

Oxfordshire Councils

Oxfordshire Growth Needs Assessment

Covid-19 Impacts Addendum



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1 Introduction

The Oxfordshire Councils¹ have commissioned Cambridge Econometrics (CE) to prepare a Covid-19 Impacts Addendum to support the development of the Oxfordshire Growth Needs Assessment (OGNA).

The OGNA and its supporting documents will help to inform the preparation of the Oxfordshire Plan. The Oxfordshire Plan will be a Joint Statutory Spatial Plan which sets out a development strategy for growth across Oxfordshire to 2050.

1.1 Context and links to other work

The Oxfordshire Growth Needs Assessment (OGNA) was initiated in 2019 and carried out throughout 2020. The work fell into two complementary phases; the **Phase 1 Report** provides overall growth need figures for housing and employment in Oxfordshire to 2050. It profiles local housing market, demographic, economic and commercial property market dynamics, all within the strategic policy environment. These factors are then brought together to provide trajectories for future housing and employment land needs, and resultant high-level implications for commuting and affordability.

Following on from this, the **Phase 2 Report** considers a range of high-level scenarios for the distribution of housing and employment across Oxfordshire. The purpose of this is to aid decision-makers in understanding of the implications of alternative spatial choices. It does not seek to identify specific options or priorities for development, but rather explores the potential scale and implications of different approaches.

During the course of this work, it became clear that the Covid-19 pandemic could have significant, long-term impacts that may be relevant to the scope of the study, both in terms of the prospects of different sectors locally, the demand for housing within the county, and the interaction between housing and employment location and transport demand under conditions of remote work.

To reflect the emergence of the Covid-19 pandemic during the development of the OGNA, this short report - the **Covid-19 Impacts Addendum** - has therefore commissioned to sense-check, contextualise, and update the results of the *Phase 1* and *Phase 2 Reports* in light of these developments.

This report draws heavily on and supplements the extensive analysis and research undertaken for Oxfordshire LEP's **Economic Recovery Plan (ERP)**², which was produced by Steer ED in conjunction with CE over 2020-21.

Informed by extensive quantitative and qualitative evidence, the Plan provides an authoritative and independent assessment of how, and where, the Covid-

¹ The commissioning authorities comprise Cherwell District Council, Oxford City Council, South Oxfordshire District Council, Vale of White Horse District Council and West Oxfordshire District Council.

² The Economic Recovery Plan and its supporting documentation can be accessed from Oxfordshire LEP's website [here](#).

19 pandemic has affected the Oxfordshire economy, and outlines a formal and proactive plan of economic renewal for the Oxfordshire economy post-Covid.

Therefore, it is recommended that the analysis presented in this report is read alongside the other supporting documentation of the OGNA and the Oxfordshire ERP, given their interconnectedness. This report supplements, rather than duplicates, the extensive analysis presented in these supporting documents.

In addition, a stand-alone **Executive Summary**, which highlights and brings together the key observations and messages from the three respective reports, has also been produced.

1.2 This report

This report is structured as follows:

- *Chapter 2* provides an overview of the latest evidence and theory to understand the impact of the pandemic on the UK and Oxfordshire, and the future prospects of a switch towards remote working;
- *Chapter 3* appraises the robustness of the *Phase 1 Report* employment projections for Oxfordshire, assessed in light of the pandemic and its related trends, and finally;
- *Chapter 4* concludes with a discussion as to the long-term options for remote working and a qualitative appraisal of the implications for employment land, housing demand, and commuting patterns.

A summary conclusion and accompanying references and appendices can also be found at the end of the report.

2 Interpreting the OGNA in a post-Covid World: Theory and Evidence

2.1 Introduction

Analysis and forecasts presented in the Oxfordshire Economic Recovery Plan (ERP) show that, despite the extent of the economic shock associated with the Covid-19 pandemic, the Oxfordshire economy has the potential to rapidly recover, stabilise, and return to long-term trends, and at a much faster rate than comparator areas.

Resultantly, over a longer timeframe (i.e. the 2050 horizon of the Oxfordshire Plan), post-Covid *levels of growth* in Oxfordshire are not expected to appear substantially different from those suggested by the OGNA's economic trajectories, despite the latter predating the pandemic. The robustness of the OGNA trajectories are explored in greater detail in *Chapter 3*.

However, beyond just the short- and medium-term economic impact, the longer-term legacy of the pandemic has the potential to trigger and accelerate substantive economic, social and behavioural change in Oxfordshire and beyond; for instance, through the rise in remote working, changing patterns in residential and commercial demand, and shifting transport use.

There is the potential that as a result of these changes, the *composition and distribution of this growth* in 2050 may not be the same as that previously observed in the OGNA, e.g. housing need may shift to suburban and rural locations, demand for retail floorspace could decline in city centres.

However, given the pandemic is at an early and evolving stage, there is still an unprecedented amount of uncertainty when it comes to estimating the longer-term scale and impact of these changes, and whether their impacts are merely transitory or permanent.

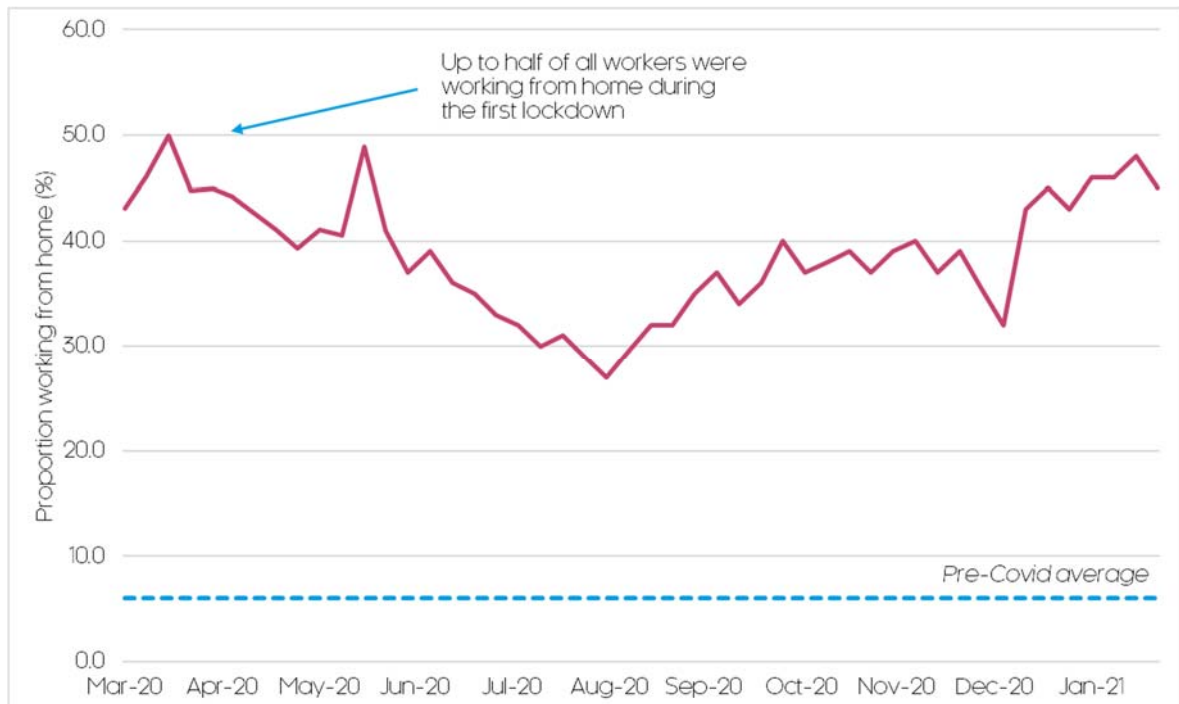
This chapter therefore seeks to understand the outlook of the OGNA and its themes within the context of a post-Covid world, drawing on the latest evidence, literature and theory to gauge the longer-term trends and implications, to inform a series of qualitative scenarios to 2050.

2.2 The pandemics legacy: a changing way of work

The Covid-19 pandemic, and associated 'lockdown' measures, have ushered in an unprecedented change in the way people work, almost overnight. As shown in Figure 2.2.1, at its peak in April 2020, half of the UK labour market was engaged in regular remote working ('working at home') in any given week, either exclusively or partially; pre-lockdown, the average share was only 6%.

This has largely been driven by Government advice for workers to avoid travelling to work and working from home where possible, to reduce virus transmission risks. This has in effect forced an enormous "natural experiment"³ upon the UK workforce, and for many, the transition has been relatively smooth, and popular.

³ Deloitte (2020), Home working and the future of cities

Figure 2.2.1: Homeworking trends during the pandemic

Source: ONS, Cambridge Econometrics. Note: data GB-wide.

For instance - as is explored in greater detail later in this chapter - workers have cited benefits including improved health, childcare benefits and a better work-life balance. Firms who were previously reluctant to allow or encourage remote working have been surprised by how productive and engaged their staff remained, and how well their systems have coped.

Yet with softening mobility restrictions over the Summer, there was a steady return to trend; by August 2020 for instance, more than two-thirds of workers were back to exclusively commuting to their workplace. Indeed, it is worth emphasizing that even during strict lockdown measures, the ONS found the majority of the workers were still reporting to have never worked from home.

The homeworking rate settled at around a third during Summer and early Autumn 2020, but continued to fluctuate throughout changing lockdown measures, approaching 50% share once more during the January 2021 lockdown, despite lighter mobility restrictions than the Spring 2020 lockdown.

The magnitude of these trends varies across areas, largely reflecting sectoral and occupational mix (which informs remote working potential). As shown in Figure 2.2.3⁴, it is estimated that – given its favourable sectoral and occupational structure – over 4 in 10 (43%) Oxfordshire jobs can be easily done from home, a higher proportion than regional and national averages (39% and 38% respectively).

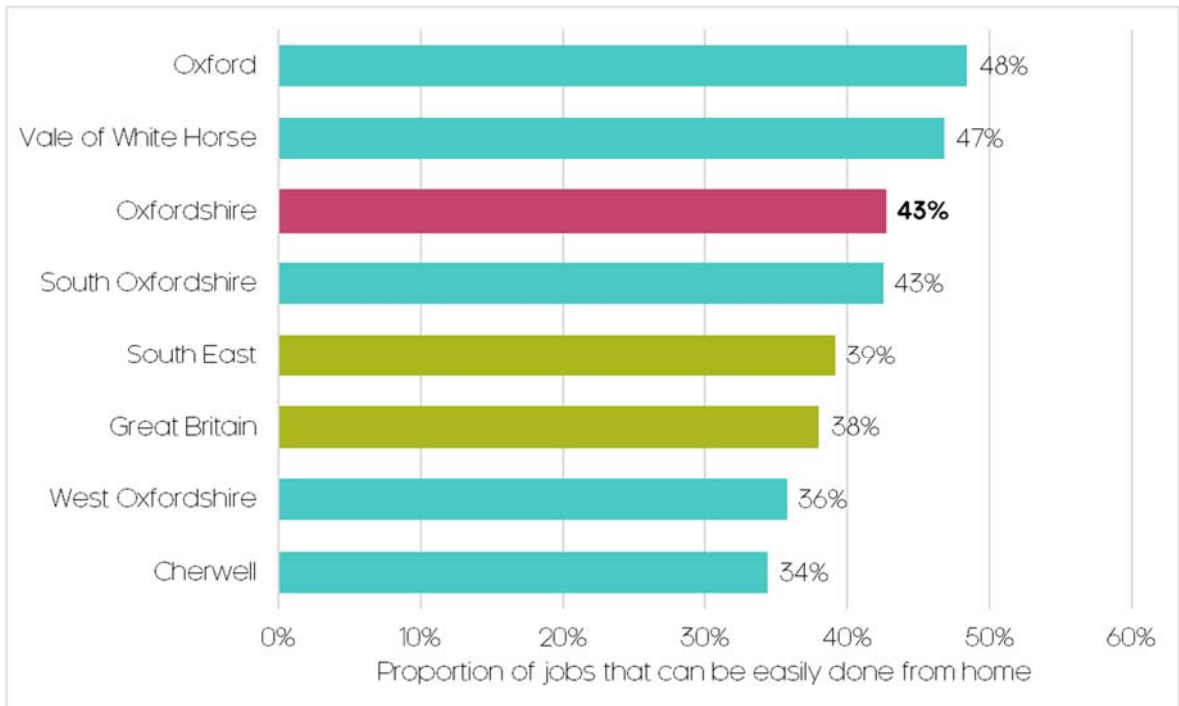
According to the Centre for Cities, Oxford has some of the highest home working potential in the country; almost half of its jobs, it concluded, “could be more easily done from home”.⁵ Vale of White Horse and South Oxfordshire also saw rates well in excess of the national average. Cherwell and West Oxfordshire however saw notably lower rates of homeworking potential,

⁴ Results adapted from research by; Dingel & Neiman (2020), How Many Jobs Can be Done at Home?

⁵ Centre for Cities (2020), How will Coronavirus affect jobs in different parts of the country?

reflecting their sectoral and occupational structure (e.g. only 4% of jobs in accommodation and food and 14% in retail can be easily done from home).

