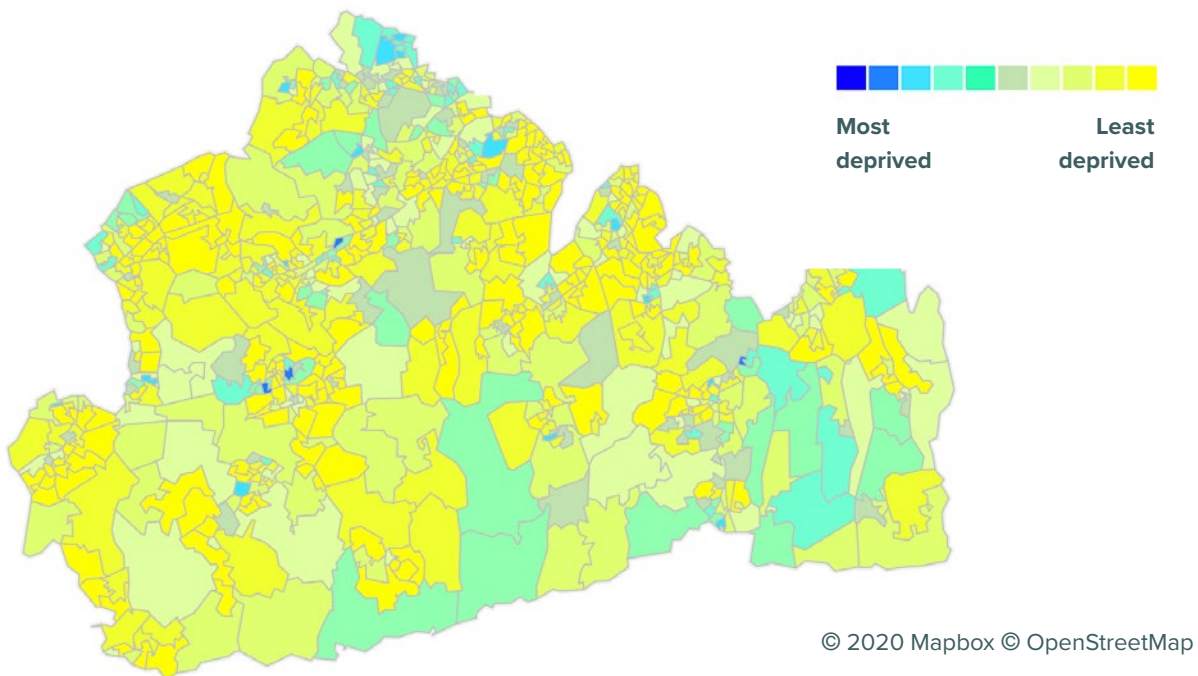
(per 100,000 population, deaths occurring between 1 March and 31 July 2020)



Source: ONS - Deaths involving Covid-19 by local area and socioeconomic deprivation

Surrey Overall Index of Multiple Deprivation

Based on the English Indices of Multiple deprivation, the following colour-coded map illustrates that overall, Surrey has low levels of multiple deprivation, with very few areas featuring among the 20% most deprived nationally. Nevertheless, there are some serious pockets of deprivation requiring serious attention, not least for the Covid-19 implications posed in areas of Guildford, Woking and Reigate and Banstead. These areas tend to be concentrated in proximity to larger towns within Surrey. Equally however, rural areas including Mole Valley and Waverly in the south, and Tandridge in the east register as more deprived than other regions of the county. Deprivation is an important determinant of health as people living in areas with lower deprivation, tend to have higher life expectancy on average than those living in areas with higher deprivation. For example, the regional life expectancy for men in Surrey is 80.7 years in comparison to 79.6 years nationally, and 84.1 years for women, in comparison to 83.2 years nationally (PHE, 2020). Significantly however, PHE (2020) reveal that life expectancy is 5.8 years lower for men and 4.7 years lower for women in the most deprived areas of Surrey than in the least deprived areas, highlighting the impact of deprivation on health.



Independent Survey Work (carried out by Dayton Bell)

Dayton Bell surveyed a number of key healthcare providers and researchers across Surrey, with a focus on the towns of Guildford and Woking, in order to assess the degree of Covid's impact on their activities. As the table shows, healthcare generally indicates high areas of responsiveness, agility, and adjustment in terms of reorienting both research-based projects, as well as overhauling pre-Covid healthcare structures and expectations. The key messages here are that 87.5 % of respondents felt that Covid-19 had a positive impact on their research (e.g. in terms of opening whole new areas, collaborators and funding sources). However,

44% of respondents confirmed that they had not been approached to undertake new research on Covid-19. 81% of respondents estimated that they were operating at 100% capacity, with two suggesting that they were operating at over 100%. 69% felt that Brexit would not have a negative impact on their overall health research; with four respondents less sure of Brexit's impact. Only 12.5% were able to confirm that they had produced data and findings that have informed recent government health policy or guidance. Overall, healthcare appears to be surprisingly robust in identifying and responding to the rapidly shifting healthcare demands and research objectives brought about by Covid-19.

