CPIER

CAMBRIDGE & PETERBOROUGH

Independent Economic Review

Interim Report

May 2018

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Foreword

FROM THE CHAIR OF THE REVIEW, DAME KATE BARKER

The Cambridgeshire and Peterborough Independent Economic Review (CPIER) is pleased to present the interim report, which has been led by the Cambridgeshire and Peterborough Independent Economic Commission (CPIEC). It is co-funded by the Cambridgeshire and Peterborough Combined Authority, the Business Board of the Combined Authority, and Cambridge Ahead.

This is of course the Commission's report. The views expressed have been developed as independent – as our funders asked us to do.

The Commission is now roughly at the half way stage in the review. We have gathered a great deal of evidence. Much of the evidence we have is data on the Cambridgeshire and Peterborough economy. Most of what we have now is from published sources, and we have commissioned a range of new research too. Some of that is available to us now and informs this report. Much of the research is still underway and will be reflected in the final report. At this stage, we have not set out a wholly definitive analysis of where the economy of the area is heading and what should be done about it. This is more our view of where the economy is today and how it got there, an important starting point for the review.

While the area the review has responsibility for is defined by its administrative geography, we are primarily concerned with the economics of the area, and we therefore refrain from artificially simplifying, or forcing together, the economic geography. We also acknowledge where there is evidence of significant economic linkage beyond the administrative area.

But the interim report aims to do much more than set out data and economic evidence.

We have been clear from the outset that no Commission or process of review could fulfil the terms of reference we have been given (available here[1]) without taking full account of the views of the people, businesses and other organisations whose work contributes most to the creation of the economic present and future of the area. That is why we issued a call for evidence in January. We received 52 responses, which are summarised in this interim report, and for which we are very grateful. The Commission has also had a range of very informative discussions with the Local Authorities of the area and with the Combined Authority Mayor, as well as other local stakeholders. These too are reflected in this report.

We use our baseline economic findings and the views of a wide range of people and organisations to set out what we see as the most important policy challenges facing Cambridgeshire and Peterborough in the years ahead. The Commission believes these are the most important to tackle if the area is to meet the goal set out in its Devolution Deal with Government (to increase economic output by nearly 100% over the next 25 years, from £22bn to over £40bn). Every area will have to maximise its contribution, where the challenges, and what success will look like, are different. While it is critical to plan for the projects of the future, it is even more important to do the right things now. This will mean ensuring strong growth continues in high-output areas, and laying the ground for future growth in lower-output areas.

In our final report, we will offer our views on how this goal might best be achieved and a series of policy recommendations which support it. Here we aim to lay the foundations for the final report. Whilst we would welcome views on any aspect of this report, the policy issues are the most important and where we would be particularly interested to receive feedback.

With this in mind, we are inviting comments on the interim report. You are welcome to submit any responses, views and supplementary evidence to the Commission at evidence@cpier.org.uk. We would be very grateful if responses were sent by 8th June 2018.

Dame Kate Barker

[1]http://www.cpier.org.uk/about-us/terms-of-reference/

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Executive Summary

THIS REPORT

This is the Interim Report of the CPIER, which is the first major project undertaken by the CPIEC. It has been commissioned and funded by Cambridgeshire and Peterborough Combined Authority, the Combined Authority's Business Board (formerly the Greater Cambridge Greater Peterborough Local Enterprise Partnership) and Cambridge Ahead. This is a report of the CPIEC. It is intended to inform policy decisions undertaken by the Mayor, Combined Authority, and others but it is an independent report and the views expressed here are those of the Commissioners only.

This interim report sets out the progress in the CPIER to date. It is intended to stimulate debate and views on its contents are welcomed. Throughout the report we have highlighted key questions the final report will answer, and here we would especially value input. The closing date for views on the report is 8th June. Following the completion of the research undertaken by the Commission and further consultation and deliberation over the spring and summer, the final report of the CPIER will be launched in September 2018.

THE ECONOMY OF CAMBRIDGESHIRE AND PETERBOROUGH

Section 1 of the Report sets out the evolution of the economy of Cambridgeshire and Peterborough in recent years. It demonstrates there have been markedly different trends across the area. There are real reasons for optimism – business birth rates in all districts have increased over the last six years, GVA (Gross Value Added – a measure of the value of output of the economy) has been increasing everywhere, and employment is growing. The often noted 'Cambridge Phenomenon' is continuing, but increasing prosperity is being felt everywhere (although not by everyone). What is clear, though, is that there are different dynamics at play. The area can be broadly understood as three economies, based around Cambridge, Peterborough, and the fens. As with any characterisation, it simplifies – there are, for instance, significant crossover areas – particularly Huntingdonshire, which looks to Peterborough in the north, and the Cambridge area in the south.

Peterborough has been and remains a diversified economy with strong traditions in manufacturing and engineering, but with a strong base in services too. It has strength in its excellent rail connections to London and the Midlands via the East Coast Mainline, allied to reasonable national road connectivity and significant room for growth, making it an ideal centre for a range of economic functions requiring otherwise scarce, affordable but connected premises. This is reflected in a quickly growing population – currently the fourth fastest-growing city in the UK[2]. Nonetheless, Peterborough's economic evolution and the loss of traditional jobs has had an impact in some parts of the city, creating localised problems.

Peterborough has long had a natural role as the gateway to the fens and there is some evidence of this today in commuter patterns. Though (as with the connectivity south to Cambridgeshire) relatively poor road and rail connectivity have limited links into this area, the exception being relatively well-connected northern Huntingdonshire.

The fens hold the area's greatest natural asset in the extremely high quality arable land – 50% of England's grade 1 agricultural land is found here[3]. The market towns of this area are a marked feature and strength which hold much potential for the future if this can be unlocked. However, the relatively poor connectivity of the fens, which for the purposes of this report broadly comprises the Districts of Fenland, and parts of Huntingdonshire and East Cambridgeshire, is one very important factor in shaping both recent and more longstanding, lower growth in the area. The area has a large agribusiness and food sector, which plays a big part in feeding the nation – 37% of English acreage given over to the growing of vegetables in the open is found in the fens[4]. However, the area's economy has historically grown modestly, and the value of its output is below that of other areas.

The remaining part of the area is centred on Cambridge, and includes South Cambridgeshire and parts of East Cambridgeshire and Huntingdonshire. This large area has grown dramatically for some decades, fuelled to a significant degree by the growth of Cambridge's innovation-rich boom, which is concentrated in the city and South Cambridgeshire, but has spread out from there, and is complemented by similarly strong performance in the southern part of Huntingdonshire. This is a phenomenon that has historic roots dating back to the 1960s, but has been refreshed by new waves of investment and technological development. This report analyses the nature of growth in and around Cambridge and concludes that this growth is driven by locally-specified factors (and may be slow to spread as a result), and that the natural pull of this growth is towards the south and east.

The economy, travel to work and housing patterns of Cambridgeshire and Peterborough are dominated by these three core areas which adjoin each other in an indistinct way. Unlike other, more city-centred Combined Authorities, this is not a single economic area. It is a geographically large multi-centred area

[2]Source: Centre for Cities [3]Source: https://www.nfuonline.com/assets/23991 [4]June agricultural census 2006, DEFRA

This interim report sets out the progress in the CPIER to date. It is intended to stimulate debate and views on its contents are welcomed.

in which each city and indeed market town has a different role. The southern economy has been the most productive – this has been significantly facilitated by creating the conditions for growth through proactive planning policy and purposeful action to stimulate nascent entrepreneurs, which has in turn leveraged external private and government investment.

We also find evidence that, right across these economies, growth is higher than official figures suggest. Examination of employment growth in individual companies suggests firms are increasing employment at a rate greater than that captured by ONS (Office of National Statistics) data; similarly, turnover growth is strong. This will be viewed as positive in most quarters; there are, however, major doubts as to how well the area is set up to cope with future growth, particularly where the strain is already evident.

These current dynamics are important in the context of the target agreed as part of the Devolution Deal between Cambridgeshire and Peterborough and the government. It has committed the area to a near doubling of economic output from £22 billion to over £40 billion over the next 25 years. It is important that all areas grow and prosper, but it will take time to improve the economies in areas that are currently lagging so that they catch up with areas that are doing well. Those areas that are doing well now, even over a 25-year period, will deliver the lion's share of the GVA growth for the target to be reached – slow growth in these areas would mean the GVA target would be difficult if not impossible to attain.

This section also considers the nature of business. New research has looked at the extent to which business in the area can be said to be 'special' and 'indigenous'. The first examines the sectors where the area can be said to particularly excel, using analysis of the University of Cambridge's Centre for Business Research's (CBR) corporate database. This finds that each area has particular strengths and has significantly higher concentrations of certain industries than national averages. The second examines the extent to which companies that were born in the area, or moved here over fifty years ago, contribute to turnover and employment. In the majority of districts, we find compelling evidence that homegrown companies have grown more quickly since 2010. This signals that growth is 'coming up through the floorboards', rather than being largely the product of national and multinational companies moving in. This is not to diminish, however, the extent to which national and international companies have made the area their home, due to its global reputation.

The Commission has also taken a particular interest in how health impacts upon work, and vice versa. The link between poor health outcomes and poor performance at work has been noted by many studies, and similarly, bad working practices can have a detrimental impact on health. The report notes that health outcomes are very uneven across the area of study, and that this seems to be exacerbating productivity divides. This subject will be returned to in more detail in the final report.

There is also a preliminary analysis of work being undertaken by Cambridge University into the future of the area. Building on a long track record of working on the Cambridge economy (Cambridge Futures, and Cambridge Futures 2 – this work is therefore sometimes referred to as 'Futures') the CPIER extends this analysis to the whole Combined Authority area for the first time. The full results of this analysis and the modelling of different scenarios will be available for the final report to underpin our recommendations.

Initial work on the baseline is included in this report. It sets out a varied picture for the future of Cambridgeshire and Peterborough. Positive levels of growth can be expected in several parts of the area without overburdening the system. However, problems that are already apparent in the greater Cambridge area of traffic congestion and prohibitively expensive housing look set to intensify. Unless addressed soon, this will, in the long-run, restrict the potential of the Cambridge economy, and reduce the growth of the whole area.

Section 2 of the report considers in detail the over fifty responses received to the Call for Evidence and the results of a wide-ranging consultation exercise involving the commission and key stakeholders, including the mayor, local authorities, and a range of other key businesses and interests.

The results of this consultation support the statistical analysis on the multipolar nature of the Cambridgeshire and Peterborough economy and the ready awareness of stakeholders about the differential speed at which parts of the area have grown over recent years, as well as the distinct opportunities and needs of each sub-area.

Issues that arise from the responses include the vitally important question of industrial strategy, noting that, while there are excellent examples of best practice already identified through consultation, there are also gaps in knowledge, including in relation to business premises.

Cambridgeshire and Peterborough suffers from significant inequality and the data and analysis received in consultation highlights a strong spatial and social dimension to inequality. Given the major impact this has on individuals, families, and communities, as well as economic performance, inclusive growth is another key theme.

A range of views was received on human capital: education and skills, as well as the role of higher education and the impact of changing patterns of migration. Despite strong educational performance in the main, there are marked concerns about the quality of the school system, particularly in relation to students who do not take an academic route through A-levels and to university. There is also a high level of concern for the fitness for purpose of the skills and vocational training system. This is seen by many as having pivotal importance in light of Brexit and the anticipated fall in the availability of migrant workers in skilled as well as unskilled occupations.

Whilst university provision in Cambridge is among the best in the world, the need for higher level technical skills remains right across the area, with proposals being made and strongly backed by the Mayor and others for further vocationally-oriented higher education provision in Peterborough.

The Review received a wide range of consultation responses in relation to transport where the sheer range of potential investments will necessitate a principles-driven and prioritised approach so as to maximise the impact of the programme in total and its impact on each area. There are strategic risks to the area if it cannot get the major infrastructure improvements it needs, and previous delays in bringing forward and delivering schemes must not continue. But careful consideration is required about which schemes will have the most impact, and about the optimal timing of different schemes. This question, and how these investments relate to other interventions, will be a major part of our final report.

Among other issues flood risk was highlighted by a number of respondents, as was the issue of bottlenecks in the electricity supply – both will be the subject of further analysis.

The Commission was in general encouraged by the proactive and creative approach of Cambridgeshire and Peterborough's local authorities to housing development. The view of respondents, which the Commission recognises, is that the housing development will be constrained as much by the ability to deploy appropriate infrastructure provision as by a willingness to develop sites in many cases – though they note that land values in some areas make it difficult to attract development interest.

A number of respondents to the consultation highlighted the potential for confusion and even duplication arising from the new governance arrangements. Whilst this can largely be attributed to their newness, with the balance of respondents seeing great opportunity from the advent of the Mayor and Combined Authority, the need for clarity and legibility of the new arrangements is clear. Delivering the new mandate for the Combined Authority will require sufficient capacity, not least to deal with what were described by some respondents as increasingly complex national planning requirements.

Section 3 sets out a series of Key Questions arising from the consultation and data analysis on which the Commission would welcome further views and discussion in the period leading to the final report. The next steps for the commission are summarised, including a list of 'Key Questions', which are spread throughout the report at relevant points. The Commission's ultimate purpose is to make meaningful, evidence-based recommendations that will inform the trajectory of the Combined Authority area.

This interim report aims to take stock of the current state of the economy, so preparing the ground, and facilitating an informed approach.

The Economy of Cambridgeshire and Peterborough

1.1 Overview

The Cambridgeshire and Peterborough area is home to over 1.6m people[5], and covers an area of 3,400 sq. km. It consists of six local authorities – Cambridge, East Cambridgeshire, Fenland, Huntingdonshire, Peterborough and South Cambridgeshire. Its largest conurbations include Cambridge in the south, Peterborough in the north-west, Wisbech to the north-east, Huntingdon to the west and Ely to the east.

HISTORY

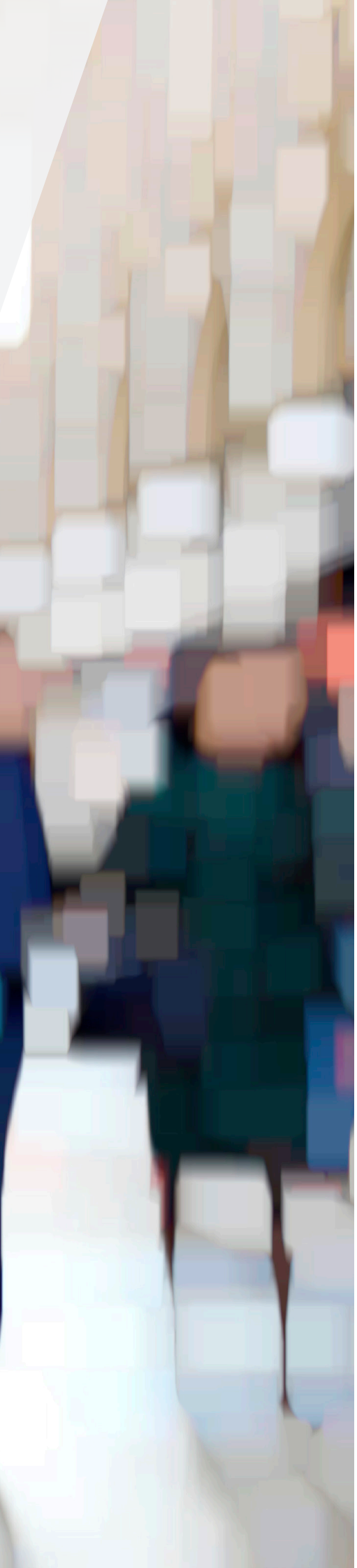
Cambridgeshire and Peterborough are steeped in history. Major historic buildings include the two ancient cathedrals in Ely and Peterborough, where significant religious sites have existed since the 7th century. The cathedrals were constructed in the 12th and 13th century. The University of Cambridge was founded in 1209, being granted a royal charter by King Henry III in 1231, making it the UK's second-oldest university.

The fens – a large, flat area to the north and east – begun to be dredged in earnest in the 17th century, led in part by the Dutchman, Sir Cornelius Vermuyden. This allowed settlements to develop in areas which had previously been partially or entirely underwater. The Bedford Level Corporation was later founded to oversee the pumping and drainage of the area. Land use in this area is now largely given over to agriculture, thanks to its high-quality, peat-rich soil.

Many market towns grew up across the area and remain important centres of trade and society. Peterborough was one of these, until its course changed drastically, due to its newfound place on the Great Northern railway line between London and York. This development allowed Peterborough's brick industry to grow rapidly (combined with more efficient production methods) and turned it into a large local centre. Engineering became an increasingly significant part of Peterborough's economy, which continues to this day.

The University of Cambridge established itself as one of the very best academic institutions in the world, and boasts innumerable notable alumni and breakthrough discoveries.

[5]Census 2011



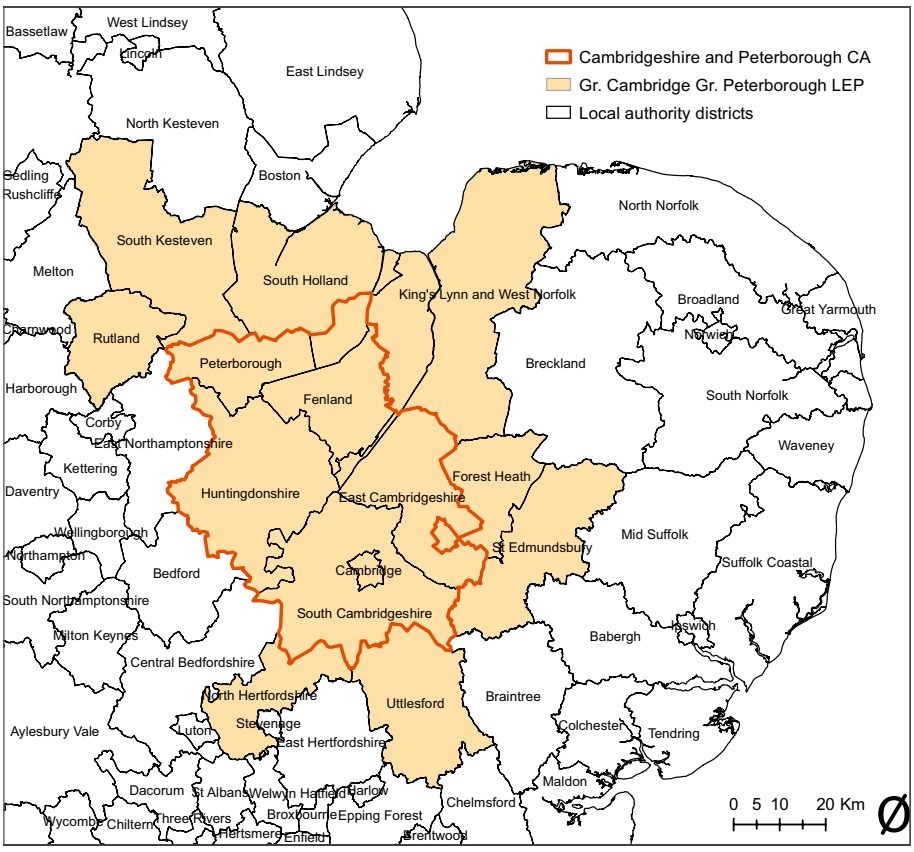
Cambridge has maintained its dominance, regularly topping international league tables. Despite this, the city remains relatively small, and (whilst it has been allowed to grow somewhat) is contained within a large 'green belt'.

ADMINISTRATIVE GEOGRAPHY

The six constituent local authorities together form the Cambridgeshire and Peterborough Combined Authority (sometimes referred to as CPCA). All districts but Peterborough also fall under Cambridgeshire County Council – Peterborough City Council is a unitary council.

The Combined Authority sits at the centre of a much larger Local Enterprise Partnership (LEP) area – the Greater Cambridgeshire Greater Peterborough LEP, whose board consists of local business people and local councillors. Its role is to deliver the Government's Industrial Strategy insofar as it relates to all areas of local business. Recently, the GCGP LEP has been integrated into the Combined Authority as 'the Business Board', with the two organisations now sharing premises at Alconbury. The map below shows the geographies covered by the Combined Authority and the LEP.

Figure 1 – The Combined Authority and Local Enterprise Partnership for Cambridgeshire and Peterborough



The Combined Authority, as part of a Devolution Deal, now has a directly elected Mayor. The current (and first) incumbent is James Palmer. As the head of the Combined Authority, he is responsible for driving change within the area, accomplishing more by bringing local authorities together than would be possible otherwise.

The area is home to seven parliamentary constituencies, which are: Cambridge, Huntingdon, North East Cambridgeshire, North West Cambridgeshire, Peterborough, South Cambridgeshire, and South East Cambridgeshire. This report's data, however, is given at the local authority level, as this tends to be how it is produced. This is also more relevant for the Combined Authority.

1.2 Economic Geography

TREATMENT OF THE CAMBRIDGESHIRE AND PETERBOROUGH AREA

A key finding from all of the work done to date is that the Combined Authority area of Cambridgeshire and Peterborough is not one economy. For our purposes, an economy can be (roughly) defined by the following features: A shared labour market, where workers live and travel within the same area; integrated business, with supply chain linkages; and a shared housing market. Considering the area of Cambridgeshire and Peterborough under these headings:

A SHARED LABOUR MARKET

To analyse the extent to which the labour market across the area is integrated, it is best to consider commuter data. If the labour market is broadly unified, then when an individual living in any one part of the area is considering offers of employment, they would be willing to look at anything within the wider area. Consequently, any local business would consider this as its 'pool' of potential employees. This would be seen in commuting patterns.

This is not what we find in Cambridgeshire and Peterborough (see below and right). These images show where those who work in each of the local authority districts live (based upon 2011 census data). As can be seen, Cambridge and South Cambridgeshire has the largest reach, stretching into Huntingdonshire and East Cambridgeshire to the north, as well as south towards London and east into Suffolk. However, it does not have significant reach into Fenland and Peterborough. It is the opinion of those consulted that, over the seven years since this data was produced, it is likely that Cambridge/ South Cambridgeshire has extended its reach.

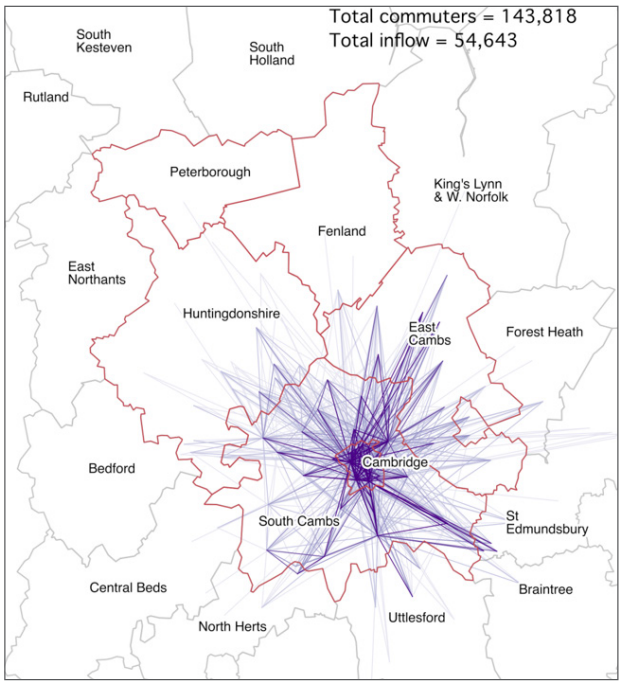
Peterborough has the characteristics of a strong regional centre, with a clear retention of large numbers of its residents within the city for work. Its reach is greater than this though, stretching in all directions. Peterborough is the largest conurbation in the surrounding (largely agricultural) area, which likely explains this fact.

Those that work in Huntingdonshire tend to come from the area, although, as noted, significant numbers from Huntingdonshire commute out to Peterborough and Cambridge. The patterns for East Cambridgeshire and Fenland are more disparate – there are fewer commuters to jobs in these areas and there are less clearly defined centres that draw people towards them. They have a loose pull on the area around them – the strongest links are into Peterborough, and also into the King's Lynn area from the north of Fenland. East Cambridgeshire also has significant ties into Suffolk via Newmarket – it is a quirk of administrative geography that this has been effectively 'carved out' of East Cambridgeshire.

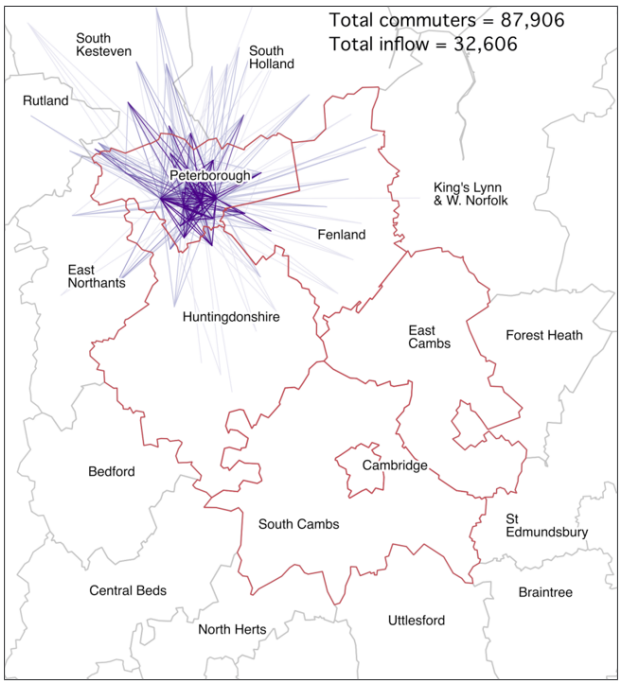
These considerations demonstrate that there is not a shared labour market across the Cambridgeshire and Peterborough area.

