



The impact of office workers' absence on central London's economy **ARUP**

# London's COVID-19 recovery

## Foreword

The COVID-19 pandemic and the resulting government guidance has had a huge impact on the behaviour of office workers. In a short period of time, areas of central London have transformed from the most vibrant, busiest centres in the world to places that many have described as ghost towns. The recovery in footfall from the spring 2020 lockdown has been slow; as I write this in November, London is still far behind other UK towns and cities. There is a similar story playing out in New York and Paris.

It turns out that two of the great strengths of these world cities have become weaknesses in the pandemic: a huge agglomeration of people, coupled with a wide labour market capture from widespread public transport use. Now for many, meeting a client or supplier, and taking a journey into town, is a last resort, and people are working across the city and beyond in a highly dispersed way. To a certain extent central London's loss has been outer London's gain.

This dramatic transition has occurred for several reasons. Government advice on essential travel and use of public transport has played a major role in driving behaviour change among white collar workers. UK employers have also been extremely open and adaptable to flexible working. The ease at which many companies have transformed from office-dominated cultures to virtual/digitally based working environments has surprised many. A digital transformation literally took place in weeks, and is now somewhat firmly entrenched.

Many office workers have relished the opportunity to work at home as it gives them a greater balance between home and work life; flexibility; more time with friends and loved ones. And these provide clues as to the reasons that workers will one day choose to return to central London. The issue of balance between home and work life is a deeply personal one, affecting people in different ways – but balance for many will be a segmentation of home and office life, with the right amount of both, and the level of social contact that brings. As we transition to life after the pandemic – a period which we hope will

begin in early 2021 - we could be entering a new era where the 3-day office week will become the norm. This change in lifestyle will impact on supporting services such as galleries, restaurants, bars, gyms and shops, as well as on how space is used across our city. We must not forget that for decades, it was this vibrancy and cultural offer that encouraged the brightest and the best from around the world to move to London to build their careers.

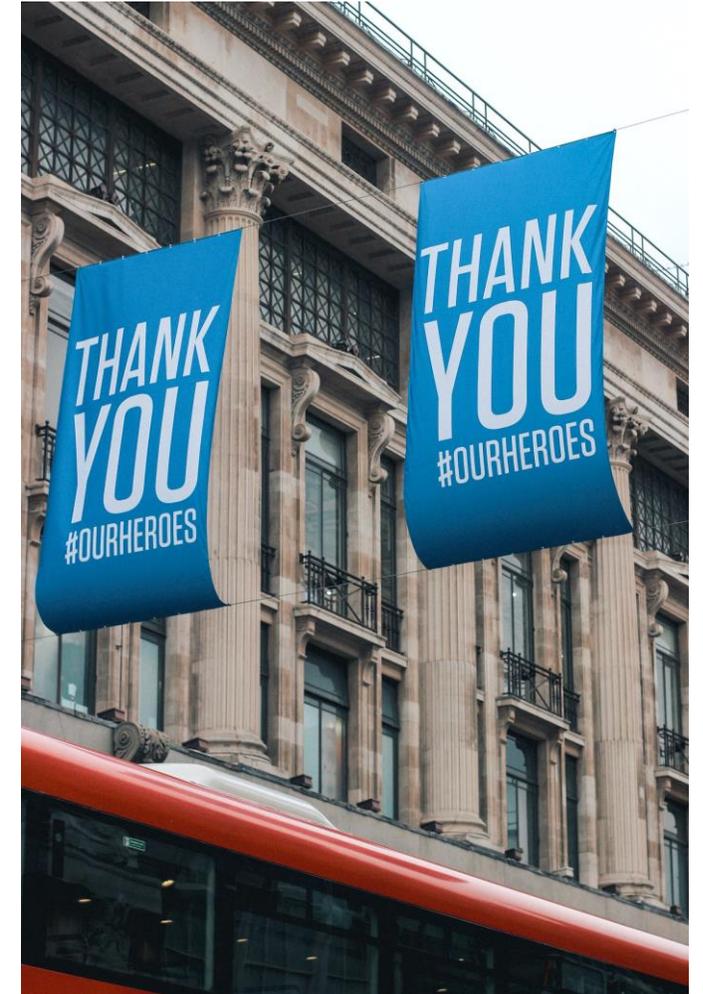
So, if we are to sustain the rich eco-systems of our city centres, we need to create more reasons for people to visit them. Making our centres places that people feel safe and comfortable accessing, using public transport and on foot and by bike, should be a priority. We need to radically re-think the role of streets and public realm, focusing on the user experience and with more emphasis on health and wellbeing. We need to rethink how outdoor spaces are used and managed and create healthier and more welcoming environments for everyone, blending a mix of recreational social, cultural and business-related activities. And companies need to re-think how office space is allocated, so that we make the best use of these now-underused assets.

We have seen some great examples of innovation in London over recent months – using policy making, offices, streets and public spaces in different ways, flexing the traditional 'rules' of what is possible and working with local business and community in a more joined up way. Taking the spirit of this joint working into the future is key to a successful recovery of London's office worker footfall, and with it, the economy as a whole.



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# London's COVID-19 recovery

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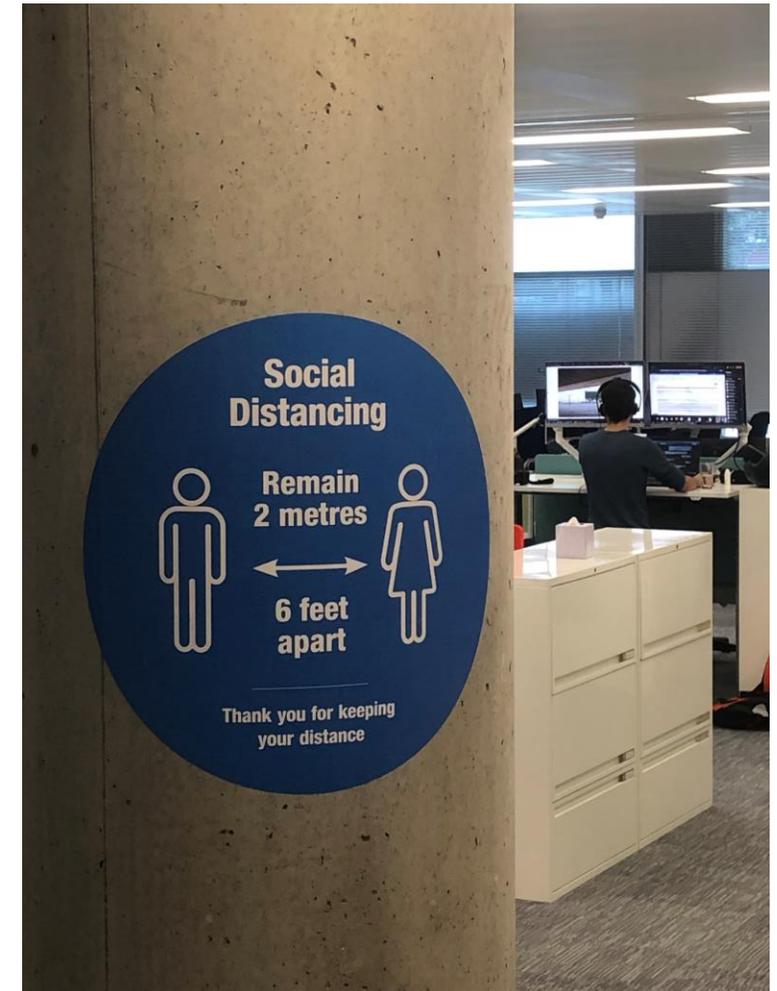
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# London's COVID-19 recovery

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# Executive summary



# Executive summary

## Findings

In July 2020 Arup was commissioned by Midtown and Victoria BIDs to estimate the impacts of the absence of white collar workers on other sectors of the central London economy.

The analysis in this report covers the area comprised within the boundaries of the City of Westminster and London Borough of Camden, and the smaller areas within the London Borough of Islington that fall within the boundary of the Midtown Business Improvement District.

### Footfall is the lifeblood of central London's diverse economy

Our analysis found that the absence of office workers in central London puts face-to-face economy workers, who heavily depend on office workers' spending, at risk of redundancy. We include a summary of our numerical results on the following slide.

Our more pessimistic 'worst case' scenario assumes no effective vaccine (or other solution) by December 2021 and that 87% of central London workers still work remotely by this time. This would lead to an estimated 117,000 jobs put at risk by the lack of footfall from office workers. These jobs are concentrated in sectors that depend on face-to-face interactions such as retail, entertainment, hospitality and accommodation. Many of these sectors employ predominantly lower paid workers.

Under this scenario, the economy of central London would contract by £84bn by December 2021, a significant hit to the UK economy as a whole.

### A vaccine (or other solution) would help to mitigate impacts

The introduction of a vaccine, as modelled in our 'base scenario', would increase office occupancy rates by 26% in comparison with the 'worst case', which would lead to a £22bn uplift in local economic activity and 31,000 jobs no longer at risk.

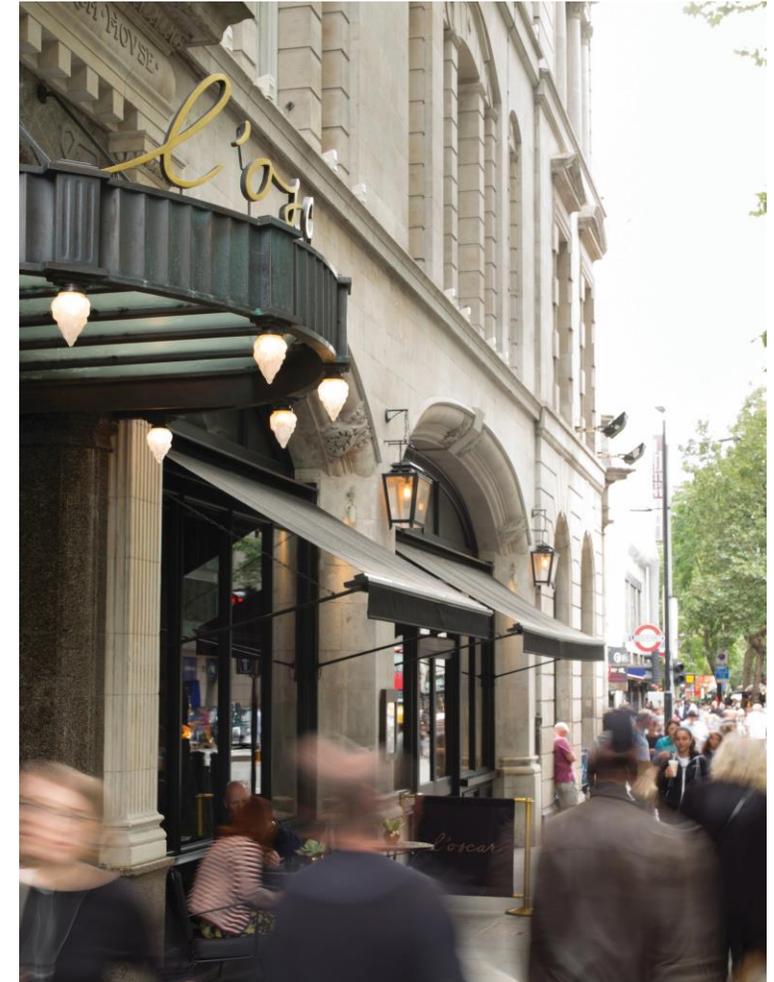
Even with an effective vaccine, however, office occupancy rates would still be 34% lower than pre-COVID-19 levels, and 51,000 jobs would still be at risk of redundancy. Under this 'base scenario', local economic activity risks being £37bn lower than pre-COVID-19 levels.

### Targeted interventions are required

In each of these scenarios, it is possible to mitigate the negative impacts through action. The government's furlough scheme has already had significant impact to mitigate potential job losses in vulnerable sectors of central London's economy. Beyond this, getting people back into town, safely, should be a priority. To enable this, our recommendations for employers include the redesign of office space to ensure that workers are interested and encouraged to visit offices more often. And whilst our analysis focuses on the importance of footfall from corporate sector workers, emphasis should also be placed on encouraging the return of others to central London (including tourists and overseas students).

Finally, despite this, remote work does not have to be merely an emergency response for business continuity, to be discarded when the pandemic subsides. Technological and social changes have reached a tipping point which will lead us to a 'new normal'. Finding the optimal balance between remote and office work, in a way that promotes the vitality of urban centres, our productivity at work, fruitful social interactions and mental health should be the drivers behind the future of work. In the long term, we may visit central London less often, but there will be many more of us doing so. New companies will step in to take up the office space vacated by the old.