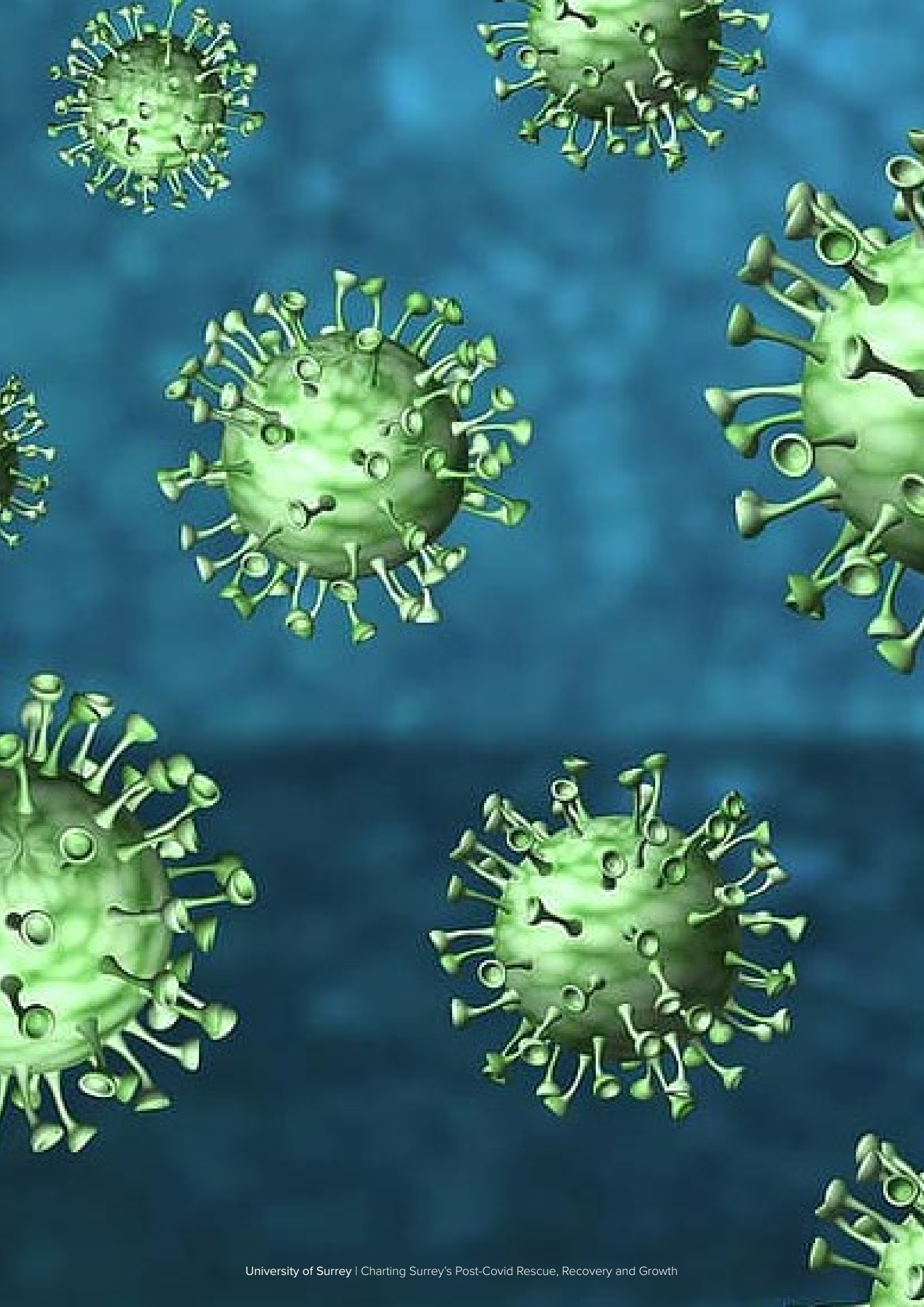


Sector Survey Responses

Location	Guildford	Guildford	Epsom	Godalming	Woking	Guildford	Cranleigh	Horley
Sector	Healthcare							
Has COVID-19 had an impact on your research?	Positive	Positive	Positive	Positive	Positive	Positive	Neither	Positive
What impact has COVID-19 had on your research?	Research	Research	Production	Research	Research	Production	N/A	Contracts
Have there been COVID-19 impacts on wider health and epidemiology research in Surrey that you are aware of?	Yes +ive	Yes +ive	Yes +ive	Yes +ive	Yes +ive	Yes +ive	None seen	Yes +ive
Have you been asked to conduct new research in response to COVID-19?	Yes +ive	Yes +ive	Yes+ive	No	Yes +ive	No	No	No
At what capacity would you estimate your firm is currently operating at?	100	100	100+	70	100	80	100	100
Do you believe that the changes adopted in response to COVID-19 in your area will inform future policy and practice?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
If so, how do you think these changes will inform future policy and practice?	New policy	Open markets	Policy	More contracts	Policy	N/A	N/A	Contracts
Has your research produced data or findings that have informed recent government health policy or clinical guidelines?	No	No	Yes	No	No	No	No	No
Why is your business based in Surrey?	Customer	Customers	Customers	Customers	Q of L	Travel	Customers	Travel
Do you believe that Brexit will impact health research?	No	No	No	No	No	Some	Some	No
What impact do you think Brexit will have on health research?	Positive	Positive	Positive	Some	Positive	Contracts	Bureaucacy	Positive
Do you believe that NHS clinical research systems would benefit from stronger ties with life science industries?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Sector Survey Responses Cont.