Figure 2 - Commuting flows of workers

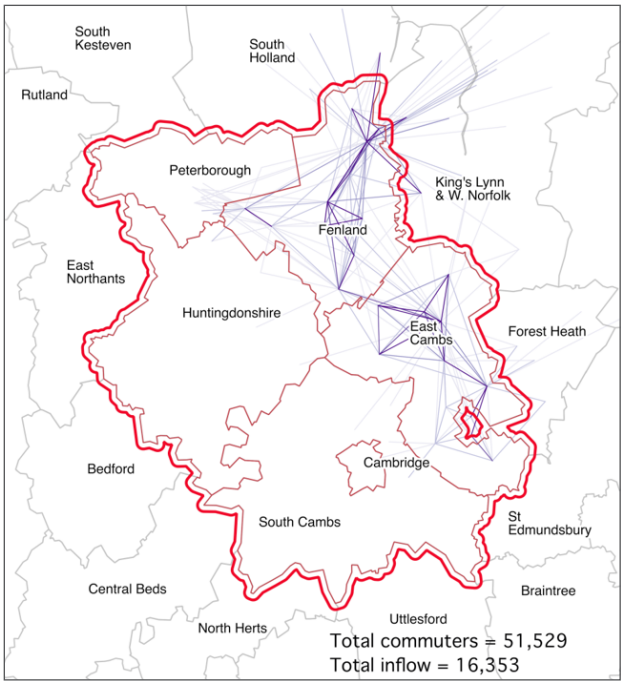
Cambridge and South Cambridgeshire



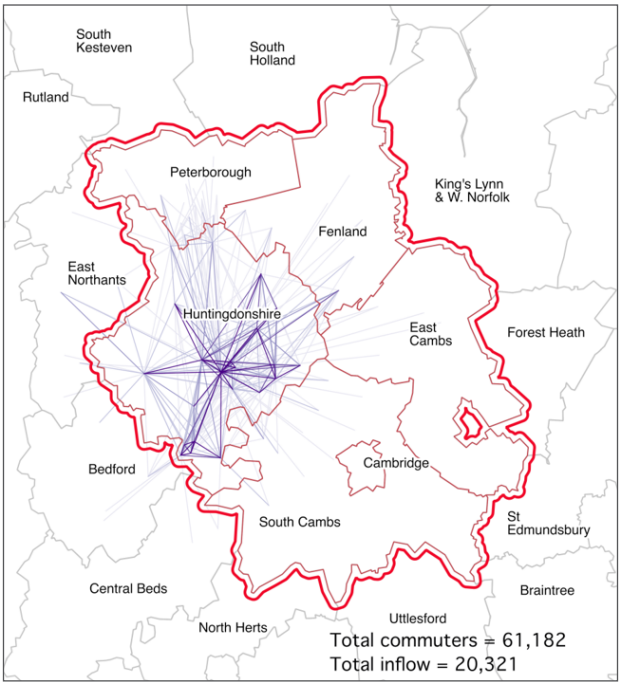
Peterborough



Fenland and East Cambridgeshire



Huntingdonshire



number of commuters
25 - 50 50 - 100 100 - 150 150 - 200 200+

10 0 10 20 30 40 km

Source: 2011 Census Origin Destination table WU03EW - Location of usual residence and place of work by method of travel. Contains National Statistics data © Crown copyright and database right 2015.

INTEGRATED BUSINESS, WITH SUPPLY CHAIN LINKAGES

When an area is functioning as one economy, we would expect to see close linkages between businesses across the area, through supply chains.

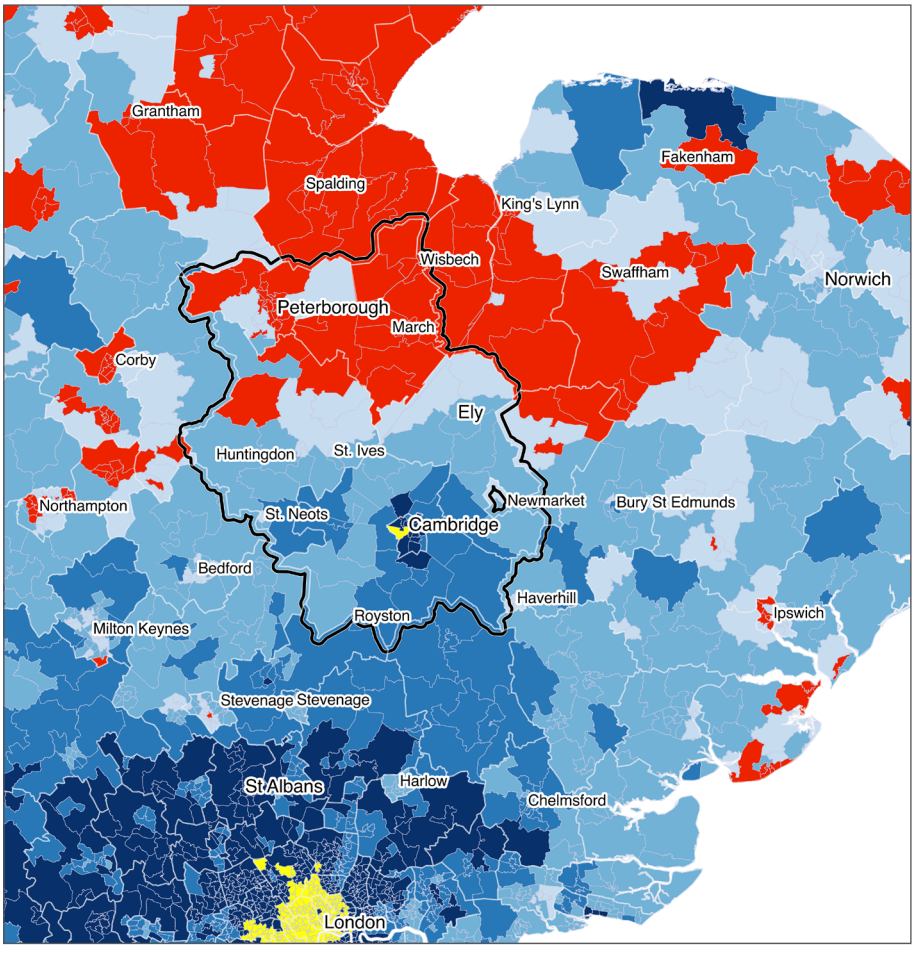
In the Combined Authority area, while a degree of business integration exists, our initial impression is that supply chain linkages are not especially strong. For the final report, we will have completed our qualitative survey of businesses, and will provide further analysis on this.

A SHARED HOUSING MARKET

Another indicator that an area comprises a single economy is that the housing market reflects what would be expected, were the same houses being considered by people across the area. We would therefore expect a degree of parity between property prices (as access to jobs would be roughly constant – though other 'quality' factors need to be considered), and parallel patterns for rents.

In Cambridgeshire and Peterborough, this is possibly the clearest indicator that there is more than one economy in operation. Differences between property prices are stark. Figure 3, which maps the median price paid for terraced properties, shows differences of greater than a factor of four between some of the northern districts and central Cambridge. Notably, Cambridge's house prices are in the same league as some areas of London.

Figure 3 – Median price paid for terraced properties: 2010-2015



Source: Land registry: Price paid data. Contains Ordinance Survey data © Crown copyright and database right 2015.

DESIGNING AN APPROACH THAT FITS THE DATA

Having rejected the idea that Cambridgeshire and Peterborough functions as one economic area, what better conception could be provided? There are different ways of subdividing the area, and any classification is guaranteed to be a simplification. Boundaries are 'fuzzy' and there will always be connections and overlaps between different areas.

The characterisation which was found to best fit is that of three economies – the fens, Peterborough, and the wider Cambridge area. The rationale for this approach is set out below.

Firstly, the separation between the two largest conurbations in the area, Cambridge and Peterborough, was noted. None of the evidence suggests strong economic connections between these two places, therefore they are part of separate economies. Next, it is clear that South Cambridgeshire and Cambridge are part of the same economy – workers commute between these two districts, and much of the 'innovation economy' associated with Cambridge (both the city and the University of Cambridge) is in fact based in South Cambridgeshire, such as Granta Park and Babraham Research Campus.

To the north, while there are some links between Peterborough and Fenland, these are not particularly strong – hindered in part by poor transport connections (particularly along the A47). The business make-up of Fenland and Peterborough also differ, with agriculture and manufacturing forming a more significant part of Fenland's economy (7.8% and 24.2% of district GVA for Fenland, 3.6% and 12.7% for Peterborough, respectively) while distribution, transport, accommodation and food, and ICT are more significant for Peterborough (23.7% and 6.3% for Peterborough, and 17.0% and 1.22% for Fenland, respectively)[6]. Therefore, we have treated these as separate. We note that Peterborough was described by the East of England Economic Planning Sub-areas and Cluster Policy as a "relatively isolated but locally dominant centre"[7] in 2002. While there have been changes since, we believe this broadly to hold true.

The outstanding question is where the two districts across the middle of the area – Huntingdonshire and East Cambridgeshire – fit into the analysis. It is clear that both have an element of 'looking two ways'. Huntingdonshire has residents who both commute to Peterborough and Cambridge/ South Cambridgeshire, as well as many who stay and work in the local market towns. East Cambridgeshire has increasing numbers commuting to Cambridge, but also has a significant agricultural economy and large areas of fens which are more akin to Fenland to the north.

Therefore, we end up with a geography which has Peterborough and its surroundings in the north (including north Huntingdonshire) as one economy; the fens, including Fenland, some of East Cambridgeshire, and part of Huntingdonshire as a second; and Cambridge, South Cambridgeshire, and southern parts of Huntingdonshire and East Cambridgeshire as a third.

Finally, a note on the changes to the economic geography over time. As housing in Cambridge and South Cambridgeshire has become increasingly expensive, workers have been moving further afield – this is the case for both Huntingdonshire and East Cambridgeshire (particularly Ely). The upgrading of the A14 is set to deepen economic ties between Huntingdon and Cambridge, and if upgrades to the A10 go ahead, we would anticipate closer linkages between East Cambridgeshire and the Cambridge/South Cambridgeshire economy.

Soundings have been taken on this approach, and the broad three-economy approach seems to best reflect the perceptions of local stakeholders.

Key Question: Does this three-area characterisation summarise the area well? Which links between the area have not been well captured? What are the most important links to outside the area?

[6]Source: Regional Accounts (ONS) - Regional Gross Value Added (Balanced).
[7]In the final report to the EEDA, page 4

MARKET TOWNS

An important feature of the economic geography is the prominence of market towns. These have long served as economic centres for local populations, providing hubs for commerce. While the relative importance of market towns has, to some extent, declined as transport has enabled larger centres to become more dominant, they continue to play a key role. For many rural communities they remain the central destination for work, retail and leisure. They are of varying sizes, from the large (such as Wisbech – population 32,489), to the medium-sized (such as Yaxley – population 9,174), and down to much smaller towns (such as Sutton – population 3,816)[8].

There are many opportunities for these towns, as they often present an attractive and affordable alternative to larger centres and can deliver well on quality of life. However, they can be held back – for example, it was noted by local councillors that poor internet provision in some market towns dissuades businesses from relocating there, and some high streets have deteriorated.

We will, in the final report, make suggestions as to what further work could be done to understand and classify market towns, as well as what data can be examined to see the trajectory different market towns are on.

Useful work in this field has been done for the East Midlands[9], where a typology of secondary economic centres (consisting of Sub-Regional Centres, Manufacturing/ Transition Economies, Strong Local Economies, Healthy Town Economies, Dependent/ Commuter Centres, and Centres without Critical Mass) has been utilised.

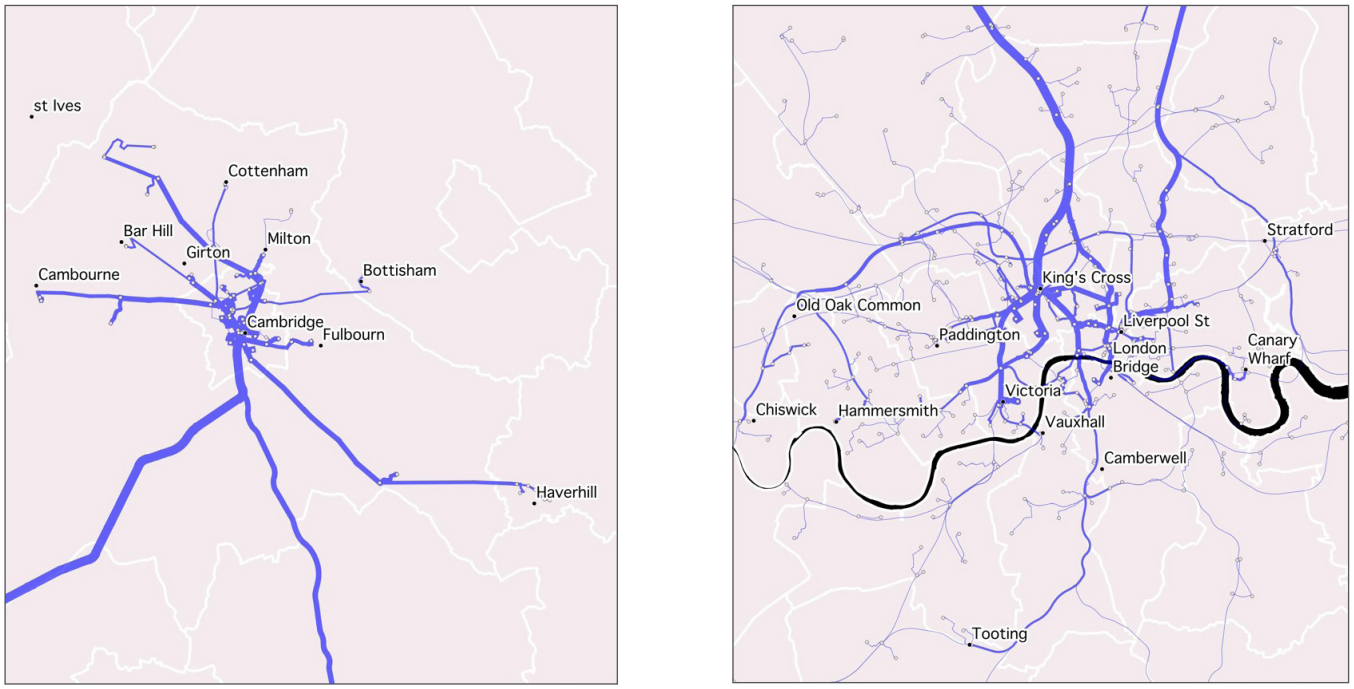
LINKS TO LONDON

Certain towns and cities within the area benefit from fast connections to London. To assess the economic importance of London for the area, we have examined commuter rail flows, using methods which take the 2011 Census data on commuting, and then use Google maps recommended journeys to estimate where people are changing in order to get to London. We have produced this analysis for Cambridge and Peterborough, both showing volumes of flows and destinations within London. As will be seen, there are significant numbers of commuters travelling to London; however, when these numbers are compared to the size of working populations, it is obvious that a characterisation of these simply as 'commuter towns' to London would be false. As can be seen from figure 4 overleaf, these values number in the low thousands; meanwhile Cambridge alone has a total of 143,818 commuters, of which 54,643 is inflow from local areas.

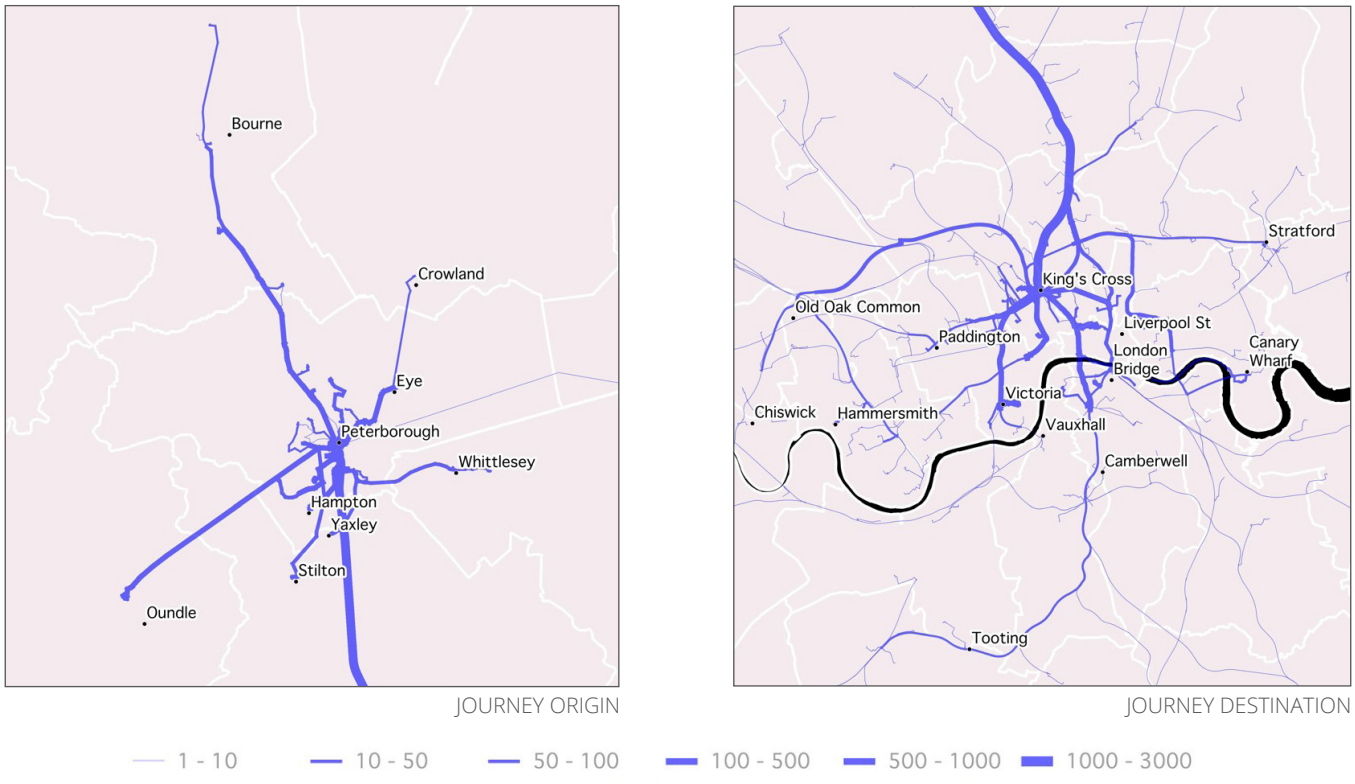
[8]Figures taken from 2011 census.
[9]Secondary Centres of Economic Activity in the East Midlands (Atherton and Price, University of Lincoln).

Figure 4 – Commuter flows to London by rail

Commuting flows to London by rail - rail journeys originating at Cambridge



Commuting flows to London by rail - rail journeys originating at Peterborough



Source: Census Origin Destination table WU03EW - Location of usual residence and place of work by method of travel. Contains National Statistics data © Crown copyright and database right 2018. Contains Ordnance Survey data © Crown copyright and database right 2018.

ROLE IN KEY NATIONAL CORRIDORS

Cambridgeshire and Peterborough is a hub area, from which various national 'corridors' stretch. These corridors are geographical concepts which attempt to capture both existing and potential economic linkages, demonstrating the potential that can be unlocked through greater connections between centres of national excellence. The most significant of these in the current policy environment is the Cambridge – Milton Keynes – Oxford corridor, where plans for East-West rail and the 'expressway' upgrade of road links will bring about faster connections and more housing[10]. It is also intended that this corridor stretch to the east of Cambridgeshire. Plans for this corridor will be fed into scenario planning in the futures modelling work.

Another key corridor, where much work has been done, is the London-Stansted-Cambridge corridor[11], which recognises the potential of an international hub centred on Stansted, combining London and Cambridge's high growth businesses. If the necessary powers to build new housing and infrastructure are provided, along with talent development, and increased international reach of Stansted, an extra 400,000 jobs by 2036 in the area are projected, along with the creation of 10 new 'unicorn' firms (those valued at over $1bn).

Lastly, there is an important research corridor is the Cambridge-Norwich corridor, focusing especially on food science and agricultural technology.

NATURAL ASSETS

It is worth noting the intrinsic natural assets of the area. While there is no significant mineral wealth, the agricultural quality of the land is extremely high in some areas, particularly towards the north east – over 50% of the UK's grade 1 agricultural land is found in the fens, along with significant quantities of grade 2 land in the south of the county.

Relatedly, in the fens in particular, water has a significant effect on the local economy. Much of the area is classified by the Environment Agency as being in flood zone 3 (see figure 6). This presents challenges to local economic development. At the same time, there is risk of drought in Cambridgeshire and Peterborough – it receives some of the lowest levels of rainfall in the UK, while a growing population is increasing the demand for water.

Figure 5 – Agricultural land classification

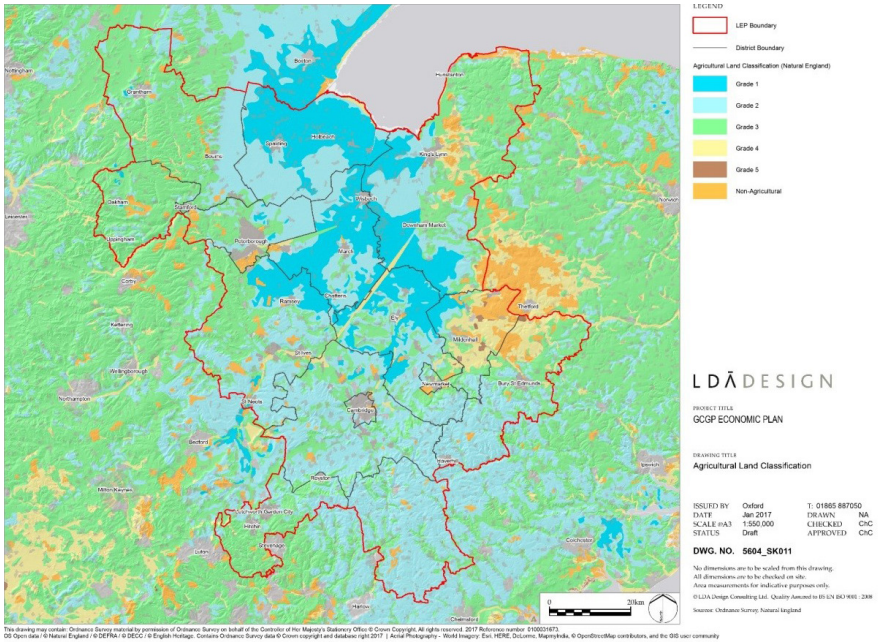
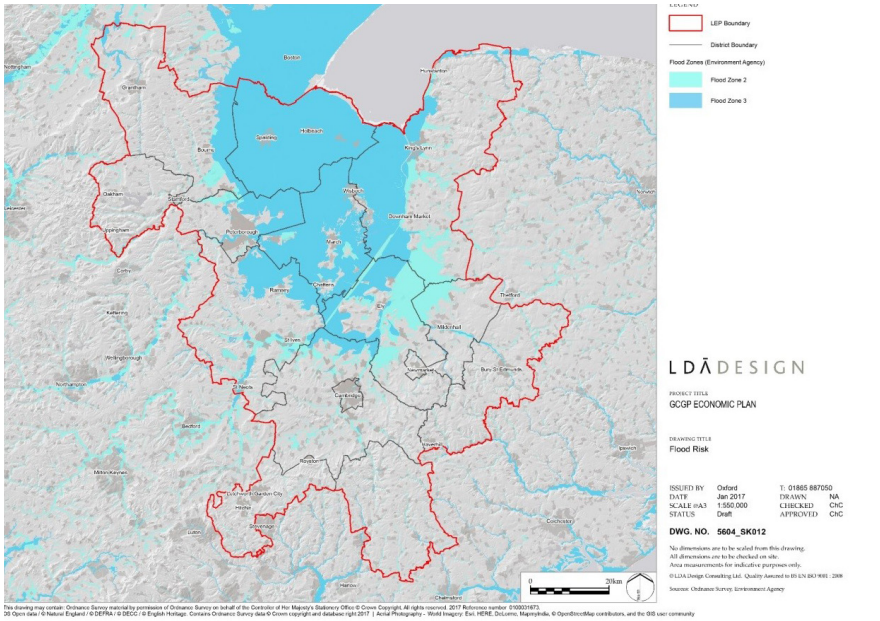


Figure 6 – Flood zone areas



[10]https://www.nic.org.uk/wp-content/uploads/Partnering-for-Prosperity.pdf
[11]For more information, see: http://www.lsccgrowthcommission.org.uk/

1.3 Growth

ECONOMIC GROWTH

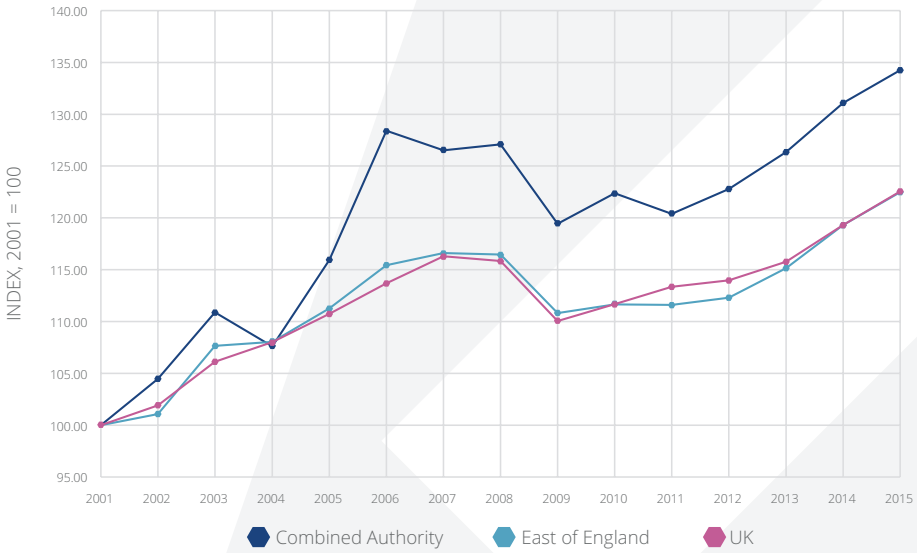
Economic growth in the area has been strong on the whole, although there are significant disparities in the levels of output.