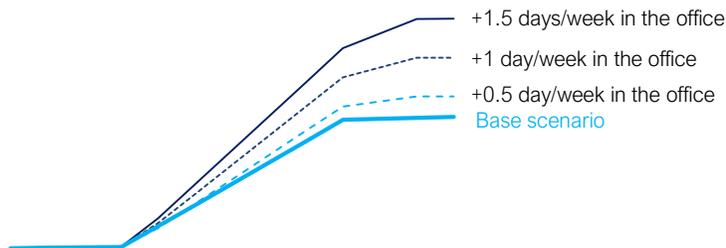
The ability of cities to reinvent themselves is phenomenal. London, New York and Paris and others have weathered crises, wars and pandemics, but always managed to change course and come back stronger than ever. Although action is needed now, there is real opportunity in the years that lie ahead.



# The impact of office workers' absence on central London's economy

Office workspace occupancy scenarios

	Base case		Worst case		No major turning point		From worse to better		Best case	
Shape of recovery Office workers working within their offices										
Share of workers in office space compared to Jan-2020 (snapshot)	June 2021	Dec 2021	June 2021	Dec 2021	June 2021	Dec 2021	June 2021	Dec 2021	June 2021	Dec 2021
	-52%	<b>-34%</b>	-89%	-87%	-65%	-60%	-52%	-34%	-41%	-13%
Place based GVA reduction compared to pre-COVID-19 projections (snapshot)	June 2021	Dec 2021	June 2021	Dec 2021	June 2021	Dec 2021	June 2021	Dec 2021	June 2021	Dec 2021
	£-51bn	<b>£-37bn</b>	£-82bn	£-84bn	£-63bn	£-60bn	£-51bn	£-37bn	£-42bn	£-18bn
Jobs put at risk in other sectors due to a reduction in worker spending (snapshot)	Dec 2021		Dec 2021		Dec 2021		Dec 2021		Dec 2021	
		% all jobs # jobs		% all jobs # jobs		% all jobs # jobs		% all jobs # jobs		% all jobs # jobs
Retail		9% 10,000	Retail	20% 23,000	Retail	15% 16,000	Retail	9% 10,000	Retail	5% 5,000
Hotel		5% 2,000	Hotel	11% 4,000	Hotel	8% 3,000	Hotel	5% 2,000	Hotel	2% 1,000
F&B		27% 28,000	F&B	60% 61,000	F&B	43% 44,000	F&B	27% 28,000	F&B	14% 14,000
Entertainment		22% 13,000	Entertainment	48% 29,000	Entertainment	34% 21,000	Entertainment	22% 13,000	Entertainment	11% 7,000
<b>Total</b>		<b>17% 53,000</b>	<b>Total</b>	<b>38% 117,000</b>	<b>Total</b>	<b>27% 84,000</b>	<b>Total</b>	<b>17% 53,000</b>	<b>Total</b>	<b>9% 27,000</b>



	+0.5 day / week in the office	+1 day / week in the office	+1.5 days / week in the office
Additional place based GVA when compared to base scenario	£+7bn	£+20bn	£+30bn

Shape of recovery  
Office workers working within their offices

Share of workers in office space compared to Jan-2020 (snapshot)

Place based GVA reduction compared to pre-COVID-19 projections (snapshot)

Jobs put at risk in other sectors due to a reduction in worker spending (snapshot)

Potential impact of additional days spent in the office

# Literature review



# Literature review

## The economic and mental costs of remote working

### Home working has become standard for office workers

Whilst a degree of home-working has been a part of office lives for over a decade, the period since the pandemic has seen an unprecedented increased take-up.

London has seen a larger increase in working from home than the rest of the UK. And perhaps because of its large travel-to-work area, and dependence on public transport, the city was also lagging behind other European cities in returning to the offices. Despite the UK government's encouragement to return to the office after the lockdown in summer 2020, UK office workers were significantly slower and more reluctant to return relative to their European counterparts. In August 2020, analysis from AlphaWise indicated that only a third (34%) of UK office workers went back to the office whereas almost three quarters (68%-83%) of workers in France, Germany, Italy and Spain had returned. In the second half of September 2020, due to rising COVID-19 cases, the UK government enacted new restriction mechanisms and asked workers to work from home when they could, which halted the return.

### Homeworking has both benefits and costs

Perhaps the largest benefit of home working, and of course the reason that it is so widespread, is its role in slowing the spread of the dangerous COVID-19 virus, both in the workplace, on public transport and in other locations. Beyond this, homeworking has significant benefits for many office workers. It can provide more leisure time and a better work-life balance, and it often allows for more time to be spent with friends and loved ones. A survey of 4,500 people by Zurich insurance in September 2020 found that more than half of workers would rather spend most of their working week at home.

However great the benefits to some, there are also some significant costs to the wider economy, and to some workers. Firstly, the overall productivity of workers may be affected by the reduction in agglomeration benefits. These benefits arise when economies concentrate, or specialise, in a certain sector (professional services for example). If an area concentrates a high density of office workers, all firms can benefit from various factors such as good supply networks;

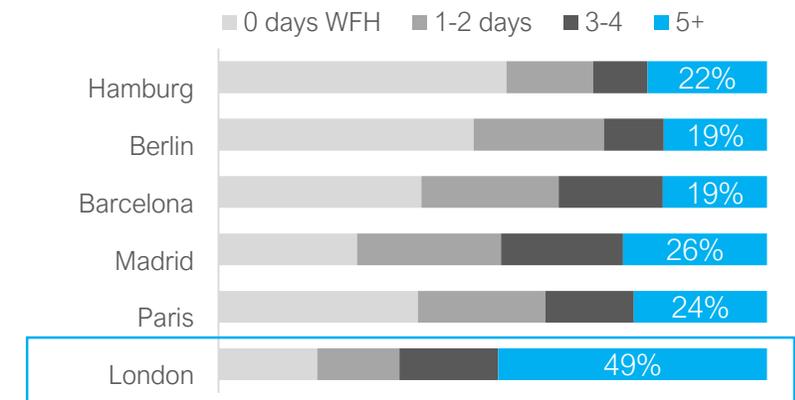
access to a large supply of trained workers; good infrastructure provision specific to the office industry; and good transport links. Densely populated areas grow faster as firms have more opportunities to share their inputs and outputs and a larger labour market provides better matching between firms' needs and skills. And cities are much better at generating new ideas and unconventional ideas leading to higher levels of innovation.

The economic costs of working from home also come from the reduced access to density (or economic mass): workers have fewer interactions, fewer new business connections and fewer opportunities to develop their business and social capital both within and outside their organisations. There is little hard evidence yet on how home-working may affect productivity, and the impact may be markedly different across sectors.

The productivity impact from remote working may differ based on the length of time: in the short run, remote working may increase productivity as existing teams are able to adjust and certain routine tasks can be performed faster. A recent survey of 1,000 employers by the Chartered Institute of Personnel and Development found that work which is done independently such as programming and report writing is enhanced when done remotely, whilst work involving project management and communication with large teams is less productive. Remote working over longer periods may lead to significant loss of productivity: workers struggle to learn from each other and to develop and test new ideas through collaboration.

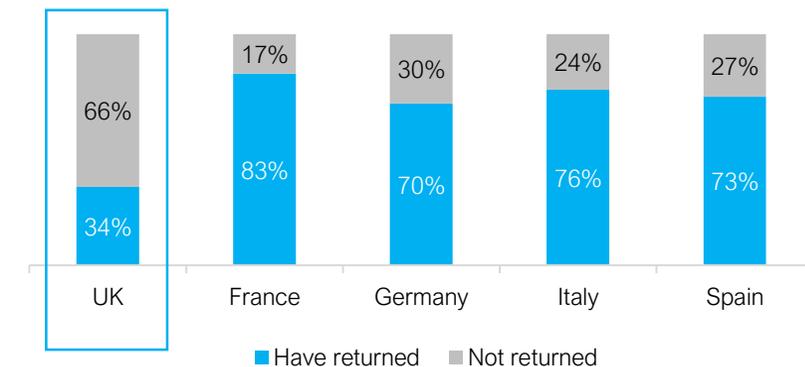
The negative impact may be larger for those that would benefit significantly from learning from others. This suggests that younger employees – especially those who start their careers without meeting their team in person – may struggle to recognise their full potential while working from home. Younger workers are also less likely to have an comfortable office environment at home, or to have to share it with other adults. Research by the London School of Economics found that Londoners between the ages of 20 and 39 had an average of 9.3 square metres to themselves during the lockdown.

Office workers' WFH weekly split (July 2020)



Source: Alphawise, Morgan Stanley's Research Unit

Office workers who have returned to the office (July 2020)



Source: Alphawise, Morgan Stanley's Research Unit

# Literature review

## The benefits of remote working

### Home working benefits some workers

For many, routine, variety and work-life balance are essential if we are to lead enjoyable lives, be productive and be fulfilled. The pandemic has given companies the chance to introduce new ways of working that may reduce stress, with some people having successfully moved to flexible hours arrangements, without experiencing a cut in salaries, productivity or profitability. When they work less, or are able to fit work around other commitments, people tend to be happier, healthier, and better able to juggle competing demands.

Improving work-life balance, accommodating the demand to continue working from home, improving boundaries between work and non-work time and emphasising collective, structural solutions rather than putting the burden on individuals are all ingredients to make work better in the future.

### The economic benefits of working from home

Whilst some firms have been keen to get their workers back into the office, a study by the Institute of Directors (IOD) suggests that home working is here to stay, with more than half of surveyed businesses planning to reduce their long-term use of workplaces. This implies that there are clear benefits to working from home for both employers and employees.

The potential savings in overhead costs and commuting time from remote work are significant. Technological conditions have been improving steadily for years, yet the fraction of people working from home full time had remained small. Now it seems reasonable to expect that the trend might accelerate.

For some workers, there are monetary advantages of working from home. A 2017 paper published in the American Economic Review found that workers were willing to accept an 8% pay cut to have the ability to work from home. Furthermore, workers may experience

cost savings from not spending money on transport, takeaway lunch and coffee, as they might do if they work in their offices.

There are wellbeing benefits associated with time savings and convenience. A 2020 Harvard study "Collaborating during Coronavirus" pointed to the positive benefits of shorter meeting times and less commuting as a result of remote working. According to a report authored by the Office for National Statistics (ONS), commuters have lower levels of life satisfaction and happiness, and higher anxiety on average than those who do not commute. Working from home avoids these inconveniences and can improve life satisfaction. It may also improve employee home life flexibility, providing more opportunities for everyday tasks to fit around the working schedule.

There may also be environmental benefits associated with home working, from an absence of carbon emissions from the commute, to a reduction in waste packaging from single use sandwich boxes and coffee cups.

### Benefits to firms

The COVID-19 pandemic has forced many companies and organisations to pay a part of the fixed cost of transition to remote work, and now that this cost is incurred firms may experience a reduction in their operational costs.

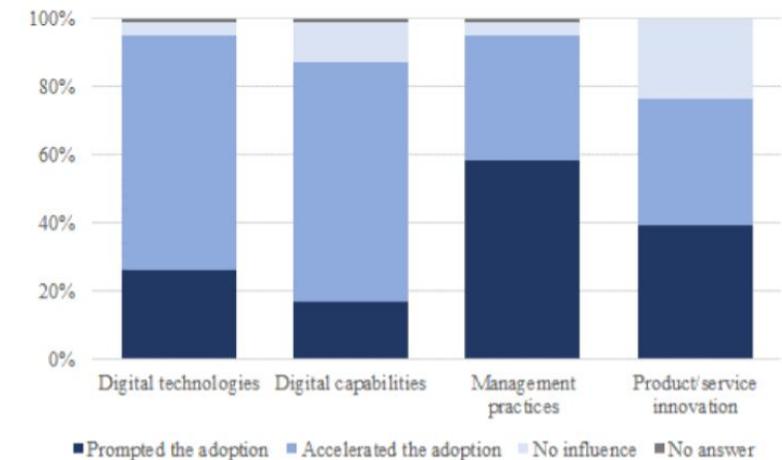
Firms that switch to a working from home model are no longer restricted to local labour supply and may hire workers from a much broader region, often limited only by time zone.

The unique situation has forced many firms to adopt new technologies and practices which enhance productivity. A survey of 375 firms by the Confederation of British Industry (CBI) has found that over 60% of firms have adopted digital technologies and new management practices during the pandemic. In addition, 38% of respondents adopted new digital capabilities. Of the innovating firms, a

majority conclude that COVID-19 accelerated or prompted these investments.