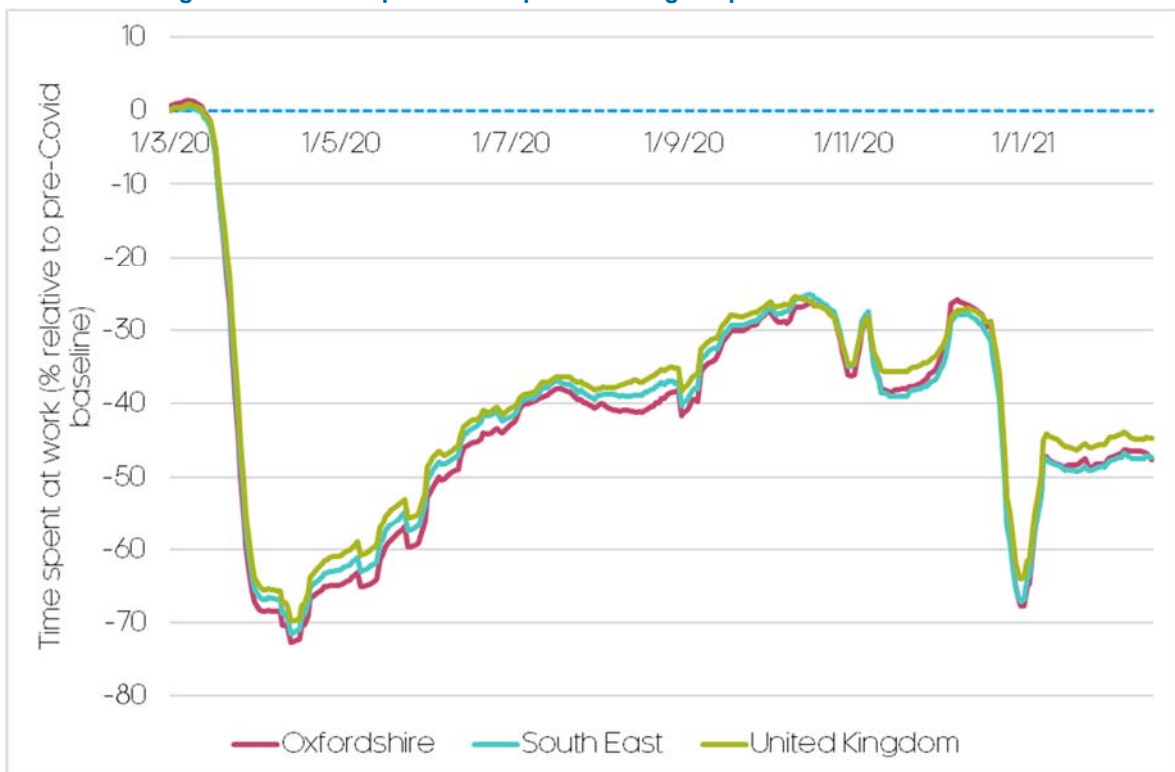
Figure 2.2.3: Homeworking potential across Oxfordshire



Source: Dingel & Neiman (2020), ONS, Cambridge Econometrics.

As a result of this high homeworking potential, as Figure 2.2.2 adapted from the ERP shows, relative to the national and regional average, Oxfordshire’s workers have been spending much less time at their workplace and more time at home, indicating that remote working has indeed flourished in the local

Figure 2.2.2: Time spent at workplaces during the pandemic



Source: Google, Cambridge Econometrics. Note: 7-day rolling average

labour market. In fact, at its peak during the first lockdown, workers in Oxfordshire were spending in excess of 70% less time at work.

Even when the pandemic abates and people are able to return to their place of work – which appears increasingly likely to be in the short-term given positive vaccine progress, of which the Oxfordshire life sciences cluster has played a critical role - it is likely some element of remote working will remain, and at multiples of its pre-Covid levels.

Of course, it should be noted that remote working and associated flexible ways of working (such as half days, split roles, reduced hours etc.) were present and growing pre-Covid. The pandemic has not prompted anything new in this regard, and CE's previous econometric forecasts have factored in technological change and changing homeworking potential (as a result of occupational change).

However, it has ensured that a profound change that may have taken decades to come to fruition has been accelerated in a matter of weeks. This has been facilitated by an unprecedented amount of innovative adaption and adoption by firms by both firms and employees.

And most importantly, compared with the other well-publicised effects of the pandemic – such as worklessness and job losses, reduced incomes and investment, and subdued demand – there is the potential for this trend to persist over a longer timeframe, and have a greater legacy on local economies.

Given the OGNA looks to a 2050 horizon, it is important that any longer-term trends are therefore given due consideration.

2.3 A changing way of work: outlook to 2050

Though the short-term trends and implications of this shift in working are clear to see, there is still a large amount of uncertainty regarding how this will be sustained and what the longer-term impacts might look like.

Undoubtedly, this will largely be dependent on how durable and widespread the shift to remote working turns out to be. Surveys of workers and businesses suggest increased remote working is likely to persist, albeit not on the same scale, whilst the pattern may be inconsistent across sectors and firms.

For instance, around a fifth of businesses say they intend to use remote working as a permanent business model, whilst employee surveys suggest more than a quarter expect to spend more time working from home, with 3 days in the office, two at home (a hybrid '3-2 model') emerging as the most preferred approach.⁶ A BBC survey of 50 of the biggest UK employers also showed that almost half did not have any plans to return workers to the office – in the short term at least.⁷

Yet this outlook varies across and within firms. Google and Amazon, leading proponents of remote working, also acknowledge the majority of employees would prefer to return to the office, whilst the latter has still confirmed take up of 900,000 sq. ft of office space, citing the lack of spontaneity in virtual

⁶ Bank of England (2020), Andy Haldane's Autumn Lecture

⁷ BBC (2020), No plan for a return to the office for millions of staff

teamwork.^{8 9} Away from the UK, a return to trend was also more evident; in France 83% of office staff were back over the Summer of 2020, and three quarters in Spain, Italy and Germany.¹⁰

There are also wider considerations which may affect longer-term trends and durability, including the social aspects of work, and issues associated with the ability to train and develop staff which may influence dynamics in the medium- and longer-term. Concern has also been expressed over employee welfare surveys which have noted increased remote working ‘fatigue’ and ‘burnout’ in recent months.¹¹

Academics have also queried the longer-term impacts of remote working, in particular that relating to wellbeing and welfare, inequality, productivity and innovation, with some notable and well-evidenced concerns over negative effects.¹² Such factors could cause firms and workers to readdress remote working overtime, and may already be evident in the weakening appeal of a full-time shift; a recent Deloitte survey found fewer than 5% of respondents wanted to work entirely from home post-pandemic.¹³

Beyond surveys, technical analysis has also acknowledged the potential longevity of remote working. McKinsey, through a cross-referencing exercise of occupations expected to grow by 2050 with occupations that are able to be performed remotely, suggest that the proportion of workers able to work remotely will grow steadily between now and 2050.¹⁴

2.4 Demography and housing post-Covid

Depending on the scale and longevity of the Covid-accelerated shift in working patterns, the implications for demography and housing in local areas could be profound.

The sudden and successful transition to remote working for a large number of occupations over the pandemic infers such roles could – in theory – be performed anywhere, regardless of the employer’s location (once accounting for the necessary inputs – e.g. digital infrastructure - of course).

Likewise, even with the softening of lockdown restrictions over Summer 2020, many workers have continued to work remotely, even if only part-time, as – even if involuntarily – employers have become more receptive to flexible working arrangements, sweeping away the pre-Covid notion of ‘presenteeism’.

Resultantly, a worker’s proximity to their workplace may no longer be the overriding factor in determining where a person lives. The longstanding principle of “Marchetti’s constant”, which theorizes the average worker will reside within ~30 minutes commuting distance of their workplace, could weaken (or even break completely for those working remotely full time).

⁸ Google (2020), Googlegeist Annual Workplace Survey

⁹ WSJ (2020), Amazon bets on office based work with expansion in major cities

¹⁰ The Guardian (2020), UK office workers slower to return to their desk after Covid

¹¹ Monster (2020), Overworked

¹² Economics Observatory (2020), Who can work home and how does it affect their productivity

¹³ Deloitte (2020), Home working and the future of cities

¹⁴ McKinsey (2020), What’s next for remote work: An analysis of 2,000 tasks, 800 jobs, and nine countries

Naturally, this could have implications for how workers consider their utility of and need for housing. With proximity to work de-prioritised, if factored in at all, workers will likely consider and re-prioritise other, non-employment factors, including:

- **Affordability:** for some workers, particularly those in large, economically successful cities (such as London), housing costs can be substantial relative to wages. With a decreased emphasis on proximity to work, workers may seek better value and more affordable housing elsewhere (even when accounting for increased commuting costs, in terms of both time and money).
- **Space:** even at this early stage, post-Covid housing markets have been driven by a ‘race for space’.¹⁵ Ongoing restrictions and increased remote working have resulted in a preference for larger, flexible living spaces or properties with a spare room. For some, gardens and home offices have shifted from being not just desirable but essential. Unsurprisingly, this has seen demand spike in rural and suburban areas, where such properties are more prevalent, and also where pandemic risks generally are lower. In contrast, the market for flats in city centre locations has weakened.
- **Wider amenities:** schools, parkland and greenspace, leisure, recreation and culture all contribute to the wider amenity value of an area and have long been an important factor in where people chose to live (and how much they are willing to pay). With workplace proximity no longer a priority, people will have greater freedom to locate in areas that offer the greatest amenity value. Importantly, how people value amenity could adapt and shift post-Covid (e.g. greater emphasis on green and open spaces, less on crowded bars and restaurants).
- **Inertia:** if firms become increasingly open to the idea of hiring workers from across the UK or beyond with no obligation of relocation, then workers may increasingly simply stay where they are. There are significant benefits to remaining where they are settled, close to family, friends and social networks, and if they have them, the workplaces and schools of their partners and children. For new graduate workers, this may mean they increasingly remaining in university towns or cities.

Even at this early stage, such factors have already been observed impacting local housing markets. For instance, in the UK, Rightmove has seen a doubling in searches for homes in small towns and villages (with populations less than 10,000 people),¹⁶ as prospective buyers seek additional space and lower costs in such areas.

They have also reported a significant rise in the number of people searching for homes further from town and city centres, with larger gardens and space for a home office.¹⁷ In the US, consumers have also acted quickly and have been observed prioritising “more space, quieter neighbourhoods, home

¹⁵ BBC (2020), House prices rise as Covid sparks rural relocation

¹⁶ BBC (2020), Lockdown city living 'wasn't the best idea'

¹⁷ BBC (2020), House prices rise as Covid sparks rural relocation

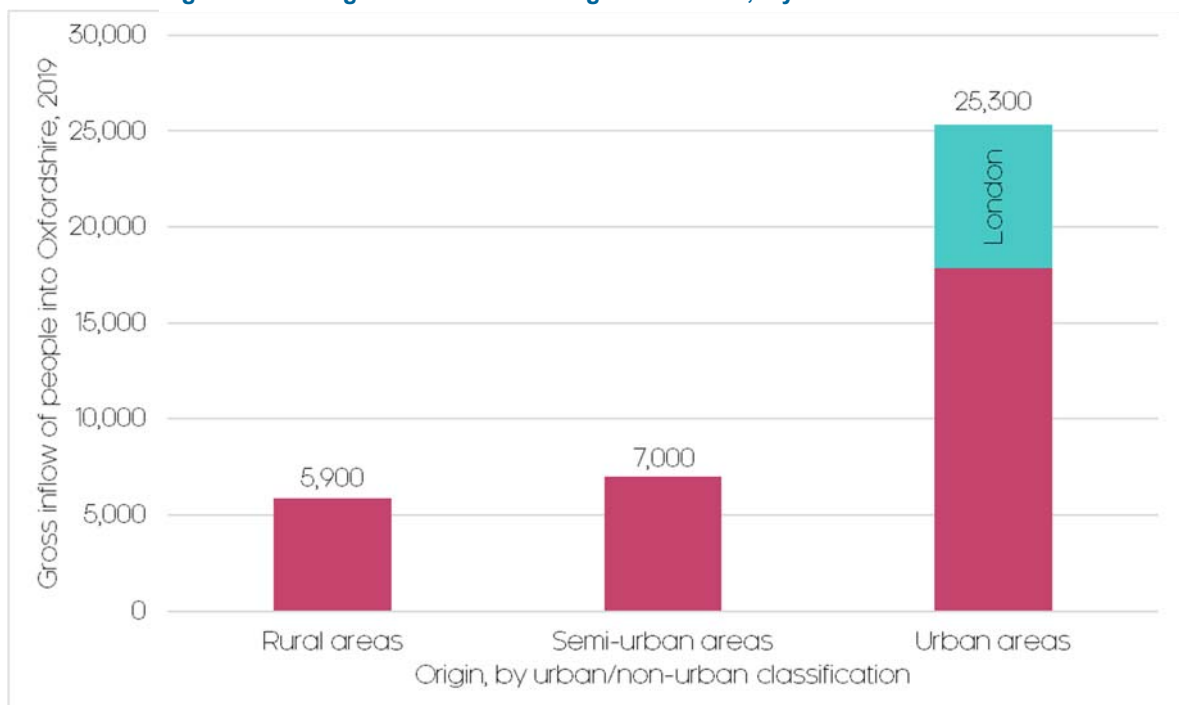
offices, newer kitchens and access to the outdoors, traits which have revived a strong interest in the suburbs and smaller metro areas.”¹⁸

Whilst declining rents and vacant stock have been evident in notoriously competitive and high-cost cities such as London, New York and San Francisco, “bidding wars are breaking out in suburbs and smaller cities as remote workers seek less harried, less expensive lifestyles and homes with a room that can serve as an office or gym.”¹⁹ Nationwide reported over 40% of Londoners are moving or have considered doing so because of the pandemic.

However, there is the potential for Oxfordshire’s housing market to be, if not already, an attractive proposition for those readdressing their living situation post-Covid, including from households moving out of London to seek greater space and willing to undertake longer commutes (e.g. from 60 to up to 90 minutes) in return for more space and an attractive environment.