The Combined Authority area has been growing faster than the wider East of England, and indeed the UK. The best approach available for measuring growth at local levels is to use Gross Value Added (GVA). While GVA has traditionally been an income-based approach (summing up wages, profits, and other incomes), recently a 'balanced' approach has been developed by the Office for National Statistics (ONS), which includes production-based methods (i.e. the value of goods and services produced locally) in the measure. This is likely to give more accurate results, however, the approach does not allow for the removal of inflation from the analysis. We have therefore also considered data from the East of England Forecasting Model (EEFM, developed by Cambridge Econometrics), which does account for inflation. The EEFM model is less likely to lead to overoptimistic conclusions about growth, but the ONS figures are official, nationally comparable data, and are constructed using a more sophisticated method. There are discrepancies between these two sources – we have attempted to present as coherent an analysis as possible.

As figure 7 demonstrates, the area's growth has performed significantly better than both the East of England and the UK. This growth was particularly strong in the period from 2004 to 2006.

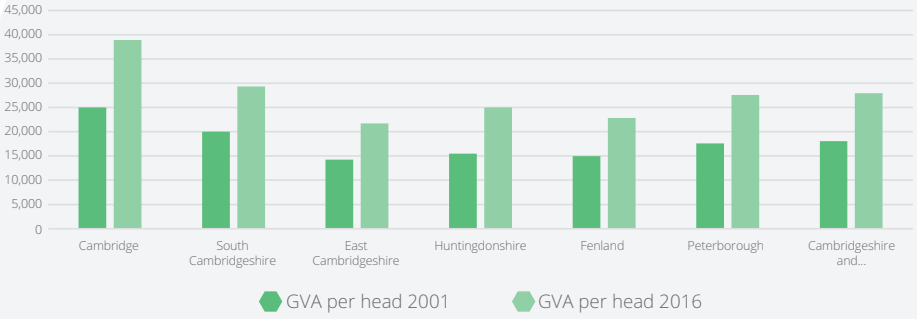
Using ONS figures, we see that, while the GVA of the East of England has grown by 70% between 2001 and 2016 (though note this figure does not account for inflation), and that of the UK at 72.7%, the Cambridgeshire and Peterborough area's GVA has grown by 84.6%[12]. However, across the area, there are great discrepancies in the amount of GVA. Alternative methods employed by Cambridge Econometrics in creating the East of England Forecasting Model, have shown wide differences in how districts are performing. Differences are less stark, but still significant when GVA per head is considered. Strongest % growth has been seen in Huntingdonshire and Peterborough – see figure 8.

Figure 7 – Total GVA – Index: 2001 = 100



Source: East of England Forecasting Model (EEFM), Cambridge Econometrics

Figure 8 – GVA per head growth between 2001 and 2016



Source: ONS Regional Accounts

[12]ONS figures

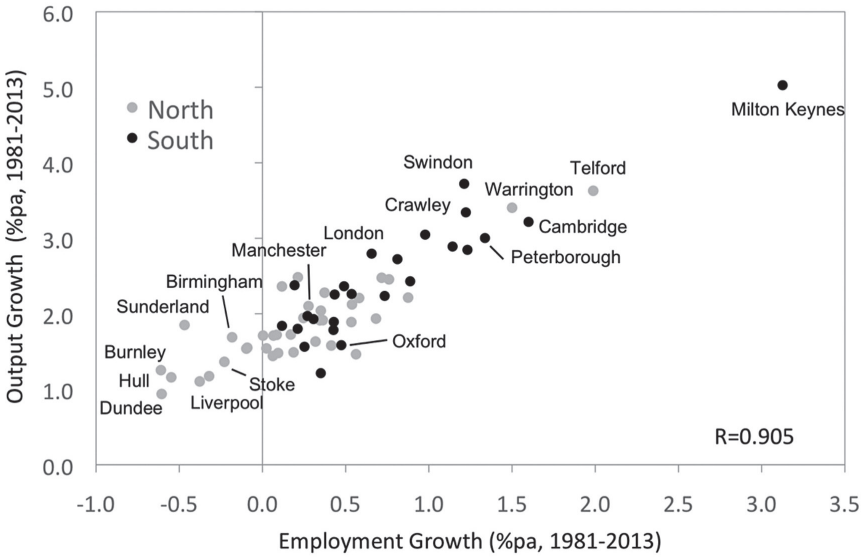
Nonetheless, comparing Cambridge and Peterborough to other high-growth UK cities, growth over the last forty years has been relatively more driven by employment growth – see figure 9. This may be in part due to high levels of public sector activity.

The question of how to ensure growth in the area benefits everyone is a challenging one. For now, the Commission notes the wide discrepancies that exist, and will for the final report make recommendations on how every part of the area can best achieve inclusive growth which benefits residents.

A central element of the Devolution Deal was the commitment by the new Combined Authority area to nearly double its Gross Value Added (GVA) over the following 25 years (from £22bn to over £40bn) in return for new powers. The Review has concluded that more detail is needed around this target, including defining precisely which measure of GVA will be used, and how inflation will be accounted for. A proposal for this will be set out in the Final Report, which will detail how the Combined Authority can ensure this target captures the real value of the local economy over time, and appropriately balances the population and productivity growth elements of the GVA measure. It will also consider how this goal should be shared across the area – clearly all areas need to grow well for the area to be succeeding, but areas which have larger economies at present need to grow by a smaller percentage to achieve the same level of absolute increase in GVA. It follows that the bulk of the heavy lifting of this target will be done by the larger economies of Cambridge, South Cambridgeshire and Peterborough.

Key Question: How can the area achieve its target of doubling GVA in 25 years?

Figure 9 – Employment and output growth for UK cities, 1981-2013



Source: Divergent Cities in post-industrial Britain - Martin, Sunley, Tyler and Gardiner

THE SOUTH CAMBRIDGESHIRE ECONOMY

The high levels of GVA in the Cambridge/ South Cambridgeshire area are in large part due to an active knowledge and innovation economy. This has been allowed to grow over the last fifty years as various areas of land have been freed up to accommodate research parks, business parks, and laboratories.

This 'pro-growth' mentality has not always been instinctive in Cambridge. In 1950, the Holford Report into land use in Cambridge suggested that the city's population should not be allowed to increase above 100,000. Holford stated: "That there should be a resolute effort to slow down migration into the Cambridge district, and to reduce the high rate of growth so that future population should not greatly exceed present figures, is our first and main proposal."[13]

However, in 1969, a committee led by Sir Nevill Mott, a Cambridge University Physicist recommended to government an expansion of 'science-based industry' close to Cambridge to take maximum advantage of the concentration of scientific expertise, equipment and libraries and to increase feedback from industry into the Cambridge scientific community.

Throughout the seventies, a pattern of establishing technological companies started to be set-up. This was small, but significant – with some companies floating on the stock market, and others being bought, often by American companies. This generated capital, which could be invested in other new business. Beginning with computers and software, entrepreneurs began to branch out into other sectors with different business models, such as telecommunications, and (more latterly) life sciences.

At the turn of the 21st century, the original Cambridge Futures Report was published, which aimed to explore what sort of direction Cambridge and the surrounding area should take, engaging the public in this process. In its introduction, it notes the two competing visions of Cambridge put forward Holford and Mott, and maps out various scenarios for Cambridge's future. This work is being brought up to date, and expanded, for this report – see the Futures section for current progress on this.

The work of the Futures report has had a large influence on how planning has been enacted in the wider Cambridge area. Among other outputs, it informed the debate resulting in the strategy set out in the Cambridgeshire and Peterborough 2003 Structure Plan, which itself informed the Regional Spatial Strategy and subsequent rounds of local plans. Crucially, it made the case for further developing Cambridge in a way that was persuasive and gave people ownership of the future of their city. This led to areas of the Cambridge green belt being freed up for important developments and various market towns being expanded, along with the designation of Northstowe as a New Town.

In addition, the City Deal acknowledged that Cambridge and South Cambridgeshire are part of the same economy, and provided funding to the Greater Cambridge Partnership for development of transport networks. This work is being implemented in conjunction with South Cambridgeshire District Council and Cambridge City Council.

The release of green belt land, implementing the strategy referred to above, provided for additional homes and employment opportunities, including at the Cambridge Biomedical Campus. This has supported the continuing growth of the world-leading life sciences cluster in Greater Cambridge, and encouraged research institutes and laboratories to move to the area. As the area established itself as a scientific centre of global importance, a wave of large multinational companies started to move in, realising they had to have a presence in the area. One of the most significant was AstraZeneca (AZ), which has moved its global headquarters to the city. AZ initially bought Cambridge AntibodyTechnology in 2006, proceeding to merge it into MedImmune (a later acquisition). Multinationals have continued to develop a presence – one example being Microsoft's new research lab by Cambridge central train station.

This has helped foster a general innovation culture, with accompanying finance, consultancy, investment, and legal support. It is very supportive for new enterprises, which means a large amount of innovation occurs. The clearest indicator of the strength of this within the city is the large number of patent applications, three times that of its closest competitor:

Table 1 – Top twenty cities for patent applications in the UK

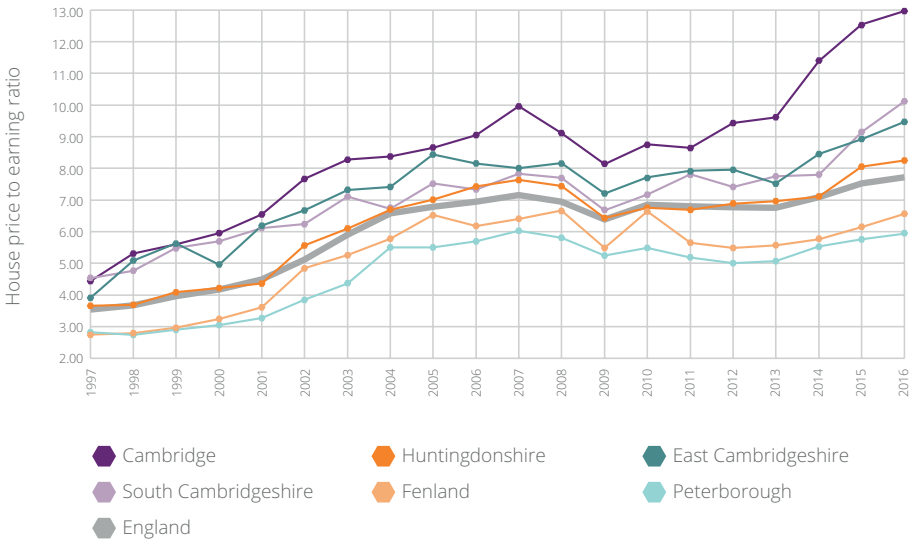
RANK	CITY	PATENT APPLICATIONS (PER 100,000 POPULATION) 2015
1	**Cambridge**	**341.06**
2	Coventry	118.36
3	Oxford	79.86
4	Derby	67.69
5	Swindon	61.59
6	Aberdeen	57.26
7	Crawley	55.84
8	Aldershot	51.47
9	Slough	45.45
10	Reading	40.26
11	Milton Keynes	38.22
12	Bristol	34.72
13	**Peterborough**	**30.20**
14	Gloucester	27.81
15	Southampton	27.24
16	Birkenhead	26.55
17	York	26.03
18	Dundee	22.84
19	Portsmouth	21.35
20	London	21.27
	UK	18.17

Source: Centre for Cities

[13]Available at: https://www.cambridge.gov.uk/public/ldf/coredocs/RD-STRAT/RD-STRAT-430%20p1.pdf

However, one of the challenges associated with this higher growth is that housing has become less and less affordable. Figure 10, right, shows how in all districts the ratio of median house prices to median earnings has increased. In 1997, all of these ratios were reasonably close to the English average of 3.54 – with South Cambridgeshire highest at 4.53, and Fenland lowest, at 2.75. While Fenland, Huntingdonshire and Peterborough have all broadly followed national trends since then, East Cambridgeshire, South Cambridgeshire, and especially Cambridge have accelerated, such that in Cambridge the median house price was almost thirteen times median gross earnings in 2016.

Figure 10 – Ratio of median house price to median gross workplace based annual earnings

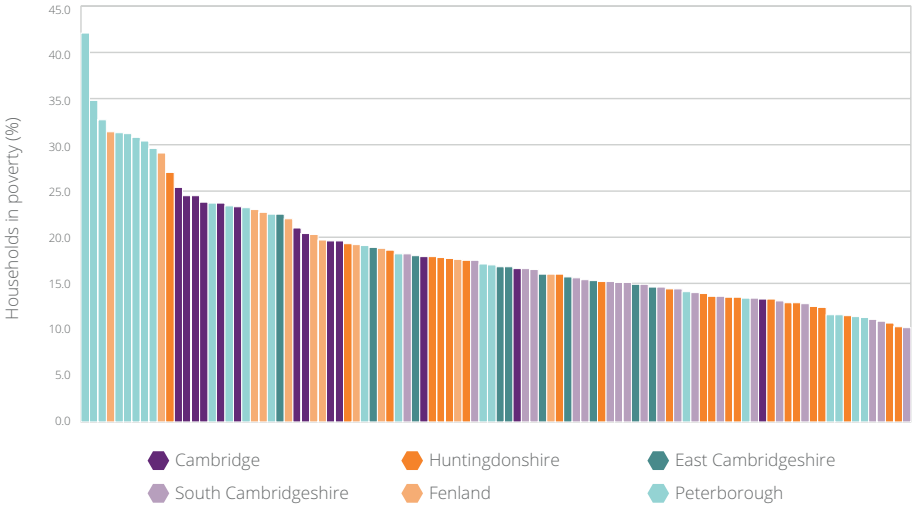


Source: ONS - Ratio of house price to workplace-based earnings (lower quartile and median)

This draws out one of the paradoxes surrounding the idea of what makes a place like Cambridge an 'attractive place to live'. On the one hand, many feel that the small size of Cambridge coupled with its attractive and accessible surroundings are what draws many high-value companies and individuals to locate there. On the other, the quantity of housing, which is small relative to levels of economic activity, pushes up prices, potentially preventing younger people on lower incomes from locating in the city – its high prices make it unattractive. This debate lies at the centre of what kind of city Cambridge wants to be – though the choice may be less stark if improved transport makes it easier to work in Cambridge but live outside of it.

It is also important to note that the economic growth of an area as a whole does not necessarily imply an absence of poverty. Figure 11 shows MSOAs (Medium Super-Output Areas, which contain roughly 6,000 people) ranked according to the percentage of households in poverty. As is evident, some of the highest rates are found in Peterborough, Fenland, and Cambridge. In Cambridge, this corroborates the finding by the Centre for Cities that it is the least equal city in the UK[14] – while there are high levels of economic growth, it is evident that not everyone is experiencing this prosperity.

Figure 11 – MSOAs ranked by the percentage of households in poverty



Source: ONS 2014

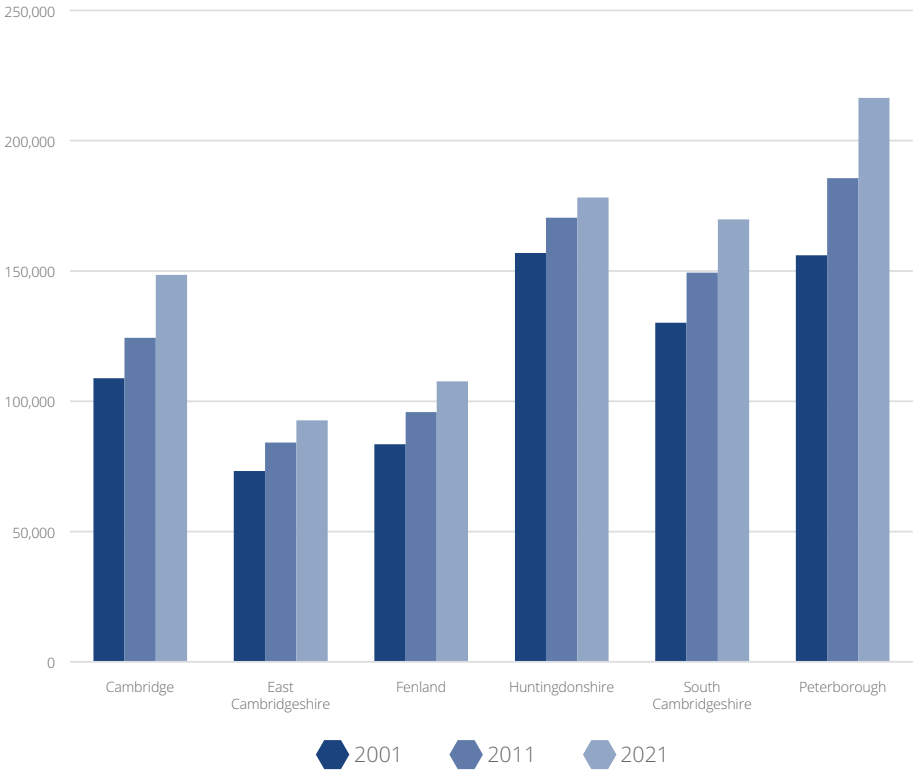
[14]http://www.centreforcities.org/wp-content/uploads/2018/01/18-01-12-Final-Full-Cities-Outlook-2018.pdf, page 31

POPULATION AND EMPLOYMENT GROWTH

Population growth figures are of economic significance, though the relationship is complex. To some extent, they describe the amount of labour available for the economy to use in production. This will feed into future growth numbers. Additionally, the number of people will affect house prices via demand levels, and local government costs via greater requirements for e.g. health and social care.

Population has grown in every district and is projected to continue to grow – see figure 12.

Figure 12 – Population growth: actual and forecast

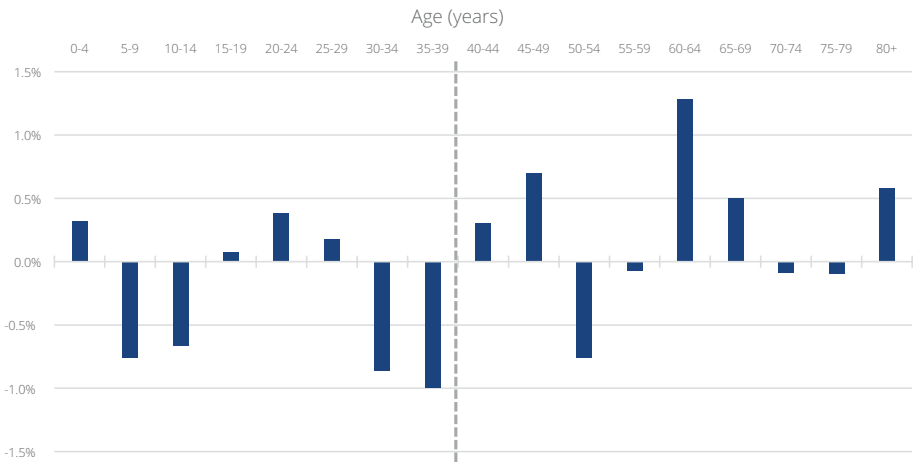


Source: Census and Cambridgeshire County Council population estimates.

The largest increases between 2001 and 2011 were in Peterborough and South Cambridgeshire. By the next census in 2021, increases are expected to have been greatest in Peterborough and Cambridge. The increases in Peterborough are especially striking – if these forecasts are correct, by 2021 its population will have grown by almost 40% from 2001 numbers. Across the area, the population grew by 1.34% per annum between 2001 and 2011 – a slightly lower rate of 1.21% per annum is forecast to 2021, increasing the population by a little over 100,000.

The effect of this growth on the age composition of the population has been mixed, though the evidence suggests a general ageing of the population across Cambridgeshire and Peterborough. Figure 13 shows the change in the proportion of the population in each age bracket between the 2001 and 2011 censuses. (For example, in 2001, 7.9% of the population was aged between 35 and 39. In 2011 this was 6.9%. Therefore, there was a decrease of one percentage point.)

Figure 13 – Changes in the % of the population in different age bands, 2001-2011 (Cambridgeshire and Peterborough)



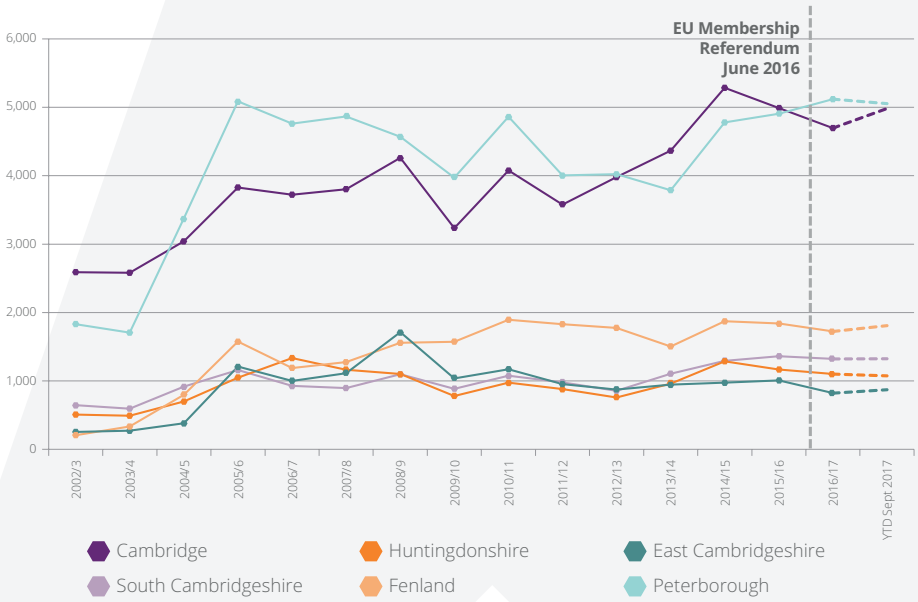
Source: ONS 2001 and 2011 census

A strong increase is being seen in the 60-64 age bracket, and decreases are being seen in most or all districts in the 5-14, 30-34, and 35-39 age brackets. When the age brackets are divided at the 39/40 break (so that those 0-39 constitute the 'young', and 40-80+ the 'old'), it becomes apparent that values are more significantly below the line for the young, and more significantly above for the old. Overall, the population can be said to be ageing, although increases in the proportion of 20-24 year olds in most areas means the picture is mixed.

Migration is a significant factor in determining what the population growth of Cambridgeshire and Peterborough will be. (This is to be considered apart from inward migration, which involves people moving from other parts of the UK into Cambridgeshire and Peterborough). Determining future migration numbers is challenging, particularly given the current political circumstances. Since the EU referendum in June 2016 there has been a sharp fall in the number of EU citizens coming to the UK without a job to go to, while numbers with a definite job have remained at historically high levels.

In Cambridgeshire and Peterborough, National Insurance Registrations for Overseas Nationals have not fallen (see figure 14). Future levels shall depend upon the nature of agreements made between the UK government and the European Union, as well as future government migration targets and the degree to which temporary residents (such as seasonal migrant workers and international students) are restricted. This brings us to a broader question about what the likely effects of Brexit will be economically.

Figure 14 – Annual National Insurance Registrations for Foreign Nationals



Source: Department for Work and Pensions, 2018

Key Question: What will the likely impacts of Brexit be upon the area? How can the area best prepare for any changes this will bring? What local and national policy environment is likely to be conducive to this?

EMPLOYMENT GROWTH – DISCREPANCIES BETWEEN CBR AND ONS BRES FIGURES

Employment has clearly grown strongly across the area in recent years, however one issue that has emerged is discrepancies between data gathered on businesses by the Centre for Business Research (CBR) at Cambridge University and the UK Business Register and Employment Survey data (BRES) compiled by the Office for National Statistics (ONS). The work presented here is provisional and will be revised following discussions with ONS and as more data become available.

Over the past few years the CBR database of all companies based within the Combined Authority has been indicating faster growth rates than those suggested by BRES data.

There are many reasons why this difference may exist. The most important is that the corporate database covers only companies that are based in the area. This means that it ignores the employment in business units and divisions of companies not based in the area, self-employment and sole proprietorships and much of public sector employment; and it is possible that such employment is growing more slowly than the corporate employment captured by the database.

Another possible reason is that part of the employment captured by the corporate database is employed outside the boundaries of the local authority, even abroad. This has been analysed by surveying companies in the Cambridgeshire area to gather information about their total employment growth in comparison with their growth of employment within the area. This work continues, but the closeness of the growth rates of local and total employment for companies in our sample suggests that this is not the cause of the difference.

Therefore, we have created a weighted growth measure. This depends in places on ONS BRES figures (for industries which the corporate database does not cover well) and in others on the corporate database (where the ONS BRES figures don't cover local industries so well). The details of how this has been done can be found in Appendix 1.

Having combined these measures, we still find that growth rates are significantly higher than BRES data suggests:

Table 2 – Comparison of employment growth for BRES data and combined CBR and BRES data

COMPARISON WITH BRES	6YRS GROWTH PER ANNUM 2010-2016	
DISTRICT	BRES DATA	CBR/BRES DATA
Cambridge	2.3%	2.4%
South Cambridgeshire	2.2%	3.8%
East Cambridgeshire	3.8%	4.3%
Huntingdonshire	1.7%	2.2%
Peterborough	2.3%	3.4%
Fenland	2.6%	3.7%
Cambridgeshire and Peterborough	**2.3%**	**3.3%**

In particular, South Cambridgeshire, Peterborough and Fenland are all showing significantly higher rates of employment growth (1.6%, 1.1% and 1.1% differentials respectively). Overall, we find growth to have been 1% higher per annum than BRES data suggests, leading to a significant differential over time. It is worth repeating that these findings are provisional – and should not for now be taken as definitive.