As such, these innovation rates appear to be greater than what we might have expected in the absence of the COVID-19 crisis, and it is unclear whether advances in digitalisation can make up for the lack of face-to-face communication. Many firms anticipate that innovations introduced during the pandemic will outlive the crisis, and will raise the productivity of workers or allow a reallocation of tasks.

Influence of COVID-19 on innovation



Source: London School of Economics, Confederation of British Industry

# Literature review

## The economic and mental costs of remote working

### Burnout, stress and lack of motivation can be some of the main mental health impacts of working from home

Remote working may also lead to loneliness, stress and burnout for some. This period has highlighted the importance of being physically present in social interactions, the benefits of mixing with colleagues and of having variety in terms of the working environment.

Research by the British Occupational Health Foundation found that mental distress is experienced by up to 64% of remote workers, which is significantly higher than employees working alongside colleagues in a secure environment. This trend is echoed in a more recent survey by Nuffield Health, which revealed that 80% of workers in Britain feel that working from home has negatively affected their mental health. Over a third of those surveyed report that remote working is related to feelings of being unable to take a break, and having to respond quickly to messages, with a fear of appearing away from their desks.

The blurred boundaries between home and work, and the lack of a commute to 'bookend' the day, are also accelerating the rate of burnout, with more than half of survey respondents putting in significantly longer hours since the start of coronavirus restrictions. On average, home workers accumulated an extra seven days of work between April and September 2020, without the office social interaction that might mitigate it.

In the earlier part of 2020, these impacts were exasperated for parents during the school closure period earlier this year. A report by the Office for National Statistics (ONS) on Coronavirus and anxiety suggested that 61% of parents with dependent children claim that their ability to work was affected by the need to provide home schooling and childcare.

There may also be health and productivity implications for those who do not have a suitable working environment at home. In particular, distractions and a lack of adequate technological equipment create barriers which limit some remote workers from producing high quality

work.

A recent global survey of employers by law firm CMS found that a combination of home and office working is likely to maximise productivity and motivation in employees, with nearly half of respondents preferring the blended approach. Whilst some are less stressed by the morning commute and can be more effective working from home, the absence of spontaneous conversation and interaction in an office environment may override this, and has implications on wellbeing and efficiency for everyone.

### Significant returns to the office are unlikely to happen without a safe commute and safe offices

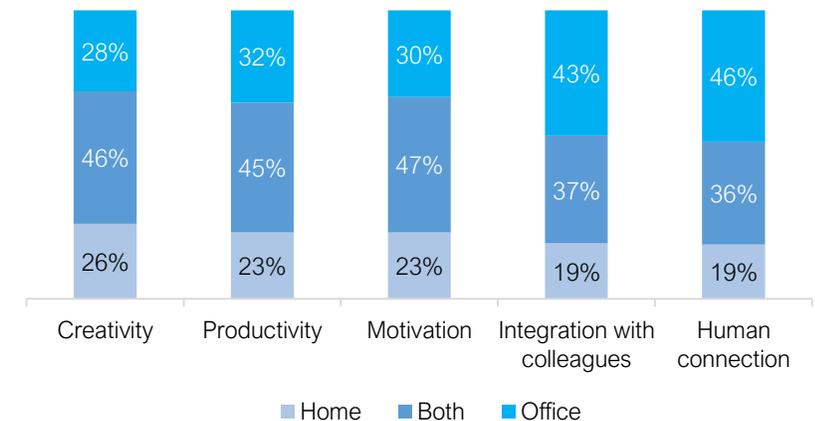
Returning to the office was sluggish in London even before stricter measures were introduced in September 2020 and November 2020. The reasons behind this include childcare duties (especially during the school summer holidays and closure period), commutes involving public transport, the perception of offices not being fit for social distancing, and (given widespread homeworking) no particular perceived benefit to coming into the office.

The journey to work can be made safer for some of those reluctant to return, and many commuters have opted for alternative methods of transport. Halfords, the UK's biggest cycle retailer reported a 57.1% increase in bicycle sales in Q2 and a 230% year on year increase in e-bikes and scooters – all avoiding public transportation. The perceived safety of the journey to work for further flung office workers will, however, remain a key factor for the duration of the pandemic.

Offices themselves can become much safer. Tim Chapman, Arup's London office manager expresses the need for offices to be 'safe havens' from which staff can work productively. Measures to protect staff in the office environment include on-the-door temperature testing for employees, rigorous cleaning routines for surfaces, staggered start times and social distancing.

The relative isolation of staff has revived a desire for spaces that foster collaboration and social experiences, safely. Office spaces may need to be fitted to support diverse working styles, with fewer desks and more flexible spaces that can be configured to host impromptu meetings, ad-hoc project rooms and collaboration zones that allow people to make the most of their time with colleagues. Keeping people engaged with a shared culture will require curated shared social spaces that reflect identities, which, alongside the opportunities that arise from 'water cooler' conversations, will give employees a reason to return to work in the office in person.

### 1,500 senior office occupiers were asked 'Which factor do you think is best for your employees in their work environments?'



Source: CMS Real Estate Reset report, September 2020

# Literature review

## The absence of worker visits impacts the face-to-face economy

### London's economy will not return to pre-crisis levels for years

The economy of central London has suffered significantly due to COVID-19. The furlough scheme has been covering the true impact of the crisis, as data from the ONS for May to July show unemployment rose to 5% in London, up 0.3% points on both the previous quarter and year. At the same time, compared to March, the number of unemployment claims in London has gone up by 161%, reaching a total of 483,480 by September. With the furlough scheme extended until March 2021, the true impact of the crisis on employment may not be seen until Q2 2021, or afterwards. The Greater London Authority's September report forecasts that London will not return to pre-crisis output levels until around three years later: after a -10.5% real GVA change in 2020.

### Footfall growth in central London is lagging behind the rest of the country

Centre for Cities has published data suggesting that the recovery in footfall since non-essential shops reopened has been the weakest in cities where offices were concentrated. When ranked against other cities in the UK on the High Streets Recovery Tracker, London is within the bottom 10 in the UK. London has also suffered from the absence of tourists.

Research led by Savills suggested in September that COVID-19 continues to impact central London retail despite lockdown restrictions easing. This was mainly due to the absence of footfall from local office workforce and international tourists. Visits to the West End in the month from 15th of June are down by 73% year on year, with only 5.1 million visits. West End footfall fell by 17% in Q1 2020 and by 87% in Q2 2020. Footfall in the West End and Mayfair was down by 73% year on year in the period between all retail reopening and the second lockdown beginning.

### The absence of worker footfall impacts the face-to-face economy

Sectors depending on local consumption and high daily footfall are

often the first to be hit by social distancing measures. The retail sector has suffered significantly due to the pandemic, independent of the lockdowns and other restrictions on opening as a result of lower footfall, office worker and tourist dependency, and an acceleration of changes in shopping habits. Footfall increased in the early autumn 2020 period, but never returned to pre-COVID-19 levels, especially in areas where offices are concentrated, before the second lockdown.

### A higher share of online spending is adding fuel to the fire

McKinsey & Company's findings from June 2020 show that households have been cutting down expenditure across all categories, except groceries and at-home entertainment. Consumers are changing their shopping habits, planning to shop more online for groceries, entertainment and children's toys rather than shopping in person. Furthermore, 71% of consumers have changed their shopping behaviour since lockdown; going online to shop, changing brands and/or retailers.

The pandemic has put 7.6 million jobs at risk in the UK (24% of the workforce) and strongly impacted business trading and revenues. Research by McKinsey concludes that it has affected jobs in retail and wholesale the most – 1.7 million jobs are at risk in this sector; 22% of the total 7.6 million. This is despite the increase in demand for labour in grocery and online retail, as it is outweighed by the number of store closures in non-food retail. Furthermore, low skilled workers are most at risk, with 44% of jobs being affected. To an extent these forecasts have been vindicated, with a dismal UK record of 300,000 redundancies occurring in the 3 months to September.

### Lost spending leads to job cuts risks for the face-to-face economy

The hospitality sector is heavily dependent on both tourism and workers. Research by VisitBritain shows that inbound visitor numbers last year were 39.9m and related spend totalled £25.5bn, and they anticipate that inbound tourist numbers will be down -59% this year (to 16.8m) and related spend will decline by -63% (to £10.6bn).

Since international tourism has plummeted and office workers are reluctant to return, face-to-face sectors of the economy have suffered. In August, the Centre for Economics and Business Research (CEBR) found that £2.3bn of spending was lost or displaced in shops, pubs and cafes near London employment hubs between March and June. In addition, £178m per month has been lost on spending as a result of working from home. More hopefully, some of this spending has been displaced from retail hubs in central London to online outlets and secondary town centres closer to office workers' homes.

### Retail and recreational activity in London



Source: GLA economics, Google Mobility, Purple, Open Table

# Literature review

## Population density, commutes and the return to the office

In this section we explore the barriers which have created a slow return to the office in London (pre-second lockdown) and compare them to other European cities which had seen a faster return.

### The commute to work may be longer in London than in other European countries

A long commute to work, more often by public transport, is one of the biggest barriers which holds back Londoners from returning to the office. Office workers in London live significantly further away and have longer commutes when compared to office workers in cities such as Paris, where just 29% of employees were working from home for more than half of the week. In London, almost a third of workers are still working from home 5 days a week. A longer commute acts as a disincentive for workers to return to the office as higher satisfaction is gained from working from home and avoiding the journey, and shorter commutes may also be completed with private, active modes of travel (such as cycling, e-scooting, or walking).

According to a 2019 research article, commuters in Paris, Madrid and Barcelona have shorter travel times and distances than commuters in London, with journeys taking less than 33 mins on average. Barcelona has the shortest average commuting travel time and distance, and it has seen the highest number of workers returning out of the four cities.

The three cities which have seen a higher return of workers also have a significantly higher population density than London. This may mean that office workers live closer to their place of work, and therefore it is cheaper and more convenient to get to the office via a 'safe' mode of transport than it may be in London. For instance, Barcelona's population density is 54% higher than London's and 37% of its office workers have returned to their offices full-time. In London, only 18% of office workers are working from the office full time. According to the Characteristics of Commuters report released by the Census Information Scheme (part of the Greater London Authority), 18% of people who worked in London commute from outside the capital, and

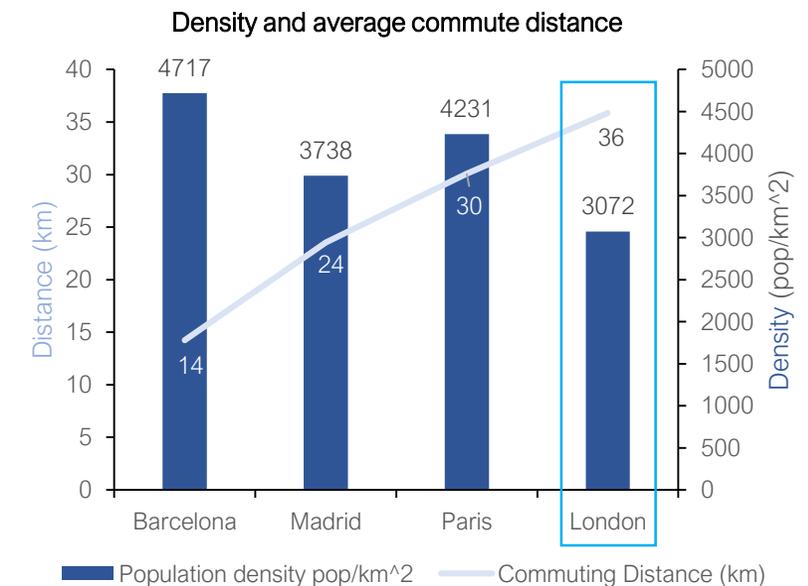
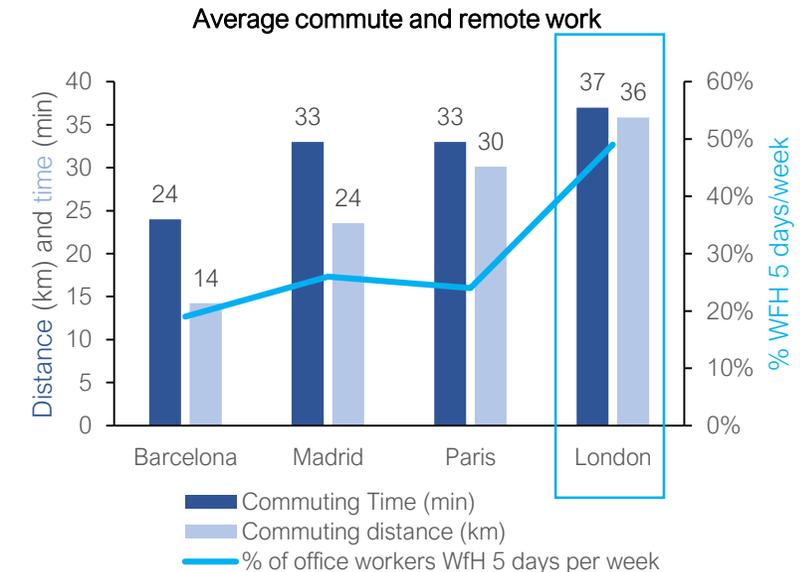
the average commute of those working in London was 18km.