For instance, Oxfordshire is already an established destination for residents moving away from large urban centres. As Figure 2.4.1 shows, in the 12 months to June 2019, some 25,300 people arrived in Oxfordshire from urban areas within England, with a particularly established inflow from London, which accounted for almost a third (7,500) of these moves.

Figure 2.4.1: Origin of Oxfordshire migrants in 2019, by urban/non-urban classification



Source: ONS, Cambridge Econometrics.

Oxfordshire’s housing market is also particularly well suited to a potential post-Covid shift in demand. For example, detached and semi-detached properties – which given space and amenity benefits have proven increasingly desirable post-Covid – accounted for 65% of pre-Covid residential sales in Oxfordshire, well above the national average of 55%.

In addition, EPC data shows homes in Oxfordshire typically have more space than elsewhere in the country, with an average floor area of 108 m², 8% larger

¹⁸ Hechinger Report (2020), Pandemic speeds up influx of remote workers to small cities

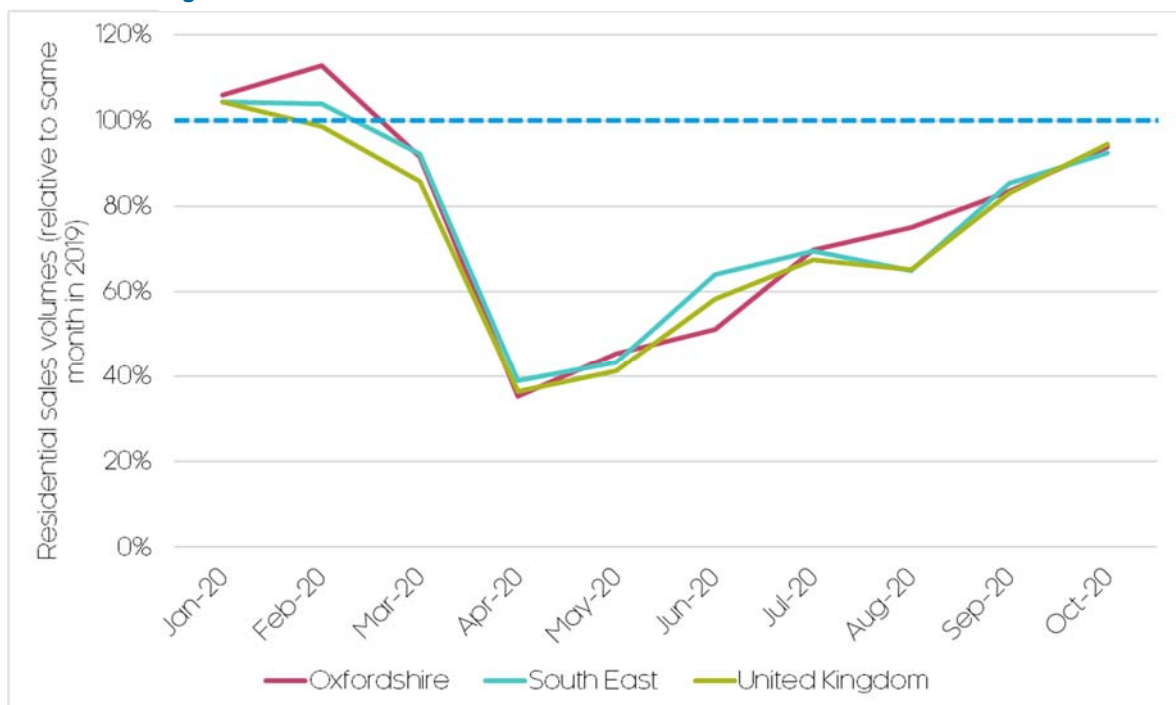
¹⁹ Forbes (2020), Covid-19 has changed the housing market forever

than the national average of 100 m². Accompanying garden space is also more generous, with Oxfordshire properties having on average 300 m² of private garden, 14% bigger than the national average of 262 m².

And combined with this is Oxfordshire’s already high amenity values; high house prices in the county relative to wages suggest that theoretically “local amenity benefits are substantial”.²⁰ This includes, for instance, the number of quality schools in Oxfordshire, the prevalence of greenspace, good connectivity, and existing cultural and recreational assets.

However, early sales data provides limited evidence of above-average interest in Oxfordshire’s housing market post-Covid. Figure 2.4.2 shows monthly sales volumes in 2020 indexed to same month in 2019; after an effective ‘shutdown’ during lockdown (with volumes down 60% on pre-Covid levels), sales recovered strongly in Oxfordshire during the Summer, though this increase was in line with the regional and national averages.

Figure 2.4.2: Residential sales volumes in 2020 relative to the same month in 2019



Source: ONS, Cambridge Econometrics. Note: a value of 100% would mean the same sales volume as the accompanying month in 2019.

Sales were somewhat more stable in Oxfordshire moving into the Autumn, yet were still running 6% lower than the previous year. Within Oxfordshire, only in Oxford and South Oxfordshire did sales volumes recover faster than the national average.

There has however been a sharp appreciation in house prices in Oxfordshire, largely a result of the Stamp Duty ‘holiday’; the 7% rise between January and October 2020 exceeded both the 6% increase nationally, and the 1% rise over the same period in 2019, with the average sale price peaking at a record £375,600 in October 2020.

²⁰ SERC Discussion Paper (2011), Real Earnings Disparities in Britain

Of course, at the subnational level, it is difficult to disaggregate short- and longer-term trends in prices and sale volumes. The housing market has clearly been supported by a surge in households seeking to move in part (if not exclusively) to benefit from the temporary Stamp Duty ‘holiday’ introduced by Government to support the market.

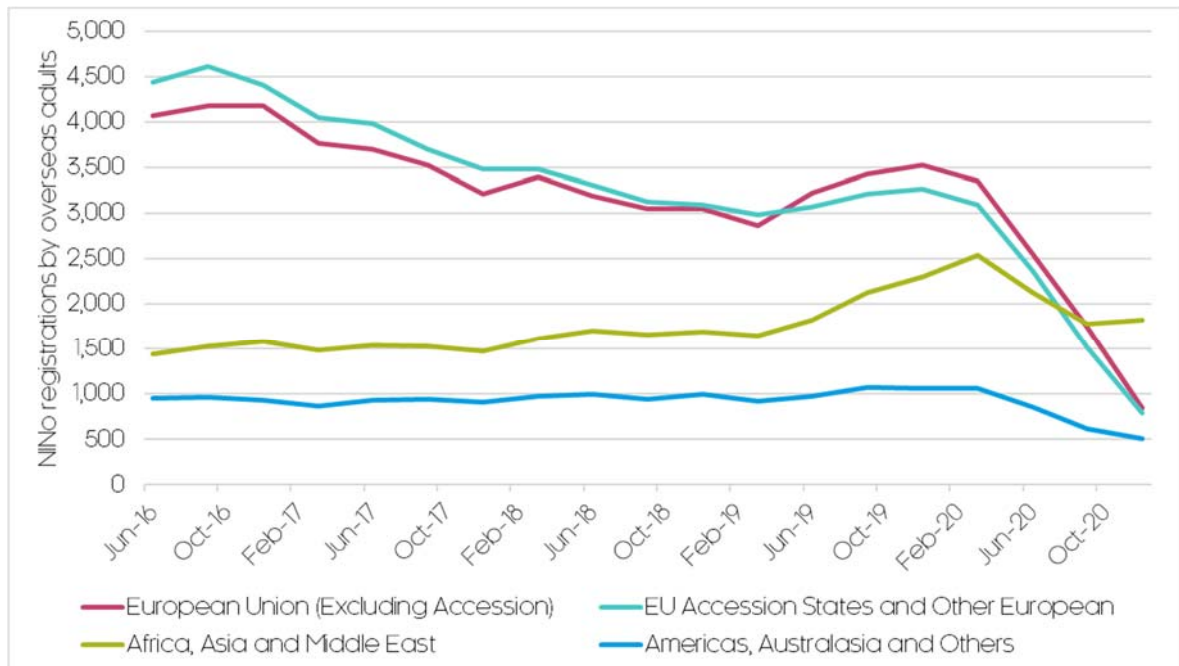
Housing market dynamics could however evolve through 2021, as buying conditions return closer to normal. Indeed, it should be emphasised that the market and its drivers over recent months represents only a very small part of the longer-term trajectory to 2050, especially when accounting for a period with restricted volumes and a bias to the higher-price end of the market.²¹

Such trends will likely ease or could even dissipate over the longer-term, though it is expected they will persist in some form as long as the model of remote working remains durable, if only for certain sectors.

It is also important to note that, though property prices and tastes move and adapt quickly, the response in respect of housing supply (i.e. new housing delivery) is more slowly influenced by the time associated with the planning process and construction. Therefore, any substantial, large-scale changes to population and accompanying housing supply are probably unlikely as a result of the Covid-induced change in property tastes, particularly in the short to medium-term.

In addition to the housing market, a more direct demographic change has been observed as a result of the pandemic. The reduction and relocation of working opportunities throughout 2020, attributable to both the pandemic and Brexit, has seen a significant decline in overseas labour staying and arriving in Oxfordshire. As Figure 2.4.3 shows, National Insurance Number (NINo)

Figure 2.4.3: NINo registrations in Oxfordshire



Source: DWP, Cambridge Econometrics. Note: quarterly values are for the preceding 12-months, not each individual quarter. NINo = National Insurance number

²¹ HMRC data shows “higher priced properties have seen a stronger recovery in transaction numbers than those under £500,000.” See: Built Place (2021), Weekly Summary: 5th February 2021

registrations to overseas adults have dropped substantially; after a peaking at 10,000 registrations in March 2020, by December, registrations were running at less than half this rate.

A sharp decline in registrations from European nationals (both EU and non-EU) accounted for more than three-quarters of this drop. Though the assumptions for the OGNA modelling accounted for a decline in net-migration, particularly as a result of Brexit, this was not to the sharp and sudden scale observed since the pandemic. As labour market conditions improve from 2021-onwards, it is likely such labour will return to the UK, and registrations will pick up again. The short-term impact could be notable though, particularly in the rental market and sectors reliant on non-UK employment.²²

2.5 Sectors and employment land needs post-Covid

The ERP showed that few sectors will be immune to the shock associated with the Covid-19 pandemic, though it is anticipated the brunt of the impact will be concentrated in a handful of sectors. In particular, those unable to shift operations to remote working, those susceptible to demand-absorbing social distancing restrictions, and those at risk of changing behavioural attitudes post-Covid, will shoulder the greatest burden short-term.

Analysis by the Centre for Cities (adapted in Figure 2.5.1) shows the Oxfordshire economy has a notably lower incidence of jobs in ‘vulnerable’ and ‘very vulnerable’ sectors - these are activities that are expected to experience a discernible and lasting impact from the pandemic, such as tourism (i.e. accommodation and food service), transport (notably automotive and aviation), leisure, and some retail.

Figure 2.5.1: Proportion of pre-Covid (2019) jobs in very vulnerable or vulnerable sectors



Source: Centre for Cities, ONS, Cambridge Econometrics.

²² Financial Times (2021), Coronavirus sparks exodus of foreign-born people from UK

In fact, Oxford was ranked as having the lowest share of such jobs in the country, and resultantly is “expected to bounce back more quickly” than cities elsewhere in the country.²³

Such proportions still equate to a significant number of jobs though, some 85,800 in Oxfordshire.

And the incidence varies within the county; Cherwell and West Oxfordshire are notably overrepresented with such activities, reflecting their local sectoral mix – for instance, almost half (43%) of the 53,700 tourism, retail and leisure jobs in Oxfordshire are located in these two districts.

Short-term, such vulnerable sectors have been highly reliant on furlough and financial support. Longer-term though there is the potential for deeper sectoral scarring and hysteresis related to the Covid crisis, particularly as support unwinds and sectors are unable to adapt and return to trend as others.

Importantly, beyond the wider economic and social implications noted in the ERP – such as the fact job and pay losses will disproportionately impact the young, low-paid and those on flexible contracts - from the perspective of the OGNA, this could also have implications for both the longer-term scale and distribution of employment land needs.

As of March 2020, 1.2 million m² of retail floorspace was present in Oxfordshire, 18% of total non-residential floorspace. Pre-Covid, despite well-publicised challenges (including falling footfall, the shift to online shopping, and high premises costs), the retail market was comparatively buoyant in Oxfordshire, with the Centre for Cities reporting Oxford’s high street vacancy rate (8%) as amongst the lowest in the country, and above-average footfall.

Some of these pre-Covid trends, such as the shift to online retail and associated distribution, was incorporated into the original OGNA floorspace modelling. Yet there is the potential for the pandemic to accelerate and shift additional headwinds against the sector, both directly and indirectly.

For instance, online shopping has surged during the pandemic - almost a quarter of retail spend in Oxford now takes place online²⁴- whilst footfall, largely a result of enforced restrictions, has plummeted, with Oxford the fifth hardest hit city in the UK for footfall loss²⁵ - in part impacted by its dependency on tourism spend.

One of the legacies of the pandemic will likely be an acceleration of the proportion of retail spend online, particularly if people spend more time at home through remote working. Many firms have already adapted their business models and systems to cope with such demand. This will impact on the scale of physical retail floorspace needed, whilst jobs in these terms may shift away from stores towards distribution networks and warehousing.

In fact, freight and logistics demand has proven buoyant, and commercial road transport volumes were already eclipsing pre-Covid levels by Autumn 2020. Resultantly, Rightmove has reported a record number of enquiries for

²³ Centre for Cities (2020), What does the Covid-19 crisis mean for the economies of British cities and large towns?