We will continue to explore this topic for the final report. However, the importance of this should be noted, as BRES data are incorporated into the ONS methodology for estimating GVA growth in the area. They are combined with average earnings data to generate a measure of the Compensation of Employees (COE), which is one of the main elements of the income-based aspect of the GVA measure. Therefore, if employment growth is understated, GVA growth is also likely to have been understated.

QUALITY OF GROWTH CONSIDERATIONS

As a final note in this section, the Commission recognises that a desire for economic growth is not simply a case of "growth for growth's sake", but for growth to be beneficial to everyone in society. Various considerations that touch on 'inclusive growth' are considered throughout the report, and the nature, as well as quantum, of growth, will be discussed in the context of the ongoing Cambridgeshire and Peterborough Futures work.

1.4 Business

Even a brief survey of businesses in the Cambridgeshire and Peterborough area gives a clear impression of a vibrant, diverse, and unique business ecosystem. Specialised sectors range from manufacturing to data science, agriculture to life sciences. As part of the review, businesses have been surveyed for their experiences operating in the area. This work is ongoing, but already a recurring message has emerged that local factors play a significant part in determining why many businesses are here (as opposed to mere convenience, or accident of origin). Over 50% of respondents so far have acknowledged proximity to local premises, local labour supply and the quality of the local environment as "important", "very important" or "critically important". A number, particularly businesses based around Cambridge, have indicated that, if they could not be based here, they would consider moving abroad to Europe, North America, and South-East Asia. Therefore, it will be necessary to think about what makes the economy of Cambridgeshire and Peterborough unique within the UK, and how this unique character can be maintained, so that the significant contributions to national growth can continue.

In order to assess this, the Review has carried out specific tests on two hypotheses about the local economy. The first is that the Cambridgeshire and Peterborough area is special – that is, it contains significantly higher concentrations of particular industries than other areas of the UK. The second is that a sizeable part of growth in the area is indigenous – that is, growth organically driven by native companies. This section also considers the role of the Cambridgeshire and Peterborough economy in national and international perspective, and births of businesses in the area.

THE SPECIAL NATURE OF THE CAMBRIDGESHIRE AND PETERBOROUGH ECONOMY

The Review assesses the specialness of the Cambridge economy by examining the key features characterising the corporate sectors in the area.

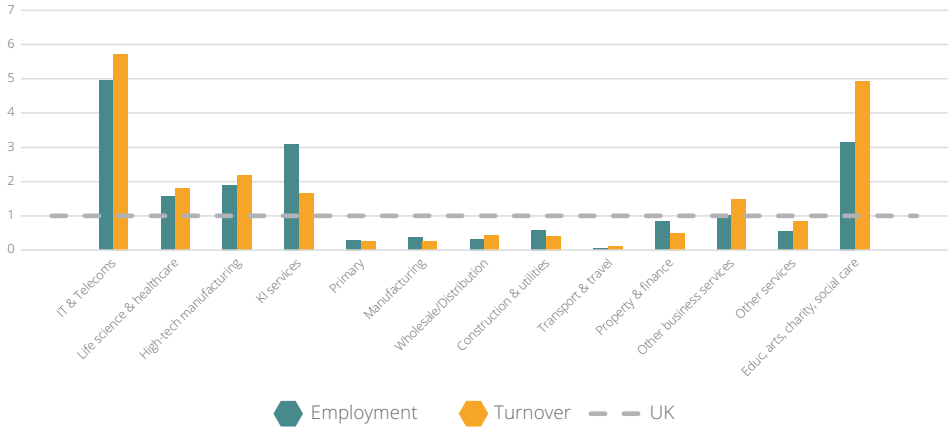
To assess the specialness of industries in each district, we use location quotients (often shortened to LQs), a measure which shows the concentration of particular industries in an area relative to a wider geography (in this case, the UK). For example, suppose 30% of area X's workers work in manufacturing, and 15% of the UK's workers do, this industry is twice as 'concentrated' in area X as it is in the UK, giving an employment LQ value of 30/15 = 2. You can also create LQ analysis for turnover values – suppose 5% of area Y's business turnover is in construction, whereas 20% of the UK's turnover value is. Then you would have a turnover LQ of 5/20 = 0.25. Any values above 1 can be said to be "special", and the greater a value is above 1, the more special it will be. Any values less than 1 indicate that the industry is not a specialism for the area. Finally, values equal to one show that the concentration of turnover or employment is the same as the UK as a whole.

All data referred to have been produced by Dr Andy Cosh at the Centre for Business Research (CBR) unless otherwise indicated – this differs from BRES data, in that it only focuses on the corporate sector. The first four sectors – IT, Life sciences, High-tech manufacturing and KI services are defined as Knowledge Intensive Sectors. 'KI services' is short for Knowledge Intensive Services – i.e. services to the knowledge intensive industry. At Appendix 2, we have included summaries of business performance in each of the six districts, which includes other details of their 'specialness'.

The methodology used to derive these figures stems from a database of companies that are based in the area – that is, their main base is in each of these districts. It then considers the total employment and turnover for these companies. This may mean that figures don't perfectly reflect the amount of turnover being generated locally, or the amount of people employed in a particular industry. (Note the comment on Peterborough's distribution LQs below). This data is based on 2015-16 figures – it will be brought up to date for the final report, by conducting another data draw for the whole of the UK.

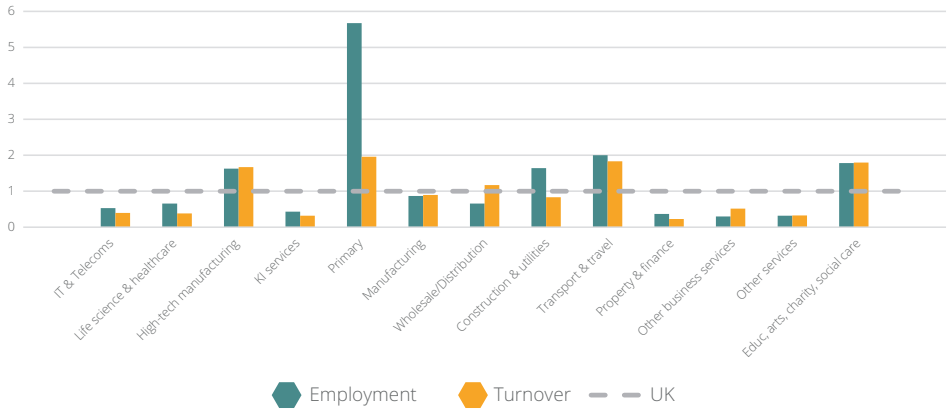
We have also included location quotients according to the ONS (BRES) data as an appendix – see Appendix 3. Note that the BRES data uses sectors which are defined differently.

Figure 15 – Location quotients for Cambridge



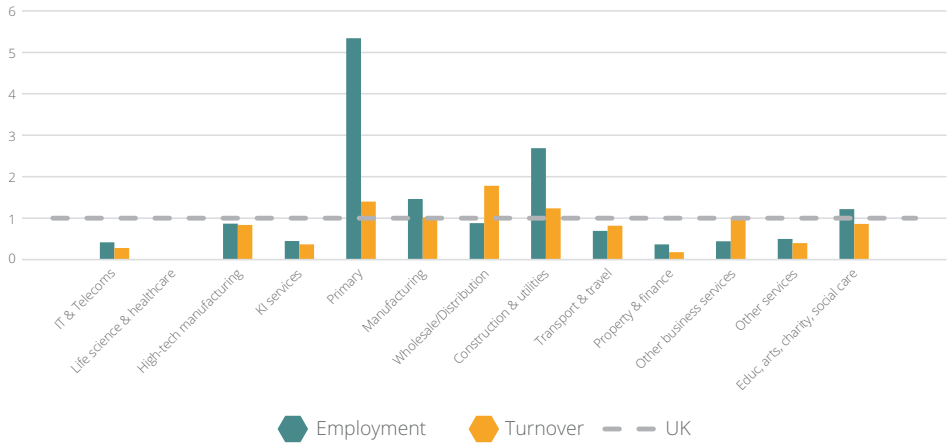
Cambridge has particular specialisms in IT & Telecoms, and Education, arts, charity and social care sectors. Life sciences & healthcare, High-tech manufacturing and KI services are also all special – meaning that each of the four knowledge intensive sectors is a specialty in Cambridge.

Figure 16 – Location quotients for East Cambridgeshire



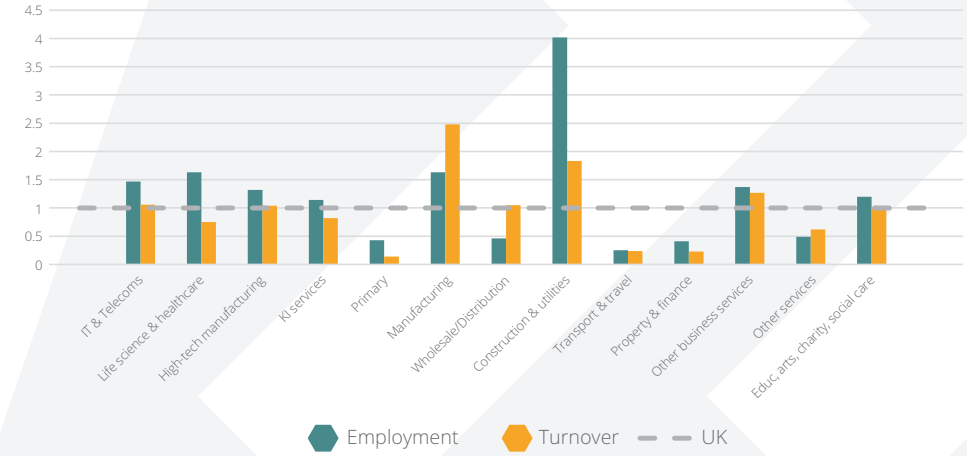
East Cambridgeshire's most 'specialised' sector is Primary – which includes agricultural business. However, employment is much more concentrated relative to the UK than turnover, suggesting the conversion of employment to turnover (i.e. productivity) is lower than in primary sectors across the UK. This would imply that these industries should look to improve the value of their output, given the numbers employed. High-tech manufacturing, Transport & travel, and Education, arts, charity and social care sectors are other specialisms.

Figure 17 – Location quotients for Fenland



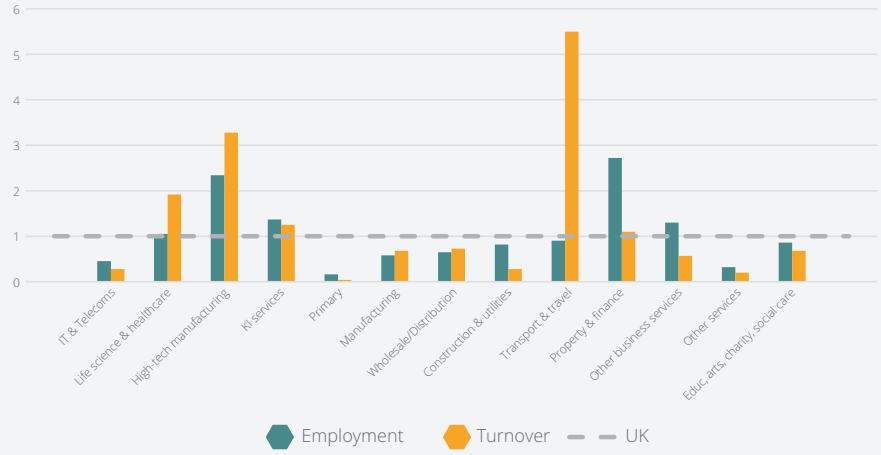
Similar to East Cambridgeshire, Fenland is a specialist in Primary industries, particularly regarding employment. Construction & utilities is a specialist sector, as is Wholesale/Distribution.

Figure 18 – Location quotients for Huntingdonshire



In terms of employment, Huntingdonshire's most special industry is Construction & utilities; in terms of turnover, it is Manufacturing. Note that for employment, Huntingdonshire shows a small degree of specialism for all of the Knowledge Intensive Sectors, but this is not yet matched by turnover.

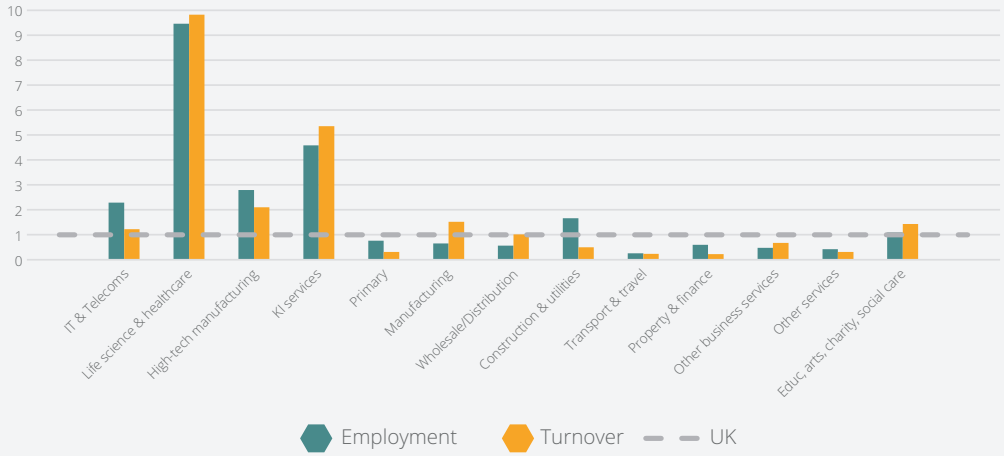
Figure 19 – Location quotients for Peterborough



Peterborough has a particular specialism in High-tech manufacturing, reflective of its history. Transport & travel shows a turnover specialism, while Property & finance shows an employment specialism. It's also interesting to note the high concentration of Life science & healthcare turnover relative to the UK.

Surprisingly, these figures do not demonstrate a specialism in Wholesale/Distribution, industries we know to be strong in Peterborough. This is likely in part to be because large firms have premises in Peterborough but are not headquartered there (such as Amazon). In addition, for this sector, we generally find the BRES data to be more accurate – see Appendix 2, where an employment LQ of 1.32 for Wholesale Distribution and 1.34 for Retail Distribution are given.

Figure 20 – Location quotients for South Cambridgeshire



South Cambridgeshire has the highest location quotients for any of the areas in Life science & healthcare, with an extremely high location quotient of 9.82. In all of the Knowledge Intensive sectors, South Cambridgeshire is special – this is especially shown by the values for the KI services industry which has grown up around it.

CONCLUSION

The economy of Cambridgeshire and Peterborough is far from ordinary. Real specialisms exist in IT, life sciences, manufacturing (both high-tech and standard) and primary sectors. This invites a bespoke treatment which recognises its nationally (and internationally) significant industries.

THE INDIGENOUS NATURE OF THE CAMBRIDGESHIRE AND PETERBOROUGH ECONOMY

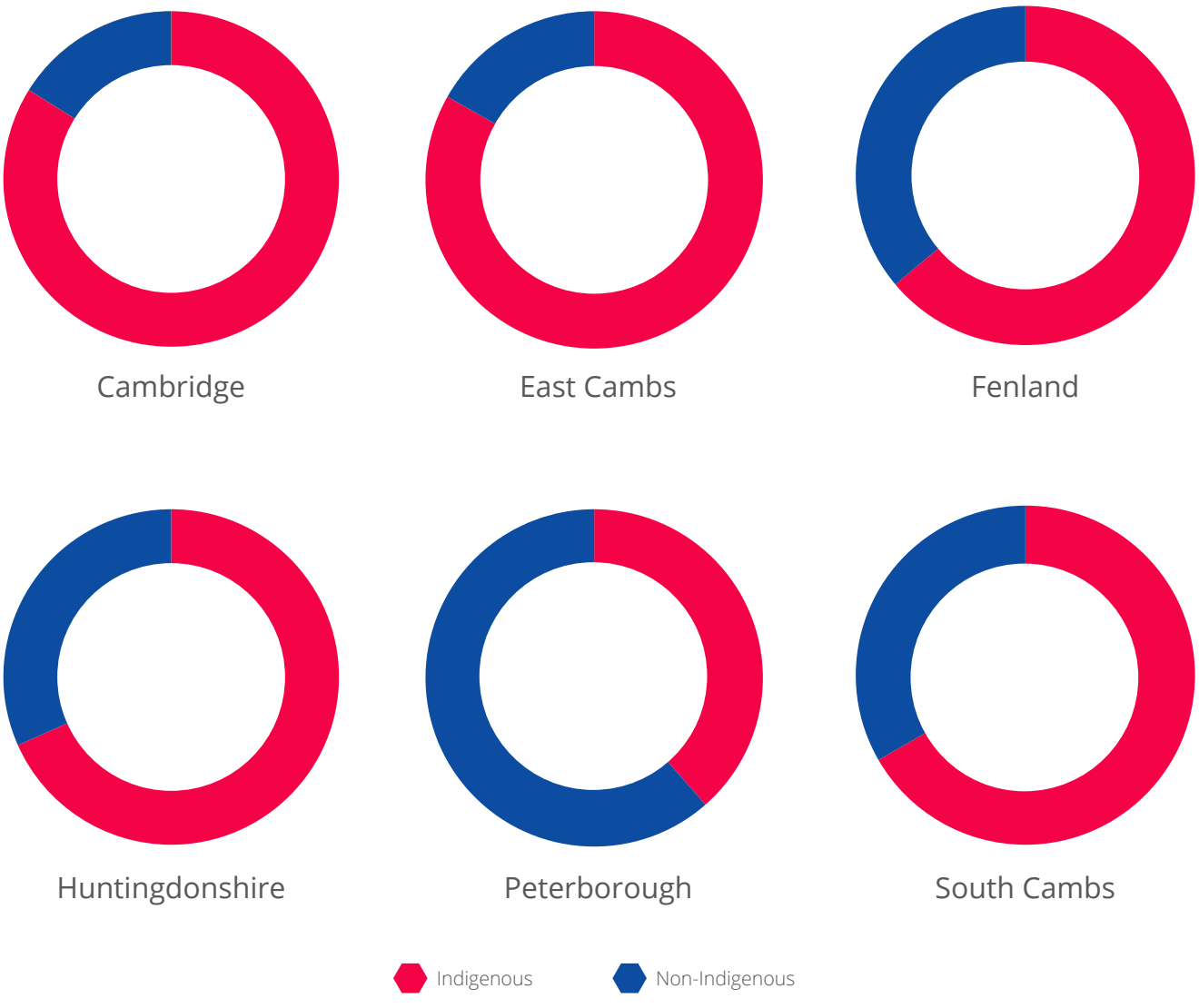
The data presented here focuses on companies which are 'large' – i.e. have 50 or more employees. These companies employ roughly 60% of the area's workers and produce 68% of business turnover.

Companies are defined as 'indigenous' if they were either started in a district, or have been based there for over 50 years. The proportion of companies that are indigenous is largest in Fenland (83%), then East Cambridgeshire (76%), Cambridge (72%), South Cambridgeshire (70%) and finally, Peterborough and Huntingdonshire (both 69%).

The contrasts across the districts are far greater in terms of employment and turnover; and these two differ. The share of indigenous corporate employment is greatest in the areas where agriculture is more dominant – Fenland has 82% in homegrown companies and East Cambridgeshire has 87%. Next come South Cambridgeshire (74%) and Cambridge (72%). The proportion of large company employment in homegrown companies is much lower in Huntingdonshire (61%) and, particularly, in Peterborough (48%).

There are differences, however, for the extent to which turnover is generated by organically grown local companies. This can be seen in figure 21. (It should be remembered that these analyses exclude companies that have set up divisions, or trading units in these districts, such as the logistics operations that have been attracted to Peterborough).

Figure 21 – % of local large business turnover stemming from homegrown and non-homegrown companies



Source: Dr Andy Cosh, University of Cambridge

Another finding is that, in most areas, indigenous companies are growing faster than other companies – see figure 22. Employment growth has been higher for these in all areas except Cambridge and Fenland – especially so in Huntingdonshire (4.1% higher). In terms of turnover growth, the majority has been driven by homegrown firms, with growth rates over 3% higher in South Cambridgeshire and Peterborough.

We have shown this by modelling the per annum CBR growth rates from the last six years as if they were constant during this time, to give an impression of how this growth has occurred. To do this we have set a base year of turnover as 100.

Figure 22 – Stylised business turnover growth of all large and homegrown companies based in the six districts, 2010=100

Source: Dr Andy Cosh, University of Cambridge

All

Indigenous

AGE, MARKET VALUE AND FOREIGN OWNERSHIP OF LARGER COMPANIES – INDIGENOUS AND IMPLANTS

Many of the large companies based in the Combined Authority area are not listed on the stock market. Some of the companies that started locally floated on the stock market and were then acquired and lost their listing. Other companies were founded with their HQ in the area, but with foreign ownership from the start, so without a listing for the local company. Other large companies have not sought to be listed.

For example, Cambridge Antibody Technologies was founded in 1989, floated in 1997 and then sold to AstraZeneca for £0.7bn in 2006; Domino Printing Sciences was founded in 1978, floated in 1985 and sold to Brother Industries for £1bn in 2015; CSR was founded in 1998, floated in 2004 and sold to Qualcomm for $2.4bn in 2015; ARM was founded in 1990, floated in 1998 and sold to Softbank for $31bn in 2016.

Cambridge has seven local companies listed on the London market with a combined value of £3.4bn. South Cambridgeshire has thirteen listed with a combined value of £6.4bn. East Cambridgeshire and Peterborough each have three local companies with a combined value of £142m and £90m respectively. Finally, Huntingdonshire and Fenland have one listed local company each with current market values of £623m and £41m respectively. These figures show that Cambridge and South Cambridgeshire have continued to grow large companies that are taken to the market.

Table 3 also shows the age composition of large companies and those that are locally grown. Considering the proportion of all large companies that have been incorporated since 2000, Huntingdonshire (54%), Fenland (53%) and East Cambridgeshire (51%) each have over half of their large local companies incorporated since then. Cambridge has 49%, South Cambridgeshire has 44%; and Peterborough has the oldest profile with 38% of their large local companies incorporated since 2000 and 32% before 1980. Cambridge and South Cambridgeshire exhibit a golden age of incorporations between 1981-89 with 39% and 42% respectively.

Looking at the age profile of indigenous large companies across the districts, a similar pattern emerges. Huntingdonshire, Fenland and East Cambridgeshire each have 57% of their homegrown companies incorporated since 2000. Cambridge has 53%, South Cambridgeshire has 48% and Peterborough has 42%. In each district they show a younger age profile than all large local companies.

Table 3 – Market value, age and foreign ownership of large companies based in the six districts

DISTRICT	SAMPLE	MARKET VALUE MARCH 2018 (£,000)	INCORP PRE-1980	INCORP 1981-99	INCORP 2000-07	INCORP POST 2008	2016-17 % FOREIGN OWNED
Cambridge	Large Indigenous	3,477,152 3,425,788	12% 12%	39% 35%	30% 31%	19% 22%	18% 8%
South Cambridgeshire	Large Indigenous	6,469,778 6,368,834	14% 14%	42% 38%	23% 24%	21% 24%	24% 9%
East Cambridgeshire	Large Indigenous	158,538 141,677	19% 14%	30% 29%	27% 25%	24% 32%	8% 0%
Huntingdonshire	Large Indigenous	623,145 623,145	13% 9%	32% 34%	31% 31%	23% 26%	27% 10%
Peterborough	Large Indigenous	89,652 89,652	32% 30%	28% 28%	18% 17%	20% 25%	19% 9%
Fenland	Large Indigenous	41,373 41,373	17% 20%	31% 23%	28% 27%	25% 30%	6% 0%

Source: Dr Andy Cosh, University of Cambridge

Finally, the proportion of large companies that are foreign-owned today is shown in the final column of table 3. Fenland (6%) and East Cambridgeshire (8%) have the lowest proportions of foreign ownership of their large companies. The highest proportion of foreign ownership is in Huntingdonshire (27%), followed by South Cambridgeshire (24%), Peterborough (19%) and Cambridge (18%). As expected, the proportion of homegrown companies that are now foreign -owned is much lower. Fenland and East Cambridgeshire have none and the other four districts have between 8% and 10%.

APPLICATION OF THE CBR DATABASE TO PLANNING

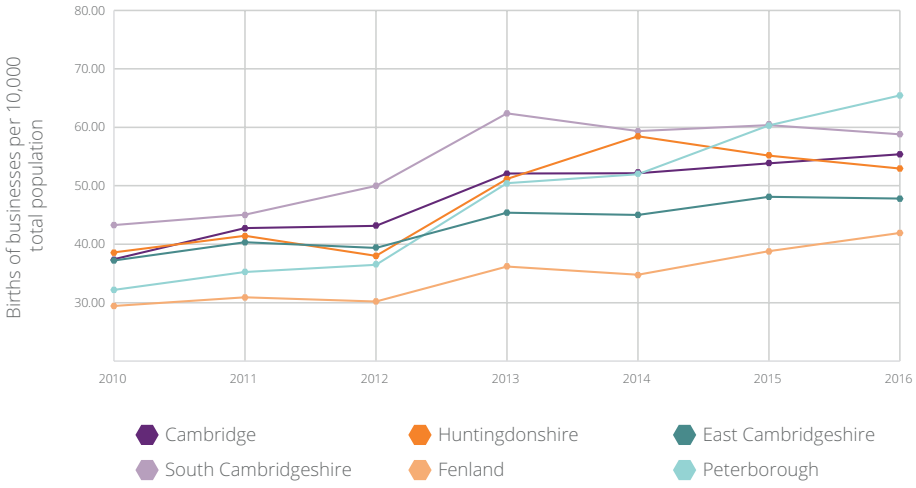
The development of the CBR databases of businesses across the area allows those who plan for the future of the area to take a much more business and employment-focussed approach to growth. This is because it enables authorities to know exactly which businesses are employing people, rather than having to rely on high-level statistics, which may be retrospectively adjusted over time. This can drive informed planning of commercial premises, designed to match the demands of specific companies, and therefore with confidence in the number of jobs this will generate. This in turn can inform decisions around location, quality, and quantity of housing. By letting business lead, rather than follow, the planning process, it is possible to design Cambridgeshire and Peterborough to be more business-ready.