### Some firms were encouraging workers to come back more than others

There is evidence that in some countries, prior to the second wave of lockdowns, confidence in home working was falling, and companies wanted their employees to return. In June, many large French firms began pushing for workers to abandon home working in favour of the collaborative work environment. Geoffroy Roux de Bézieux, the head of MEDEF, the French employers' association, asked for the government to intervene - it "must tell the French people that it is time to return to work," he explained in "Les Echos". This contrasts the attitudes of UK firms and employers who have largely not put pressure onto workers to return to the office.

### The critical mass effect means that once some workers come back, the rest do too ('FOMO')

When some workers return, it may also push other workers to return due to the critical mass effect (or more commonly called fear of missing out or 'FOMO'). Workers may experience FOMO in the office, especially when a large enough number of (senior) colleagues return. This psychological phenomenon may be made stronger due to the prevalence of social media and other online platforms, where colleagues may share their experience in the office. This could explain the wide gap between the number of UK and European workers who have returned to the office.



Source: 'Critical Factors for Mitigating Car Traffic in Cities'  
Vincent Verbavatz, Marc Barthelemy

# Methodology



# Methodology

## The study area

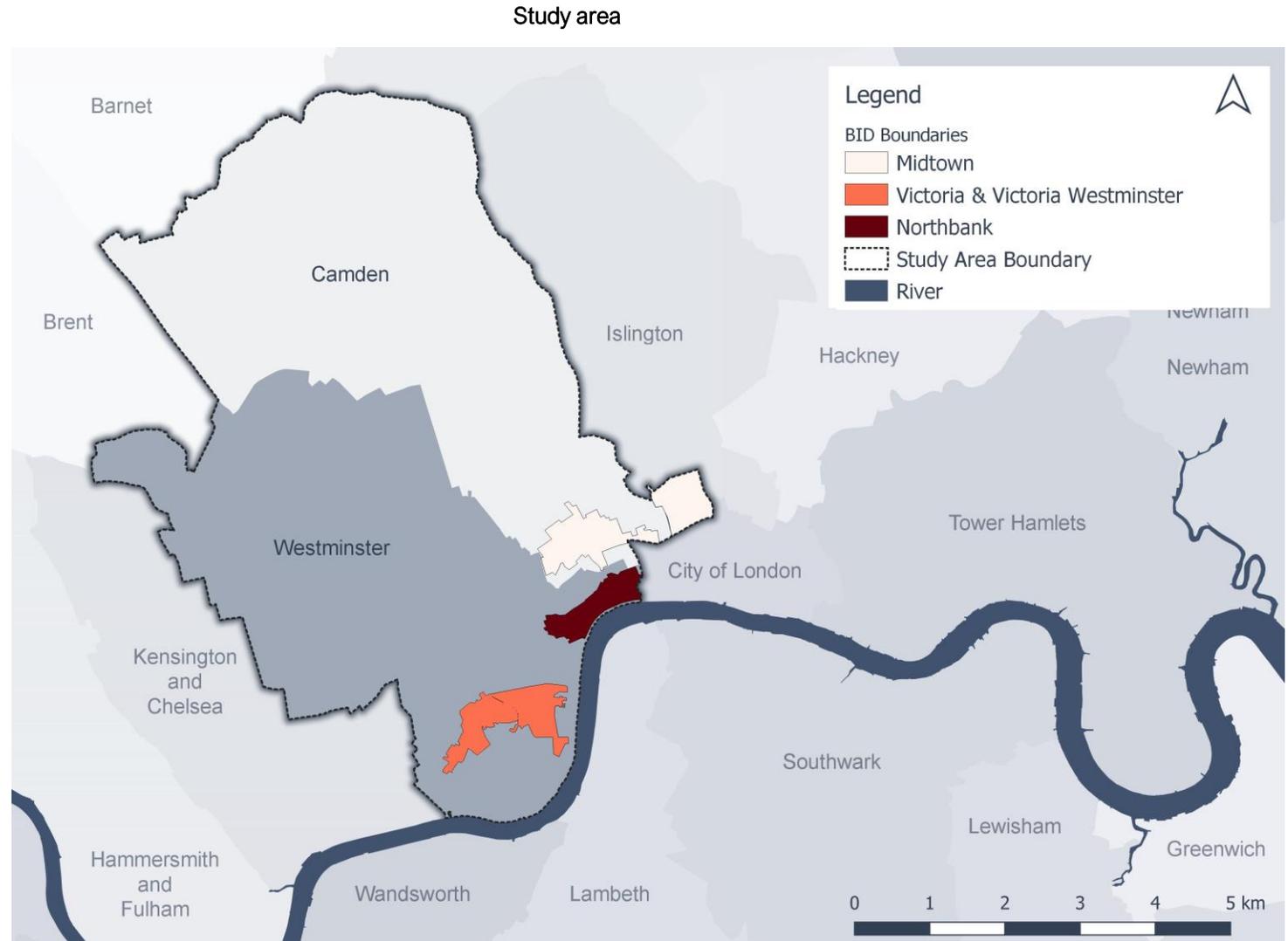
### Study area

This report covers the area comprised within the boundaries of the City of Westminster and London Borough of Camden, and the smaller areas within the London Borough of Islington that fall within the boundary of the Midtown Business Improvement District, as shown on the right.

We show some results by local authority (Westminster or Camden), and others by BID district (Northbank, Midtown, Victoria and Victoria Westminster).

The study area as a whole is made up of distinct economic geographies, containing a range of concentrations of largely service sector industries, cultural features, other major institutions (including those in the education and healthcare sectors) and neighbourhoods.

Although they are different, the analysis in this report therefore assumes a similar profile of impacts from COVID-19 on the occupancy of workplaces across all sub-geographies.



# Methodology

## Pre-COVID-19 employment baseline

We differentiate office-based sectors from other face-to-face sectors such as retail, hotel, entertainment and food & beverage using broad planning categories rather than the traditional Standard Industrial Classification (SIC) or NACE (the statistical classification of economic activities in the EU) which are the norm in national statistics datasets.

Using a simplified planning-based terminology allows for a simpler analysis of the relationships and dependencies between the office sector and other sectors of the economy. Where relevant, we have sourced lower layer output area or postcode level data at SIC (2-digit) or NACE (4-digit) level before reallocating employment to the broad planning based sectors and to each of the sub-geographies.

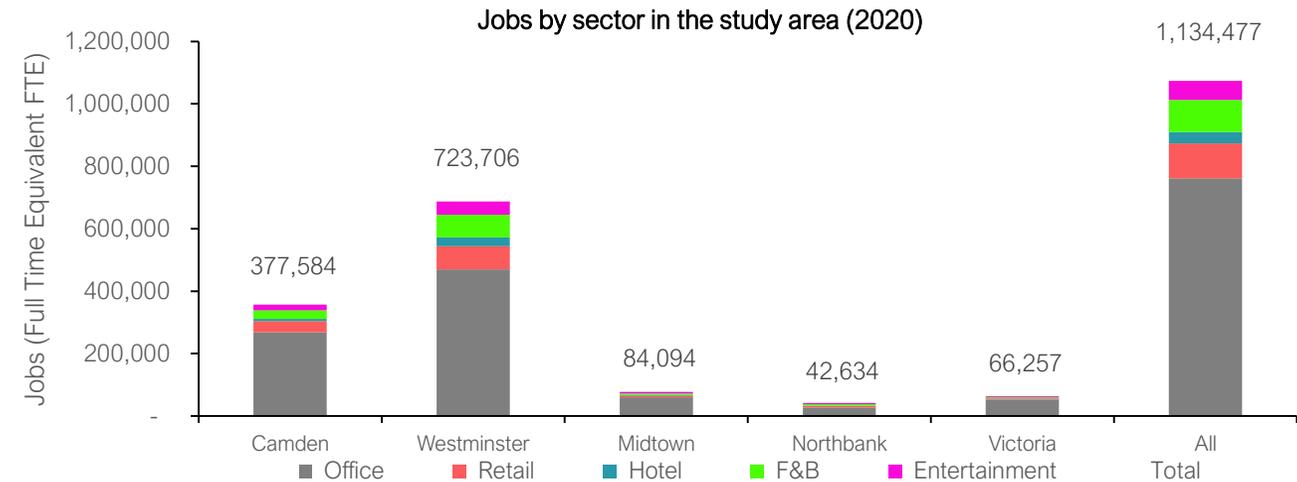
As can be seen in the charts shown opposite, professional services and office-based work generate the largest elements of employment in the study areas. At 762,000 jobs in the beginning of 2020, this represents nearly 70% of all employment in the overall study area.

There have been relatively modest changes in jobs in the study area over the period from 2015 to 2018. The compounded average annual growth rates observed are as follows:

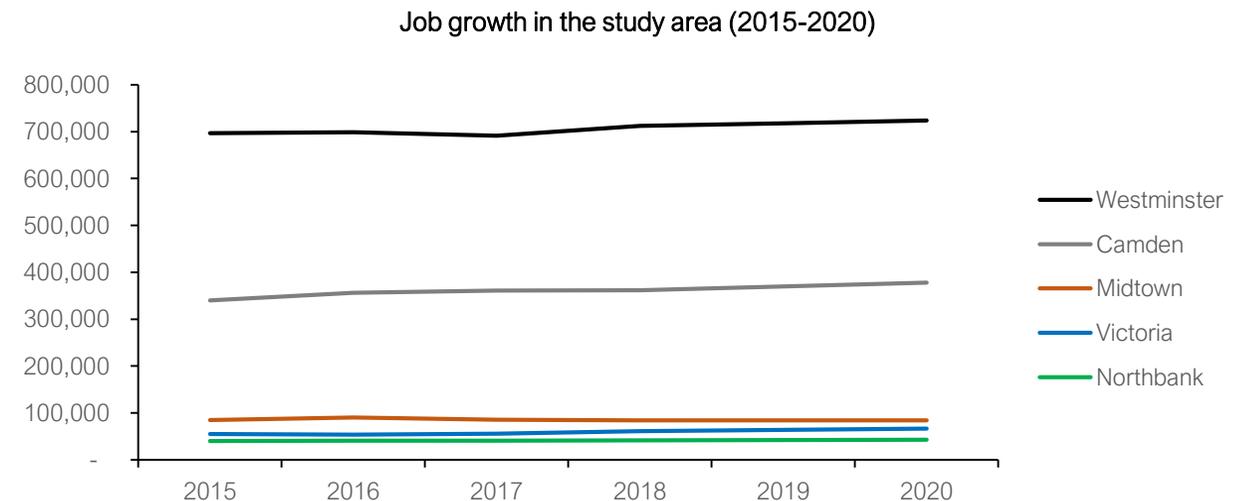
- Westminster: 0.7% overall, 0.3% in the office sector.
- Camden: 2.1% overall, 1.4% in the office sector.
- Midtown: -0.4% overall, -2.1% in the office sector.
- Northbank: 1.1% overall, 0.8% in the office sector.
- Victoria and Victoria Westminster: 3.8%, 4.8% in the office sector.

Official ONS statistics on employment figures do not go beyond 2018. We have used the compounded annual growth rates above to extrapolate 2018 employment to figures for the beginning of 2020.

Our analysis assumes that Full Time Equivalent (FTE) workers spent 5 days per week in the office on average before the coronavirus pandemic.



Source: BRES; Arup



Source: BRES; Arup

# Methodology

## COVID-19 impacts on workspace occupancy in 2020

### Workspace occupancy

We define workspace occupancy as the amount of workers completing their workday within the location of their office (as opposed to work done remotely from home). The timing of future waves of infections, the length and severity of social distancing measures and the uptake in digital technologies will determine London office workers occupancy of their workplaces.