²⁴ Centre for Cities (2020), How have coronavirus and lockdown impacted online shopping in cities?

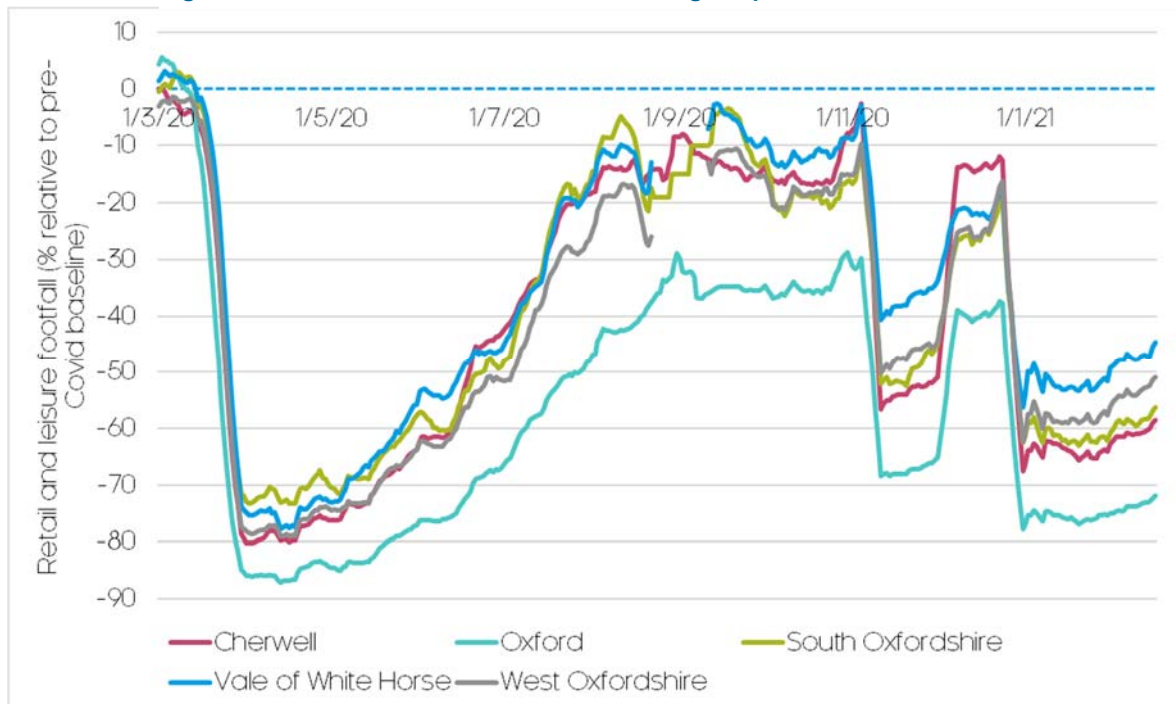
²⁵ Centre for Cities (2020), High streets recovery tracker

industrial and warehousing property, with the South East region leading this surge in interest.²⁶ Yet the same report also found enquiries for retail outlets are still higher than their pre-Covid average.

It is therefore likely that, rather than a wholesale decline, different retail centres will be affected in different ways. For instance, footfall and spending that hasn't moved online has also been observed shifting spatially, moving away from large city centres to suburbs and smaller towns, closer to where people live (particularly for convenience and food and drink-related vendors, encompassing the commute/office worker reliant 'Pret economy'²⁷).

This is demonstrated in Figure 2.5.2, where footfall has been hardest hit and slowest to recover in Oxford (which saw a close to 90% decline in footfall during the first lockdown), whilst there has been an improved performance in suburban and rural districts, where some smaller and market towns have flourished. Over Summer 2020, many of these areas experienced footfall similar to pre-Covid levels.

Figure 2.5.2: Footfall across Oxfordshire during the pandemic



Source: Google, Cambridge Econometrics. Note: 7-day rolling average.

Alongside this, and indeed contributing to challenging high street conditions, is the risk exposed to the demand for office space as a result of the shift to remote working. As of March 2020, there was just over 1.1 million m² of office floorspace present in Oxfordshire, and as with retail the local market had been relatively buoyant pre-Covid, with 136,000 additional m² of floorspace delivered over the past five years.

With the pandemic and associated lockdown measures though, offices across the county have been left at reduced capacity (or closed) as production and staff moved online. The reaction of the market has been swift; commercial

²⁶ Yahoo Finance (2021), Demand for warehouses skyrockets as retailers adapt to online sales amid COVID-19

²⁷ Financial Times (2020), Goodbye to the 'Pret economy' and good luck to whatever replaces it

leases were down 60% in the first nine months of the year, according to Jones Lang LaSalle,²⁸ whilst Central London office values have already been observed falling by 10%.²⁹

There is uncertainty however as to the extent the effects of the pandemic will persist over the timeframe to 2050. Already, some of the initial outlooks, including the ‘death of the office’ narrative,³⁰ appear overly pessimistic. For instance, in the same report, rather than a wholesale decline, Jones Lang LaSalle has observed an initial diversion in the market, with demand and rents rising for new offices, yet declining for older and second-hand space.

Likewise, a group of large US firms surveyed over 2020 predicted zero change in their future demand for space,³¹ whilst Amazon has confirmed it will continue with one of the largest corporate office expansion programmes on record. KPMG reported by Spring 2021 many major employers were already scrapping plans to cut back on office space, given positive vaccine progress.³² Theoretical analysis has also shown that under a hybrid model of remote working “total demand [for office space] might be the same or higher.”³³

Regardless of the trajectory, previous analysis has shown commercial property markets can be highly adaptable to shocks and sudden changes in local values and needs,³⁴ in particular, through the change of use of land and premises. Such factors have contributed to stable real rents, even in highly competitive cities such as London.

Post-Covid, the sector may demonstrate this adaptability by focussing development around local service centres (e.g., retail and food, exploiting the footfall shift seen in Figure 2.5.2), distributed shared office space or city centre collaboration hubs (to enhance social and interaction benefits in a remote working future), and also the opportunities around the repurposing of city centre space (be it to residential, leisure, R&D, cultural etc.).

Alongside this, there are a myriad of other factors which may interact to shape office demand moving forward, including potential changes to office densities associated with social distancing, and changes to national policies in this area, including the introduction of Class E which includes office and retail space under a single use class facilitating change of use, and the potential impacts of new permitted development rights on the reduction of office space (particularly for second hand and lower-grade offices).

2.6 Commuting and transport post-Covid

As with demography and housing, depending on the scale and durability of the Covid-accelerated shift in working patterns, the implications for commuting could be similarly profound.

²⁸ Bloomberg (2020), Only the best London offices thrive in an emerging Covid divide

²⁹ Bloomberg (2020), Central London office values seen falling by 10 on Covid impact

³⁰ Financial Times (2020), ‘Death of the office’ exaggerated despite homeworking boom

³¹ NBER (2020), Surveying Business Uncertainty

³² Reuters (2021), Major employers scrap plans to cut back on offices - KPMG

³³ Economics Observatory (2020), Will coronavirus cause a big city exodus?

³⁴ BBC (2020), Coronavirus may have huge impact on property markets

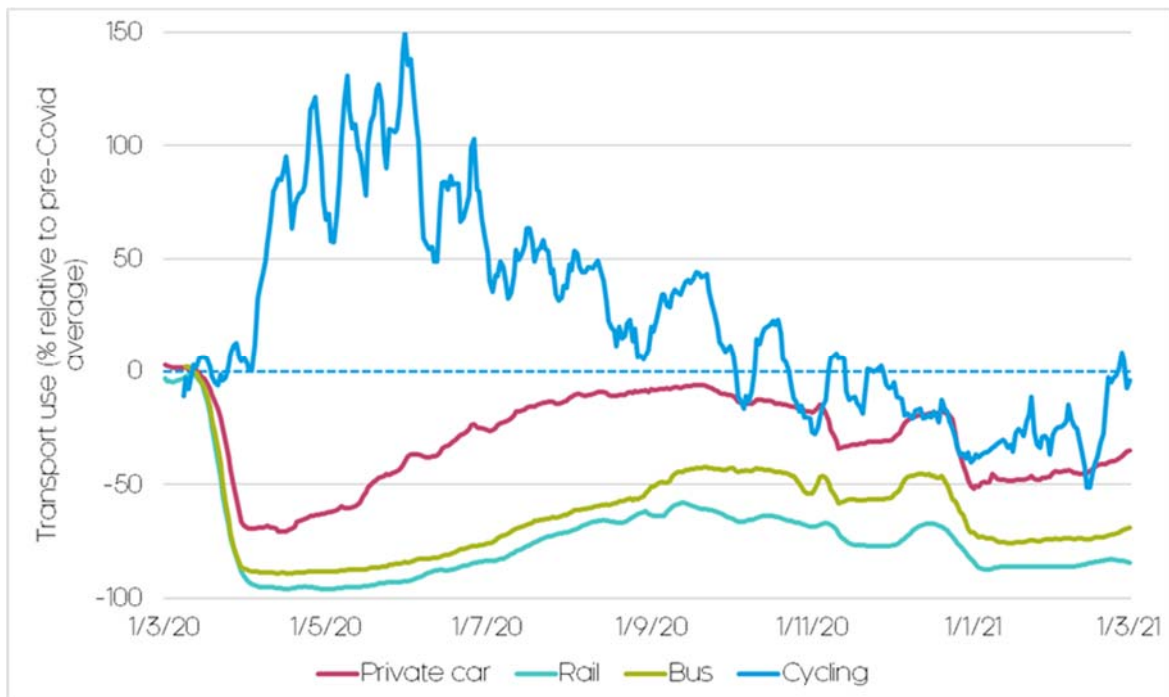
In 2018, an estimated 381,000 people regularly commuted within Oxfordshire for work, many by private means of transport (primarily car), but a large share also by public transport (bus and rail in particular) and active travel (walking or cycling). Notably, over the past decade, people have been prepared to travel longer and further to work in Oxfordshire, increasing reliance on private travel.

Since the Covid-19 pandemic, a substantial, unprecedented change has been observed. In fact, one of the most visual impacts of the pandemic has been the sudden and relatively sustained decline in commuting, largely a result of the shift to remote working, but also to some extent the behavioural response to pandemic risks associated with commuting (especially public transport).

As Figure 2.6.1 shows, across Great Britain transport use ground to an effective halt during the first lockdown, reflecting the ‘stay-at-home’ advice for all but essential workers during this time. Moving into the Summer, and with the loosening of restrictions, there was some return to trend, though less so for public transport (notably rail and bus) which barely eclipsed 50% capacity at its peak in September and has since tailed off again.

Those that have had to travel for work during the pandemic have increasingly prioritized private transport, which had almost recovered to pre-Covid levels by Autumn 2020, though it has since eased off given the reimposition of ‘stay-at-home’ advice in early 2021. Active travel, specifically cycling, has been one of the beneficiaries of reduced road volumes and short-term route improvements, though this started to decline moving into Winter 2020, actually falling below pre-Covid levels.

Figure 2.6.1: Modal transport use since the pandemic



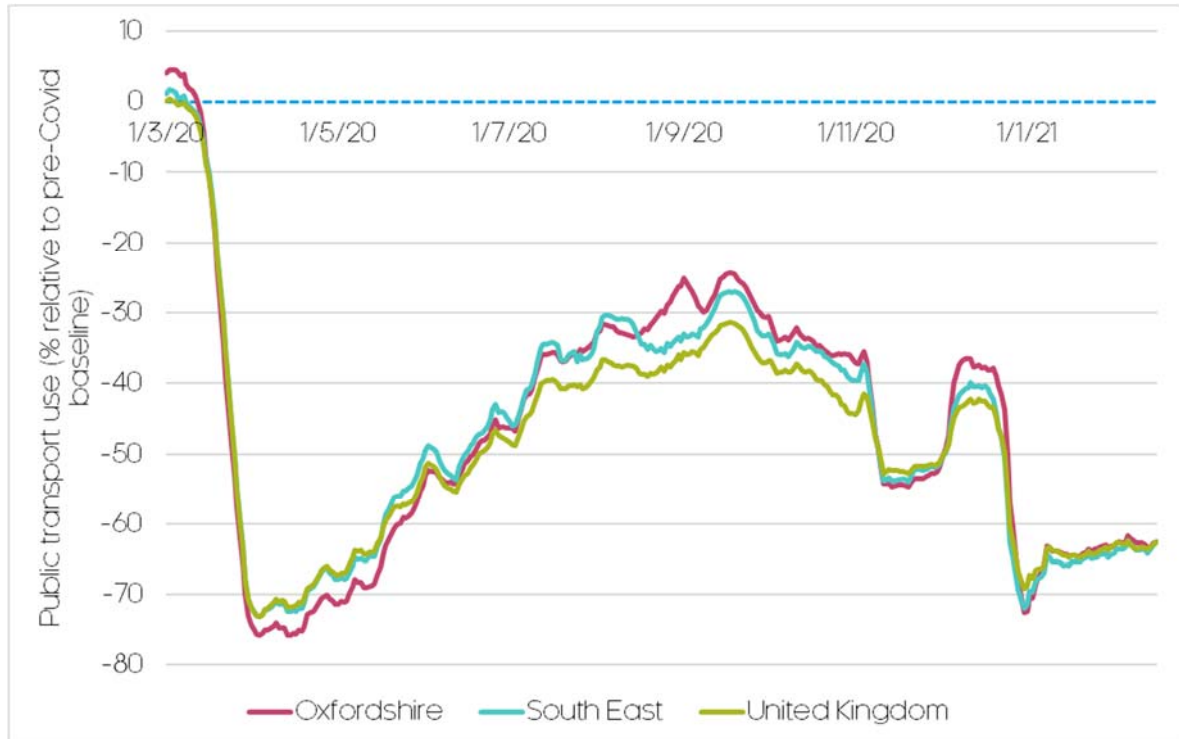
Source: DfT, Cambridge Econometrics. Note: 7-day rolling average.