THE GROWTH OF BUSINESS

The number of business births is a useful indicator for the vibrancy of the local economy. Figure 23 shows how these figures have changed between 2010 and 2016. Encouragingly, all of the districts have seen the rate of business births increase. Most striking is Peterborough, where this has more than doubled from 32.2 (per 10,000 population) in 2010 to 65.5 in 2016.

We can also see that these births are leading to a greater number and spread of businesses across the area.

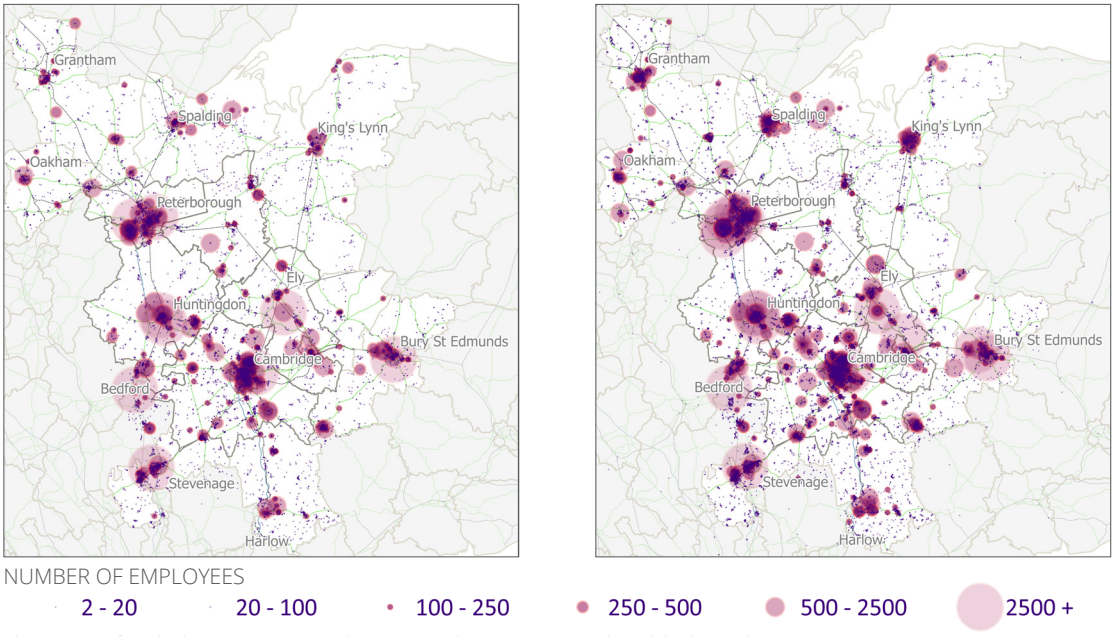
Figure 23 – Births of businesses per 10,000 total population 2010-2016



Source: ONS Business Demography. Note that this data refers to where businesses are registered, which may not correlate directly to where its output is generated.

The maps below contrast the presence of business in 2010/11 and 2016/17 both in the Cambridgeshire and Peterborough area and the wider LEP.

Figure 24 – Businesses across the area by number of employees, 2010/11 (left) and 2016/17 (right). Combined Authority area shown.



Source: Dr Andy Cosh, University of Cambridge, 2018. Contains Ordnance Survey data © Crown copyright and database right 2018.
Notes: Location of businesses in 2010/11 based on 2015/16 (where available) or 2015/16 address due to data availability.

BUSINESS CULTURE

A distinctive feature of the Cambridge/South Cambridgeshire business environment is the large number of business networks that exist. These include the Cambridge Network, Cambridge Wireless (for technology businesses), One Nucleus (for life sciences), Cambridge Clean Tech, Agri-Tech East, and an innumerable amount of other networks, meetups and groups prevalent in the area. These networks have grown alongside the 'Cambridge Phenomenon' and have been decisive in its success. They support new companies by providing access to expertise and opportunities for collaboration.

Currently, this pattern of business networks is not replicated across the area. However, Peterborough City Council's response to the consultation on this report states that:

Discussions with industry have revealed that the development of Manufacturing Association would particularly help drive productivity growth within that sector.

There may be, therefore, opportunities for other parts of the area to improve the generation of high-quality local businesses by establishing or fostering these networks.

Key Question: How can we create the conditions required for the development of sectors which will provide long term resilience for the local economy? What role should industrial policy play in this?

1.5 Human Capital

The term 'human capital' refers to "individuals' skills, knowledge, abilities, social attributes, personality and health attributes. These factors enable individuals to work, and therefore produce something of economic value"[15]. Human capital is a critical factor in economic production. One local government official consulted during this review stated that: "human capital is where the biggest potential for this area is". In this review we chosen to focus on skills and health in particular.

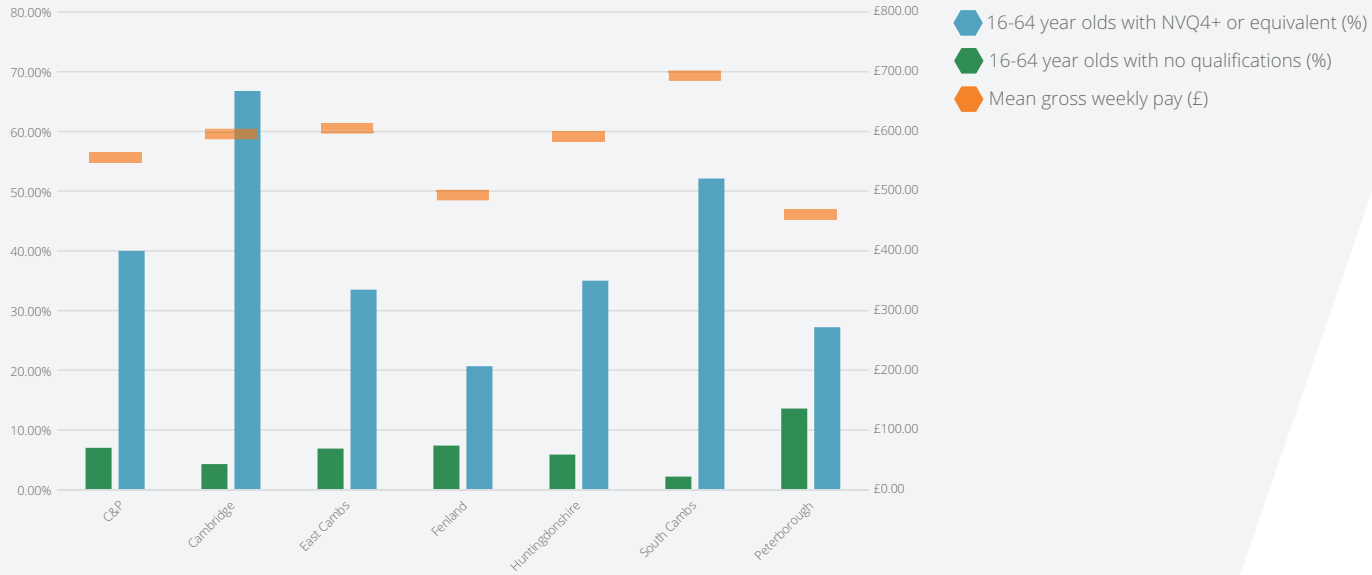
SKILLS

In a Centre for Cities study which considered the economic progression of every UK city from 1901 until 2011, it was concluded that "skills are the most important factor determining long-run urban success"[16]. Recent publicity around the slow growth of productivity in the UK has drawn attention to the extent to which a dearth of skills in a wide range of disciplines is hindering the UK's competitiveness and growth. The government has rethought its approach to adult skills recently and plans to bring in new T-levels (technical skills qualifications) shortly. One of the four key recommendations from the recent Made Smarter Review into how the UK could seize the opportunity of the digitisation of industry is "Upskill a million industrial workers to enable digital technologies to be successfully exploited"[17]. As disruptive technologies continue to transform our workplaces, sectors, and outputs, those areas which have the workforces to successfully integrate them into production will succeed.

Within Cambridgeshire and Peterborough, there are large differences in qualifications held by individuals. Figure 25 shows that to the north and east of the county, there is a higher prevalence of individuals holding no qualifications – particularly in Peterborough, at 13.6%. This is as low as 2.2% in South Cambridgeshire. At the top end, there are also big differences – unsurprisingly, Cambridge has the highest proportion of individuals with NVQ4+ or equivalent qualifications, due to its large academic population, followed by South Cambridgeshire (52.1%). Fenland performs particularly poorly on this measure – only 20.7% of its population have this level of qualification.

The link to earnings for individuals can be clearly seen. Across the districts there is a strong positive correlation (0.66) between rates of NVQ4 + qualifications and earnings, and a very strong negative correlation (-0.88) between rates of individuals with no qualifications and earnings. There is therefore a strong priori reason to conclude that one of the main foci for improving economic outcomes, particularly in areas where they may be falling behind, is to improve skill levels.

Figure 25 – Proportions of individuals aged 16-64 with no qualifications and with NVQ4+ qualification of equivalent; mean gross weekly pay



Source: Annual Population Survey; ONS Jan-Dec 2016, Annual Survey of Hours and Earnings (ASHE) ONS 2016

[15]Human Capital Estimates – Office for National Statistics [16]Centre for Cities: City Outlook 1901 [17]Made Smarter. Review 2017

ORGANIC GROWTH OF SKILLS: EXAMINING THE LOCAL EDUCATION SYSTEM

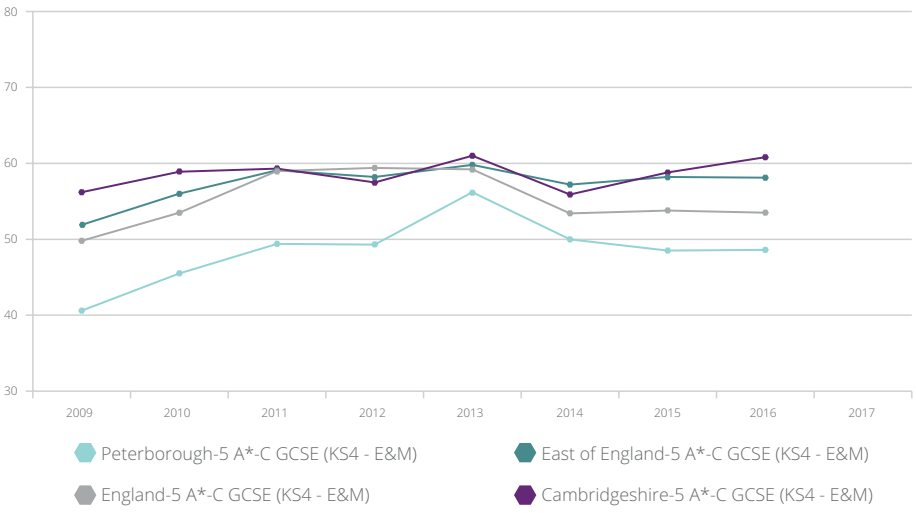
One very important element of this is developing the skills profile of the native population. Particularly in areas that have fallen behind, it is difficult to encourage highly skilled people into the area, as there are unlikely to be large numbers of highly skilled jobs. It is also possible that high skill levels in the south of the county may be driven more by individuals moving in than the development of local youngsters, meaning that high skill levels are disguising local educational shortcomings.

Educational outcomes across the county are variable. Data produced at a higher-tier authority level suggests Cambridgeshire is generally ahead of the England and East of England averages on various measures, while Peterborough is behind (see figure 26).

Fenland and East Cambridgeshire have been designated a Social Mobility Opportunity Area. This follows work from the Social Mobility Commission to assess the prospects of disadvantaged young people from every council area in the UK. These councils were then ranked – in the most recent analysis, East Cambridgeshire and Fenland ranked 241st and 308th out of 324 respectively[18] (this an improvement on 2016's scores of 311st and 319th respectively). The delivery plan for the opportunity area has four priorities, one of which is to focus on raising the aspirations of young people regarding their final careers. Lacking aspiration is something which was noted as a problem by some councillors during consultation.

Other key actions include increasing teacher numbers. The struggle to recruit and retain teachers has been recognised as an increasingly acute problem right across the area. In a report by RAND Europe, it was noted that "teacher shortages are a real threat for Cambridgeshire"[19] . Various causes for this were identified. One was that in general, teachers in Cambridgeshire are paid less than the national average, with a pay distribution that is more skewed towards lower values. Additionally, expensive housing in some parts of the area and a larger than average proportion of jobs being part-time may be deterring teachers from beginning their career in Cambridgeshire. At the same time, there are higher rates of retirees than the national average, diminishing the overall population of teachers.

Figure 26 – % of Pupils achieving 5 A*s – C, including English and Maths, at GCSE



Source: Department for Education

Key Question: Where does the education system most need attention? How conducive is the wider environment (including early years schooling) to helping young people develop necessary skills?

[18]Social Mobility Index 2017 [19]RAND: Attracting and retaining teachers in Cambridgeshire, 20

There are many encouraging signs that the area is responding to the challenge of improving provision of education and skills. Examples of this include:

iMET at Alconbury Weald

iMET – which stands for Innovation, Manufacturing, Engineering and Technology – is a new educational institution that will open its doors in September 2018. A collaboration between Cambridge Regional College and Peterborough Regional College, it will have a business-focused approach to its skills training and is working with local businesses to develop its curriculum. This will cover a wide range of disciplines, including engineering, construction, manufacturing, life sciences, and IT and digital technologies.

The Thomas Clarkson Academy, Wisbech

The Thomas Clarkson Academy has gone through a difficult period with poor results and recommendations from Ofsted to improve. Some parents from Wisbech would send children out of the county to Lincolnshire and Norfolk for a better education, and staffing was often temporary. However, matters have recently improved – with better facilities, a completed first year with full staffing, and leadership driving towards improved results. The most recent report from Ofsted concluded that it is "a rapidly improving school... Over the last year, new leaders have introduced policies and procedures which are beginning to have impact"[20]. The sixth form is also noted as being good, giving confidence that school leavers will have useful skills for work.

Plans for a Peterborough University

Peterborough is the largest urban centre in the UK without its own university. This means that many young people leave the city to go on to higher education, and that the perception of the city is damaged. The council is now driving forward plans for a University. Thought is being given to how Peterborough University can find a 'niche' where it is especially strong, similar to Loughborough University, which has established itself as a centre of Sports Science expertise. This offer will be business-focused, creating a path where high-achieving young people can pursue an academic education and go on to stimulating work while remaining in Peterborough.

It is also encouraging to note that in Fenland and East Cambridgeshire, there is a higher than average level of apprenticeship take-up; however, there are currently no degree-level apprenticeships on offer in the area[21].

Key Question: What specialisms should the planned new university at Peterborough focus on?

HEALTH

Promoting health and wellbeing for all raises employment, reduces child poverty and poverty later in life, and raises growth in productivity. According to one report[22], which measures the number of 'impairment days' where productivity is reduced for health reasons, the least healthy 20% of employees generate 45.4 impairment days for their companies.

High levels of ill health cause staff absence, which has costs for business. What is being increasingly recognised is that employers face significant costs due to presenteeism – employees being at work but unable to function to maximum capacity because of the work environment, poor managerial relations, or unsupported poor health. Thought to be an even greater problem than sickness absence, presenteeism affects business performance on productivity, quality and safety. It is often concealed and unrecognised, mostly revealed through workforce surveys, and difficult to measure objectively.

The direction of causality, between good health and good work, is not one-way. There is also clear evidence to show that being in work can positively impact health. Employment (so long as it is of sufficient quality and security) can provide an important source of income, social contact and a core role, identity and purpose. On the other hand, unemployment is associated with an increased risk of mortality and morbidity, including limiting illness, cardiovascular disease, poor mental health, suicide and health-damaging behaviours.

Clearly, within Cambridgeshire and Peterborough, there are health issues which weigh on productivity. In particular, research has shown how districts with worse economic outcomes tend to have worse health outcomes. Almost two-thirds of Cambridgeshire and Peterborough adults carry excess weight, with higher levels than found nationally in East Cambridgeshire and Fenland. Peterborough and Fenland have significantly higher levels of obesity in those aged 18 and over than found nationally. While adult smoking across the area is around the national average, it is higher in Fenland. "Levels of disability and general ill-health are generally low in Cambridgeshire but are higher in Peterborough and also the Cambridgeshire district of Fenland"[23]. There are some areas where the trends are different – self-harm, for instance, is notably higher in Cambridge City.

[20]Ofsted report, 1st November 2017. [21]Fenland and East Cambridgeshire Opportunity Area Delivery Plan.

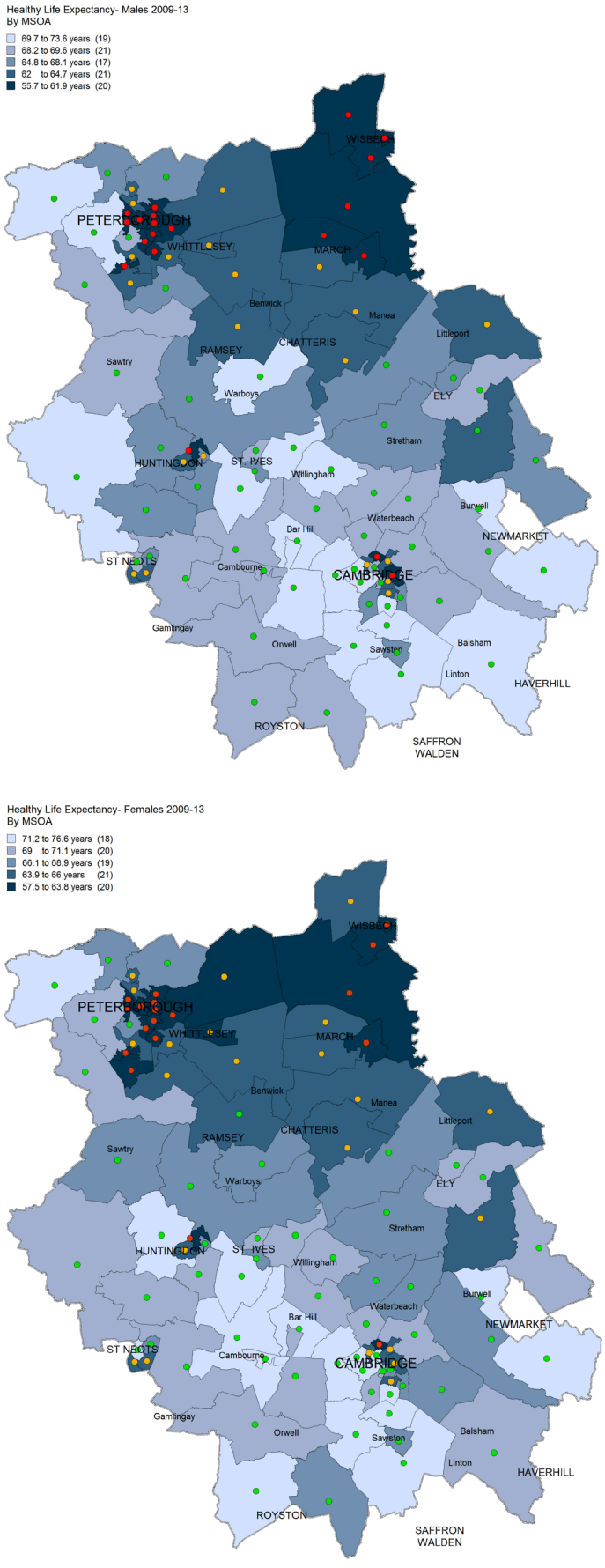
These discrepancies can be seen most strikingly when life expectancy is considered. The maps in figure 27 show healthy life expectancy rates – that is the number of years a person can expect to live in good health – for males and females, with darker blues showing worse outcomes, and the green/amber/red dots showing whether these are significantly better, roughly the same, or significantly worse than English averages.

Concerningly, in some areas the healthy life expectancy age is below the pension age, meaning poor health has a direct impact upon the supply of labour to the economy.

The Commission will continue to explore these themes to understand how they are impinging upon economic success for all across Cambridgeshire and Peterborough.

Key Question: Where can we see poor health outcomes affecting productivity? Which businesses are exemplars at improving health outcomes for employees? How can lower life expectancy outcomes be improved?

Figure 27 – Healthy life expectancy for males (top) and females (bottom) across Cambridgeshire and Peterborough



Source: Cambridgeshire and Peterborough Public Health Intelligence Team

[22]Britain's Healthiest Workplace, Vitality Health [23]Joint Strategic Needs Assessment Core Dataset 2018.

1.6 Cambridgeshire and Peterborough Futures

As previously noted, Cambridge Futures was the name given to a collaborative exercise conducted at the turn of the 21st century, when Cambridge was trying to decide what sort of city it wanted to be. This examined different options for development in Cambridge and framed the ensuing debate.

The creation of the Cambridgeshire and Peterborough Independent Economic Review makes this an apposite time to extend this work to the wider area of the Combined Authority and help bring the Cambridge work up to date. The economy has evolved, and as already noted, pressures in areas such as housing and congestion are much more visible than at the time of the original study. Further, the city of Cambridge does not exist in a vacuum; and there are clearly knock on effects across districts according to how development occurs.

The Commission also hopes that this work will help people to think about the future they desire for their locality. It is to empower people by showing realistic options that can be taken. It is to help people understand where there are trade-offs and encourage informed debate between those with different perspectives. Lastly, it should encourage citizens from different parts of the area to consider their future together, recognising themselves as part of a broader network, where success of the whole can entail success for all.

For this, the interim report, we only set out the 'base case' of what we expect to happen given current development in Cambridgeshire and Peterborough, taking account of proposals in local plans, produced by councils. For this 'base case' the modelling assumes no further housing beyond that proposed in the plans, although it includes the build out of the remainder of the planned new settlements. This raises some challenges for the area, as will be clear. In the final report we will analyse five scenarios for the future of the area, using the model to discover the likely outcomes arising. This will inform recommendations from the Commission about how development should be carried out, and what infrastructure is likely to be needed to position the area well in future.

HOW IT WORKS: THE MODEL

The model which drives the analysis is an advanced land use and transport model. It incorporates the prices, rents, environmental amenity and consumer wellbeing of different locations to predict the demand from residents and businesses to be in a certain area. The philosophy that underlies the model remains the same from the previous Cambridge Futures modelling, but it has been updated in almost every aspect to include more sophisticated behavioural assumptions. The basic modelling approach used for this model was recently subject to an Impact Case Study by the UK's Research Excellence Framework 2014, in which it was noted that: "[it] has been used extensively by the UK Government in LASER (London And South East Area) model for London Crossrail, Thames Gateway, Congestion Charging, and has become the core of the DfT National Transport Model."[24]

The model is conditioned under the assumption of development as currently planned. The model's outputs are wages, business costs, household numbers, household occupancy rates (an index capturing the average number of people living in each area relative to the number of dwellings), rents, and commuter numbers. The main horizons for the model are 2021, 2031, 2041 and 2051.

The model is driven by employment growth. As the number of employees grows, the demand for housing, and the pressure on transport systems will increase. The model is run for four possible employment growth scenarios:

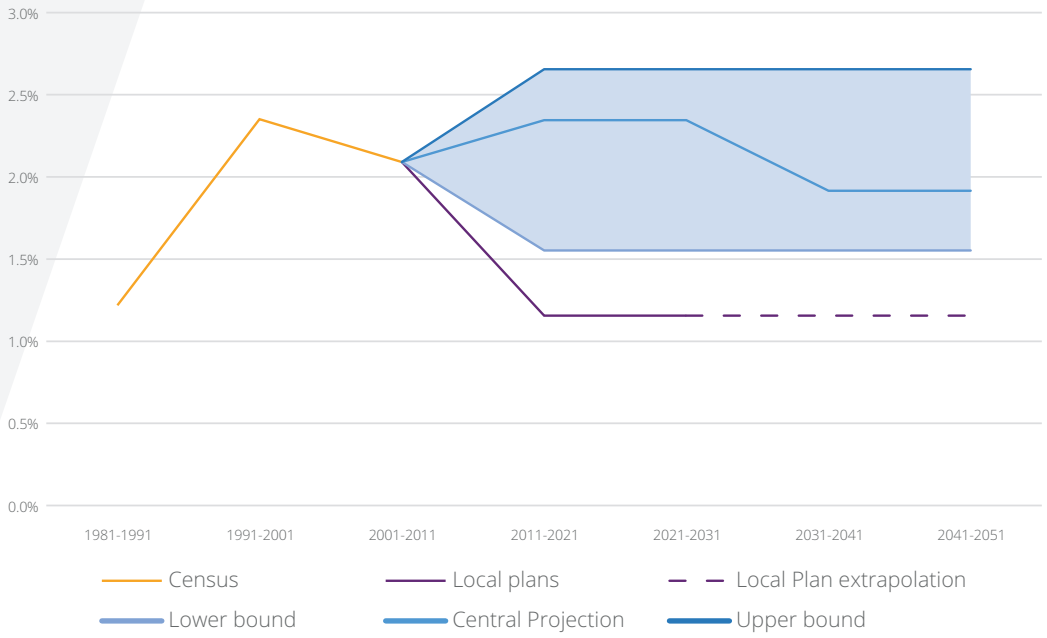
1. Local land use plans – to create land use plans, councils make assumptions as to how employment will grow. This run captures these assumptions, with an extrapolation to 2051.
2. Employment Growth – lower bound. This projection is a continuation of the 1981-2016 trend of employment growth, which therefore does not give special weight to more recent high-levels of employment growth.
3. Employment Growth – upper bound. This projection is a continuation of the 2010-2015 employment growth trends according to recent CBR data.
4. Employment Growth – central projection. In recognition that recent growth rates have been exceptional (and have been accelerated by construction of new science parks and premises) this run models, at first, continuation of recent CBR growth rates, but then a gradual return to long term ONS growth rates.