The estimation of the 2020 impacts of COVID-19 on workspace occupancy has been informed by projections and benchmarks for the whole of London (notable from GLA Economics: London Future Economic Outlook). The impact on the study's area's workplace occupancy for 2020 is assumed to be made of four phases

Q1: Business as usual (no social distancing)

Q2: Strict lockdown (essential travel only)

Q3: Softer lockdown (strict social distancing)

Q4 Beginning of recovery (soft social distancing)

We have assumed that the impacts for next couple of months are fixed, with a continuation of soft social distancing measures to the end of December 2020. The report was in its final stages when the 4-week lockdown effective on 5 November 2020 was announced by government and as such, it has not been considered in our modelling.

Our scenario-based projections start in January 2021 and are detailed in the 'occupancy scenario' section of this report.

### Commuting

Workplace occupancy is part-determined by the ability of the transport system to bring workers to their office locations, and the impact of government restrictions and advice. Under essential travel, for example, the transport network would operate at 20% of its capacity, and office workers would be advised to work from home. We looked at four possible scenarios around the transport system capacity and government advice. Details of the assumptions used to determine the impact of social distancing measures on office occupancy are provided in the appendices of this report.

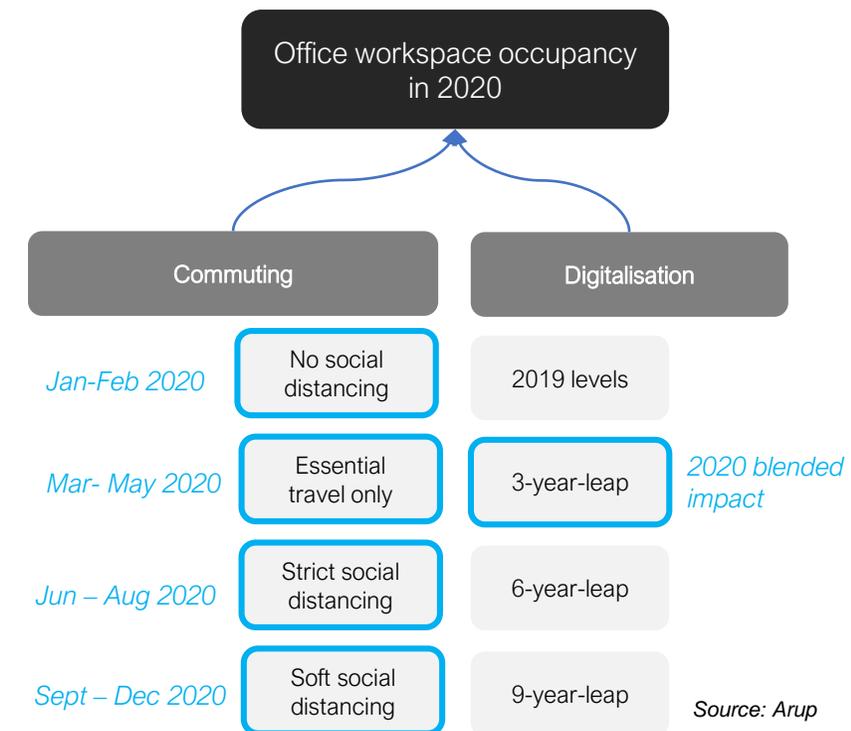
### Digitalisation

COVID-19 has forced many firms to rapidly change their ways of working, and to adopt new digital technologies or management practices considered to enhance productivity in normal times. If such innovation persists, it could induce lasting positive impacts on business performance and productivity.

The acceleration of trends in the firms' agenda for digital transformation programmes (e.g. 6-year leap in 6 months) has an impact of the ability of workers to conduct their work productively from home. These digital transformations may eventually lead to longer-term changes in working habits, enabling a more permanent transition towards more flexible working patterns and office-based work weeks.

The selection of the impact variables for 2020 are shown in the figure opposite:

### Methodology to estimate workspace occupancy impacts in 2020



# Methodology

## Estimating spending lost and associated jobs at risk

Employment losses are likely to be largest in sectors that rely heavily on footfall and do not translate easily online: food and beverage, retail, hotels, arts and entertainments. Even when businesses have been able, legally, to keep their doors open throughout 2020, they have often experienced an abrupt decline in customer demand and revenues.

To calculate this, we estimated the number of workers in the study area that might go back to their offices during 2021, before looking at the number of jobs in other sectors which would be put at risk by the change in spending resulting from the daily worker visits.

### Spending per worker visit and spending by age and sector

We examined consumer-spending responses to the onset and spread of COVID-19 and the subsequent government-imposed social distancing measures by estimating the average spending of workers by age groups in different sectors of the economy. Investigating this was challenging, given that official statistics are often produced with a significant time delay at aggregate level, and so we used a combination of ONS data, BID surveys on worker spend, and our own research. For the latter we surveyed Arup employees asking the following questions:

- How much do you spend on food and drinks on a typical week-day/evening at the office?
- How much do you spend per month on average in the office area (excluding food but counting the occasional spend in retail shops, theatres, night outs etc. excluding weekend only counting work-days/evenings over an average month)?

N=52 (Arup employees answering these two questions)

We have then used the 'detailed household expenditure by age of household reference person' dataset from the Office for National

Statistics' to breakdown the monthly discretionary spending surveyed in the second question to the retail, entertainment and hotel sectors and by age groups.

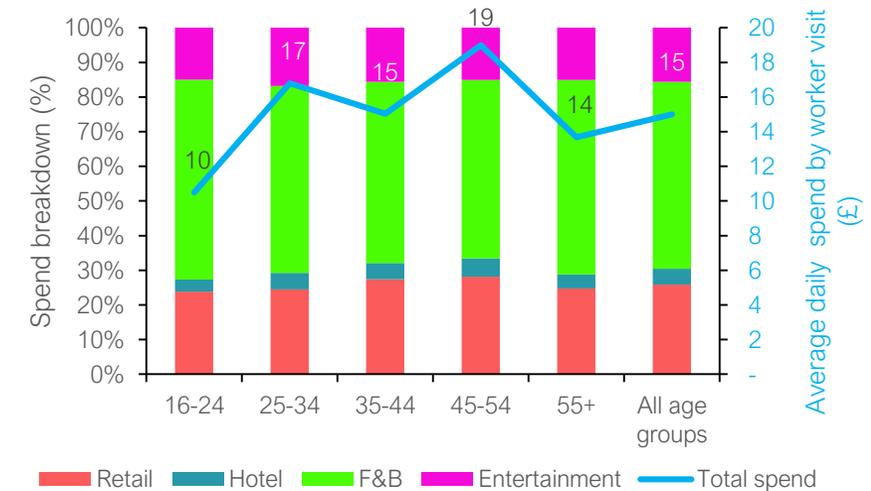
### Estimating total consumer spending (turnover) by sector and geography

The Orbis dataset is a resource that provides comprehensive company reports, financial strength indicators and ownership information at postcode level. We have sourced the total operating revenues for all companies operating in each geographies, having filtered all companies that had more than 1,000 employees for any given postcodes to ensure that we would only count business units that operate locally (rather than headquarters which may have skewed the results).

The Orbis dataset provided one estimate of total operating turnover for a sector and a geography. We have triangulated this estimate with the consumer expenditures estimate for London from Experian. The Experian dataset provides an estimate of consumer expenditure broken down by postcode sectors. Category contains spending data on a wide range of consumer products and services which we have used to provide another estimate of annual turnover for each of the sub-geographies considered in this report.

The average annual turnover per worker figures reported in the graph opposite takes the average of the Orbis and Experian dataset, divided by the number of jobs in each sector and geography.

Average daily spend by work visit, age and economic sector



Source: Arup

Average annual turnover per worker



Source: Experian; Orbis; Arup

# Office occupancy scenarios



# Occupancy scenarios

## COVID-19 scenario development to 2021

Below we provide an overview of the five COVID-19 related scenarios. Four components drive office workspace occupancy for 2021:

- **Commuting** and government guidelines - 'soft social distancing' involves offices remaining open with the possibility of using public transportation, 'strict social distancing' involves offices remaining open but public transport is discouraged, and 'essential travel' involves offices closing.
- **Organisation culture change** – the number of days per week in the office that will become the 'new normal'.
- **Timing of a turning point** – which month will bring a major technological breakthrough in fighting COVID-19 (vaccine or highly efficient testing or treatment for example).
- **Ramp up period** – how many months after the turning point will the 'new normal' (based on commuting and organisational culture change) be reached.

We used variations in these factors to generate five different scenarios. The components of each scenario are shown colour-coded in the figure opposite. So for example, scenario 5 'Base scenario', involves selecting 'No social distancing' for commuting, '3-day office-based work week' for organisational culture change, a 'Turning point in March 2021' and '6 months ramp up period' until the 'new normal'.

We have agreed to select scenario 5 'delicate recovery' as our baseline scenario. The results are then presented in the subsequent section of this report.

### Scenario 1: Doom & Gloom | Worst case

Due to the worsening situation, 2021 starts with a strict lockdown which is then maintained for 3 months. Office workers are advised to work from home for the whole of the year. There is no major turning point, but a very gradual ramp up of workplace occupancy due to pandemic fatigue. This scenario assumes a 2-day office based work week throughout 2021.

### Scenario 2: Living with COVID-19 | No major turning point

Soft social distancing, such as that in September 2020, is maintained for the whole of 2021. There is no major turning point, and so the population learns to live with COVID-19, very gradually returning to the office. By the end of 2021 occupancy levels reach the new normal of 3-day office-based work week, with soft social distancing measures still in place.

### Scenario 3: Recovery after a lockdown | From worse to better

2021 starts with a strict lockdown, but a major turning point happens in the spring which leads to loosening of government restrictions, and gradually improving office occupancy which ramps up to a 3-day office work week over 2021.

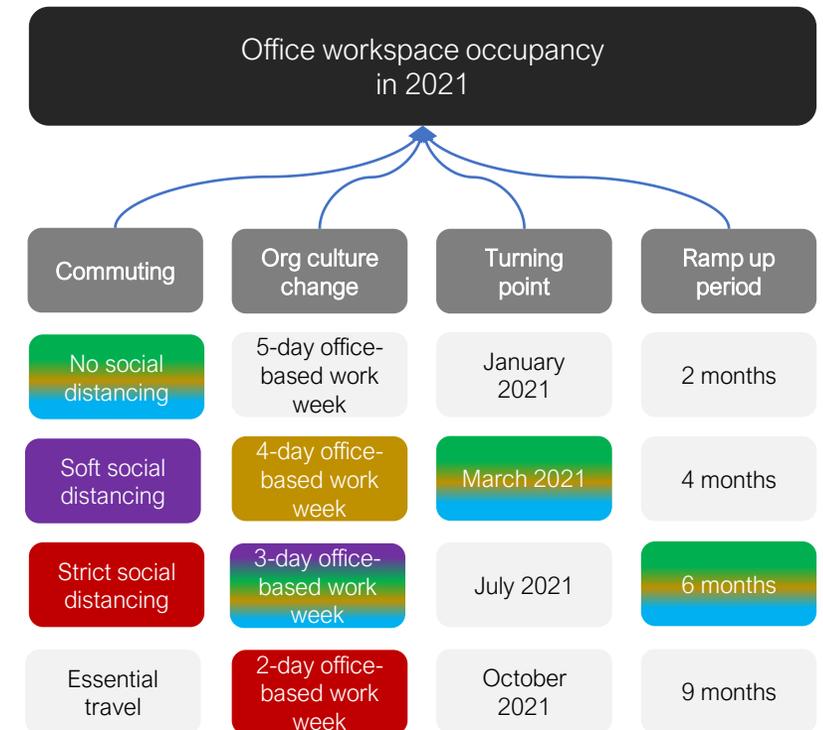
### Scenario 4: Robust recovery | Best case

There is a very gradual return to the office during early 2021, until a major turning point in the spring. Then, government guidelines are fully lifted and office workers ramp up to a 4-day office work week.

### Scenario 5: Delicate recovery | Base case

There is a very gradual return to the office during early 2021, until a major turning point in the spring. Then, government guidelines are substantially lifted and office workers ramp up to a 3-day office work week.

### Scenario development for workspace occupancy impacts in 2021



Source: Arup

# Occupancy scenario results

## Workspace occupancy scenarios

While our model produces monthly changes for all variables, it is important to note that the timing of each of the events modelled are subject to debate. Therefore, instead of using monthly forecasts, we have presented using quarterly outcomes where possible.