Within Oxfordshire, residents have been much more successful in avoiding the daily commute than elsewhere in the country; at its peak, workplace visits in the county were 73% lower than its pre-Covid baseline. Though this rate settled at around 30-40% in Autumn 2020, prior to the second national lockdown, it has consistently remained below the national benchmark. In

contrast, time spent at home has soared by 20-30%, reflecting the shift to remote working.

Resultantly, as Figure 2.6.2 shows, this had a substantial effect on public transport use in Oxfordshire; the initial 76% drop in use during the first lockdown was larger than the regional and national averages (both 73%). Interestingly, use recovered faster in Oxfordshire than elsewhere and started to exceed the national average but has declined again since re-entering lockdown over Winter 2020-21.

Figure 2.6.2: Public transport use during the pandemic



Source: Google, Cambridge Econometrics. Note: 7-day rolling average.

The longer-term implications of the pandemic for public transport could be significant. Beyond the direct economic impact in terms of commuting revenues – e.g. for bus and rail companies, and automotive-related sales and servicing, which account for some 16,900 jobs in Oxfordshire - there are also broader economic implications associated with this shift in commuting, given the wider commercial ecosystem that is dependent on and has been built around places of work and commuting.

Some of this has been observed already. For instance, across cities in the UK there has been a reduction in city centre footfall and spending, impacting 'Pret economy' vendors, and a displacement towards suburbs and smaller towns, as home-working residents shop closer to home. As explored previously, this has also been evident in Oxfordshire, with a much stronger footfall recovery away from Oxford city centre.

The longer-term outlook for commuting, as with other Covid-related behavioural changes, is dependent on the robustness and popularity of remote working as a future model for work. There is the potential for both commuting patterns to change, as well as how many days a week commuters travel.

Indeed, given that commuting is both costly and demanding for many workers – in well-being studies, commuting ranks just after death and divorce for unhappiness, whilst longer commutes correlate with higher blood pressure and obesity³⁵ – the opportunity to reduce this burden has made it widely popular, and could contribute to remote working's longevity.

And the implications of a durable, sustained shift away from the daily commute could be significant; even just a hybrid model of remote working could lead to a substantial decline in total commuting levels, lifting thousands of private vehicle trips (as well their associated costs, such as emissions, congestion and accidents) off of Oxfordshire's roads.

For instance, assuming the 27% reduction in private vehicle use throughout 2020 equates to a similar drop in private vehicle trips, there could be some 22 million less private vehicle trips ending in Oxfordshire during 2020 relative to its peak in 2018 (when 80 million private trips ended in the county). This would have the potential to lift some 225 million vehicle miles off of Oxfordshire's roads, and their associated externalities (pollution, noise, congestion etc.)

2.7 Summary

Drawing on the latest theory and evidence, this chapter has sought to gauge the potential legacy of the pandemic, particularly in terms of matters associated with the thematic areas identified in the OGNA.

Many of the trends observed were to some extent already in place and were likely to be significant by 2050 anyway; rather than changing the direction of travel, the pandemic has accelerated these trends, whilst, crucially, bringing them to the attention of a wider social, business, and political audience.

Some of the short-term impacts of the pandemic have undoubtedly been significant in terms of the OGNA, and may be felt for several years to come. However, it is difficult to gauge whether they will still have a discernible legacy or impact in 2050.

The following chapter proceeds to consider the longer-term robustness of the OGNA's original economic trajectories, drawing on updated forecasts and evidence incorporating the impact of the pandemic and the trends analysed in this chapter.

³⁵ BBC (2016), What your commute looks like

3 Evaluating the post-Covid Robustness of the OGNA Economic Trajectories

3.1 Introduction

This chapter considers the longer-term robustness of the OGNA’s economic trajectories in light of the Covid-19 pandemic and its potential economic impact and legacy, which was explored in the previous chapter.

The economic trajectories form an important foundation for many of the observations and conclusions in the OGNA, particularly those relating to the scale and distribution of housing and employment needs to 2050. Therefore, evaluating their validity post-Covid is an important part of understanding and setting the OGNA within the context of a post-Covid world.

3.2 Background to the OGNA Economic Trajectories

The OGNA, which started development in 2019, is intended to provide an integrated evidence base to help the Oxfordshire Councils identify the appropriate levels and distributions of housing and employment over the period to 2050.

The OGNA reviewed the Government’s National Planning Policy Framework and the associated Planning Practice Guidance, which sets out a “Standard Method” for calculating the minimum local housing need, taking projected household growth and then applying an upward adjustment to improve affordability based on the median house price-to-income ratio.

However, a review of the existing evidence - including recent economic performance, the strategic policy context, and alternative econometric assumptions - suggested that the particular economic characteristics and wider strategic context of Oxfordshire are such that additional consideration is required through the process of developing the Oxfordshire Plan of the compatibility of the Standard Method of housing need assessment with wider strategic growth potential for the sub-region over the long run, or whether significant differences exist.

Resultantly, the OGNA modelled three alternative economic trajectories to 2050 to consider potential housing and employment land need:

- **Standard Method (adjusted) trajectory:** backwards calculated from the Standard Method calculation of housing need, with an adjustment for a revised demographic baseline.
- **Business as usual trajectory:** representing a continuation of Oxfordshire’s recent economic performance, taking particular account of the robust growth delivered during the recovery from the 2008-09 recession.
- **Transformational trajectory:** broadly the equivalent of the Oxfordshire Local Industrial Strategy’s (LIS) aspirational “*go for growth*” scenario, but updated and adjusted to 2020.

The trajectories recognise that the national planning policies outline that the Standard Method is a minimum, is based on current data, and that national

planning practice guidance identifies circumstances where housing need may be above that shown by the Standard Method.

To produce these local economic trajectories, CE utilised forecasts from the bespoke Local Economy Forecasting Model (LEFM) component of its macroeconomic Multi-Sectoral Dynamic Model (MDM-E3) of the UK economy. As a consequence, the local area forecasts for Oxfordshire were consistent with CE’s macroeconomic forecasts for the whole of the UK economy at that time (late 2019, thus predating the Covid-19 pandemic).

3.3 Summary of the OGNA Economic Trajectories

The results of the three economic trajectories, shown in terms of total employment (i.e. job numbers), are presented in Figure 3.3.1 and Table 3.3.1 below. They present alternative visions of how the Oxfordshire’s economy might have performed under a pre-Covid context.

Figure 3.3.1: OGNA economic (jobs) trajectories to 2050

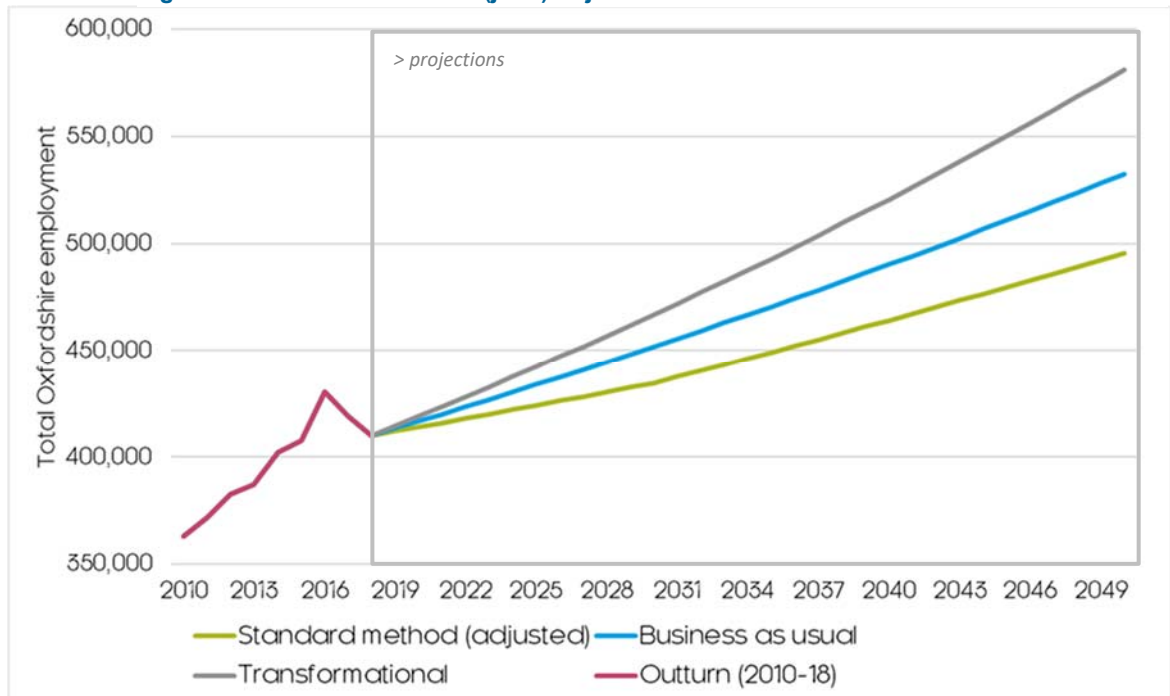


Table 3.3.1: OGNA economic (jobs) trajectories to 2050

	Jobs at 2018 (baseline)	Jobs at 2050	Jobs growth, 2018-2050	Jobs growth per annum, 2018-2050
Standard Method (adjusted) economic trajectory	410,000	495,600	85,500	2,700
Business as usual economic trajectory	410,000	532,500	122,500	3,800
Transformational economic trajectory	410,000	581,300	171,200	5,400

Source: ONS, Cambridge Econometrics.

The Standard Method (adjusted) trajectory showed net additional employment growth of 85,000 between 2018-50, modelling the level of economic activity that could be expected to be supported by delivery of housing in line with the Standard Method calculations (using the adjusted baseline demographic assumptions).

The business as usual trajectory models a continuation of Oxfordshire’s robust pre-Covid growth pattern. This showed employment growth of 122,000 over the period to 2050. At this pace of growth, Oxfordshire was expected to have continued along its past high-growth trajectory, as outlined in its 2014 SMHA and SEP, and achieved some of its LIS-related ambitions.

The highest scenario, the transformational trajectory, modelled the equivalent of delivering many of the aspirations set out in the Oxfordshire LIS Strategy, and would see employment growth of 171,000 jobs over the period to 2050. The Oxfordshire LIS set out a vision for Oxfordshire as one of the top three global innovation systems by 2040.

From these trajectories, the OGNA also modelled the corresponding level of housing provision that might be needed to support these levels of growth, taking account in particular of changes in the age structure of the population and the proportion of people of different ages in work. The implications for employment land and floorspace was also considered. The results for both of these are summarised in Table 3.3.2.

Table 3.3.2: OGNA housing (dwellings) and employment land needs to 2050

	Total housing need, 2020-50	Total employment land (ha) need, 2020-50
Standard Method (adjusted) economic trajectory	101,600	445
Business as usual economic trajectory	123,400	555
Transformational economic trajectory	152,800	807

Source: Cambridge Econometrics, Justin Gardener Consulting, Iceni.

3.4 Evaluating their post-Covid robustness

Given that the OGNA’s economic trajectories were informed by pre-Covid modelling assumptions and data (specifically, Summer 2019), they did not capture and account for the impact of the Covid-19 pandemic on economic activity.

A key element of appraising the robustness of the modelling results will be understanding the ability and speed at which the Oxfordshire economy is able to recover and return to trend, as this will determine the probability of whether it can adapt and continue along its pre-Covid trajectory to 2050, or indeed exceed it, as per the transformational scenario outlined above.

As observed in the ERP, relative to previous recessions, the shock associated with the Covid-19 pandemic is novel; an unprecedented short-term shock to output, but a lighter and sectorally uneven employment effect. There is the potential for a rapid recovery, particularly on the labour market side, which could result in a much faster return to trend compared to previous shocks.

Combined with this is Oxfordshire’s intrinsic resilience and adaptability to economic shocks. As Table 3.4.1 shows, Oxfordshire’s resistance to economic shocks has generally been stronger than the wider UK economy, and it is expected to show greater resilience to Covid-19 pandemic relative to the wider UK economy.