INITIAL FINDINGS

The different employment growth rates implied by these scenarios are shown in figure 28.

[24]https://impact.ref.ac.uk/CaseStudies/CaseStudy.aspx?Id=23292

Figure 28 – Cambridgeshire and Peterborough yearly employment growth rates – Actual, and projected

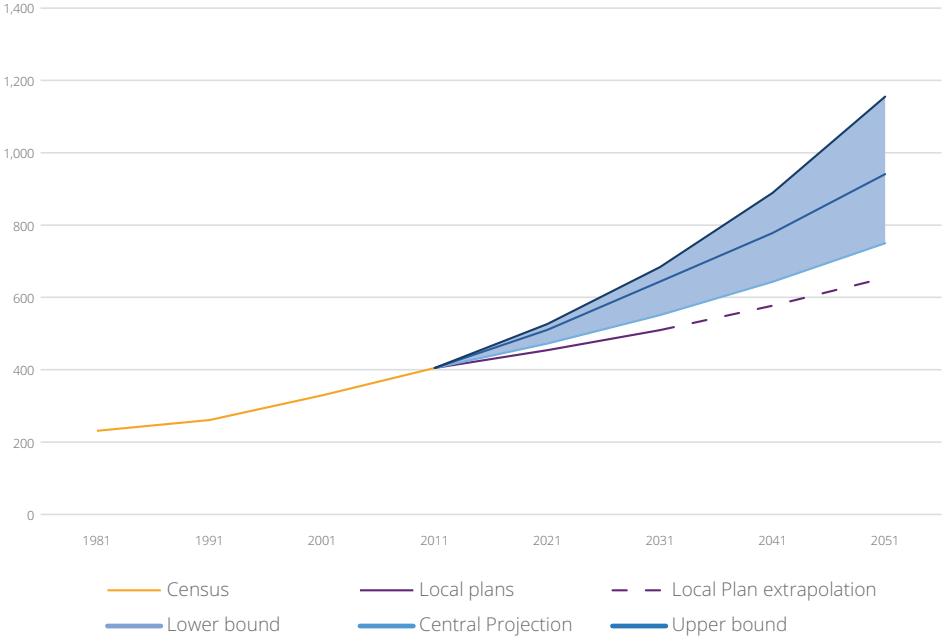


Source: Dr Ying Jin, Department of Architecture, University of Cambridge

As an early indication of where the area may need to adjust for this growth, the rates of employment growth anticipated in local plans are lower than the lower bound of our projections. The gap is particularly wide if the 2010-15 growth trends continue.

The corresponding effect on number of employed persons is shown below:

Figure 29 – Employment projections for Cambridgeshire and Peterborough – 000's of people



Source: Dr Ying Jin, Department of Architecture, University of Cambridge

HOUSING RENTS

The research so far suggests that in Cambridge, South Cambridgeshire, and East Cambridgeshire, should recent high employment growth continue, the effect of rising rents will be significant. If this is correct, local plans will need to take account of the available evidence of population growth and housing need as they are refreshed in the coming years.

COMMUTING

Another impact of increasing employment numbers is that the weight of commuting is forecast to worsen, especially in Cambridge. This is due in part to a mismatch between where housing is expected to develop (in general, more to the north of the city, where there are brownfield sites) and where jobs are expected to be on offer (as shown by growth in business floorspace, which is forecast to be evenly spread around the city).

If that is correct, the result would be that more people will commute across Cambridge, making an already bad problem worse. If employment grows at the rates envisaged by the local plans, by 2031 there will be 32% more in-commuters in 2031 than in 2011. However, if employment growth continues at recent high rates, this could be as much as 82%. It seems unlikely that the current transport system could sustain these levels.

The modelling has not at this stage tested specific transport improvement as schemes or projects. Instead, the model has assumed that transport improvements and travel demand management measures will be in place to maintain the current average speeds of travel door to door.

In the other main city of Peterborough, population growth could put considerable strain on the road network, especially at junctions e.g. as demonstrated by the congestion effects on the Nene Parkway after a move of a headquarters office within the city.

WAGES

It follows that, if house prices and rents increase in some areas, and heavier commuting leads to extra delays, the wages demanded by workers to compensate for these difficulties would increase in those areas. The work done so far suggests this would be particularly acute in Cambridge, South Cambridgeshire and East Cambridgeshire.

INITIAL CONCLUSION

Based on the preliminary analysis, it seems that Cambridge and South Cambridgeshire will be unable to maintain their present growth given current infrastructure and housing plans, and we see this start tailing off as house prices, office rents, and congestion make the area too costly a place to live and do business. This is not a criticism of local plans – indeed, these have been recognised as relatively very proactive. Rather, it is brought about by the unusually high rates of local growth. The other parts of the area do not seem to face a strain that is as systematic, but strains and bottlenecks may emerge as they face growing pressures.

All else remaining equal, this would suggest that the Combined Authority's target of nearly doubling GVA will be at risk, as the largest economy is expected to start to falter in the foreseeable future. In the final report we will look at the kinds of approach to development that will be required to prevent this from happening. Alongside taking steps to raise the growth potential of other areas of Cambridgeshire and Peterborough, it will be necessary to invest in the infrastructure of the main current economic driver of the area.

FUTURE WORK

In the final report, we will examine how alternative approaches to the development of Cambridgeshire and Peterborough could lead to different results. The five scenarios we are going to look at are designed as distinct options for the purposes of informing the debate:

- Densification – where new jobs and housing are delivered in existing urban areas, particularly around fast public transit hubs
- Fringe Growth – where development spreads outwards from current sites in high-demand locations
- Dispersal – where development happens away from the two cities and the current suburban growth spots in South Cambridgeshire
- Transport Corridors – where development is planned as clusters along key public transport corridors
- Deeper Digital Transformations – where autonomous vehicles as well as more flexible work patterns lead to alterations in demand for housing, business premises, and transport

These scenarios will guide the Commission in understanding what approaches may work well, or less well, in the shaping of the Cambridgeshire and Peterborough area, helping it make informed and objective conclusions in its final report.

Perspectives On The Future Of Cambridgeshire and Peterborough

2.1 Introduction

In the previous section of this report we set out a summary of the wealth of data and analysis available to us on the economy. But the Terms of Reference require the Commission to take a view on a range of policy issues more wide-ranging than can be captured by data. The Commission's approach is evidential wherever possible, but we must also listen to the views of the people of the area, its businesses and local and other public authorities.

The data presented in previous sections make it plain that all of Cambridgeshire and Peterborough is growing, though different historic trajectories have meant some areas are working from a much lower base. The 'Cambridge Phenomenon' has delivered consistently strong levels of growth for decades in the south of the area, but the industries which have driven this haven't spread to the north in significant measure. In this sense, it could be argued Cambridgeshire and Peterborough acts as a microcosm of the UK as a whole in that it is growing, but in some senses growing apart as well as together. To fulfil the terms of reference for the Review, therefore, the Commission needed to understand the extent to which Cambridgeshire and Peterborough itself agrees with this view and – to the extent it does – what peoples' understanding is of what is driving change and how it manifests itself. The way Cambridgeshire and Peterborough is growing presents a range of opportunities, but in our view it also poses some very particular challenges. It is important that we take stock not just of what these are but of the plans and policies in place or under development to understand where Cambridgeshire and Peterborough stands on these issues and to help us frame our response.

This section sets out a summary of what we have seen and heard over recent months from the people and businesses as well as the local and other public authorities of Cambridgeshire and Peterborough. Here we use the more than fifty responses to the call for evidence we issued in January as well as the findings from the roadshow we undertook in February and March, talking with the leadership of each Local Authority, a discussion with the Combined Authority Mayor and with a range of other organisations and individuals.

The key issues are set out below grouped around a series of themes, starting with the very nature of the economy of Cambridgeshire and Peterborough itself.

2.2 The Economic Geography of Cambridgeshire and Peterborough and the Nature of Growth

As the data considered earlier established, there is a clear finding from consultation that Cambridgeshire and Peterborough is far from being one area. To create a series of foci for analysis and policy, we think it is best to look at the area broadly as three sub-areas: Peterborough, the fens and the wider Cambridge area. There is no evidence for a contrary view in the consultation, even if the precise identities we have sought to define are more implicit than clearly explicit in the responses and discussions. What is more interesting is how respondents to the survey understand these differences. The University of Cambridge commented:

> *Given the complementary strengths of Peterborough and surrounding rural economies such as that in Fenland, Cambridgeshire as a whole is therefore well poised to play a crucial role in local, regional, and national priorities. It has the potential to lead on the grand challenges of the industrial strategy, such as those focusing on Artificial Intelligence, Big Data, and Clean Energy – all of which already have a significant footprint in the Cambridge ecosystem.*

This response typifies the sense of optimism on the possibilities for the Cambridgeshire and Peterborough area. This has been couched in terms of the possibilities of transport connectivity, as in Peterborough, as the City Council noted:

> *Improved connectivity to surrounding market towns would help to boost economic growth within those towns and provide residents with greater economic opportunities. Public transport between Peterborough and the surrounding towns, and between those towns, is poor, particularly in Fenland. This not only limits options for residents on low incomes but can act as a barrier to education for young people wishing to take advantage of Further and Higher Education Provision.*

Or, in the response from the Citizens Advice Bureau in relation to the need for inclusive growth:

> *New housing development and expansion of existing communities are an essential element in raising economic growth. However, the recent emphasis on creating the hard infrastructure (the houses, roads etc) without also focusing, at the outset, on the need for accompanying soft infrastructure has certainly led to problems. Families and lone parents can find themselves in large new estates, isolated, often with difficult or expensive public transport. The soft infrastructure, creating community groups, providing access to advice must be included from the outset and we can help in that process, particularly if we are involved early in the planning of future developments.*

The suggestions for what is needed are necessarily couched, either explicitly or implicitly, in the conditional. Transport investment is vital to sustain, and in some cases to create, vitality in Cambridgeshire and Peterborough's market towns. Successful communities are a prerequisite for this success, and would surely flow from it, but choosing the right infrastructure programmes is important. A sense of prioritisation will be needed if the economic geography is to be developed in an affordable and timely manner, while there are finite limits on the power of planners and politicians to foster successful communities.

The clear view from the consultation, including comments from AstraZeneca, Anglian Water and Cambridge Innovation Capital and from our various meetings, is that there is the potential for benefits to flow across the area, but that the factors that make different parts of the area successful are very specific indeed. In our view, with the likely limited resources at play in the area, a careful analysis of relative priorities will be needed if public and private investment in transport and other measures is to turn the potential of Cambridgeshire and Peterborough's economic linkages into reality.

Similarly, the challenge of inclusive growth is one with which the whole country is wrestling. Are growth and inclusion in tension, or can they be complementary? Increased interest in inclusive growth has stemmed from the observation that large parts of the UK have not felt the benefits of growth. The Cambridgeshire and Peterborough area is no exception. The first question is whether this is inevitable – i.e. is exclusion the price we pay for growth? On the one hand, it seems some aspects of the Cambridge/South

Cambridgeshire cluster will not be replicable around the area – it is the very proximity to expertise that means businesses will pay extremely high rents to be there, and this is self-perpetuating. However, this cluster has many business needs which do not need to be serviced from "next-door" but could still helpfully be served from nearby. These include resources, materials, and back office services. In some areas there are good examples – for instance, Huntingdon's production of composites. In order to seize these opportunities, though, it is necessary that there are sufficient 'intermediate-level' skills – not at the level of expertise needed for Cambridge's advanced research, but sufficient to create the sophisticated products and services that these industries require.

There is one further notable aspect of economic geography. This review concerns Cambridgeshire and Peterborough. Whether in recognition of wider economic linkages or otherwise, a range of responses make clear the linkages outside the review area. The fens stretch for miles beyond Cambridgeshire, while Peterborough still stands as a vital gateway between East Anglia and the Midlands and the views of many in Cambridge is that it is integrating more into a wider South Eastern economy. We therefore need to bear in mind that not every solution to the challenges or opportunities of different parts of the area lie within it. Indeed, in some cases the costs of doing so may already be prohibitively high compared to alternatives. Similarly, several of the Cambridge responses made clear that, whilst the benefits of technological development in Cambridge are applicable to the area, many of the economic linkages from the city are already with other research centres, in Oxford, London or northern cities and further afield.

2.3 The Role and Scope of Industrial Policy

The best companies in Cambridgeshire and Peterborough are some of the best in the world. There is an enviable foundation to build on to enable every part of the area to fulfil its potential. The Combined Authority, supported by the Local and other public Authorities will have to forge a new approach to achieving this, with and for the benefit of the businesses and people of the area. One of the most important roles of the Commission in our view is to frame what this approach should look like.

Views on the role and nature of Industrial Policy in the UK are changing. Decades in which liberal market policy have been the main, if not sole, basis of policy are giving way to very different views across the political spectrum, with a reappraisal of the role of government. Most relevantly, the Government's recently released Industrial Strategy[25] sets out a new and more ambitious agenda for purposeful action based on strong partnership between the private and public sectors. Cambridgeshire and Peterborough must capitalise on this.

Members of the CPIEC were involved in the recent national Industrial Strategy Commission[26] and, as we approached the consultation with local partners, we had its approach to industrial strategy in our minds. It set out seven strategic goals which are consistent with but range more widely than the Government's approach:

- Industrial strategy should be understood as a broad and non-partisan commitment to strategic management of the economy.
- The UK economy has many strengths and areas of opportunity, but the reality must be accepted that it also contains many sustained weaknesses. The government should commit to addressing all of the weaknesses through strategic economic management.
- The new industrial strategy must be designed with a comprehensive understanding of the state's unique powers of coordination and convening, and its ability to pool risk, create markets and provide public goods.
- Comprising a long-term and viable indus trial policy framework, the strategy should be built on seven foundational themes: a new institutional framework; place; science, research and innovation; competition policy; investment; skills and the state's regulating and purchasing power.
- The UK needs significant cultural change in policymaking so that the new industrial strategy does not become paralysed by risk aversion and short-termism.
- The new industrial strategy should embrace technological change and seek to capture the benefits, but a critical perspective to occasionally overstated claims is always necessary. It should recognise the state's essential role in driving technological innovation, and focus on diffusion, as much as disruption.
- A new strategy should have an ambition to achieve positive outcomes and make material differences to people's everyday lives, and not confine itself to a few 'sector deals'.

As we have assessed the feedback from the consultation and our other meetings, we have

[25]https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/664563/industrial-strategy-white-paper-web-ready-version.pdf
[26]http://industrialstrategycommission.org.uk/wp-content/uploads/2017/10/The-Final-Report-of-the-Industrial-Strategy-Commission.pdf Quote taken from P4.

asked: is this a valid approach to Cambridgeshire and Peterborough, what are the opportunities and barriers in the area, and how can we start to identify the approach that will work best?

In our view, this general approach is valid (though we would welcome views). We intend it to underpin our work in the months ahead. Emerging from the consultation responses and our meetings, a series of themes emerge.

EXCELLENCE THROUGHOUT CAMBRIDGESHIRE AND PETERBOROUGH

There is excellence throughout the Cambridgeshire and Peterborough area. Though it may no longer be the largest employer in Peterborough, Perkins Engines, now a subsidiary of Caterpillar Inc, remains one of the leading manufacturers of diesel and gas engines in the world.

On a smaller scale, but of great interest to the Commission, is Stainless Metalcraft Ltd based in Chatteris in Fenland. It has won awards for its work investing in the skills of its workforce to develop cutting edge products for the nuclear, health and technology industries, including making parts for the Large Hadron Collider at CERN. SpiroTech SRD, an engineering company specialising in the bulk handling industry, is a shining example of a local company which has gone from strength to strength, with a 40,000 square foot factory in Sawtry, and now a further division in York. Hotel Chocolat is based a road's width outside the Cambridgeshire area in Royston. Nonetheless its entire manufacturing operations take place just outside Huntingdon, with its distribution centre at St Neots. Of course, the major generator of wealth in the area is the Cambridge and the southern part of the area with its world-class clusters of bioscience, pharmaceutical and technological companies.

SPECIFICITY

The research findings considered earlier sought to establish how specific the nature of growth in the Cambridgeshire and Peterborough economy is: how rooted it is in the places where it occurs as well as how far it is genuinely additional to the UK economy.

The consultation we have undertaken tends to support quite strongly the view that the location decisions of businesses across the area, including all those listed above, are highly specific to their needs and difficult (if not impossible in many cases), to influence in the short term. Businesses locate where they choose to for a variety of reasons, some of which relate to the proximity of other important factors such as research and talent. In some cases they are simply a matter of history that cannot be circumnavigated.

CREATING THE RIGHT CONDITIONS EVERYWHERE

Over time, the objective of Cambridgeshire and Peterborough must be to create the conditions across the area such that businesses will tend to choose to locate their activities on a more geographically distributed basis. In the paragraphs below, we consider some of these vitally important factors such as transport, skills and housing.

The question for industrial policy is what it can do to add to the general policy interventions to catalyse the process of change.

EXISTING INITIATIVES

The legacy of Regional Development Agency and local investment over recent years is seen throughout the area through the active engagement of businesses in every sector in a variety of different institutions and policy initiatives aimed at improving economic performance. Some of these are highly local such as the Cambridge Centre for Science and Policy, some of them are pan-regional such as the National Centre for Food Manufacturing in Lincolnshire, which serves the whole of the agriculture sector. Many, particularly those in Cambridge related to academic-related business spin outs, are national or international in orientation. These nationally funded and internationally renowned bodies include the Babraham Institute and One Nucleus. We were interested to find out how much of this kind of activity is state-funded and how much is the product of entrepreneurs leading the development of skills, innovation or other industry developing activity. The pattern is not wholly clear, but suffice it to say that there is considerable existing private sector activity and engagement. We are interested in finding further examples of excellence, particularly those that can be scaled up.

GETTING THE BASICS RIGHT: THE EXAMPLE OF BUSINESS PREMISES AND FINANCE

One of the most basic issues in industrial policy is the provision of sites and premises for business. This ranges from having large sites with specialised technical equipment down to the smallest incubators, so that location decisions which could lead to the loss of business are not aided by lack of available, affordable and suitable accommodation.

The responses to the consultation on this issue were interesting. In some areas, particularly Huntingdonshire, there was a very clear analysis of what is needed and of some of the potential problems given current market conditions. In terms of need:

> *Identifying, planning to accommodate and supporting the development of new opportunities including Industry 4.0. This involves de-globalisation, on-shoring of suppliers (Cooke, 2018) and means it's critical that sufficient commercial space is made available in proximity to Cambridge to allow for Industry 4.0, pioneers in 'crossover' innovation 4.0 platforms and suppliers to co-locate. Market pressure on commercial land allocations for distribution and warehousing should be resisted to ensure sufficient capacity for the development of Industry 4.0 automated manufacturing processes which in many cases will be space consumptive, but low job density, so will not bring additional pressure to housing demand.*

Both in the Huntingdonshire response and in the St. Neots Masterplan there is clear concern about the need for planning policy to ensure that economic capacity is not lost both to distribution as above, and, as discussed in the St. Neots Masterplan, under the weight of pressure for housing development via changes to the Permitted Development Rights introduced in 2017. These allow for the conversion of light industrial to residential use without planning permission:

> *A concern is the substantial market pressure aimed at conversion of commercial and industrial land use to residential. For example, a 2.6ha industrial property on Cromwell Road in the primarily industrial area is being marketed as potential residential development. To limit manufacturing loss and therefore a stalling of the Masterplan for Growth, a review of the St Neots Neighbourhood plan should be carried out to examine how it can help to protect the existing industrial land and buildings during a period of stabilisation, growth and transformation.*

These issues are undoubtedly found elsewhere in Cambridge and Peterborough, though no other respondee raised the issue. What the consultation did highlight was a potential lack of analysis on the state of the market and the availability of suitable premises. Within the Cambridge area one response argued as follows:

> *We have the space to accommodate expansion and the international connections to be the global hub for ideas, research and innovation.*

Another, also in Cambridge, noted that there is a:

> *Shortage of office and incubator space. The East of England currently has fewer incubators per 1000 new businesses than any other UK area - lack of available office space has pushed up commercial prices for following companies by almost two thirds since 2007.*

As the response from Peterborough City Council argues similarly to the latter point, the balance of argument is probably with there being a lack of potential space as this is something that is also felt in that city, as set out in the Peterborough response:

> *A major factor constricting business growth is the lack of availability of good quality serviced offices and grow on space.*

If this analysis is correct, a point on which we would welcome views, this would be illustrative of what is found elsewhere in the country in that there is a lack of clear evidence of the supply and demand for business premises or a programme to ensure that needs are met appropriately in every part of the area. More positively, the new Enterprise Campus at Alconbury Weald was noted, which will be accompanied by its own station, and offer 100% business rate discounts and superfast broadband to companies which establish themselves there. This is a positive example of rising to the challenge of providing modern and flexible working space for business.

There was very little reference to finance for business in the consultation responses indicative of a sense that this isn't a burning issue at present for the private sector in the Combined Authority area. Here too, views would be welcome, especially with regard to start-ups of high-tech firms.

Key Question: How much is a lack of available premises hindering business growth? Similarly, is access to finance a significant problem?

NEW IDEAS: EXISTING AND POTENTIAL

We were encouraged that in the responses to the consultation there were interesting and potentially important suggestions for industrial policy initiatives which could help to stimulate the private sector growth. These included the suggestion from Stainless Metalcraft Ltd for an advanced manufacturing centre in Fenland. We would be interested to know more about the proposals for Technology Institutes which came from Cambridge University Health Partners, and would be particularly interested to talk further with Peterborough about the idea for a Manufacturing Association, particularly if it were to help local and regional manufacturers to improve productivity and achieve excellence.

2.4 The Social Inclusion Dimension to Growth

The need for inclusive growth has assumed particular importance over recent years particularly in light of the Brexit referendum and the sense that some places and people have been "left behind" in the way the economy has grown.

Cambridgeshire and Peterborough is far from immune from this problem. As the Police and Crime Commissioner says in his submission:

> *Any economic strategy needs to clearly incorporate people and place, making sure that any policies do not have the unintended consequences of excluding populations or worsening inequalities.*

The Police and Crime Commissioner, along with other respondents, cites the Centre for Cities Outlook 2018 which, as in 2017, found Cambridge to be the most unequal city in the UK.[27]

Key Question: How can Cambridge lose its unwanted accolade of being the most unequal city in the UK? How can we tackle inequality and deprivation across the Cambridgeshire and Peterborough area?

The Citizens Advice Bureau response notes that investment in development in places can often overlook their social needs and the need for communities to remake themselves in new developments if the ill-health-inducing effects of isolation and lower levels of social capital are to be avoided. Public Health England argue, we think correctly, that these social issues are neither purely local nor trivial for this Review. This is because they contribute to lower health and wellbeing across economies; in a point raised by the CAB:

> *Good worker health contributes to high productivity and successful enterprises, which in turn supports economic prosperity, and the social wellbeing and welfare of communities.*

Referencing the work of Michael Marmot, PHE make the point that lower economic activity rates, high levels of benefit, mental health and other issues arise less from the performance of the health and care sector (important as this is) and more from wider social issues.

The health data considered in Section 1 highlight the extent of these issues and how disproportionally they affect not just the individuals and families concerned but the whole character and sense of wellbeing of the places where they are concentrated. These issues are of great importance to the people who live there, as well as to ensure the places are not unduly affected by concentrations of disadvantage, and to ensure that everywhere in the area is able to fulfil its potential.

We noted earlier that the basis of a successful industrial policy requires a functioning health and care system. As PHE note in their response and in their "Health and Wealth" report[28], the most important aspect of the health and care system in this regard is the need for investment appropriate preventative, long-term provision which tackles the social determinants of health at source. We would welcome further views on this issue and how Cambridgeshire and Peterborough should tackle it as we prepare our final report.

[27] http://www.centreforcities.org/reader/cities-outlook-2018/
[28] https://static1.squarespace.com/static/55e973a3e4b05721f2f7988c/t/5a3252e88165f59567b6bca5/1513247469817/Metro_Dynamics_PHE_Health_%26_Wealth.pdf

2.5 Human Capital: Education and Skills, the Role of Higher Education and Migration

The social dimension to growth in the previous section essentially concerns the way in which the economy interacts with the population. The most important part of this relationship concerns human capital: the education and skills of the workforce.

We received a variety of views from the consultation and stakeholders on the views of schools, further education, and higher education.

THE SCHOOL-AGE EDUCATION SYSTEM

The school system of Cambridgeshire and Peterborough has mixed but generally positive features. Cambridgeshire generally over-performs relative to UK averages but this is skewed by strong relative performance towards the south of the county, with poorer outcomes in Fenland and East Cambridgeshire. Peterborough also suffers relative disadvantage, and faces the challenge of large numbers of schoolchildren who don't have English as a first language. In Cambridgeshire, a Fenland and East Cambridgeshire Opportunity Area Programme has been established as a means of improving outcomes in these areas.

Perhaps one of the most surprising and consistent findings of the consultation we undertook with local authorities was that there is a sense of dissatisfaction with educational outcomes even in areas of Cambridgeshire which perform well in statistical terms.

A comment made frequently to the Commission is that the school education system of the area is not fit for purpose. Given the relatively positive performance figures, in further discussion with stakeholders we ascertained that the greatest concern is for those not achieving good GCSE results and the extent to which these young people are ill-equipped with the skills for the world of work. This is something on which the Commission would welcome views in the period ahead.

One issue on which we received very little feedback was on the fitness for purpose or otherwise of the pre-school education system and the impact of the wider social determinants of educational performance on later school attainment. The Commission welcomes further views on this issue.