Location	Epsom	Cobham	Woking	Woking	Guildford	Guildford	Guildford	Leatherhead
Sector	Healthcare							
Has COVID-19 had an impact on your research?	Positive	Positive	Positive	Positive	Positive	Positive	Positive	Negative
What impact has COVID-19 had on your research?	Research	Research	Research	Contracts	Research	Research	Research	Loss of contracts
Have there been COVID-19 impacts on wider health and epidemiology research in Surrey that you are aware of?	Yes +ive	Yes +ive	Yes +ive	Yes +ive	Yes +ive	Yes +ive	Yes +ive	No
Have you been asked to conduct new research in response to COVID-19?	Yes +ive	Yes +ive	Yes +ive	No	Yes +ive	No	Yes +ive	No
At what capacity would you estimate your firm is currently operating at?	100	100+	100	100	100	100	100	50
Do you believe that the changes adopted in response to COVID-19 in your area will inform future policy and practice?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
If so, how do you think these changes will inform future policy and practice?	New policy	New policy	New policy	New policy	N/A	More contracts	New policy	N/A
Has your research produced data or findings that have informed recent government health policy or clinical guidelines?	No	Yes	No	No	No	No	No	No
Why is your business based in Surrey?	Customers	Customers	Family	Customers	Customers	Travel	Customers	Customers
Do you believe that Brexit will impact health research?	No	No	Some	No	No	No	No	Yes
What impact do you think Brexit will have on health research?	Positive	Positive	Contracts	Positive	Positive	Positive	Positive	Major disruption
Do you believe that NHS clinical research systems would benefit from stronger ties with life science industries?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes



STRATEGIC ASKS AND POLICY RECOMMENDATIONS





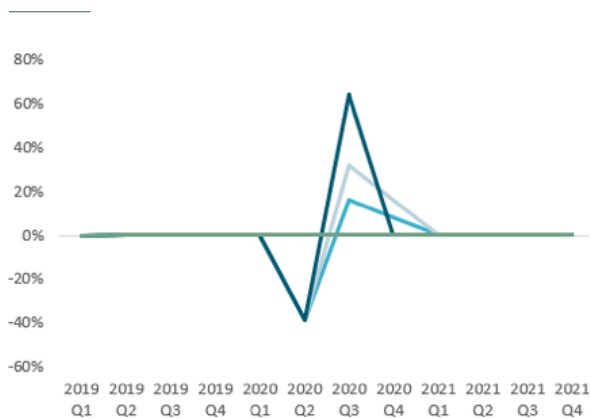
Strategic Asks



Economic Conclusions

The recovery path of both the UK and Surrey's economy depends largely on whether there is a second wave of Covid, and the form of response via full country-wide or series of local lockdown. Further and protracted lockdowns will inevitably place quarterly output growth back in negative territory, while annual GDP would likely produce some of the worst-scenario forecasts. The Office for Budget Responsibility for instance expects a worst-case scenario would reduce UK GDP by over 14% compared to 2019, while the medium-case scenario still represents a fall of over twelve percent.

Quarterly Growth Rates

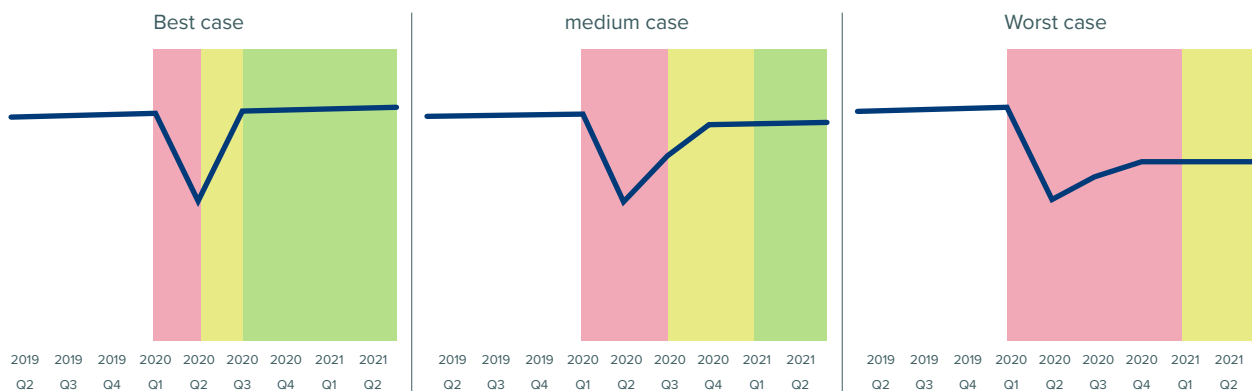


While Covid remains the current focus of attention, as this report has indicated throughout, the path ahead for the UK economy needs to incorporate both heightened uncertainty and possible sustained economic disruption due to Brexit. The delay in achieving a clear and timely UK-EU agreement has inevitably reduced key aspects of both business growth and foreign investment in the UK. The question is whether this will diminish the UK's output capacity for the long-term, and what the full effects of this will be when combined with the impacts of Covid, in which Brexit may act as a multiplier effect on current and forecast 2020 shortfalls.