Table 3.4.1: Oxfordshire’s previous recession and recovery performance (GVA growth ratio, relative to the UK average)

Oxfordshire relative to UK	Actual data							Covid-19 forecast	
	1975-79	1979-81	1981-90	1990-91	1991-07	2007-09	2009-19	2019-20	2020-30
	Recovery	Recession	Recovery	Recession	Recovery	Recession	Recovery	Recession	Recovery
	0.1	0.3	0.3	-1.5	0.2	1.0	0.2	0.3	0.4

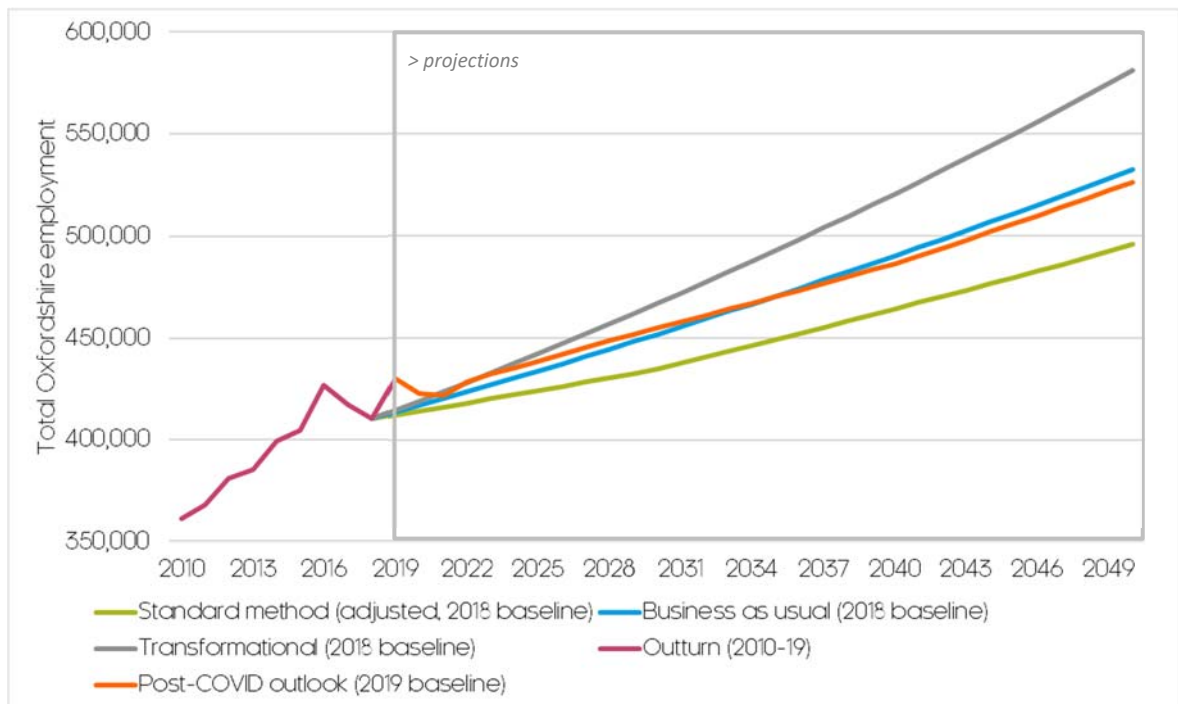
Source: ONS, Cambridge Econometrics. Note: Ratio calculated as Oxfordshire’s recovery/recession performance (GVA growth, in percentage terms) relative to the UK average.

Of particular interest, though, is the ability of the Oxfordshire economy to rapidly recover, stabilise, and return to long-term trends. In fact, following every recession over the past 50 years, the Oxfordshire economy has recovered much more quickly than the UK average, and in some cases, has even exceeded pre-recession trend growth.

For instance, during the recovery from the 2007-09 recession – the deepest economic contraction in the county since the 1970s - Oxfordshire emerged as the third fastest growing economy in the country (ranked out of 38 Local Enterprise Partnership areas). This has enabled Oxfordshire to establish and maintain a strong performance advantage relative to the rest of the country.

With these observations in mind, Figure 3.4.1 and Table 3.4.2 consider Oxfordshire’s revised central economic trajectory – incorporating the impact of the Covid-19 pandemic (‘post-Covid’), as well as the UK’s departure from the EU - and how this compares with the original OGNA results. Note that the results have been rebased to their respective forecast baselines, to allow for comparability across different forecast baselines, data and assumptions.³⁶

Figure 3.4.1: Oxfordshire’s post-Covid outlook to 2050, relative to the OGNA trajectories



Source: Oxfordshire ERP, ONS, Cambridge Econometrics.

³⁶ The baseline is 2018 for the OGNA and 2019 for the ERP. It should also be emphasised that both forecasts were developed within the same modelling framework. More information on modelling approach and assumptions can be found in *Appendix A: Post-Covid Forecast Methodology*.

Table 3.4.2: Oxfordshire’s post-Covid outlook to 2050, relative to the OGNA trajectories

	Jobs, baseline	Jobs, 2050	Jobs growth, baseline-2050	Jobs growth per annum, baseline-2050
Post-Covid outlook (2019 baseline)	430,100	526,500	96,400	3,100
Standard Method (adjusted, 2018 baseline) trajectory	410,100	495,600	85,500	2,700
Business as usual (2018 baseline) trajectory	410,100	532,500	122,500	3,800
Transformational (2018 baseline) trajectory	410,100	581,300	171,200	5,300

Source: Oxfordshire ERP, ONS, Cambridge Econometrics.

The first thing to note under the post-Covid forecast is that the additional year of historic data now available (to 2019, represented by the pink ‘outturn’ line) shows the Oxfordshire economy grew particularly strongly in the lead-up to the pandemic, creating approximately 20,000 net additional jobs over 2018-19, reversing the easing of employment growth seen since 2016 (which was possibly attributable to post-Brexit uncertainty and employment shifting).

In fact, shortly before the pandemic in 2019, there was estimated to have been a record 430,300 jobs in Oxfordshire. Unsurprisingly, the expected contraction in employment over 2020-21 – which could result in a potential 8,000 permanent job losses (represented by the orange line) – brings a sudden halt and reversal to this robust growth, pulling trend employment growth down.

However, this contraction is smaller than both national and regional averages, and the Oxfordshire labour market is expected to recover quickly, eclipsing pre-Covid employment levels by 2023 (a year earlier than the rest of the country).

By the latter half of the 2020’s, employment growth will have settled at its pre-crisis trend, broadly in line with the business as usual trajectory (its approximate growth path over the past decade – the light blue line), and once more outpacing the national average.

Business as usual trajectory

Most notably, by the 2030’s the post-Covid trend starts to closely track that of the business as usual trajectory – the central trajectory from the OGNA modelling - and by 2050, the two expect similar employment totals for Oxfordshire; approximately 533,000 under the post-Covid forecast, and 527,000 under the business as usual trajectory, with the small shortfall of 6,000 jobs largely attributable to the longer-term scarring of the pandemic.

This shows that, despite the contrasting context, under a consistent modelling approach there is still a broad alignment on Oxfordshire’s fundamental characteristics and medium to longer-term growth prospects. Of course, given the nature of the shock, the shape of the trajectories remains different, but this should not detract from the longer-term consistency in the results.

This is reasonable given the timeframe being considered, and on the understanding that historical trends take into account previous recessionary and recovery periods. Of course, the uncertainty of the forecasts heighten the further they look further into the future, but even in the short-medium term (where the data is more robust), the pandemic has not substantially altered Oxfordshire growth outlook.

**Standard Method
(adjusted)
trajectory**

Post-Covid trend employment growth is still expected to exceed that of the Standard Method (adjusted) trajectory (the green line). Converted from the Standard Method of housing need, the OGNA considers this trajectory as the ‘minimum’ level of growth Oxfordshire should aim for.

Though this trajectory could appear conservative in a post-Covid context, it offers a realistic lower bound and the potential for a more pessimistic outlook (such as ongoing/additional restrictions 2021 onwards, or a subdued recovery). And being informed by a government framework (the Standard Method), the underlying methodology remains robust.

**Transformational
trajectory**

The transformational trajectory (the grey line), which assumes the realisation of LIS-related interventions and delivery, remains ambitious, requiring an uplift of over 50,000 additional jobs on the post-Covid trajectory.

The shock of the Covid crisis could make this more challenging to deliver, especially given any diversion of policy and resources (which many LIS interventions are reliant on). For instance, Government has already suggested LIS’ may no longer be the basis for future local funding and interventions post-Covid.³⁷

However, it should be emphasised that much of this additional growth was targeted in high-innovation LIS “breakthrough sectors.” Many of these have remained largely unaffected or have even accelerated growth plans under the pandemic, most notably life sciences and health – with the Oxfordshire cluster at the forefront of the global pursuit of a vaccine – digital and IT services.

In fact, research adapted from the Centre for Cities shows some 130,000 jobs (34% of total jobs) in Oxfordshire are in sectors unaffected or experiencing higher demand from the pandemic. If Oxfordshire is able to exploit its global comparative advantage in such sectors in a post-Covid world, this transformational level of growth could remain within reach.

3.5 Summary

Overall, it does not appear the longer-term robustness of the OGNA’s economic trajectories has been significantly weakened or invalidated in light of the Covid-19 pandemic based on current projections, with broad agreement critically on Oxfordshire’s destination in 2050 (not least when accounting for the margins of error that accompany such forecasting exercises).

Given Oxfordshire’s intrinsic resilience and recoverability to economic shocks, it is expected the short-run impact from the pandemic will be less pronounced in Oxfordshire, whilst Oxfordshire’s recovery will also outperform the national average, resulting in a smaller shortfall relative to pre-Covid trends.

The business as usual trajectory remains the central outlook for the Oxfordshire economy, whilst the Standard Method (adjusted) and transformational trajectories represent realistic upper and lower bounds. A consistent modelling approach has been taken across the three trajectories, whilst underlying methodologies remain sound and have not been invalidated by the further assessment in this report.

³⁷ Local Government Chronicle (2021), Concern over apparent shelving of local industrial strategies

This should not however understate the significant impact of the pandemic on economic activity, and its potential longer-term legacy. Though pre- and post-Covid levels of growth may converge, the economic, social and behavioural legacy of the pandemic could well change what this growth looks like and means for Oxfordshire, as observed in the previous chapter.

However, significant uncertainty still exists as to the durability and impact of these trends over a longer timeframe. To address this, credible contrasting scenarios have been developed to appraise the potential implications of post-Covid trends for the observations and conclusions of the OGNA. These are considered in the following chapter.

4 Interpreting the OGNA in a post-Covid World: Behavioural Scenarios to 2050

4.1 Introduction

Given the uncertainty and lack of consensus over the longer-term embeddedness and trajectory of remote working, the following analysis considers three contrasting, qualitative scenarios looking at the longer-term implications of the Covid-induced behavioural change in working patterns, and what this means for some of the observations and conclusions in the OGNA.

As explored previously, the trend of remote working is likely to have a discernible and lasting impact on the thematic areas considered in the OGNA, particularly those relating to:

- demography and housing (e.g. by changing the attractiveness of urban living, or people revising their need to reside close to work);
- sectors and employment land needs (e.g. by shifting/reducing demand for retail, leisure and office space, or accelerating the shift to online shopping), and;
- commuting and transport (e.g. by shifting/reducing the volume, mode and distance of commuting trips).

Most importantly, compared with the other well-publicised effects of the pandemic, there is the potential the remote working trend and accompanying behavioural changes to persist over a longer timeframe, and have a greater legacy on local economies.

The behavioural scenarios have been informed by and build on the theory and evidence presented in the previous chapters. They are intended to be high level and indicative only.

Accompanying probabilities or projections have not been calculated, however, the scenarios do broadly relate to and will be informed by the success of the response to the pandemic over the coming months (in particular, the speed and efficiency with which a vaccine can be deployed).

It should be emphasised that efforts to determine the long-term effects of the Covid-19 pandemic (both quantitatively and qualitatively) on national and local economies are uncertain and indicative at this moment in time. The following analysis should therefore be regarded as such.

4.2 The scenarios

Scenario 1: a 'relative' return to normal

Even under the most optimistic outlooks, a swift and seamless return to pre-Covid working norms appears unlikely, especially given many businesses and workers will experience at least a year of remote working arrangements, even if under 'forced' experimentation.

Therefore, the first scenario assumes a 'relative' return to normal by 2050; the standard '5-0'³⁸ working week model will still be the norm for many firms and

³⁸ That is, five days in the workplace, zero days working at home. So a '3-2' model assumes three days in the workplace, two days working at home etc.

workers, but for a small minority a more flexible working model may be preferred (though the 0-5 remote working model will be rare).

The relative restraint could be driven by an increased awareness of remote workings costs – in terms of productivity, wellbeing and innovation – over the long term which leads workers and firms to desire and pursue a ‘return to normal’.

Under this scenario, remote working also fails to permeate into more interaction-driven service occupations – despite lockdown experimentation – such as teaching, banking and finance, and sales. Retail, construction, manufacturing and other customer-facing/manual trades largely if not exclusively return to pre-Covid norms.

The legacy of the pandemic on working patterns will still be evident though; rather than the 5% labour market share seen pre-Covid, regular remote working will be around 10-20%, largely encompassing professional and skilled occupations.

Scenario 2: a new normal

This central scenario assumes a more realistic outlook to 2050; remote working – in some form - will persist for many. It stops short of assuming the current, 0-5 model will continue. Instead, firms and workers, having both appraised the benefits and costs of remote working, will reach agreement on a suitable ‘hybrid model’ of remote working e.g. a 3-2 arrangement.

Manual and customer-facing occupations (e.g. in retail, construction, manufacturing) will still rely on a traditional 5-0 model, but there may be some longer-term remote working uptake in associated back-office/desk-based operations.

The vast majority of professional occupations will be working flexibly, though a strict 0-5 week will still be in the minority, as most firms continue to value face-to-face interactions. Yet even firms with more interaction-driven service occupations (e.g. teaching) will experiment with longer term remote working arrangements.

As a share of the labour market, regular remote working will have settled at 30-40%, slightly below the rates experienced over the Summer of 2020. Despite this, the majority of workers will still exclusively travel to their place of work.

Scenario 3: a step change

Under this scenario, a more drastic ‘step change’ is assumed to take place. Firms and workers overwhelmingly welcome and prioritise the benefits of regular, long-term remote working e.g. reduced overheads and transaction costs, improved work-life balance, geographic mobility.

They are also able to negotiate and manage some of the shortcomings associated with remote working, aided by ongoing technological improvements and innovations in related product and service areas. Resultantly, this leads to an unprecedented change in how labour markets function.