A vaccine is often seen as the holy grail that will end the pandemic, and the positive reports of the Pfizer trials in November 2020 are to be welcomed. Nevertheless, a report from researchers brought together by the Royal Society, said we needed to be 'realistic' about what a vaccine could achieve and when. Restrictions may need to be 'gradually relaxed' as it could take up to a year to roll the vaccine out. There is optimism, including from the UK government's scientific advisers, that some people may get a vaccine this year and mass vaccination may start early next year.

The time until the end of 2021 can be divided to three key periods:

- **Before turning point:** what happens between autumn 2020 and the discovery of the vaccine, an effective treatment or relaxation of government guidelines on social distancing.
- **Ramp up period:** once the vaccine, treatment or relaxation occurs, how long will it be to reach 'the new normal'.
- **New normal:** what will be the new normal for office life.

The impact of the five occupancy scenarios explained earlier can be seen on the graph to the right.

Our results for 2020 show the sharp decline in office workplace occupancy in March 2020 which gradually improved until autumn. The new lockdown announced for November is not captured here. The five scenarios provide a wide range of options for 2021.

**Scenario 1 (worst case)** stays at very low levels for the whole of 2021 as repeated lockdowns keep occupancy ratios at the minimum, leading to a reduction in occupancy of 87% compared to pre-COVID levels.

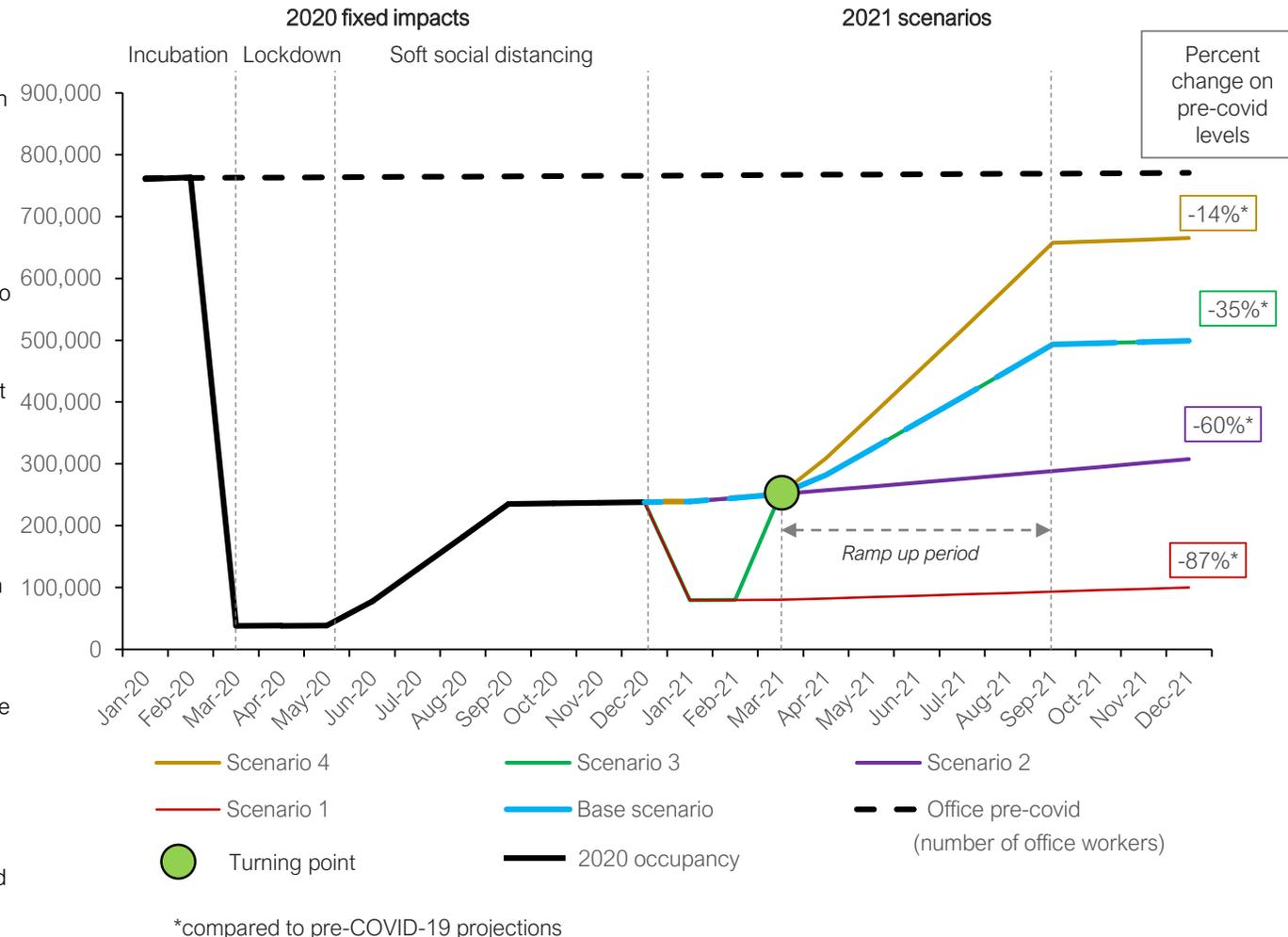
**Scenario 2 (no major turning point)** forecasts that occupancy levels will stay around 2020 early autumn levels and will reach a 60% reduction compared to pre-COVID by the end of 2021.

**Scenario 3 (from worse to better)** shows occupancy levels decreasing in the beginning of the year due to lockdown. However, an effective vaccine leads to a recovery and a 35% reduction in occupancy rates compared to pre-COVID by Dec 2021.

**Scenario 4 (best case)** forecasts that occupancy levels will be at early autumn levels until a vaccine is being rolled out in the spring of 2021. A 4-day office work week leads to an only 14% reduction compared to pre-COVID levels.

**Base scenario** expects occupancy to be at early autumn levels until the spring when an effective turning point leads to a six-month ramp up period ending with a 35% reduction office occupancy compared to pre-COVID levels.

FTEs in study area workplaces under our scenarios



# Occupancy scenario results

## Jobs at risk for Delicate recovery - base scenario

Our analysis models the number of jobs at risk due to reduced spending by office workers for each month until the end of 2021\*.

The jobs at risk figure shows how many jobs are unsustainable at the current level of office worker spending for each month (therefore, the monthly figures should not be added up). Jobs at risk do not correlate to unemployment – government intervention (for example furloughing) and multi-address companies may save these jobs or relocate them elsewhere.

We identify only the local impact, and reduced spending in central London may lead to increased spending outside of the centre where new jobs could be created which we are not identifying. Our results show the number of jobs at risk due only to the absence of office worker spending, and other impacts such as reduced tourism are not included.

It is unlikely that commercial real estate in such large amounts would stay vacant for an extended period. Falling real estate prices may lead to the reallocation of space and to a sectoral shift, providing a positive feedback loop which our analysis does not model.

As the previous page showed, the Delicate Recovery base scenario for office worker visits sees a 70% (530,000 workers) reduction in occupancy, which is followed by gradually increasing occupancy until it reaches the new normal of 35% (300,000 workers) reduction compared to pre-COVID levels.

### Base scenario modelling results for the entire study area

#### Food & Beverages (F&B) jobs at risk

The F&B sector is impacted the most – in the beginning of 2021, around 50% of jobs may be at risk (46,000), which gradually decreases until the new normal of 30% of jobs at risk (28,000) compared to pre-COVID level.

#### Entertainment jobs at risk

The entertainment sector also depends heavily on office worker spending – in the beginning of 2021, 40% of jobs (22,000) may be at risk, which gradually decreases as office workers return, until the new normal of 25% of jobs at risk (13,000) compared to pre-COVID level.

#### Retail jobs at risk

The impact on retail is relatively muted compared to F&B and Entertainment – in the beginning of 2021 we forecast that around 15% of jobs will be at risk (17,000), which decreases to around 10% at risk (10,000 jobs) compared to pre-COVID levels. Note that retail jobs might be at risk from wider factors, such as the absence of tourists, which this report does not cover.

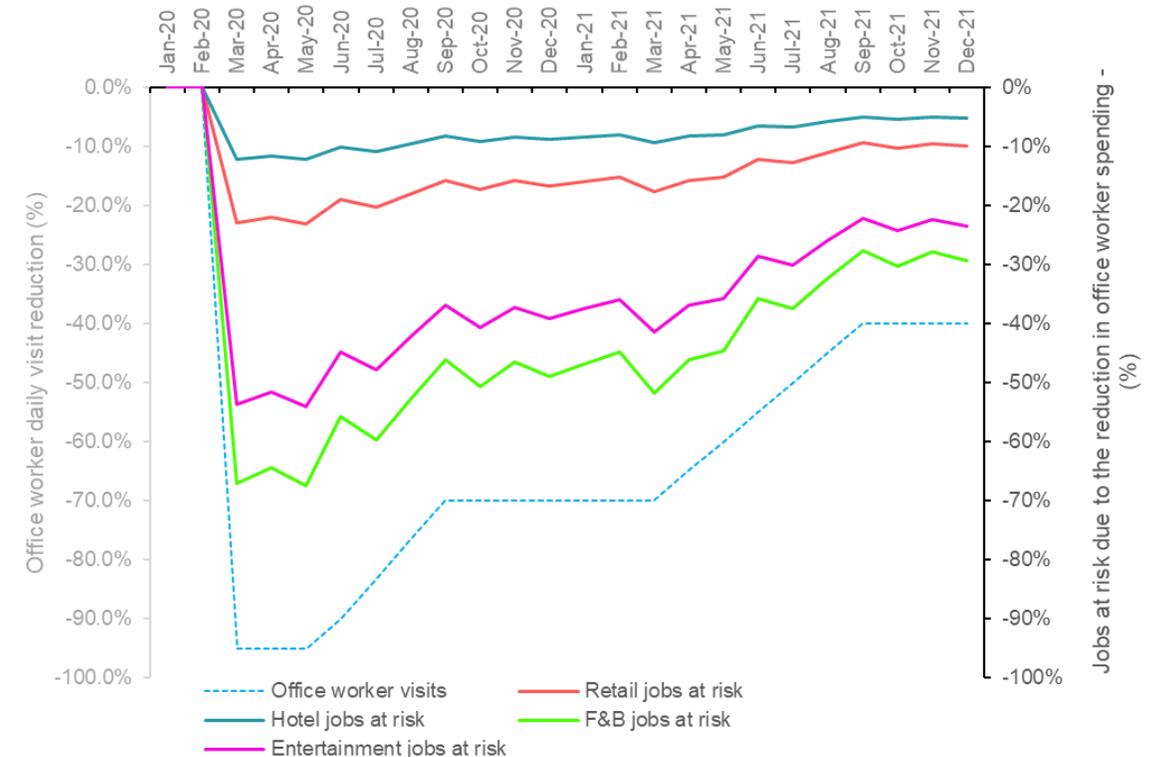
#### Hotel jobs at risk

The hotel sector is impacted by the absence of office workers the least – a 7% jobs at risk figure decreases to 5% (2,000) in the new normal.

#### Overall impact

In the Delicate recovery, before the turning point, around 84,000 jobs in the face to face economy may be at risk – with F&B sector taking more than half of them (55%). In the 'new normal' period, the model suggests that around 39,000 of face-to-face economy jobs may be at risk – with the F&B sector taking the largest share (55%).

### Delicate recovery | Base scenario



\* our approach uses spending and company turnover data which use different spatial units that cannot be perfectly matched to location. This provides a relatively small change in monthly spending and turnover data from one month to the other.

# Occupancy scenario results

## Other scenarios

### Modelling results for the entire study area

#### Food & Beverages (F&B) jobs at risk

The F&B sector is impacted the most in all scenarios. The scenario 1 'Doom & Gloom worst case' shows that 65% of jobs will be at risk at the end of 2021 compared to pre-COVID levels. On the other hand, the scenario 4 'Robust recovery best case' shows a gradual decrease of jobs at risk starting in spring, which result in 15% of jobs at risk at the end of 2021.

#### Entertainment jobs at risk

The entertainment sector moves similarly to F&B. The 'Worst case' scenario 1 shows that around 50% of jobs will be at risk continuously in 2021, the 'No turning point' scenario 2 shows 38% of jobs at risk and the 'Recovery after a lockdown from worse to better' scenario 3 produces a gradual increase to around 25% after a drop in the beginning of 2021. Even the 'Robust recovery best case' scenario 4 shows that around 10% of jobs will be at risk at the end of 2021.