The possible future travel of the economy in the coming quarters can be illustrated using the three scenarios depicted below, which illustrate both quarterly growth rates and GDP. In the best-case scenario, output follows a strong rebound in the second half of the year, after a 20.1% fall in Q2 GDP, taking quarterly output back to pre-Covid levels. A mid-range scenario (and possibly a more realistic one) sees only a moderate rebound in the economy in the third and fourth quarters of 2020. This brings GDP closer to pre-Covid levels, but requiring another quarter or even two to return to a level of real growth. In the worst-case scenario, GDP in quarter three and four remain depressed, with GDP remaining well below average rates for an extended period.



Quarterly Growth Rate Scenarios



EM3, Understanding & Responding to the Economic Impact of Covid-19, June 2020, pp. 9-10.

Economic Policy Recommendations

For the most part, the implications for Surrey's economy follow directly from the UK's own outlook. Surrey would again be affected should a second national lockdown occur, or if two or more local lockdowns in high population areas were imposed for more than a fortnight. The medium case scenario foresees regional, rather than national lockdowns, and considers the incidence of urban Covid hotspots. If Surrey reaches the end of 2020 without a county-based lockdown, or the lockdown of two or more high population centres for more than two weeks, then it could arguably follow a mid-range recovery, in which there is moderate but continued growth in the following two or three quarters, allowing the county to recover a significant share of lost output, and possibly outpacing national growth depending on downturns elsewhere in the UK.

Given that Surrey's overall Covid caseload remains low in comparison to national and other regional figures, lockdown potential at the time of writing also remain low. However, as illustrated by trends in the UK in early September, demographic shifts and behavioural changes in a local population can prompt epidemiological differences in regional R-rates. Pushing ahead on economic and business stimuli is however the first requirement here. The worst-case scenario itself incorporates the multiplier effect of resurgent lockdowns coupled with a no-deal Brexit in December 2020, the latter triggering a high level of disruption not only on exports but also in the service sector. In addition to arrested GVA, this could see many of Surrey's residents and business (particularly those operating within the aforementioned knowledge economy as well as specific sectors like finance) unemployed for some considerable times. This in turn would negatively affect Surrey's customer base and housing market, which could trigger further cross-sectoral, county-wide shocks.

Boosting a high value-high growth economy

Surrey has great potential to continue to boost high value industries, as it is already a knowledge-based high-worth economy. However, it has been "sleepwalking into both low business and output growth" in recent years (Online interview, September 2020) and needs to take advantage of the present circumstance – as well as Surrey's established requirements - to effect radical growth-based change.

To regain growth and vitality, Surrey needs to address:

- **Large disparities between East and West Surrey in terms of output, with very poor growth in East Surrey.**
- **Falling productivity largely driven by East Surrey, but West Surrey's is in standstill compared to the UK's level.**
- **Dependence on financial and real estate activities, which are at risk with Brexit.**
- **Losing the ability to sustain a healthy and dynamic business base, and over-reliance on micro-businesses.**

Economic recovery should focus upon:

- **Putting an action plan to resuscitate East Surrey's economy.**
- **Promoting Surrey as a "place to do business" using high survival rates as evidence, and focus on fostering the growth of micro-businesses.**
- **Enhancing support for businesses and innovation in key strategic sectors: knowledge, health, and aviation.**
- **Boosting technological infrastructure, essential for knowledge and high-tech industries.**

Cluster Strategic Asks

Within the context of the report's goals, i.e. charting the impact of Covid, and to a lesser extent Brexit, on Surrey's ability to survive and thrive, each of the individuals, businesses and organisations interviewed for this report - as well as those surveyed – were given the opportunity to reflect at length on both broad and specific 'asks'. What follows represents a consolidated version of the key requirements which - as Surrey stakeholders - best reflected both the broader needs of the county economy, and the specific requirements of their sector or business. Following an explicitly needs-based ranking, each of the 'asks' arising from the four clusters – **aviation, business, knowledge and health** – are grouped under a single theme, which can translate to practical policy recommendations.

- Aviation's key recommendation is a rescue package.
- Business's key recommendation is entirely growth-based, with a focus on investment and innovation.
- Healthcare's key recommendation is based on capacity building and enhancing skills.
- Knowledge's key recommendation is boosting academic-industry innovation.