The majority of workers in the service sector are now engaged in regular remote working. The traditional 5-0 week, commonplace for over 90% of the workforce pre-Covid, is now in the minority, represented by a few occupations, largely manual and/or customer-facing.

For some service-based occupations, the majority of roles are now exclusively remotely-based, particularly in professional, IT and administrative services. Even previously difficult to permeate occupations, such as interaction-driven teaching, banking and finance, and health, start to engage with a longer-term model of remote working.

4.3 Results and implications for the OGNA

The following analysis draws on the three aforementioned scenarios to appraise the potential implications for Oxfordshire's demography and housing, sectors and employment land needs, and commuting and transport within the wider context of the OGNA.

Scenario 1: a 'relative' return to normal

Despite the magnitude of the short-term shock, under this conservative scenario for remote working it is likely there would be an insignificant impact to the distribution and type of growth expected to take place in Oxfordshire:

Demography and housing:

- There could be a marginal increase in Oxfordshire's total population, as workers (aged 30-40+) in typically urban-based professional and skilled occupations consider relocating to the area, prioritising high amenity values and relative (e.g. to London) affordability.
- This will likely be focussed in Oxfordshire's Wider County areas, where amenity values are typically higher and there is a greater availability of suitable properties, despite higher costs (though this will not be significant deterrence as higher-paid jobs are more amenable to remote working).
- Proximity to connectivity points, not least Oxford's central transport hubs, will remain important though, as most will probably be working a hybrid model. More isolated, less-connected areas will see muted demand.
- Resultantly, there could be a marginal increase in the demand for housing in areas such as the Wider County. This will largely be concentrated at the higher end of the market, with a particular emphasis on detached properties with accompanying rooms and green space.
- This could serve to push up prices at the higher end of the market, and thus deteriorate absolute affordability ratios, though the median and lower-quartile affordability will remain largely unaffected.

Sectors and employment land needs:

- Though a theme factored into the original OGNA, ongoing remote working has the potential to accelerate the shift to online shopping. If this persists, there could be reduced floorspace demand from some retail and leisure trades, who are either unable to compete with online competitors or are themselves able to undergo a wholesale shift to online operations, together with some growth in demand for warehousing floorspace such as close to the M40 and elsewhere to service 'last mile' delivery.

- Beyond this though, the implications for Oxfordshire’s employment land needs would be relatively limited under this scenario. Spatially, there could be a small legacy of the shifting of retail and leisure floorspace away from Oxford city centre to suburban locations and smaller towns. This would be largely concentrated in convenience and food and drink-based trades (the ‘Pret economy’).
- For office space, it is unlikely there would be any substantial shift relative to the trends outlined in the OGNA. There may be an increased emphasis on more flexible, interaction-led office space for some tenants though, particularly for sectors likely to embrace greater remote working, such as IT, professional and business services.

Commuting and transport:

- The limited persistence of remote working under this scenario means, by 2050, many workers will have returned to the standard, five-day model of commuting, with total trips (and distance) and a modal share broadly similar to that explored in the OGNA.
- The increased remote working uptake by some, mostly professional-based occupations, means total commuting trips may be marginally lower, particularly for private and public means of travel. The behavioural legacy of the pandemic, including aversion to public transport, may see a small increase in private modal share (but not absolute trips).
- Existing flows within Oxfordshire will largely be the same as that observed in the OGNA, depending on the respective housing distribution scenario. A marginal increase may be observed from the Wider County, into both Oxford and further afield (e.g. External), the latter particularly if there is an increase in London-based remote workers.

Scenario 2: a new normal

Given the more likely scenario of a widespread adoption of a ‘hybrid’ model of remote working, the impact on the distribution and type of growth (but not the scale) expected in Oxfordshire could be more notable, if still limited:

Demography and housing:

- A larger, although still only moderate increase in Oxfordshire’s population could be observed, as a result of the widespread adoption of hybrid remote working attracting a larger pool of mobile residents, typically urban, whose workplace proximity is now less of a priority.
- This will be most predominant in middle and older-aged groups (30’s+), whose above-average incomes and high current housing costs ensures Oxfordshire is an affordable and attractive location. Some could comprise larger family units, attracted by Oxfordshire’s strong educational and lifestyle offer.
- Spatially, there will be a focus on the larger stock and higher-amenity offer of the Wider County areas, though some (particularly those with families) may be drawn to the affordability and good connectivity of the Knowledge Spine and Outer Fringe.

- The more widespread adoption of remote working may also pull some existing residents away from Oxford city, likely to the Outer Fringe and Knowledge Spine, though it is likely many in the city, especially the young, will continue to value the amenities it offers.
- Resultantly, demand for housing could increase in such areas. Again, this will likely be at the middle-higher end of the market, with an emphasis on detached/semi-detached properties. Depending on the speed and scale of the supply response, prices could accelerate at this end of the market.
- This could deteriorate the mean and median affordability in these areas. Lower-quartile affordability should remain largely unaffected, but there may be some pressures in well-connected areas with limited supply.
- Demand and prices for flats and other small urban properties could fall, though such stock is relatively underrepresented in Oxford, particularly compared to other cities. Any moves to introduce more widespread remote teaching could reduce student numbers in the city, and therefore demand for student accommodation.

Sectors and employment land needs:

- As with the previous scenario, the potential for a sustained shift to online shopping could lead to a small reduction in overall retail and leisure floorspace demand but with increased warehousing space needed. This could even be accelerated further under this scenario, with an observable correlation between increased remote working and online shopping.
- Similarly, there would likely be a more notable shift in the spatial pattern of retail and leisure floorspace demand; the ‘Pret economy’ of convenience and food and drink stores will adapt to reduced workday footfall, either moving online or to suburban and out of town premises. Existing city centre premises could be repurposed for either other commercial use or housing.
- Though a hybrid model of remote working becomes widespread, the demand for office floorspace could remain largely the same, as the benefits of an office presence prevails despite more flexible working arrangements. As before, there may be an increased emphasis on flexible, interaction-led office space. There will likely be a reduction in demand for older, lower-quality office space less amenable to remote working.
- Coincidentally, reduced transaction costs for firms (through improved digital communications and lower running costs) may incentivise some firms to relocate to Oxfordshire as relative costs are lower whilst many of the benefits remain, potentially increasing demand for office space. Conversely, some firms may use this as an opportunity to move away from Oxfordshire.

Commuting and transport:

- With the increased adoption of a hybrid model of remote working, there will be a larger drop in total commuting trips, as people spend an

increased number of days working from home rather than travelling to the office, though the latter still remains in the majority.

- The modal share may balance slightly more towards private modes of transport though, as people are likely to reside further from their workplace (and thus reduced probability of public and active travel) and will be happy to incur the cost of a longer private commute on a reduced basis.
- Depending on the housing scenario, flows from the Knowledge Spine and Outer Fringe have a higher potential of shifting to public and active travel modes, though the former may still be avoided given legacy of the behavioural aversion during the pandemic.
- Reliance on active travel may well increase, in both absolute and relative terms, given improved road conditions and potential route improvements during the pandemic. These would largely originate from the Outer Fringe.
- Interestingly, there may be an increase in the proportion of flows and distance travelled from inside Oxford to its outer suburbs (Outer Fringe) and surrounding towns (Wider County and Knowledge Spine), as previously city-centre based retail and leisure ('Pret economy') workers adapt to the potential shift in demand and footfall.
- The proportion of flows originating from the Wider County and Knowledge Spine could also increase, some into Oxford, the remainder to further afield External locations, including London. The latter in particular will be public travel reliant.

Scenario 3: a step change

This ambitious scenario assuming a step change in the adoption of remote working could result in some substantial changes to the distribution and type of growth expected to take place in Oxfordshire:

Demography and housing:

- With remote working adopted by the majority of workers, a substantial pool of potential residents could be attracted to living in Oxfordshire. However, it is unlikely additional population growth will be substantially higher than previous scenarios, as demand, particularly from younger and non-professional occupations, may shift to more affordable locations.
- As with previous scenarios, the age profile of this shift will be broadly the same, as younger cohorts will either continue to prioritise existing urban locations, or pursue more affordable opportunities elsewhere. Greater remote working may incentivise additional family moves, as education and lifestyle becomes a greater priority instead of workplace proximity.
- Importantly for Oxfordshire, with the potential for teaching and education to move online – even if only part-time - under this scenario, there could be a significant reduction in the Oxford-based student population.

- Resultantly, a more varied spatial pattern could emerge. The Wider County and Knowledge Spine will remain attractive locations, with the potential for additional interest in more rural and isolated communities (given the necessary digital infrastructure) as full-time remote working increases.
- Oxford's student-led market could see notably reduced demand (particularly international), as remote-teaching persists, whilst lower income service-based workers may also leave the city. Resultantly, city-centre stock could have to adapt to commercial/alternative use, whilst shared-premises may be returned to single use.
- It is unlikely this will impact prices substantially in the city, whilst there is the potential for an appreciation in the Wider County and Knowledge Spine if supply is unable to respond effectively. Affordability will likely deteriorate, but could marginally improve in parts of the city, particularly at the lower-quartile end.

Sectors and employment land needs:

- As with the previous scenario, the potential for a sustained shift to online shopping could lead to a reduction in overall retail and leisure floorspace demand, which could be accelerated under this scenario if greater remote working corresponds with a greater shift to online shopping. Demand for warehouse space would again grow.
- With workers spending more time at home than in the office, related retail and leisure trades - such as the 'Pret economy' of convenience and food and drink stores - will either cease trading, move online or shift to suburban or out of town premises closer to where people live. Such stores may help support the concept of a '15-minute neighbourhood'.
- With a greater emphasis on permanent and hybrid remote working, office floorspace demand for office space will likely be lower. Many tenants will downsize, with a greater emphasis on flexible working space for those that do still go into the office, and interaction areas for clients and employee engagement.
- With this scenario also inviting the concept of an increase in remote-teaching, there is also the potential for reduced demand and redundant education space under this scenario, particularly in Oxford city.
- Redundant working spaces under this scenario could attract a variety of potential use changes, including leisure, cultural, or residential.

Commuting and transport:

- Under this scenario, for the first time the majority of workers will work more days at home than they do in the office. Resultantly, commuting trips could see a substantial drop, by a potential magnitude of two-thirds to a half, with significant economic, social and environmental ramifications.
- Modal share remains unpredictable under this scenario; with the potential for workers to live even further from their workplace, private travel reliance might increase – the longer and costlier private

commute can be balanced with its convenience if only for one or two days a week.

- Given significantly reduced volume on public transport, certain routes and options may become unviable. This could see a reduction in the public travel share, whilst increasing the reliance on private travel.
- Active travel will likely increase its modal share, particularly in and around Oxford, but for those few still commuting to their workplace five days a week (such as manufacturing and construction workers) such travel modes may not always be optimal.
- The potential for more people residing in the Wider County and Knowledge Spine could see an increase in the proportion of flows into Oxford and Externally, but in absolute terms these will drop substantially.
- As with the previous scenario, there could be an increase in flows and distance travelled for retail and leisure workers from Oxford to its suburbs and surrounding towns, as they adapt to the shift in footfall and spending, whilst finding it unaffordable to live nearby.

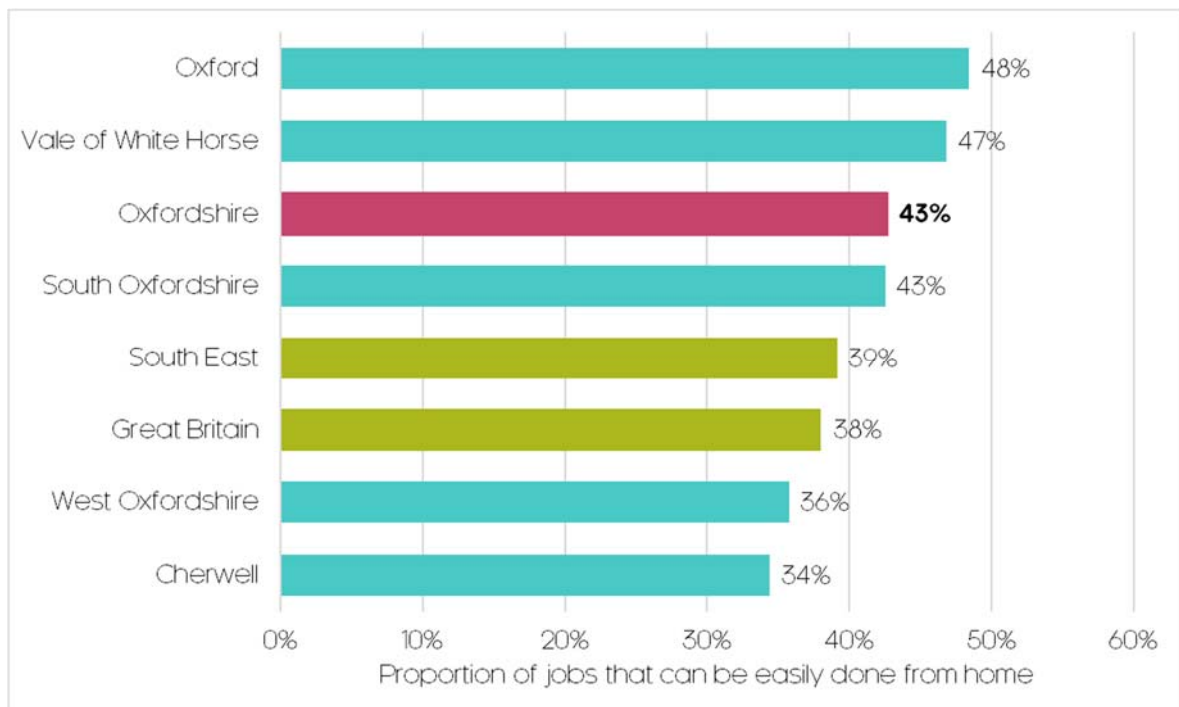
5 Conclusions

This conclusion chapter highlights and draws out the key findings and observations from the Covid-19 Impacts Addendum.