THE SKILLS SYSTEM AND VOCATIONAL TRAINING

Many of the responses to consultation raised the issue of skills. In several areas including St. Neots and Fenland, employer surveys and engagement revealed widespread discontent among businesses with the skills system, something echoed in Peterborough and in Huntingdonshire in relation to the lack of incentives for schools to provide accurate information that enables young people to make decisions on their vocational education and training.

The need for high-quality education and training provision, particularly in relation to vocational skills, was highlighted by many respondents, including in Greater Cambridge, as a key means by which inequality can be alleviated, with considerable concern that current arrangements do not lend themselves well to achieving this.

Previous analyses of skills nationally such as the Leitch Report[29] have established that some skills issues can be a product of low employer investment. However, even in the high performing Cambridge economy, key stakeholders have commented to us on the lack of fitness for purpose of the school system:

> *As part of an effort to address this issue, the complexity of skills provision needs to be addressed. There are currently more than 600 skills providers in Cambridgeshire with very little coordination or signposting for users.*

In discussion, the Mayor and Local Authorities noted with some frustration that, as in other areas with devolved governance, negotiation of devolution of responsibility for education and skills had been met with strong resistance by central government, leaving little space for local discretion.

HUMAN CAPITAL AND MIGRATION – THE BREXIT DIMENSION

Many respondents who referenced skills made a direct connection between the need for a significant and rapid improvement in the level of skills training and the expectation of a lower supply of skilled labour arising from Britain's exit from the European Union:

> *We would like to see a joined-up approach to apprenticeships rather than the current arrangements which, despite the goodwill and hard work of individuals, does not meet the critical mass which is required in a future where the life science industry will be affected by Brexit.*

[29]Prosperity for all in the global economy - world class skills – found at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/243599/0118404865.pdf

This response came from Cambridge University Health Partners and reflects concern well beyond the relatively lower skilled and low-paid agricultural sectors on the link between skills and migration. We note that in some responses (the St Neots Masterplan being one example) a particular concern over lack of training provision sees this issue not just as driving international migration but also higher than necessary levels of commuting as employees cannot source local labour.

The consultation revealed excellent local action which can be built on including the Accelerate East umbrella skills partnership, proposals for an apprenticeship hub in Peterborough and the iMET campus in Huntingdonshire. Despite these and other positive developments, these consultation responses accord with concerns about the skill system expressed in many local areas and is one we will return to in the final report. Views would be welcome on this issue.

UNIVERSITIES AND HIGHER EDUCATION

Cambridgeshire and Peterborough is lucky to have one of the most successful universities in the world in its area. Cambridge University, in addition to its educational excellence, is a major employer with some 12,000 staff, and has secured some £1.6 billion in follow-on funding for University spin outs in the last 20 years, spawning nearly 5,000 knowledge intensive companies in the area. It is also a major investor in the future development of the area with its project at Eddington alone worth £1 billion, leading to the creation of more than 3,000 homes as well as retail, community centres and research space.

The area also has Anglia Ruskin University, also based in Cambridge, which, in partnership with Peterborough Regional College, has created the University Centre Peterborough.

Despite this enviable level of provision in a single area, access to higher education is uneven across Cambridgeshire and Peterborough and the educational attainment figures for areas relatively close to but economically distant from the centres of education suggest that more could be done to create pathways between local communities and higher education.

The comments we received from or on behalf of employees, particularly outside of the Greater Cambridge area, point to the need for better skills training for local employment sectors, an area where Higher Education could also play a bigger role. This is among the reasons why Peterborough City Council has high on its list of priorities the development of a university in the city. The consultation revealed that the University of Lincoln and its link to the National Centre for Food Manufacturing is something which should be further analysed and possibly emulated as part of a coordinated response to the need for a stronger skills supply in the agribusiness, manufacturing, and other important sectors in the Cambridgeshire and Peterborough economy.

2.6 Transport and Infrastructure

Transport and infrastructure are some of the most important policy levers available to governments to support economic growth. The picture which has greeted the review through consultation is one of frustration in this area. Many schemes have been discussed and planned, some are in development whilst other important proposals remain undeveloped.

There are undoubtedly development pressures in the area so frustration is understandable. It is worth recalling some of the other developments in and around Cambridgeshire and Peterborough in recent decades. The M11 may now be some 40 years old but was the fulfilment of plans started in 1915. M11 access to Stansted airport, itself a relatively recent addition to the transport infrastructure of the area, didn't arrive until 2002. The A14, currently under reconstruction, was itself the subject of major upgrading from the 1980s onwards, whilst rail connections have been the subject of considerable improvement, most importantly the development of a direct and fast train link from Cambridge to London Kings Cross.

Clearly these important developments have not arrived as quickly as hoped and we have found through consultation that the list of schemes now proposed is long indeed. However, the key findings from this analysis is that development of schemes is possible in the area, but that the time taken to see them through from conception to completion is too long and results in significant economic costs.

The Commission is conscious that, given the many strong options for infrastructure schemes, an evidence-based view needs to be developed on the timings for these schemes to come to fruition. This needs to look at where the urgent need is at present, what finance will be available and when, and what would guarantee a good return on investment.

What is true in terms of transport limitations may well be true in relation to utilities; especially electricity supply and broadband, as well as in flood defences – a uniquely important part of the infrastructure in this part of the world.

We consider what we have seen and heard on transport, utilities and broadband in the sections below.

TRANSPORT

Cambridgeshire and Peterborough is a large area with a dispersed pattern of settlement and unsurprisingly the consultation has revealed a wide range of views on transport investment.

In relation to roads, it is important to note that both Peterborough and Fenland accord a very high priority to the dualling of the A47 which would improve connectivity across the northern part of Cambridgeshire to Peterborough, and also complete a vitally important link from Norfolk through to the Midlands.

Similarly, there is great anticipation:

- from the greater Cambridge area and Huntingdonshire for the completion of the current works on the A14 to improve cross country connectivity in that part of the county.

- from East Cambridgeshire as well as from Cambridge and South Cambridgeshire for improvements to the A10.

In addition, the review has heard compelling arguments for essentially local but nonetheless fundamentally important projects. For example, in Huntingdonshire, a third river crossing over the river Ouse to St Ives would offer the potential for 10,000 new homes in that area.

As a New Town, Peterborough has a problem looming over the simultaneous ageing of much of its infrastructure. The poor connectivity of many market towns, particularly those in the fens, would not be wholly resolved by current plans for the A47 and the as yet unscheduled works for the A10.

The city of Cambridge has its own set of local and sub-regional needs extending into the greater Cambridge area and a variety of road and cycle priorities. The Big Conversation (a Greater Cambridge Partnership (GCP) survey in November 2017) found that "traffic and congestion slowing your journey" was the most commonly experienced challenge when travelling around the area, with almost 70% of people noting this. The lack of, and unreliability of, public transport were the next biggest issues. The Combined Authority, as the Strategic Transport Authority, are taking forward transport proposals for intra-city travel in the area, with the Cambridge Autonomous Metro high up on the agenda. GCP is supporting the proposal and has jointly funded with Combined Authority a high-level options appraisal of a suitable solution. Other studies have been produced to explore options to the west and south east of Cambridge (linking the Cambridge Biomedical Campus with Babraham and/or Granta Park). Connectivity to the south is felt to be a particular issue – with the A505 beginning to show strain, and increased momentum for the construction of a Cambridge South station.

In addition to these and other schemes the review is aware that the Mayor has a long-term proposal to extend the M11 north from the Cambridge area to join the A47 in order to create a Peterborough – Cambridge – London corridor.

The limitations on likely road access to Cambridge have seen attention switch, building on the success of the guided busway and Cambridge North Station, to off-road solutions including the possibility of creating an autonomous Metro service connecting the city with its hinterland. This idea has been developed to include tunnels for rubber wheeled vehicles guided by artificial intelligence, which would stop at a central terminus under the city. There would then be set aside above-ground roads to connect developments around Cambridge to the city. This form of connectivity would expand the area considered to be in easy reach of Cambridge.

In the centre of the county, at Ely, there are proposals which will go some way to alleviating the congestion and alignment of the railway lines which meet at Ely Junction. In the north of the county, the campaign to reopen the Wisbech to March line has seen feasibility work started, funded by the Combined Authority, in 2018.

At a more advanced stage of planning is an improved rail route between Cambridge, Milton Keynes and Oxford (with funding for the western section approved by the Chancellor in the 2017 Budget) and less developed plans for a road Expressway scheme as recommended by the National Infrastructure Commission.

Elsewhere in relation to public transport, the Commission has received impassioned pleas for the development of cross ticketing and for the mayor to take up the right under the Devolution Deal to implement bus franchising.

This is by no means a complete list of the schemes that have been put to the Commission in its consultation. There are numerous ideas at both the national and local level. What does strike the Commission as of great importance is that these two levels of transport planning are not considered in isolation; rather, delivery must occur in a synchronised fashion. For example, the positive effect of strengthening links from Oxford to Cambridge will be severely blunted if researchers from Oxford are unable to reach research institutions within Cambridge easily upon arrival, such as is often the case for institutions like the Hinxton Genome Centre some distance to the south of the city. Inter-city travel matters, but intra-city travel is crucial. In its review of infrastructure initiatives in the final report, the Commission will consider transport both within and beyond city boundaries.

The capacity of the Combined Authority and local authorities to manage such a large and complex list of priorities is considered below. However, even with the capacity to manage it, this list of schemes is in all likelihood too expensive to fund simultaneously; but because of the vastly different sizes and states of development of each, they may not need to be funded at the same time. It looks to the Commission as if a process of prioritisation will be needed so as to ensure that schemes are progressed in a timely manner as they are ready to proceed and in an order which reflects their importance to the economy as a whole (whilst being mindful of the need to ensure that growth is maximised in each part of the Cambridgeshire and Peterborough area). This is an area where the Commission will make recommendations in its final report and views are welcome on both the priorities themselves and the principles and process by which they should be prioritised.

Key Question: What are the main infrastructure priorities and why? What needs to come first to maintain economic growth and unlock future growth, from an economic and practical perspective?

Key Question: What are the funding streams that can allow for ambitious development?

UTILITIES AND FLOOD RISK

The evidence submitted to the Commission by the Middle Level Commissioners (who represent thirty Flood Risk Management (FRM) authorities) revealed the complex patterns of governance and management stewarding the flood defences. These have developed over several hundred years in the area. They allude to the levels of investment which will be required in the future, partly for reasons of maintenance, but partly because of increased flood risk.

In its submission to the Commission, the Regional Flood and Coastal Committee quantified the financial risk, arguing that the Environment Agency have reported the existence of £1.2 billion worth of flood risk assets in the Great Ouse tidal river area, with Government funding likely to meet only 40% of the anticipated funding needs, resulting in a funding gap of £80-£100 million.

The Environment Agency argue that even though over one third of the area is at high risk of flooding, resulting in major cost pressures, investment in managing risk brings significant capital and wider benefits, which are many times the level of investment.

It is impossible for the Commission to quantify the risk to the economy of Cambridgeshire and Peterborough arising from floods. We would welcome further views on this issue in the period before our final report is produced but would note that financial pressures in this area will add to those considered previously in relation to transport projects, further highlighting the need for a robust process of investment prioritisation.

Many respondents to the consultation made reference to potential shortages of power, though most were essentially anecdotal. Peak demand nationally is expected to increase from 60GW currently to 85GW in 2050. Emerging challenges flagged by UKPN in its Long Term Development Statement for the Eastern Power Networks (EPN) area (which covers our area and beyond into Essex, Bedford, Buckinghamshire, and North London) include the loss of night-time load from the increasing penetration of gas heating systems, increasing summer load from air conditioning and cooling equipment, and the growth in demand from electric vehicle (EV) charging.

A need for increased efficiency of usage is driving an increase in 'flexibility services', whereby energy supply becomes more responsive to local demand. Therefore, the responsibility is changing from one of overseeing local distribution, to one of managing an intelligent, multi-input, local energy system. Even so, a number of bottlenecks are anticipated, with several in the Greater Cambridge area in particular, associated with major new developments.

Relatively few respondents cited imminent pressures in relation to water. In general, this was backed up by the evidence from Anglia Water Services. Nonetheless they and others make the argument that flood risk can only be minimised through investment in appropriate infrastructure alongside or ahead of development, whilst there is the need for continuing innovation such as that underway in Fenland involving a partnership between the District Council and the Dutch Government.

Broadband and Mobile Telephony Many respondents made reference to either or both the patchy mobile phone coverage within their areas and the limitations of the existing programme of superfast broadband rollout across the area.

The Connecting Cambridgeshire programme, which provided a response to the Commission, used 2017 Ofcom data from its Connected Nations report to illustrate the unevenness of connectivity to 2G and 4G mobile signals in the area. Whilst Cambridge and Peterborough are relatively well served, a different picture is found in other districts, with indoor, in car and 4G coverage at substantially lower levels than the English average. We will analyse this data further in our final report, and will be interested in hearing from mobile operators on the current levels of service and future plans, both in relation to these data and those relating to the development of 5G services.

In relation to broadband provision, the Connecting Cambridgeshire submission outlines how, since 2015 and in three phases, the provision of superfast broadband has increased markedly. The programme is on course to reach a target of 97% by the end of 2018 and a further phase is planned with the target of 99% by the end of 2020.

On these figures, Cambridgeshire and Peterborough look to be relatively well provided for. The same looks to be the case in relation to ultra-fast (fibre to the premises) provision, with Cambridge and Peterborough both marginally above the UK average of 3.7%. This is a very low figure given the growing importance of synchronous and uncontended high bandwidth provision to business users, however is the result of national rather than local issues, and therefore is an area where the Combined Authority should continue to press for greater investment. In this area, Peterborough looks to have positioned itself well through the CityFibre project.

CityFibre has also announced a strategic partnership with Vodafone to deliver Gigabit capable full-fibre broadband to up to 5 million homes and businesses nationally by 2025. Peterborough is one of the first cities to be announced as part of this partnership. The project will see a private investment from CityFibre of at least £30 million into a state-of-the-art digital infrastructure, bringing ultrafast internet connectivity within reach of every building in the city.

Key Question: Where are limitations in the electricity supply and broadband provision hampering local growth?

2.7 Housing

Cambridgeshire and Peterborough has performed better than many areas of the country in delivering new housing over recent years. Nonetheless, the need for further housing provision in the area was one of the most widespread concerns which arose in the consultation.

As stated above in relation to transport and infrastructure, the relatively permissive development environment which exists in some parts and where there is potential to develop is tempered by reservations concerning infrastructure. Local authority respondents are increasingly concerned that appropriate transport and other infrastructure needs to be put in place prior to housing development to ensure effective integration of new developments within existing urban environments. Getting infrastructure right is essential to delivering stronger house in growth.

The work on Cambridge Futures discussed in Section 1 of the report looks set to confirm that on current trends, the existing levels of housing completions relative to demand will lead to increasing pressure on the housing market with a potentially severe impact on the local economy. This is despite considerable efforts on the part of the local authority to improve matters. As the Greater Cambridge Partnership commented in their response:

> *Jobs growth in Greater Cambridge has outstripped housing growth, resulting in high house prices and declining affordability. These issues contribute to Cambridge being the most unequal city in the UK, with significant shortages in key workers likely in the future without action being taken.*
>
> *The area has already responded: the local planning authorities have ambitious plans for new housing with sites allocated in adopted and submitted plans providing over 40,000 new homes, including through new settlements at Northstowe (now underway), Waterbeach and Bourn and development on the edges of Cambridge City at Wing, Cherry Hinton, Darwin Green and North-West Cambridge. In recognising the significant housing affordability issues in Greater Cambridge, the Cambridgeshire and Peterborough Devolution Deal has secured funding from Government for affordable housing, including £100 million for affordable, rented and shared ownership homes, and £70 million, to be passported to the City Council, specifically to support the development of council homes in Cambridge, given the high level of house prices in the city.*
>
> *This is a welcome intervention, however will not alone solve problems for Greater Cambridge.*

Elsewhere, rather than development pressures, the prevailing issue is of relatively modest demand and low land prices. This is complicated by land conditions, which is particularly the case in Fenland as their response to the Commission made clear:

> *Fenland faces an unfortunate set of circumstances in that although there is a significant supply of suitable development and urban extension sites, house prices and therefore returns to developers, are relatively low comparative to build costs which may be higher still in some locations due to additional foundation design to meet geological conditions (essentially flood risk).*
>
> *In response to reduced market activity, Fenland District Council has commissioned feasibility studies to consider the development of a Wisbech Garden Town, an effective expansion of the existing town with the*

construction of a further 12,000 new homes and the creation of jobs to ensure the sustainable growth of the town and future economic prosperity.

Clearly, Fenland has opportunities for housing development as do East Cambridgeshire and Peterborough. The question, neatly summarised in Fenland's response, is how to convert this potential into actual supply and in ways which do not weaken demand. This, in our view, is unlikely to be achieved simply or even primarily by improving transport connectivity, but by education, skills, industrial and indeed every other policy lever considered in this report. The balance between and sequencing of these issues will be the key issue for the Combined Authority and its Local Authority Members. We will make recommendations in this regard, and would welcome further views.

In areas of high demand, the responses from the University of Cambridge and others highlight the steps that major employers are taking to ensure that there is at least some supply of affordable housing for key workers. Despite this and the activity of Housing Associations, and indeed Local Authorities (some of the latter report that they are starting to set up their own development companies), there remains an acute shortage of affordable housing. There is anecdotal but compelling evidence that commuting patterns are becoming ever more extended out of Cambridge, particularly for lower paid workers due to unaffordable housing costs.

The only hard evidence presented to the Commission in relation to housing need was from Peterborough, whose submission reported some 3,117 applicants waiting for social housing as of April 2017. Peterborough City Council is one of the local authorities which has created a new housing development company in partnership with a developer. This issue – the need for and creation of a supply of affordable housing – is one the Commission will return to in the second half of our work.

The Commission has also noted data from the Ministry of Housing, Communities and Local Government (MHCLG) on housing completions for the last five years across the economy, which show that average completions over 2012-2017 were 3581 per annum for the area[30]. The data from the Government's recent housing consultation state that an additional 4826 dwellings will be required per year to meet demand[31]. This need to build more housing is being recognised in local plans, and we will consider this issue further in the final report.

Strategic Planning policy has an important role to play in sustaining the pipeline of housing sites and in ensuring that the necessary infrastructure is in place too. Several responses to the consultation highlighted the role that the Combined Authority could play in this area not least via the Spatial Framework included in the Devolution Deal, a point picked up later in relation to public administration, below. There looks also to be a role for creative new ways of developing housing, and increased density in urban centres seems likely to be a feature of the future.

Key Question: How can the south of the area ensure its success doesn't come at a cost to local people in the form of unaffordable housing? What practical steps can central and local government take to improve housing supply across the area?

[30]https://www.gov.uk/government/statistical-data-sets/live-tables-on-dwelling-stock-including-vacants - Live table 122
[31]https://www.gov.uk/government/consultations/planning-for-the-right-homes-in-the-right-places-consultation-proposals

2.8 The role of the public sector

Following the creation of the Combined Authority and the election of its first Directly Elected Mayor, Cambridgeshire and Peterborough has undergone significant change in governance and is in the process of maturing existing and new institutions into a system which is as yet still emergent. The opportunity of the Combined Authority was not lost on respondents to the consultation, who expressed clear appreciation of the need and opportunity for better and more coordinated action across the range of issues considered in this section.

There is, for some respondents, concern that the split of responsibilities between town and local authorities, the County Council, and the Combined Authority is not clear and therefore there is potential for duplication and delay. There were echoes of these concerns from the private, academic as well as public sector respondents. Clearly these are inevitable concerns at this stage in the evolution of the new system but do highlight the need to create legibility and clarity.

The consultation has revealed strong and perhaps unusually high levels of excellence, such as the work of the Combined Authority, Huntingdonshire District and St. Neots Town Council on the 'St. Neots Masterplan for Growth'. Clearly this is one example of the new system starting to work, underpinned by the principle of subsidiarity which has been key to the 'devolution revolution'. We also note that this is a very positive example of a market town taking responsibility for its own destiny, deciding the sort of place it wants to be, and partnering to achieve it. Other market towns should look to develop their own futures, by allowing themselves to grow, and by creating jobs for local people to ensure that economic vibrancy does not just become the preserve of the larger settlements, and we are encouraged to note further market towns, such as Ramsey and Littleport, are to be given funding to develop plans.

Similarly, the enterprising activities in East Cambridgeshire District Council on financing for infrastructure – the development and extension of which the Mayor is actively considering as part of his plan for funding major infrastructure development in the future – is another area with considerable potential.

The opportunity and the challenge to the public sector in the period ahead was laid out most clearly by the University of Cambridge response:

> *Through encouraging spillovers, greater connectivity, and collaboration, we would urge regional policymakers to recognise the GVA of these distinct zones and assess how their different strategies and visions can be brought into greater alignment rather than brought into greater competition for regional or national investment. This might build on the forthcoming Non Statutory Spatial Plan and would help to disperse growth prospects more equitably across the county, without diminishing the comparative strengths of any area.*

The Anglian Water submission laid out the potential for a growth and development strategy to combine minimum standards and to improve the collation of data and information among planning authorities leading to better service outcomes. Though, mindful of the points on business premises made earlier, this point on data could extend beyond planning into the wider economic and social development arena though the development of an ongoing capacity for data and intelligence.

Several respondents also raised the potential for public service reform activity across the range of health, care and other human services to help make better inroads into inequality within the Combined Authority area.

The strategic capacity of the Combined Authority along with that of the other local authorities is an area where the Commission has found evidence of a real need for focus. As the County Council itself noted:

> *Timescales for bringing forward infrastructure projects are getting longer, restricting growth plans. Processes are becoming more complex due to a more risk averse regulatory environment. A review of planning processes, particularly relating to land and compulsory purchase powers and the possible devolution of call-in powers could assist in making schemes more efficient.*

The Commission also recognises that the Combined Authority currently has limited fiscal powers. Before the current Devolution Deal, there had been a number of attempts to secure greater devolution of powers and funding to the local area, with the City Deal for Greater Cambridge representing the most successful. However, there has been very limited progress towards genuine fiscal devolution, where greater control over tax revenues rests with the local area.

In the negotiations around the Cambridge City Deal, local partners (Cambridge City Council, South Cambridgeshire District Council, Cambridgeshire County Council, Cambridge University and the Local Enterprise Partnership) had argued for an arrangement which would have been underpinned by tax increment financing - so that a portion of the uplift in tax revenues created by the investments within the City Deal would have been retained locally to cover the costs of that investment. In the later part of the negotiations, Government decided against this approach and instead opted for what is essentially a grant system, with gateway reviews to test progress against plans before the next tranche of grant funding can be released.

Since the City Deal was agreed, the existing collaborative working between the local authorities, the business community and universities has strengthened and widened. Now, with the creation of the Combined Authority and the office of a directly-elected Mayor, there may be opportunities to make the case again for greater fiscal devolution so that more of the fruits of future growth are retained locally and harnessed to cover the costs of putting in place the enhanced infrastructure of all types that will be necessary to ensure the whole area can make the most of its potential. This is something the Commission will consider in its final report.

Towards The Final Report

3.1 Questions for further consultation

All of the work done so far has raised particular questions which the Commission would like to engage further with local business, residents, and authorities on, as well as any other interested stakeholders. These have been noted throughout the report. They are:

1. Does the three-area characterisation summarise the area well? Which links between the area have not been well captured? What are the most important links to outside the area?
2. How can the area achieve its target of doubling GVA in 25 years?
3. What will the likely impacts of Brexit be upon the area? How can the area best prepare for any changes this will bring? What local and national policy environment is likely to be conducive to this?
4. How can we create the conditions required for the development of sectors which will provide long term resilience for the local economy? What role should industrial policy play in this?
5. Where does the education system most need attention? How conducive is the wider environment (including early years schooling) to helping young people develop necessary skills?
6. What specialisms should the planned new university at Peterborough focus on?
7. Where can we see poor health outcomes affecting productivity? Which businesses are exemplars at improving health outcomes for employees? How can lower life expectancy outcomes be improved?
8. How much is lack of available premises hindering business growth? Similarly, is access to finance a significant problem?
9. How can Cambridge lose its unwanted accolade of being the most unequal city in the UK? How can we tackle inequality and deprivation across the Cambridgeshire and Peterborough area?
10. What are the main infrastructure priorities and why? What needs to come first to maintain economic growth and unlock future growth, from an economic and practical perspective?
11. What are the funding streams that can allow for ambitious development?
12. Where are limitations in the electricity supply and broadband provision hampering local growth?
13. How can the south of the area ensure its success doesn't come at a cost to local people in the form of unaffordable housing? What practical steps can central and local government take to improve housing supply across the area?

3.2 Next steps

The consultation on this interim report will remain open for a month after its launch. Comments, further evidence and other responses should be sent to the Commission at the following e-mail address: evidence@cpier.org.uk by Friday 8th June at the latest.

The C ommission will continue to meet through the spring and summer, considering the responses received, along with further evidence as it becomes available. A series of further consultation visits will be undertaken, and the report will be written in summer 2018. It will be launched as soon as possible following the summer holidays.

Appendices

Appendix 1

CALCULATION OF THE CA/BRES COMBINED MEASURE OF GROWTH IN CORPORATE EMPLOYMENT

To create the weighted measures, more weight was given to sectors where CBR were more confident in their figures, due to the in-depth knowledge of the corporate economy. This includes the five KI sectors, which are (according to BRES definitions): High-tech manufacturing, Life sciences manufacturing, ICT, R&D, and Knowledge intensive services. The first five non-KI sectors, where generally we trust CBR figures more are Primary, Other manufacturing, Property and construction, Utilities, and Publishing. The remaining ten, where we rely on BRES figures more are: Transport and travel, Wholesale distribution, Retail distribution, Hotels, pubs and restaurants, Other business services, Public services, Other Services, Education, Finance and professional services, and Health services.

This table shows the different employment weights given to different sectors according to BRES and CBR figures.