Aviation: Rescue

- Utilising the post-Covid economic recovery and future growth of Heathrow as a key catalytic source of growth for the county and the nation; tying in strategic goals for the next decade and beyond.
- Enhance the future prosperity of the region by supporting the enhancement of Gatwick Airport, thereby underwriting sustainable regional dynamism.
- Alter the mandatory 14-day quarantine from all red "threat" nations, subject to a negative Covid-19 test. Given uncertainty over the reliability of testing on arrival, a shorter quarantine period (e.g. 5 days) may be sufficient to alleviate public health concerns. The cost of this should be picked up by the UK Government as a means of support to the aviation industry.
- The UK Government must establish a bailout package for the vulnerable aviation sector, providing medium- and long-term financing to airlines, airports and aviation supply chains to allow for the expected drop in demand and accelerate the recovery to pre-Covid levels.
- Establish a separate representative body to represent the aviation industry working explicitly with national (e.g. Department for Transport's *Aviation Restart, Recovery and Engagement unit*; *COVID Recovery Commission*) and local government to inform to swiftly assist the sector's recovery.
- Ensuring post-Brexit that the UK Government continues to play a world-leading role in developing internationally-agreed global aviation standards, both generic and Covid-compliant to facilitate short-term rescue and long-term growth of aviation.
- Look in detail at the long-term implications of the expiration of airport slot exemptions in October 2020, particularly the need to balance airlines' short-term liquidity and airports long-term recovery in air traffic.
- Establishing a 'triangular skills structure' to prevent the haemorrhaging of skills and talent within the aviation sector. This would be comprised of:
 - ▶ Aviation Skills Retention Scheme – a version of the CJRS, whereby the UK Government pays a portion of wages for those in the aviation industry, offset by voluntary reduction in working hours.
 - ▶ Aviation Skills School – the offering of a variety of training opportunities, including short-term courses and further education, that allows aviation workers to prepare for entering the job market with a wide range of abilities.
- Aviation Skills Bank – a central repository system, likely divided into East and West Surrey, that encourages the rehiring of aviation workers that are made redundant as a direct result of the economic impact of Covid-19 and retains high-level skills within the sector.
- Work with local authorities and national government to ensure England falls into line with the rest of the United Kingdom by not applying business rates to airports for the next 12 months.
- That full consideration is given to the temporary suspension of Air Passenger Duty for an initial period of six months to a year to assist with the recovery of the sector and help prevent unnecessary job redundancies.
- Independent research is carried out to understand the economic activity generated by aviation supply chains within Surrey, in relation to airports and manufacturing, in conjunction with the LEPs and the Farnborough Aerospace Consortium.

Business: Growth

Surrey's business sector is at a strategic crossroads. The ensuing decisions will determine not just its direction, but its entire future. The Commission's recommendations present a key opportunity to both support innovative growth in the county, but also to address obstacles and complacency stifling progress, and in some areas, causing decline. Changes need to be undertaken via pragmatic and programmatic approaches addressing both the 'cluster' and 'driver' winners identified in the previous pages, but also the uncomfortable realities highlighted by stakeholders, and present circumstances. Growth, and support for growth, is key. **Investment and innovation** will follow. All four aspects need to be sewn into Surrey's business ecosystem, on the basis of an **inclusive economic recovery**, that genuinely supports levelling up within the county, including prevailing disparities.

People and Employment

- Use enhanced LEP / Chambers/ Surrey County Council network to boost key cluster and hotspots focusing on investment, training and skills (including reskilling).
- Follow C2C's Growth Hubs, accelerators and escalators structure to sustainably and meaningfully connect SMEs with potential employees, investors and education institutions.
- The Seed Enterprise Investment Scheme and the Enterprise Investment Scheme are both essential components of Surrey's innovation ecosystem. New initiatives should be developed that de-risk investment in SME's and Microbusinesses further.

Apprenticeships

- Promote a 'Covid-compliant' Kickstart scheme run by Surrey County Council, with the support of the Chambers of Commerce with the goal of providing employers with financial assistance to take on unemployed young people on a placement scheme.
- Establish a Surrey-wide 'Apprenticeships, Placements and Skills Hub' that would act as information and advice centre for both businesses and potential apprentices. It is vital that there should be a central organisation that engages with businesses on one side, and HE institutions offering undergraduate and graduate placements on the other.
- Empower SCC to oversee a more streamlined, lite-style Apprenticeship Levy to greatly strengthen the uptake by local businesses, with an inhouse Apprenticeship Manager to oversee and troubleshoot. The current confusion of the levy

transfer between businesses needs to be permanently solved.

- Challenge Surrey's HE and FE institutions to better support Surrey-specific skills on the basis of education, skills and training. E.g. developing 'Game Engine' skills at undergraduate level, and advanced coding at postgraduate level will produce a hugely unique and adaptable workforce ready to maximise the potential of Surrey's, and the UK's own digital economy.
- Create a joint initiative between Surrey County Council and LEPs to provide matched funding for the creation and enhancement of apprenticeships, in particular targeting those who are from lower socio-economic backgrounds and therefore more likely to feel the acute economic disparities of Covid-19.
- Overall, it is vital to continue the work of the Employment and Skills Board in Surrey and receive the resources needed to fulfil its aims and continue to support the growth of employment and closing the skills gap in the county.

Connectivity, Office Space & Public Transport

- Proactive attention to 'Biz connector routes' between business-to-business and residence-to-business by SCC: e.g. business parks, research parks, industrial parks, the High Street, and the universities. Ensure these routes are entirely climate friendly: line up connectivity with investing in sustainable local transport.
- "Greater connectivity and affordability in public transport reduces the reliance of transportation by private means, diminishing the challenges

to Surrey's existing road infrastructure and achieving climate neutral objectives.”

- Support Covid-compliant working transformations: a concerted effort to ensure east-west broadband connectivity to facilitate home working.
- Transform empty retail or office space into temporary, pop-up, rotational or semi-permanent collaborative, multi-purpose spaces (starting with Surrey's High Streets) used by multiple businesses, self-employed and sessional workers.
- Surrey County Council, LEP and Chambers of Commerce pop-ups rotating seasonally across High Streets, retail, industrial, research and business parks and universities.