The legacy of the Covid-19 pandemic

Drawing on the latest theory and evidence, the addendum has sought to gauge the potential legacy of the Covid-19 pandemic over the longer timeframe of the Oxfordshire Plan (to 2050). Particular attention has been given to the durability and legacy of the Covid-induced shift to remote working ('homeworking'), which as Figure 4.3.1 shows has the potential to be a much more prevalent within parts of Oxfordshire's labour market.

Figure 4.3.1: Homeworking potential across Oxfordshire



Source: ONS, Cambridge Econometrics. Note: data GB-wide.

Beyond the short- and medium-term economic impact, the addendum appraises the longer-term potential for the pandemic to trigger and accelerate substantive economic, social and behavioural change in Oxfordshire and beyond, particularly in terms of matters associated with the thematic areas identified in the OGNA, such as:

- demography and housing (e.g. by changing the attractiveness of urban living, or people revising their need to reside close to work);
- sectors and employment land needs (e.g. by shifting/reducing demand for retail, leisure and office space, or accelerating the shift to online shopping), and;
- commuting and transport (e.g. by shifting/reducing the volume, mode and distance of commuting trips).

Yet in many instances, the pandemic has simply brought to the fore trends that were already in place and likely to be significant by 2050 anyway (and were typically considered, if not accounted for, within the original OGNA evidence base). Rather than changing the direction of travel, the pandemic

has accelerated these trends, whilst, crucially, bringing them the attention of a wider audience.

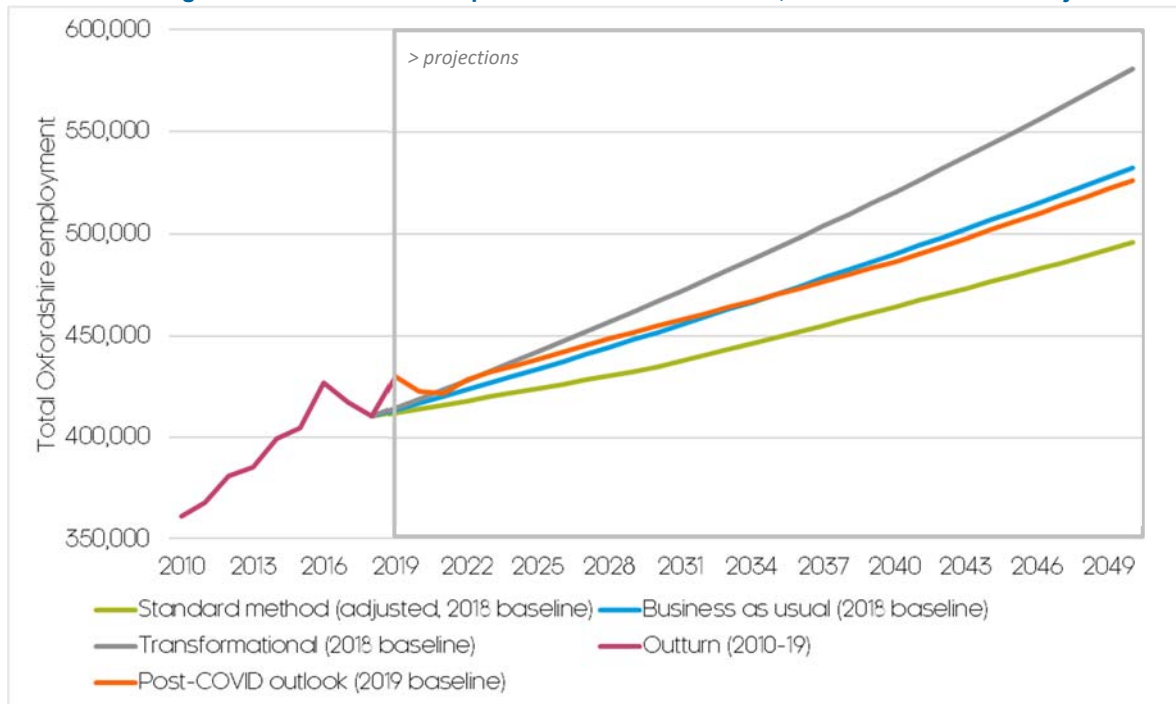
Likewise, for many workers and residents and Oxfordshire, it is important to note that the pandemic may have little to no impact relative to their pre-Covid routine; for instance, even during strict lockdown measures, the majority of workers were still reporting that they had never worked from home.

Although the negative short-term impacts of the pandemic have undoubtedly been severe within Oxfordshire, and will continue to be felt for several years to come, some of the Covid-induced trends, such as homeworking and localism, should be seen not as a threat but a significant opportunity to reshape Oxfordshire’s economic geography and transport systems, particularly in the context of the urgent need to reduce emissions.

Robustness of the Phase 1 trajectories

Informed by updated forecasts and evidence incorporating the impact of the pandemic and its accompanying trends (presented in Figure 4.3.2, with post-Covid forecasts shown as the orange line), the addendum appraises the longer-term robustness of the OGNA’s original economic trajectories.

Figure 4.3.2: Oxfordshire’s post-Covid outlook to 2050, relative to the OGNA trajectories



Source: Oxfordshire ERP, ONS, Cambridge Econometrics.

Given Oxfordshire’s intrinsic resilience and recoverability to economic shocks, it is expected the short-run impact from the pandemic will be less pronounced in Oxfordshire, whilst Oxfordshire’s recovery will also outperform the national average, resulting in a smaller shortfall relative to pre-Covid trends.

Resultantly, as far as Oxfordshire is concerned, the addendum considers that the analysis underpinning the *Phase 1* and *Phase 2 Report* remains current and valid, though there is undoubtedly a need for the planning system to build in an increased level of flexibility.

As Figure 4.3.2 and Table 4.3.1 show, the range of feasible trajectories for employment growth and subsequent housing need are still well represented by the three trajectories depicted in the *Phase 1 Report*. Similarly, the five

housing distribution scenarios outlined in the *Phase 2 Report* are still a suitable means of exploring the implications – in terms of commuting and affordability - between different approaches.

Table 4.3.1: Oxfordshire’s post-Covid outlook to 2050, relative to the OGNA trajectories

	Jobs, baseline	Jobs, 2050	Jobs growth, baseline-2050	Jobs growth per annum, baseline-2050
Post-Covid outlook (2019 baseline)	430,100	526,500	96,400	3,100
Standard Method (adjusted, 2018 baseline) trajectory	410,100	495,600	85,500	2,700
Business as usual (2018 baseline) trajectory	410,100	532,500	122,500	3,800
Transformational (2018 baseline) trajectory	410,100	581,300	171,200	5,300

Source: Oxfordshire ERP, ONS, Cambridge Econometrics.

What may change is how policy makers calculate these implications, depending upon which version of the future they think is most likely to occur, as captured by the three post-Covid scenarios presented in this addendum. The scenarios, which look ahead to 2050, cover a range of feasible and contrasting behavioural changes as a result of the pandemic:

- *Scenario 1: a ‘relative’ return to normal* – a conservative scenario for the adoption and durability of remote working.
- *Scenario 2: a new normal* – a more likely scenario of a popular and widespread adoption of a ‘hybrid’ model of remote working.
- *Scenario 3: a step change* – an ambitious scenario assuming a positive step change in the adoption and durability of remote working.

Drawing on these scenarios, and flexibly incorporating any other relevant trends and indicators that emerge, policy makers are better placed to understand and appraise the scale and distribution of housing and employment space needed, and accompanying implications for commuting and affordability.

For instance, the original OGNA identifies a need for 560 hectares of employment land to 2050 under the central outlook of the business as usual trajectory. However, under the more extreme behavioural scenarios (i.e. scenarios 2 and 3) rather than maximising land allocations, local policy makers may wish to make more flexible allocations for employment land.

Post-Covid monitoring and review

When planning for the Oxfordshire of 2050, there is an increased emphasis on planning for a vision that is both feasible and desirable; the “forced experiment” of the pandemic has provided us with incredibly valuable information as to what that might look like.

For instance, the geography of Oxfordshire’s residents has both expanded and contracted during the pandemic: expanded, by the reduced need for daily commuting, which has increased the range of feasible employment or residential options; contracted, by the increased opportunity and willingness to engage with and increase dependence on local communities and amenities.

Moving forward, there is a need for the planning system to continue to monitor such trends and build in additional flexibility and responsiveness, particularly

given there is still an unprecedented amount of uncertainty when it comes to estimating the scale and durability of the pandemic's longer-term impacts.

Building on the opportunities provided by the pandemic – such as increased active travel, and reduced commuting - there is also a need for additional analysis on how best to join up spatial planning with infrastructure delivery sequencing, to reach net zero carbon targets whilst maintaining an innovative and prosperous economy.

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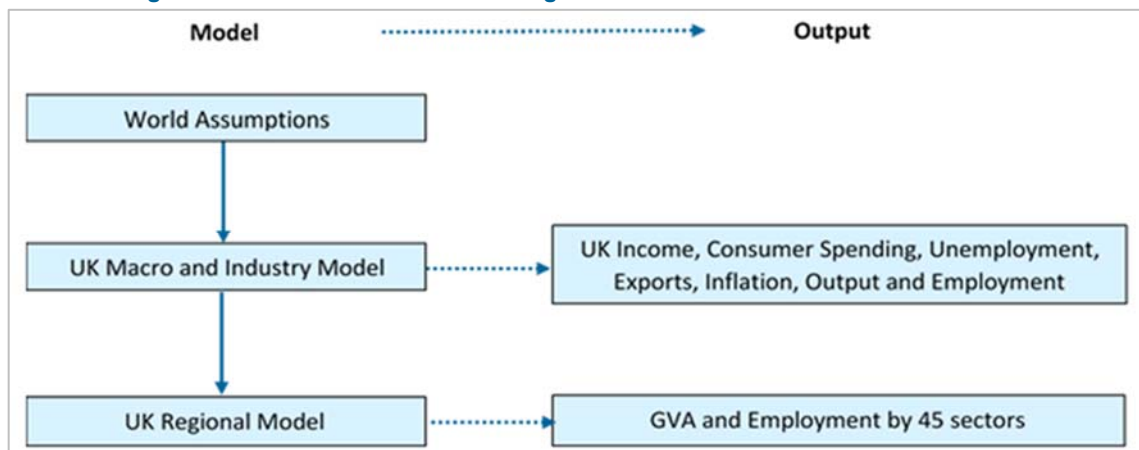
7 Appendix A: Post-Covid Forecast Methodology

As part of its work on the Oxfordshire Economic Recovery Plan (ERP), to better understand the likely longer-term impact of the Covid-19 pandemic on the Oxfordshire economy, Cambridge Econometrics (CE) worked with Steer-ED to develop a series of credible econometric forecasts for the county and its constituent local authority areas.

To produce these local area forecasts, CE utilised the bespoke Local Economy Forecasting Model (LEFM) component of its macroeconomic Multi-Sectoral Dynamic Model (MDM-E3) of the UK economy. Resultantly, the local area forecasts for Oxfordshire are consistent with CE’s macroeconomic forecasts for the UK economy as a whole.

Importantly, this approach and modelling framework is consistent with that used to produce the original OGNA trajectories. The forecasts used in this report and the ERP were produced over summer 2020.

Figure 4.3.1: Links between Cambridge Econometrics’ suite of models



Source: Cambridge Econometrics.

As Figure 4.3.1 demonstrates, an important feature of this modelling approach is the link to CE’s wider modelling suite and framework, ensuring any local area forecasts are consistent with CE’s world, UK national and UK regional forecasts and assumptions.

CE’s headline UK forecasts have been developed within the context of its position within global trade networks, the worldwide impact of Covid-19, and the changing nature of the UK’s trading relationship with the EU. These national level impacts are then systematically distributed to regions and local areas, based on historic sectoral relationships.

The regional and local impact depends, therefore, on the historic precedent of how local sectors have historically performed relative to their national or regional equivalents, thereby capturing the differing intrinsic resilience of local sectors to national economic shocks.

For example, if the Professional Services sector in Oxfordshire has historically been impacted less hard, and/or recovered more rapidly from past shocks,

than the UK Professional Services sector as a whole, then this will be reflected in the local forecasts.

To improve the quality and reliability of the Oxfordshire results, particularly in relation to the sectoral and local authority detail, additional quantitative and qualitative data have been incorporated into the forecasts, specifically for the year 2020, for which early data is now partly available.

For instance, by utilising the ‘live’ indicators collected by Steer-ED, for instance Job Retention Scheme (“furlough”) data, or business focus group feedback, it has been possible to enhance the quality of the local forecasts in the very short term whilst ensuring alignment between the CE’s and Steer’s workstreams.

It should be emphasised that at this early stage, any efforts to determine the quantitative implications of Covid-19 on national and local economies are highly uncertain and indicative. Even when accounting for this, as with all kinds of forecasting, there are margins of error associated with the results which tend to widen over time. Furthermore, it should also be noted that the quality and reliability of data decreases at more detailed levels of geography.

Whilst CE’s/Steer-ED’s approach incorporates a wide number of factors, including global, national and local interrelationships and detailed sectoral impacts, there are factors it cannot account for, including any long-term behavioural changes due to the pandemic, or large and unanticipated policy changes at the local or national level.