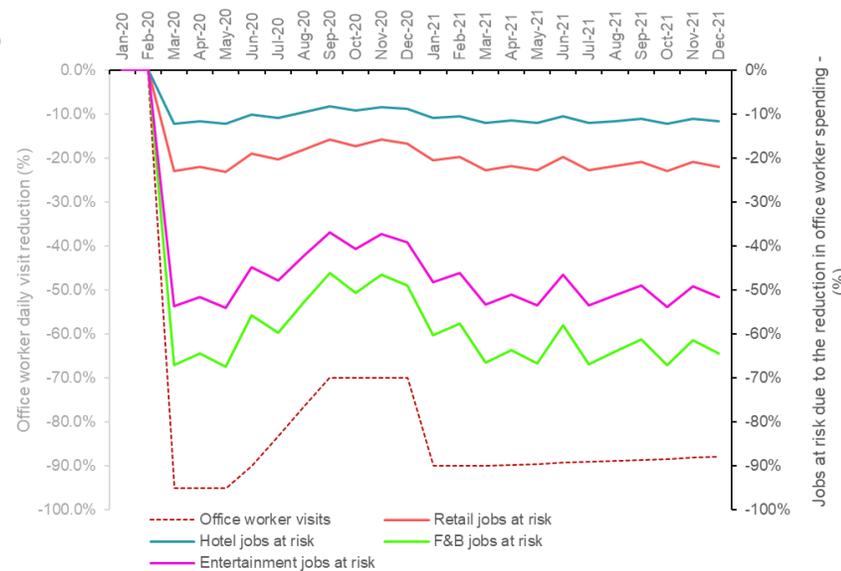
#### Retail jobs at risk

The retail sector is also impacted significantly by the absence of office workers; however, the impact is significantly smaller. The 'Doom & Gloom worst case' scenario 1 shows that around 20% of jobs will be at risk during 2021, whereas the 'Robust recovery best case' scenario 4 shows that from around 15% in January 2021, the number of jobs at risk will decrease to around 5% after the ramp up period.

#### Hotel jobs at risk

The hotel sector is impacted similarly to retail, but less so: the 'Doom & Gloom worst case' scenario 1 and 'No major turning point' scenario 2 scenarios forecast around 10% of jobs at risk in 2021, and the 'Recovery after a lockdown from worse to better' and 'Best Case' scenarios 3 and 4 forecast a gradual ramp up from around 10% in the beginning of 2021 to less than 5% by the end of 2021.

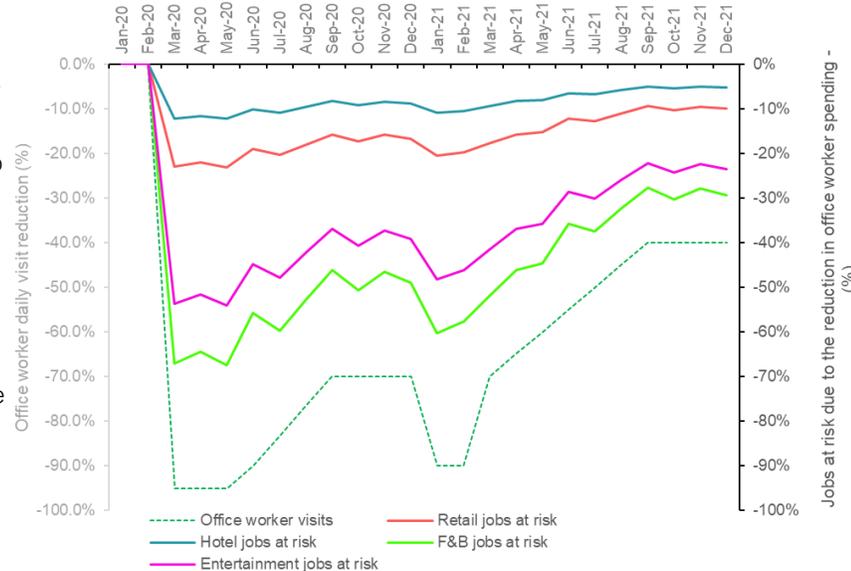
### Scenario 1 | Doom & Gloom | Worst case



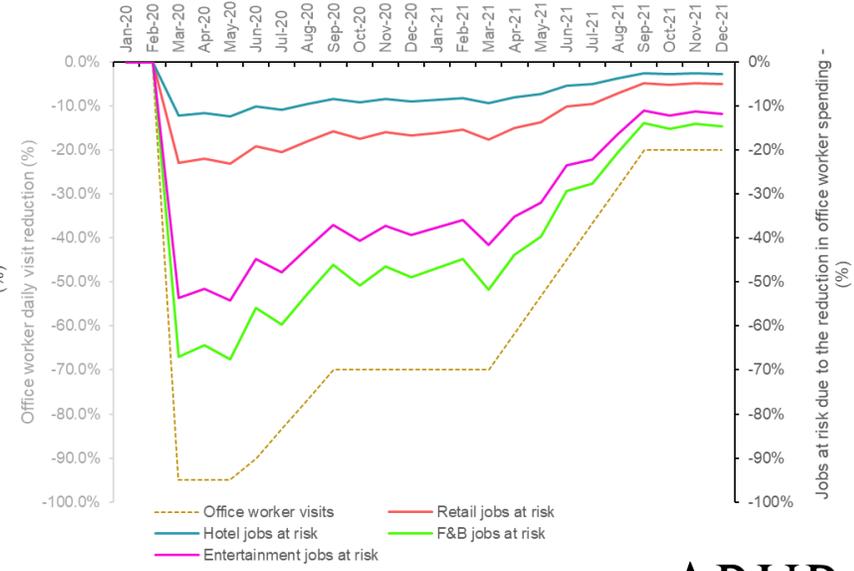
### Scenario 2 | Living with COVID-19 | No major turning point



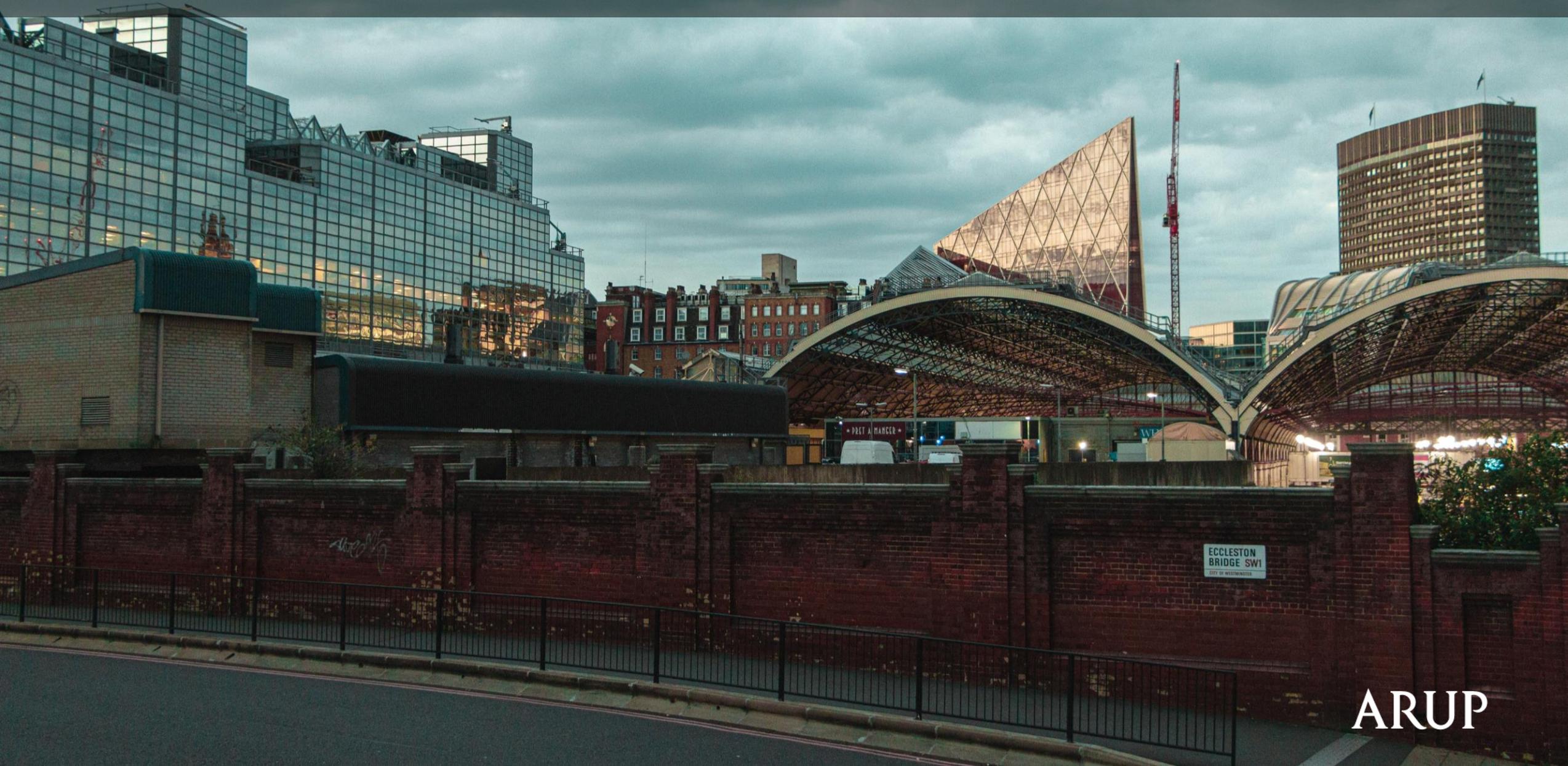
### Scenario 3 | Recovery after a lockdown | From worse to better



### Scenario 4 | Robust recovery | Best case



# Short term recovery initiatives



# Short term recovery initiatives

## Mitigating the impact, helping the recovery

The previous section showed that if no action is taken, the resulting impact on many of these sectors, which includes many of London's low paid workers, is staggering. Nevertheless, with mitigation, businesses operating in face-to-face sectors of the economy who are heavily dependent on the visits of office workers may be able to recover from the impacts of COVID-19 and associated social distancing measures.

During a period in which government guidelines and rules are relaxed, whilst the pandemic is still in process, office workers may not choose to visit the study area for a variety of reasons, including:

- Perception of a lack of safety (perhaps on behalf of elderly relatives) in crowded spaces such as public transport, offices, places to eat, venues, restaurants and bars.
- Supply side issues such as businesses not being open, and a reduced choice of offers, or time slots.
- The requirement to book ahead at cultural venues or restaurants resulting in reduced opportunity for spontaneous decisions after work.
- Expense of travel (including rail season tickets), and lack of surety about whether this expense will have been 'wasted' if government guidelines change.
- Behavioural factors, including habit, expectations of clients and colleagues, and a lack of 'fear of missing out' that has so long been associated with big city work and leisure opportunities ("no one else is going into central London so why should I bother?").

Our short term recovery measures attempt to overcome these. They are designed for implementation in 2020 and 2021. We divide the recovery measures into calls on government, the Mayor of London, Westminster City Council, The London Borough of Camden, the London Borough of Islington and actions for businesses and business improvement districts. Many of these activities require cross sector working.

For government, (central government, Mayor of London, Westminster

City Council, London Borough of Camden, and the London Borough of Islington)

### Direct financial support to businesses in the study area

- Sustaining the study area's workforce through a continuation of the job retention scheme until social distancing measures are ended under government's COVID-19 guidelines.
- Business rates holidays for the economic sectors most at risk from social distancing measures.
- Reduction of VAT and / or provide tax relief for supply chain businesses that supply businesses in the study area.

### Lower the cost of bringing workers back to central London

- Launch a 'go out to help out' or 'work at the office to help out' scheme similar to 'eat out to help out', potentially through free or discounted public transport.
- 'Flexible working' season tickets for rail travel to be considered in line with new commuter behaviour in order to accommodate a level of homeworking (e.g. 3 days a week).

### Reduce the perceived risk of a visit

- In the absence of a vaccine or another intervention, work towards mass testing of the population, with rapid results, which would allow for a form of passporting.
- Invest in the study area's public realm, transport infrastructure, walking and cycling routes.
- Rapidly increase the uptake of active travel, including e-scooters and e-bikes. This should include creating more space for people to walk and cycle safely, free cycle lessons, bike repairs, temporary cycle lanes and wider pavements, building on the existing efforts.

For business improvement districts

### Make it more appealing to visit the study area

- Following relaxation of government guidelines, launch a global post-COVID-19 campaign. Create activities to attract UK domestic visitors, and Londoners to central London.
- Join with other business groups, the rail industry, TfL and other allies to campaign for safe return of the corporate and other workers to London, perhaps through a campaign geared around FOMO.