Boosting Business

- Make Guildford the UK gaming hub, and the UK the global gaming hub. There is renewed public focus and investment in UK gaming; the sector has impressively weathered Covid's economic impacts demonstrating serious resilience in growth, innovation and investment.
- Videogame Tax Relief must continue. The program should be extended to provide additional unique benefits for SME's and microbusinesses.
- Gaming, AI and 5G and digitisation enterprises are all key to a resurgent UK and Surrey economy but SCC and local business need to inject investment now particularly to its SME's and microbusinesses.
- Ensure the Surrey Growth Board has the clear responsibility of attracting inward investment that collaborates with all stakeholders in the county to achieve a clear 'Invest in Surrey' message. This can sit alongside a county-wide business hub that provides advice and support to businesses whilst enhancing collaboration with LEPs and key stakeholders, such as the universities.
- County-level support for collaborative partnerships between SMEs and MNCs, allowing for the transfer of skills and knowledge to uplift the county.
- A clearer, joined-up strategy for enhanced LEP-to-LEP collaboration, as well as LEP-Surrey County Council cooperation to ensure rescue, recovery and growth goals are achieved on the basis of regional specialisms but also streamlined decision-making.
- Raising the concerns of business to Westminster on post-Brexit immigrations plans and helping to ensure that any changes allow for the recruitment of talented individuals to bring their skills to Surrey, boosting the cutting-edge R&D in the area.
- National funding is secured to allow for the creation of localised supply chains in areas of strategic national importance that sit alongside globalised, cost-efficient models. This ensures than in times of acute crises, the UK can 'upscale' the necessary manufacturing processes and ensure consistent supply and demand.

Healthcare: Capacity Building And Skills

Public Health

- Public Health England must ensure that NHS staff have better access to support services and these services need to be publicised more widely to ensure engagement. Additional funding is required for staff who need access to services to manage established trauma-related mental health problems such as PTSD post-Covid.
- Local and national government alike must provide concrete measures to address the under-funding, under-resourcing, and under-valuing of the health and social care workforce, such as removing student nurse, midwife and paramedic debt.
- Public Health England must ensure that NHS trusts have better control over PPE supply chains so that they can regulate the quantity and quality and do not have to turn to external markets with inflated costs.
- Surrey Heartlands' Workforce Transformation team needs to be sustained through continued funding to be able to continue to implement the NHS People Plan, which highlights the importance of workforce development, education, training, and retention.

- Public health messaging and warnings are made more accessible to non-English speakers and people with disabilities.
- SCC retains its Covid taskforce in place for all potentialities and work directly with contact tracing to identify hot spots to avoid another large-scale resurgence.

The National Institute for Health Research (NIHR)

- Better mental health services need to be available to students. Local higher education institutions should play a key role in facilitating education and career support for CYP to tackle concerns surrounding academic performance.
- Public Health England should promote integrated data sets to enable greater system-wide access to patient data. This will enable targeted interventions to those most at risk, focusing more effectively on preventative strategies.
- With demand for social care rising and changes in family care availability, there is an urgent need to tackle the issue of under-funding, under-resourcing, and under-valuing of the social care workforce.

Health Digitalisation

- Residents in care homes need to have digital access to primary and secondary care. Therefore the NHS, Care Quality Commission and local authorities need to play a key role as commissioners and regulators by mandating and paying for the use of technology in care homes and ensuring sustained funding for secure email, access to networks and secure collaboration platforms in care homes.
- Themes emerging from Covid-19 include using technology to support physical and cognitive maintenance and rehabilitation; recognition and management of delirium; and remote ways of diagnosing memory problems. This has become increasingly pertinent for patients isolated from their usual sources of support.

Research

- Public Health England should take this opportunity to emphasise the importance of clinical trials, inviting people to learn about them and inspiring them to take part.
- The development of a regional funding pot for research would be beneficial to tackle competition between institutions and research fields and promote collaboration. SCC should work alongside NIHR and the AHSN network to facilitate this.

Health Inequalities

- SCC need to encourage businesses to provide work opportunities and apprenticeships to disadvantaged groups within the local community to help unlock their potential and enable them to participate more fully in their local community. This can be done by showcasing the benefits of securing a future workforce and building a more prosperous local community.
- SCC should invest in targeted third sector support for vulnerable groups in Surrey, focusing on key issues of child poverty, mental ill-health, domestic abuse, social isolation. The CPF provides a key vehicle for such interventions.



Knowledge: Innovation

- Surrey's strengths need more support: cyber security, AI, 5G, and GIS require more investment and funding.
- Expanding on the already impressive AI/5G/Cyber 'hub' that is University of Surrey, Royal Holloway and University of Southampton is key – there is real capacity to produce a 'Silicon Valley' of Britain with the right strategic facilitation.
- LEP & CoC support to for Employability and Careers offices in all 3 HEIs to reverse the decline in placement partners, and students, revealed as Covid- vulnerable.
- More hubs, facilitators and networks: development of a county-level strategy that allows for a "joined up approach" in areas where there is a need for greater interconnectivity yet little facilitation at regional and national level.
- Enhance Surrey-specific support to SMEs: allow for the facilitation of support from local government to valuable research business assets to ensure that Surrey prevents a "brain drain" to more affordable areas, as some businesses have already done.
- As Further Education (FE) providers and Sixth Form Colleges are likely to be short-term victims of Covid contractions, speedy "Edu-collaborative" partnerships should be formed between FEs, Colleges on the one side and universities and businesses on the other, to support the 'schooling' and 'skilling' of students, and the financial future of FEs and Colleges.