BRES COMPARISON	6YRS 2010-2016			
EMPLOYMENT GROWTH (% PA)	BRES DATA		CBR DATA	
	GROWTH	% WEIGHT	GROWTH	% WEIGHT
Cambridge				
5 KI sectors	3.6%	14.5%	5.3%	30.1%
First 5 non-KI sectors	0.0%	7.9%	-0.6%	10.8%
Last 10 non-KI sectors	2.3%	77.6%	3.6%	59.1%
Total Employment	**2.3%**	**100.0%**	**3.7%**	**100.0%**
South Cambridgeshire				
5 KI sectors	3.7%	28.2%	5.7%	46.5%
First 5 non-KI sectors	-2.5%	19.7%	5.5%	18.1%
Last 10 non-KI sectors	3.0%	52.1%	9.8%	35.3%
Total Employment	**2.2%**	**100.0%**	**7.2%**	**100.0%**
East Cambridgeshire				
5 KI sectors	3.1%	10.7%	4.2%	12.9%
First 5 non-KI sectors	2.0%	21.2%	4.9%	46.6%
Last 10 non-KI sectors	4.4%	68.1%	9.4%	40.5%
Total Employment	**3.8%**	**100.0%**	**6.8%**	**100.0%**
Huntingdonshire				
5 KI sectors	-1.0%	11.9%	4.0%	19.1%
First 5 non-KI sectors	2.1%	18.9%	4.2%	37.1%
Last 10 non-KI sectors	1.9%	69.2%	6.0%	43.8%
Total Employment	**1.7%**	**100.0%**	**5.0%**	**100.0%**
Peterborough				
5 KI sectors	-0.5%	10.4%	1.9%	24.9%
First 5 non-KI sectors	-1.5%	14.0%	9.3%	23.4%
Last 10 non-KI sectors	3.3%	75.7%	9.7%	51.7%
Total Employment	**2.3%**	**100.0%**	**7.9%**	**100.0%**
Fenland				
5 KI sectors	0.5%	4.7%	6.4%	7.4%
First 5 non-KI sectors	1.0%	27.9%	7.2%	48.7%
Last 10 non-KI sectors	3.4%	67.4%	6.0%	43.9%
Total Employment	**2.6%**	**100.0%**	**6.7%**	**100.0%**

Appendix 2

BUSINESS OVERVIEW OF EACH DISTRICT

CAMBRIDGE

KEY SECTORS

- Cambridge contributes 15.8% of total employment and 15.6% of total turnover in the Combined Authority.
- The largest share of employment is found in the Information Technology and Telecoms sector (22.8% of total employment in Cambridge and 44.7% of total employment in the sector for the Combined Authority).
- KI sectors constitute 38.1% of total employment in the area, the second highest figure after South Cambridgeshire (43.3%) and well above the Combined Authority (25.3%).
- Significant shares of turnover are observed in Information Technology and Telecoms (31.9% and 56.6%), High-Tech Manufacturing (20.6% and 24.7%) and Other Business Services (9.8% and 24.4%).
- There is particular concentration in the KI sectors, especially in Information Technology and Telecoms, and in Knowledge Intensive Services.
- Six-year employment growth in the district (5.6%) has been lower compared to the Combined Authority (6.7%).
- Employment growth for KI sectors in Cambridge (6.9%) has been remarkably higher than that for the Combined Authority (4.9%).
- Concentration has increased over time in Information Technology and Telecoms, Knowledge Intensive Services, and Life Science and Healthcare.

DISTRIBUTION OF EMPLOYMENT AND TURNOVER BY FIRM SIZE

- SMEs account for the largest share of employment in the district (42.0%), while over a third of employment is at large firms.
- Half of total turnover in Cambridge is accounted for by large firms, whilst turnover generated by SMEs represents around a third of total turnover in the district.
- Total employment growth in the area appears to be driven by the growth of large firms.
- All three groups of firms in Cambridge have witnessed lower employment growth rates relative to the Combined Authority.
- The fastest rates of growth in turnover are found among firms with more than 250 employees.

LARGEST COMPANIES

- Some of the largest companies that are based in Cambridge are found in the KI sectors, namely Information Technology and Telecoms (e.g. ARM LIMITED and AVEVA GROUP PLC), Life Science and Healthcare (e.g. CARL ZEISS LTD) and High-Tech Manufacturing (QUALCOMM TECHNOLOGIES INTERNATIONAL, LTD.).
- Key examples of companies that are active in the district include GLAXOSMITHKLINE PLC and ASTRAZENECA PLC (Life Science and Healthcare) as well as VODAFONE LIMITED and VIRGIN MEDIA LIMITED (Information Technology and Telecoms).

COMPARISON WITH BRES

- Total employment based on Cambridge Ahead data represents approximately 37% of total BRES employment.
- The largest differences between Cambridge Ahead and BRES employment estimates are found for Education (-17,812), Health Services (-14,016) and Retail Distribution (-8,332).
- Six-year employment growth is 5.6% based on Cambridge Ahead data and 2.3% according to BRES data.

EAST CAMBRIDGESHIRE

KEY SECTORS

- East Cambridgeshire contributes 9.8% of total employment and 7.6% of total turnover in the Combined Authority.
- The largest number of employees are in the Primary sector (25.6% of total employment in the district and 49.7% of total employment in the sector for the Combined Authority).
- The share of employment in KI sectors (10.5%) is the second lowest after Fenland (6.5%) and well below the average for the Combined Authority (25.3%).
- The greatest shares of turnover are generated in the Primary sector (24.3%) and in the Wholesale and Retail Distribution sector (21.9%).
- Employment LQs suggest that there is high concentration in the Primary sector, in the Transport and Travel sector, and in the Education, Arts, Charities, Social Care sector.
- Total employment in East Cambridgeshire has increased at a slightly higher rate compared to the Combined Authority (6.8% and 6.7%, respectively, for the six-year growth).
- Employment growth in the Primary sector (6.0%) has witnessed a higher rate relative to the Combined Authority (4.9%).
- The largest rates of growth in turnover are observed for Education, Arts, Charities, Social Care (32.5%), Other Services (16.0%), Construction and Utilities (11.6%) and Primary (7.8%).
- Concentration in terms of employment has increased over time in a number of non-KI sectors, including Education, Arts, Charities, Social Care, Primary and Other Services.

DISTRIBUTION OF EMPLOYMENT AND TURNOVER BY FIRM SIZE

- Large firms account for over half of total employment in the area, a figure that is considerably higher compared to the Combined Authority (46.8%).
- Over 47% of total turnover in the district is generated by the 14 firms with more than 250 employees that are based in the area, while SMEs contribute almost a third of total turnover.
- Employment growth for large firms (7.0% for the six years to 2016-17) appears to be the major driver of total employment growth in the district.
- Large firms in East Cambridgeshire have seen greater turnover growth (9.4%) than the average for the entire area (7.8%).

LARGEST COMPANIES

- The largest companies based in the district tend to be concentrated in non-KI sectors, namely Primary (e.g. G'S GROUP HOLDINGS LIMITED), Transport and Travel (e.g. TURNERS (SOHAM) HOLDINGS LIMITED) and Wholesale and Retail Distribution (e.g. GEORGE THURLOW AND SONS (HOLDINGS) LIMITED).
- Among the key sectors in terms of active companies are Manufacturing (e.g. WITTINGTON INVESTMENTS LIMITED), Wholesale and Retail Distribution (e.g. VOLKSWAGEN GROUP UNITED KINGDOM LIMITED) and Construction and Utilities (e.g. EUROPEAN METAL RECYCLING LIMITED).

COMPARISON WITH BRES

- Total employment based on Cambridge Ahead data represents around 75% of total BRES employment, the highest value among the six districts.
- The largest differences between Cambridge Ahead and BRES employment estimates are found for Primary (5,768), Other Business Services (-3,093) and Other Services (-2,052).
- Six-year employment growth is 6.8% based on Cambridge Ahead data and 3.8% according to BRES data.

FENLAND

KEY SECTORS

- Fenland contributes 5.2% of total employment and 4.9% of total turnover in the Combined Authority, the smallest contribution among the six districts.
- The largest share of employment is in the Primary sector (20.7% of total employment in the area and 21.6% of total employment for the sector in the Combined Authority).
- The share of employment in KI sectors (6.5%) is the lowest in the Combined Authority.
- The greatest contribution in terms of turnover comes from the Wholesale and Retail Distribution sector, which accounts for 31.5% of total turnover in Fenland.
- Employment in the district tends to be concentrated in the Primary sector, although relatively high concentration is also observed in Construction and Utilities, and Manufacturing.
- During the six years to 2016-17, total employment in the area has grown at the same rate of the Combined Authority (6.7%).
- High rates of growth in employment have been experienced by Construction and Utilities (13.2%) and Other Business Services (10.2%).
- Key sectors in terms of employment, such as Primary, Manufacturing, and Construction and Utilities, have had higher rates of growth compared to the Combined Authority.
- Six-year turnover growth in the district (5.4%) has been lower than that for the Combined Authority (6.7%), yet greater than that for Peterborough (2.6%).
- Relative concentration for employment has increased in a number of key sectors, namely Construction and Utilities, Manufacturing and Primary.

DISTRIBUTION OF EMPLOYMENT AND TURNOVER BY FIRM SIZE

- Over half of total employment in Fenland is concentrated in SMEs, while micro firms account for approximately 30% of total employment.
- The largest share of turnover in the area is originated by firms with 10-49 employees (28.2%).
- SMEs have exhibited the highest rates of employment growth in the district (8.4%) and have grown at a faster rate relative to the Combined Authority (6.0%).
- The highest rate of growth in turnover is reported for large firms (7.8%).

LARGEST COMPANIES

- Some of the key players based in Fenland are found in Wholesale and Retail Distribution (e.g. MM (UK) LIMITED), Primary (e.g. PRODUCE INVESTMENTS PLC and ALAN BARTLETT & SONS (CHATTERIS) LIMITED), Construction and Utilities (e.g. FOSTER PROPERTY MAINTENANCE LIMITED) and Manufacturing (e.g. LH HOLDINGS LIMITED and TRADELINK DIRECT LIMITED).
- Most of the largest companies active in the area belong to non-KI sectors, including Wholesale and Retail Distribution (e.g. PRINCES LIMITED and FARMFOODS LIMITED), Primary (e.g. AGGREGATE INDUSTRIES UK LIMITED), Construction and Utilities (e.g. BIFFA WASTE SERVICES LIMITED), Manufacturing (e.g. SMURFIT KAPPA UK LTD) and Transport and Travel (e.g. CEVA LOGISTICS LIMITED).

COMPARISON WITH BRES

- Total employment based on Cambridge Ahead data represents over a third of total BRES employment, the lowest value among the six districts.
- The largest differences between Cambridge Ahead and BRES estimates are found for Other Business Services (-3,620), Other Manufacturing (-3,557) and Health Services (-3,413).
- Six-year employment growth is 6.7% based on Cambridge Ahead data and 2.6% according to BRES data.

HUNTINGDONSHIRE

KEY SECTORS

- Huntingdonshire contributes 20.4% of total employment and 19.6% of total turnover in the Combined Authority.
- The largest sector in terms of employment is Other Business Services (19.4% of the total for the district and 29.4% of the total in the sector for the Combined Authority).
- KI sectors account for 17.3% of total employment in the area, significantly below the average for the Combined Authority (25.3%).
- The largest share of turnover is generated in the Manufacturing sector (23.7%).
- There is particular concentration in Construction and Utilities, Manufacturing and Other Business Services.
- During the six years to 2016-17, Huntingdonshire has witnessed a lower growth rate in total employment (5.0%) compared to the Combined Authority (6.7%).
- Among the fastest growing sectors based on employment are Education, Arts, Charities, Social Care (17.4%), Other Services (10.3%) and Wholesale and Retail Distribution (7.9%).
- Growth in employment for the KI sectors (3.3%) has been lower than the average for the Combined Authority (4.9%).
- The highest growth rates in turnover over the entire period can be seen for Education, Arts, Charities, Social Care (13.4%), Property and Finance (10.8%) and Other Services (10.1%).
- Relative concentration in employment has increased for Manufacturing, Education, Arts, Charities, Social Care, Wholesale and Retail Distribution, and Other Services.

DISTRIBUTION OF EMPLOYMENT AND TURNOVER BY FIRM SIZE

- Large firms contribute the largest share of employment in the district (42.4%), while employment at SMEs constitutes around one third of total employment.
- Almost half of total turnover in Huntingdonshire is originated by l large firms.
- The highest rates of employment growth are reported by SMEs (6.7% over the entire period), whereas more limited appears to be employment growth among large firms (3.3%).
- Micro firms have the highest rate of turnover growth in the district (7.7%).
- The lowest growth rate in turnover is observed for large firms (5.0%).

LARGEST COMPANIES

- Some of the largest Huntingdonshire-based companies operate in Construction and Utilities (e.g. OSPREY ACQUISITIONS LIMITED), Manufacturing (e.g. HILTON FOOD GROUP PLC), Other Business Services (e.g. RR DONNELLEY UK LIMITED), Life Science and Healthcare (e.g. ENVIGO CRS LIMITED) and High-Tech Manufacturing (e.g. BOSCH REXROTH LIMITED).
- Most of the largest companies active in the area are concentrated in non-KI sectors, including Other Business Services (e.g. SERCO GROUP PLC), Wholesale and Retail Distribution (e.g. WILKO RETAIL LIMITED), Property and Finance (e.g. ROYAL & SUN ALLIANCE INSURANCE PLC) and Construction and Utilities (e.g. SKANSKA UK PLC).

COMPARISON WITH BRES

- Total employment based on Cambridge Ahead data represents approximately 62% of total BRES employment.
- The largest differences between Cambridge Ahead and BRES employment estimates are found for Health Services (-8,464), Retail Distribution (-6,720) and Public Services (-4,493).
- Six-year employment growth is 5.0% based on Cambridge Ahead data and 1.7% according to BRES data.

PETERBOROUGH

KEY SECTORS

- Peterborough contributes 25.5% of total employment and 24.7% of total turnover in the Combined Authority, the greatest contribution in the area alongside South Cambridgeshire.
- Employment is particularly high in Property and Finance (27.9% of total employment in the district and 63.9% of total employment for the sector in the area), Other Business Services (18.2% and 34.6%) and Wholesale Total employment based on Cambridge Ahead data represents approximately 62% of total BRES employment.
- The largest differences between Cambridge Ahead and BRES employment estimates are found for Health Services (-8,464), Retail Distribution (-6,720) and Public Services (-4,493).
- Six-year employment growth is 5.0% based on Cambridge Ahead data and 1.7% according to BRES data.and Retail Distribution (10.8% and 26.6%).
- The largest KI sector is High-Tech Manufacturing, which accounts for almost a third of total employment for the sector in the Combined Authority.
- The largest sector based on turnover is Transport and Travel (27.1%).
- Employment is concentrated in several non-KI sectors, namely Property and Finance, and Other Business Services, as well as in some KI sectors such as High-Tech Manufacturing.
- Total employment growth in Peterborough over the six-year period (7.9%) has been the highest in the Combined Authority.
- The sector that has exhibited the largest growth in employment is Other Business Services (20.6%), followed by Property and Finance (11.8%).
- Peterborough has seen somewhat limited turnover growth over the entire period (2.6% as opposed to 6.7% in the Combined Authority).
- Concentration in terms of employment has increased in Other Business Services, Property and Finance, and Construction and Utilities.

DISTRIBUTION OF EMPLOYMENT AND TURNOVER BY FIRM SIZE

- Employment in Peterborough is concentrated among firms with more than 250 employees, which account for 65.1% of total employment in the district.
- The share of turnover generated by large firms (71.0%) is substantially higher relative to the Combined Authority (52.8%).
- Total employment growth is mostly driven by large firms, which have been growing at higher rates compared to the whole area (10.1% and 7.3%, respectively).
- Turnover growth for large firms has slowed down during the past three years (0.2%).

LARGEST COMPANIES

- Sectors where large Peterborough-based companies are represented are Transport and Travel (e.g. THOMAS COOK TOUR OPERATIONS LIMITED), High-Tech Manufacturing (e.g. PERKINS ENGINES COMPANY LIMITED), Property and Finance (e.g. BGL GROUP LIMITED and ALDERMORE BANK PLC), Wholesale and Retail Distribution (e.g. IDEAL SHOPPING DIRECT LIMITED) and Other Business Services (e.g. VITAL RECRUITMENT LIMITED).
- Two of the largest companies active in the district (i.e. SKY PLC and AMAZON UK SERVICES LTD.) operate in Information Technology and Telecoms, while other large companies are found in Other Business Services (e.g. TRAVELEX LIMITED), Property and Finance (e.g. RSA INSURANCE GROUP PLC) and Wholesale and Retail Distribution (e.g. IKEA LIMITED).

COMPARISON WITH BRES

- Total employment based on Cambridge Ahead data represents around 54% of total BRES employment.
- The largest differences between Cambridge Ahead and BRES estimates are found for Other Business Services (-12,087), Retail Distribution (-11,981) and Health Services (-11,506).
- Six-year employment growth is 7.9% based on Cambridge Ahead data and 2.3% according to BRES data, the largest difference among the six districts.

SOUTH CAMBRIDGESHIRE

KEY SECTORS

- South Cambridgeshire contributes 23.3% of total employment and 27.5% of total turnover in the Combined Authority, the highest contribution in the area alongside Peterborough.
- The largest sector in terms of employment is given by Life Science and Healthcare (15.9% of total employment in the district and 69.5% of total employment in the sector for the Combined Authority).
- Particularly high is employment in Biotechnology R&D (5,993) and in High-Tech Manufacturing – Life Sciences (2,193).
- Among non-KI sectors, employment is high in the Wholesale and Retail Distribution sector (12.7% and 28.4%).
- Turnover in the Life Science and Healthcare sector in South Cambridgeshire alone accounts for over 70% of total turnover in the sector for the Combined Authority.
- During the six years to 2016-17, total employment growth (7.5%) has been the second highest after Peterborough (7.9%) and greater than that for the Combined Authority (6.7%).
- The fastest growing KI sector based on employment is Information Technology and Telecoms (8.1%).
- Growth in turnover has been particularly high in Information Technology and Telecoms (10.5%) and Life Science and Healthcare (10.4%).
- Relative concentration in terms of employment for KI sectors has somewhat increased throughout the entire period.

DISTRIBUTION OF EMPLOYMENT AND TURNOVER BY FIRM SIZE

- Firms with more than 250 employees account for the largest share of employment in South Cambridgeshire (40.8%), while SMEs contribute over one third of total employment.
- The largest portion of turnover in the district is generated by large firms (48.6%), followed by SMEs (33.9%) and micro firms (17.5%).
- The highest six-year employment growth rates in the district are found among large firms (7.9%).
- Firms with more than 250 employees have seen the largest increase in turnover throughout the entire period (11.1%), substantially higher than that for the Combined Authority (7.8%).

LARGEST COMPANIES

- A number of the largest companies based in the district belong to High-Tech Manufacturing (e.g. Marshall of Cambridge and DOMINO UK LIMITED) and to Life Science and Healthcare (e.g. PPD GLOBAL LTD, NAPP PHARMACEUTICAL HOLDINGS LIMITED and ABCAM PLC).
- Some of the largest companies that are active in South Cambridgeshire are found in Information Technology and Telecoms (e.g. SONY INTERACTIVE ENTERTAINMENT EUROPE LIMITED and IBM UNITED KINGDOM LIMITED), Knowledge Intensive Services (e.g. INTERTEK GROUP PLC) and High-Tech Manufacturing (e.g. SPIRAX-SARCO ENGINEERING PLC).

COMPARISON WITH BRES

- Total employment based on Cambridge Ahead data represents approximately two thirds of total BRES employment.
- The largest differences between Cambridge Ahead and BRES employment estimates are found for Health Services (-7,252), Education (-3,525) and Retail Distribution (-3,374).
- Six-year employment growth is 7.5% based on Cambridge Ahead data and 2.2% according to BRES data.

Appendix 3

EMPLOYMENT LOCATION QUOTIENTS ACCORDING TO BRES DATA

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

EAST CAMBRIDGESHIRE	LQ (Comb. Auth. = 1)	LQ (LEP = 1)	LQ (GB = 1)
High-tech manufacturing	1.21	1.22	1.58
Life sciences manufacturing	0.65	0.60	0.68
ICT	0.51	0.68	0.61
R&D	0.14	0.23	0.94
Knowledge intensive services	1.08	1.31	1.52
Sub-total - KI sectors	**0.72**	**0.90**	**1.11**
Primary	2.10	1.73	0.31
Other manufacturing	1.34	1.01	1.37
Property and construction	1.52	1.28	1.28
Utilities	1.12	1.15	1.12
Publishing	0.97	1.37	2.41
Transport and travel	1.95	1.66	1.90
Wholesale distribution	1.04	0.89	1.06
Retail distribution	0.91	0.87	0.90
Hotels, pubs and restaurants	1.02	0.86	0.77
Other business services	1.00	1.06	1.03
Public services	0.49	0.51	0.39
Other Services	1.84	1.83	1.80
Education	0.86	0.97	1.04
Finance and professional services	0.54	0.58	0.36
Health services	0.56	0.58	0.52
Sub-total - Other sectors	**1.05**	**1.01**	**0.99**

FENLAND	LQ (Comb. Auth. = 1)	LQ (LEP = 1)	LQ (GB = 1)
High-tech manufacturing	0.59	0.60	0.78
Life sciences manufacturing	0.00	0.00	0.00
ICT	0.17	0.22	0.20
R&D	0.01	0.02	0.06
Knowledge intensive services	0.45	0.54	0.63
Sub-total - KI sectors	**0.29**	**0.36**	**0.45**
Primary	6.83	5.64	1.02
Other manufacturing	2.82	2.13	2.89
Property and construction	1.18	0.99	0.99
Utilities	0.75	0.77	0.76
Publishing	0.29	0.41	0.73
Transport and travel	1.59	1.35	1.55
Wholesale distribution	1.54	1.32	1.57
Retail distribution	0.99	0.95	0.99
Hotels, pubs and restaurants	0.83	0.70	0.63
Other business services	1.00	1.05	1.02
Public services	1.04	1.10	0.83
Other Services	0.71	0.71	0.70
Education	0.84	0.95	1.03
Finance and professional services	0.64	0.69	0.43
Health services	0.86	0.89	0.79
Sub-total - Other sectors	**1.12**	**1.08**	**1.06**

HUNTINGDONSHIRE	LQ (Comb. Auth. = 1)	LQ (LEP = 1)	LQ (GB = 1)
High-tech manufacturing	0.91	0.92	1.19
Life sciences manufacturing	0.39	0.36	0.41
ICT	0.77	1.03	0.92
R&D	0.11	0.17	0.72
Knowledge intensive services	1.02	1.22	1.42
Sub-total - KI sectors	**0.71**	**0.89**	**1.10**
Primary	0.55	0.45	0.08
Other manufacturing	1.80	1.36	1.84
Property and construction	1.23	1.03	1.03
Utilities	1.30	1.34	1.31
Publishing	0.45	0.63	1.12
Transport and travel	1.23	1.04	1.20
Wholesale distribution	1.26	1.09	1.29
Retail distribution	1.06	1.01	1.05
Hotels, pubs and restaurants	1.05	0.89	0.79
Other business services	0.88	0.93	0.91
Public services	1.71	1.80	1.36
Other Services	0.98	0.98	0.96
Education	0.56	0.63	0.68
Finance and professional services	0.61	0.65	0.41
Health services	1.05	1.09	0.97
Sub-total - Other sectors	**1.05**	**1.01**	**0.99**

PETERBOROUGH			
	LQ (Comb. Auth. = 1)	LQ (LEP = 1)	LQ (GB = 1)
High-tech manufacturing	1.10	1.11	1.43
Life sciences manufacturing	0.54	0.50	0.57
ICT	0.85	1.13	1.01
R&D	0.03	0.05	0.19
Knowledge intensive services	0.39	0.47	0.54
Sub-total - KI sectors	**0.61**	**0.77**	**0.95**
Primary	0.33	0.27	0.05
Other manufacturing	0.56	0.42	0.57
Property and construction	0.79	0.67	0.67
Utilities	1.40	1.44	1.41
Publishing	1.12	1.57	2.78
Transport and travel	1.14	0.97	1.12
Wholesale distribution	1.29	1.11	1.32
Retail distribution	1.34	1.29	1.34
Hotels, pubs and restaurants	0.83	0.71	0.63
Other business services	1.53	1.62	1.57
Public services	0.99	1.04	0.79
Other Services	0.90	0.90	0.88
Education	0.59	0.67	0.72
Finance and professional services	1.71	1.84	1.15
Health services	0.96	0.99	0.88
Sub-total - Other sectors	**1.06**	**1.03**	**1.01**

SOUTH CAMBRIDGESHIRE			
	LQ (Comb. Auth. = 1)	LQ (LEP = 1)	LQ (GB = 1)
High-tech manufacturing	1.90	1.92	2.49
Life sciences manufacturing	3.89	3.60	4.10
ICT	1.62	2.15	1.93
R&D	3.62	5.91	24.67
Knowledge intensive services	1.61	1.94	2.25
Sub-total - KI sectors	**2.15**	**2.69**	**3.32**
Primary	0.68	0.56	0.10
Other manufacturing	1.06	0.80	1.08
Property and construction	1.32	1.11	1.11
Utilities	0.53	0.54	0.53
Publishing	0.76	1.07	1.89
Transport and travel	0.77	0.66	0.75
Wholesale distribution	0.97	0.83	0.99
Retail distribution	0.61	0.59	0.61
Hotels, pubs and restaurants	0.80	0.68	0.60
Other business services	0.76	0.81	0.78
Public services	0.43	0.45	0.34
Other Services	0.72	0.72	0.70
Education	0.75	0.85	0.92
Finance and professional services	0.66	0.71	0.45
Health services	0.92	0.95	0.84
Sub-total - Other sectors	**0.81**	**0.78**	**0.76**

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