AI/CVSSP

- Map out the creation of a 5G town/city in Surrey with support from LEPs.
- Work with national government to facilitate the creation of Infrastructure to support high bandwidth communication.
- Local government must make it more attractive for companies to locate here. Currently, Basingstoke or Aldershot offer cheaper alternatives.

- Replicate the joined-up approach of Bath, Bristol and Media City (Salford), who have very strong local authority intervention and investment to put in infrastructure to support high tech industry.
- Stronger vision from SCC regarding how to support the creative industries. Some investment is taking place behind the scenes but not as part of a visible, high-level strategy.

Cyber Security

- County-level support for outreach on cyber security, with a particular focus on the most vulnerable groups; unemployed/underemployed, young people and disadvantaged groups.
- Enhance more collaboration on cyber security between the education sector and local businesses to support businesses with cyber security needs and to foster partnerships.

Space

- A more appropriate export policy for dual-use space systems (currently decisions appear uninformed of the realistic international state of play and default to the most conservative level, seriously impeding export growth and UK soft-power).
- A coherent cross-department government approach to space, possibly drawing on the Space Council.
- Draw focus to the need on intertwining space with other sectors, e.g. medical institutes could use space data to monitor spread of viruses.

Geospatial

- Clarity on mechanisms to export expertise internationally. Currently there is no clear mechanism that would help companies such as Alcis to work with British Embassies and Consulates around the world to enable host nation governments in fragile and developing countries to deliver their activities more effectively.

- Developing Surrey as a Geospatial and technology fusion hub. Surrey could develop an identity as a leading Geospatial hub in the UK and internationally, and there are already some efforts to achieve this, but these could be more formalised.

Employability & Careers

- Funding for 'Recovery internships' at either a local or national level to enable universities to set up internships for graduates of 2020 and 2021, who were not able to benefit from PTY because of Covid. This policy ask is also endorsed by Universities UK (UUK, 2020:5).
- Focus on the most vulnerable groups; unemployed/underemployed, young people and disadvantaged groups, with tailored support into skills training and job roles.

Regional Research Network : SETsquared and SEPnet

- Continue to make fast access grants available to innovative SMEs.

- Boost SEIS tax relief levels to encourage first time investments in early stage companies.
- A sponsorship programme working with LEPs, and/or local government to promote both SEPnet and wider skills/training programmes.

University: Attainment Outreach

- A task force to tackle Surrey's GCSE attainment gap should be developed.
- More weighting should be given to the disadvantage attainment gap when making judgements on school performance by Ofsted.
- Pupil premium should have more rigorous criteria and reporting measures to ensure it is being used effectively, specifically on activity/resource to reduce the education gap.



'Surrey Voices' Asks

Incorporating the views of those national, regional and local decision-makers who represent Surrey in both a political and cross-sectoral perspective, the dual themes of boosting business, and stimulating community were seen as key to Surrey's recovery and growth strategy:

Business

- **Support for new entrepreneurs:** A wave of new business start-ups is anticipated post-Covid-19 in response to widespread redundancies and therefore, business support and tax relief is essential to kickstart these enterprises.
- **Support for small businesses:** Whilst small towns and rural villages in Surrey are unlikely to attract MNCs, they require support for the small businesses that they host to take advantage of increased WFH.

- **Diversity:** Policy makers need to incentivise more women into areas of high-tech innovation and general entrepreneurialism which are traditionally male dominated and enforce policies such as quotas if necessary, to tackle the gender gap. Higher education institutions should also play a key role in encouraging young women into these fields.
- **Improved Connectivity:** Local government and businesses must commit to a complete transformation of Surrey in both fibre and broadband.
- **Investment in HE/industry networks:** Stronger relationships between HE and industry need to be established through a variety of mechanisms such as research collaborations, more industry-relevant curriculum, employee exchanges and professional training placements. University innovation

and intellectual property also need to be more accessible to the public and industry to facilitate knowledge-exchange and social development.

- **Infrastructure:** There is a need for a coordinated programme of hard infrastructure development for example by solving the M23 infrastructural issues and improving rail lines between East and West Surrey to enable better connectivity.
- **Safeguarding against Brexit:** Businesses should be much more proactive and prepare to implement measures to protect themselves against import and export regulations post-Brexit.

Community

- **Community networks:** Local community networks need to be explored and supported to tackle social isolation amongst employees WFH and increase collaboration and networking.
 - **Change of management:** Political and business leaders have an opportunity to lead a step change in working practices, improvement of quality of life, the environment and health as well as well-being. There is a need to put in place support mechanisms that enable an understanding of how to effectively drive such change.
 - **Local Development:** There is a need for more flexible, multifunctional and affordable spaces with shared facilities for work and housing
- **Education:** There is a need to expand school provisions in terms of funding and resources beyond private education in Surrey to better support state education.
 - **NHS Workforce Projections:** The Government must publish the long-term health care workforce plan to forecast the projections of the NHS workforce needs for 2030-2040 to kickstart training and planning to ensure future capacity. The fragmentation of responsibility for workforce shortages at national level must be addressed before effective management can occur.
 - **Capacity-building:** The Government must tackle NHS workforce shortages and high numbers of staff leaving the profession early by addressing the key issues of demoralisation, workforce burnout, lack of adequate safety precautions, unreliable access to testing capacities, 'institutional silencing', limited career progression opportunities, long working hours and a lack of pay rise for nurses, midwives and paramedics. This will enable long-term capacity building by creating a better work environment and incentivising health care roles.

Local Government Recommendations

Stakeholders were also asked for their recommendations regarding both the current county setup, and ideas about future transformations. Here, the key responses incorporated the themes of enhanced governance (both form and content) and enhanced economic development.

Enhanced Governance

- Local government must work collaboratively to ensure efficient leadership dedicated to driving both sustainable growth and innovation in the county.
- There is an urgent need for a practical and impactful model of local government able to deliver courageous rescue packages where needed, sustainable growth in high-value areas, more robust business networks, creative innovation, and capacity-building including skills development.
- Local government should consider establishing a task force to act as an exponent for genuine and sustainable growth throughout the county.

- Stronger cross-system leadership is required to remedy current east-west divisions in key socio-economic areas.
- Local government needs representation on the Parliamentary Covid Recovery Commission.
- Local government should improve economic and demographic data mobilisation at both county and district/ borough level.
- SCC should explore multiple avenues for a radical review of planning laws, as recently published by the UK government, considering various possibilities including a more centralised approach for the county and a more devolved approach to local boroughs and districts.
- A PR campaign should be launched alongside ongoing communications to inform the general public and businesses on the role of councils, their current activities and what they can offer.
- Cluster-specific support is essential in areas of need such as health and social care, education, housing, and transportation.
- Radical new approaches need to be adopted to seize the potential for Covid- generated changes in behaviour to enhance a greener component to public service transformation alongside support for flexible working strategies.
- Agile working procedures should be utilised when appropriate. However, this should not come at the expense of creativity and collaboration, which is more difficult to engender remotely.
- A stronger partnership needs to be developed between LEPs, SCC and the borough councils to capitalise on their respective capabilities and reduce contract duplications. The growth board should be a key force driving this partnership strategy.

Economic Development

- A single, clear economic development strategy is required from local government.
- There is a need to align infrastructure investment with strategic business growth and housing development.
- SCC should serve as both a permanent hub and responsive ‘broker’ in facilitating business-to-business, and business-to-sector links.
- SCC needs to increase business engagement to enhance awareness of council activities and capabilities, uphold a unified approach to support businesses in Surrey and incentivise more people and businesses to the area.
- SCC should commit to further developing cluster-led excellence across the county and ensuring high-value, high-worth Surrey drivers are boosted nationally and globally.



Final Recommendations

Surrey's overarching challenge is a head-on clash between the need for genuine, sustainable economic growth, and an increased spatial development and infrastructure pressures. Ideally, a reciprocal and sustainable solution should be sought, based on a 'growth first' strategy. What follows are recommendations that emerged in common from stakeholders across all four clusters, as well as the broader socio-economic analysis of the report:

Intra-County disparities: Addressing the deepening economic disparity between East and West Surrey's economies and sectoral performance to avoid widening inequalities and to increase the County's overall GVA per capita growth rates.

- **Improve key digital infrastructures in the county:** Transport and communications infrastructures need to be improved dramatically to unlock cluster potential. While there are excellent transport links for London commuters, greater attention needs to be paid to connecting (and de-congesting) east and west Surrey. Failure to address infrastructure pressures, particularly intra-county connections, need particular attention.

Governance: Public authorities at all levels need to work more effectively with a host of key stakeholders, including LEPs, to design "local-growth, local-jobs" programmes, tailored to the different local economic realities, but promoting the same key message that "Surrey's in Business". Strategic task forces focusing on growth, skills, and sustainability could arguably support and direct county-wide recovery and growth.

- **Innovate the High Street:** With the requirements of high streets shifting radically in a post-Covid age, a more imaginative approach is needed to manage the space that would benefit shifts in business, healthcare, the knowledge economy and aviation. Offering multi-purpose, collaborative business spaces, hubs for inclusive career support, NHS-related areas, as well as much-needed skills/training areas, all supported by high-quality communications infrastructure would help transform unused or surplus retail/office space.

Surrey Specialisms: Building the County's claim to be England's Silicon Valley by consolidating existing high-tech hubs, connected by 'business corridors', while kick-starting rescue packages for those aviation-related industries whose current challenges will negatively affect Surrey's overall GVA.

- **Embracing the modern workplace:** Covid has brought about both threats and opportunities to contemporary working patterns, including new forms of flexibility and challenges to traditional modes (e.g. commuting in/out of the county). Both need to be seriously considered when mapping Surrey's future economic growth.

Healthy and Inclusive Surrey: Launching packages to promote an uplift in Surrey's demography; retaining high-skilled students, attracting highly-qualified younger workers and their families by providing enhanced and sustainable infrastructure, accessible housing and an attractive lifestyle.

- **Demographic challenges:** Surrey faces a serious challenge in attracting and retaining highly-skilled young people for both the knowledge economy and business. Failure to make Surrey attractive, both commercially and residentially, risks ongoing shrinkage of growth, both in terms of demography and the overall economy.





CONTRIBUTORS AND REFERENCES



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