For BID members and businesses

- Encourage / join the UK 'Good to Go' scheme, the official UK mark to signal that a hospitality business has followed Government and industry COVID-19 guidelines to maintain cleanliness and aid social distancing.
- Make offices COVID-safe. Install measures to protect such as on-the-door temperature testing for employees, one-way walking directions, rigorous cleaning routines for surfaces, staggered start times and enforced social distancing.
- Post pandemic, review office layouts to accommodate new uses to maximise the potential for innovation, creativity and inspiration. This may include more space for collaboration; more space for face-to-face meetings; and more space for professional events.
- Companies to acknowledge the value of face-to-face communication and provide more opportunity for interaction. This may include team days and internal training days; professional events; conferences; lectures and networking events; leisure events and after work community building.

# Short term recovery scenario results



# Recovery scenario results on office occupancy

Our suggested recovery measures are expected to lead to an increase in workspace occupancy and associated worker spending in their workplace area. This work is illustrative only.

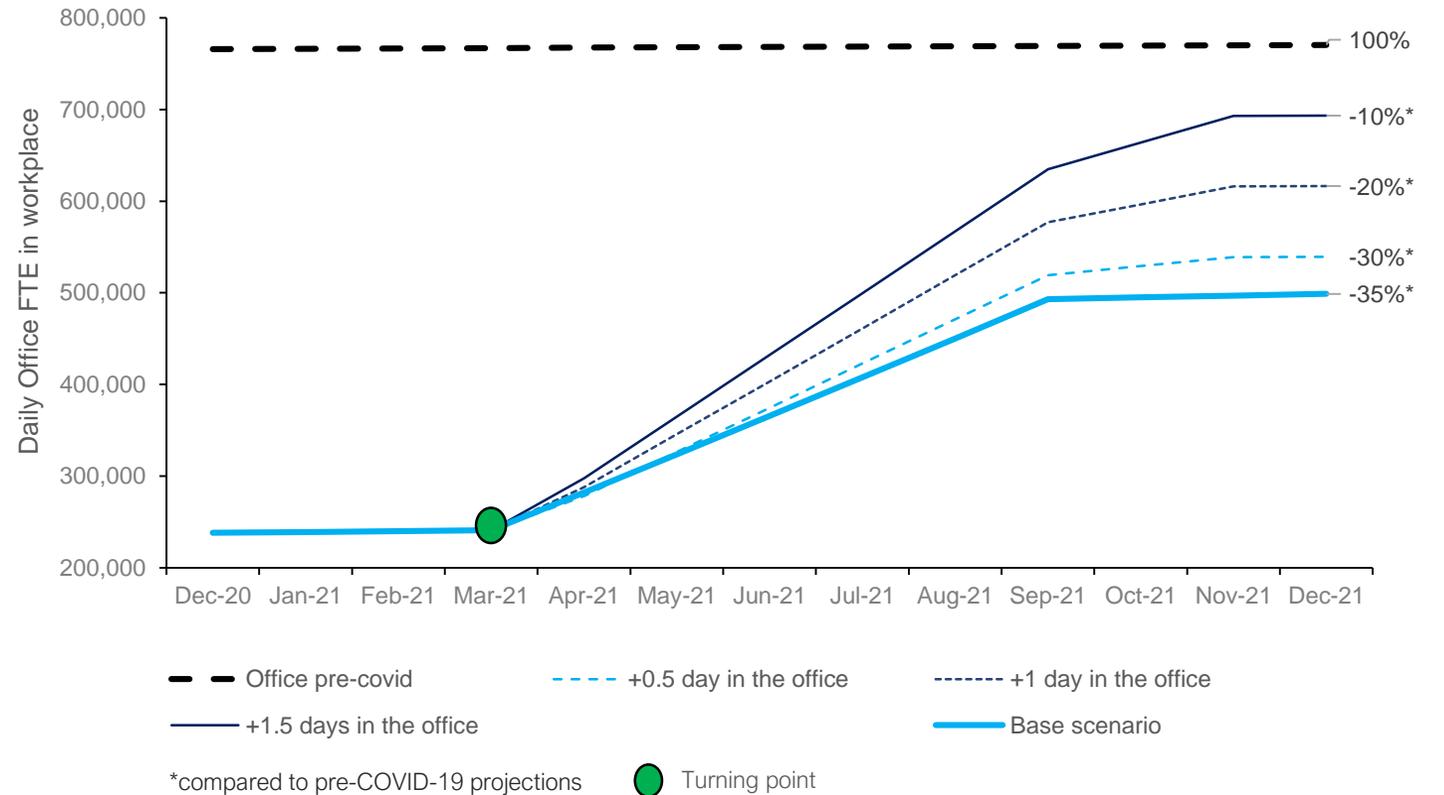
If our recovery measures lead to an additional 0.5 day in the office for all office workers in the study area it would translate to a reduction in the number of jobs at risk from 10,000 to 8,000 in the retail sector; 2,000 to 1,000 in the hotel sector; 28,000 to 14,000 in the food and beverage sector and 13,000 to 10,000 in the entertainment sector, by December 2021 for the base scenario (3 days).

An additional 1 day in the office for all office workers in the study area would translate in a reduction in the number of jobs at risk from 10,000 to 5,000 in the retail sector; 2,000 to 1,000 in the hotel sector; 28,000 to 21,000 in the food and beverage sector and 13,000 to 7,000 in the entertainment sector, by December 2021 for the base scenario.

An additional 1.5 days in the office for all office workers in the study area would translate in a reduction in the number of jobs at risk from 10,000 to 3,000 in the retail sector; 2,000 to 0 (rounded) in the hotel sector; 28,000 to 7,000 in the food and beverage sector and 13,000 to 3,000 in the entertainment sector, by December 2021 for the base scenario.

Note: job numbers have been rounded to the nearest thousand.

Potential impacts of recovery initiatives on workplace occupancy



# Longer term recovery initiatives



# Longer-term recovery initiatives

## The office post-COVID-19

The post-pandemic 'new normal' world is expected to be different in offices, high streets and the economy as a whole. This section provides an illustration about the possibilities and how companies and public authorities can make the most out of the new normal.

Our assumptions about the effectiveness of home working, and the tasks that are better delivered through face to face contact have changed. Therefore the office needs to adapt to encourage people to return. Post pandemic, workers are likely to retain more flexibility in where they can work, and they may require incentives and purpose to return to the office. Employers are able to place less emphasis on 'presenteeism' and more emphasis on the office being a productive, collaborative space to work with colleagues. With a hybrid office / home workforce, and people working in scattered locations and a reduction in international travel, digital connectivity will need to be further embedded in working environments to ensure that everyone feels included regardless of their location. Collaborative spaces that include audio-visual facilities, from displays to more immersive technologies that can create mixed realities, can be strategically distributed across floorplans. Flexitime working may lead to reduced peaks in transport demand, extending the requirement for safe and welcoming 24-hour access to building facilities and amenities, such as healthy food, concierge services and changing rooms.

Offices may also need to adapt to the possibility of a further, future pandemic. Sensors and data can be used to control occupancy and inform building operations, from cleaning routines to rapid response to anomalies. Putting the same data on display through dynamic dashboards can increase our awareness of safety. Multiplying vertical connections in high-rise buildings and giving more prominence to stairs can help reduce reliance on lifts, which will have limited use considering appropriate distancing. Anti-microbial materials and contactless access also help create spaces and behaviours that will make offices more prepared for future outbreaks. Spatial design can be used to generate floorplans that combine social interaction with required distancing

There are six key features which offices may wish to embed going forwards:



### Team

The office provides a sense of belonging and loyalty.



### Teach

It is a place where people learn, mentor and develop.



### Trust

The environment facilitates interaction, collaboration and wellbeing.



### Creativity

It inspires and promotes ingenuity



### Clients

It is a place where clients and collaborators can visit



### Capability

It is a place where workers can showcase their capability



Source: Arup

# Longer-term recovery initiatives

## Retail post-COVID-19

### How will the crisis transform the high street?

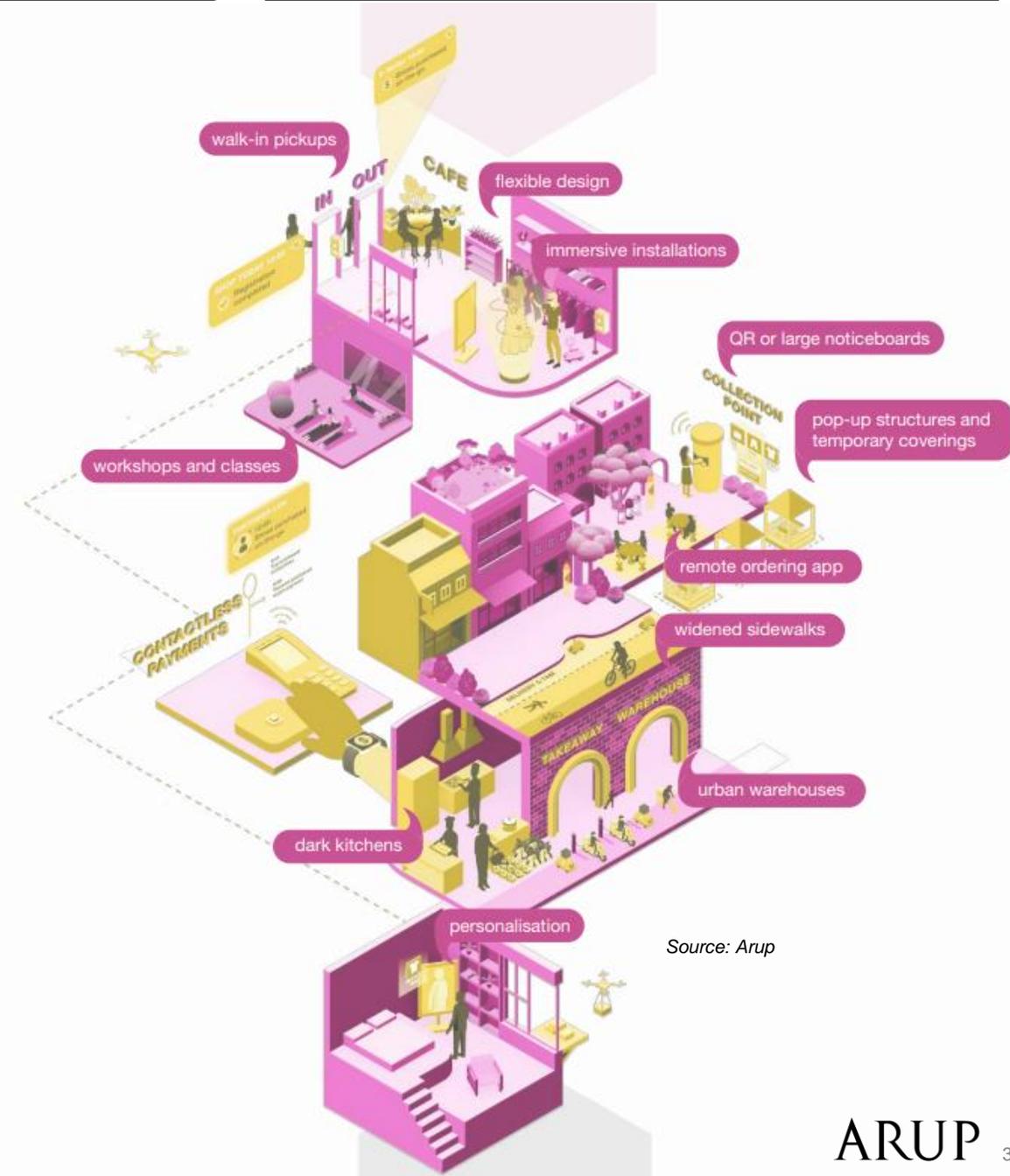
With bars, restaurants and pubs forced to limit indoor occupation, we have already seen social life flourishing in the streets. Widened sidewalks in proximity to shops and limiting road access to cars will mean that streets can accommodate far more social life outdoors. Pop-up structures, temporary covering and heating or ventilation solutions can be used in less favourable climates to provide more space. Flexible design of store layouts to provide for changing uses is an increasingly important factor that allows retailers to integrate different activities and offerings within traditional stores.

### What will bring you to the store?

The competition to create vibrant destinations that increase property value may become fiercer in our post pandemic world. Creating a unique character will be a priority for property owners and developers, who are likely to seek retailers that have a distinctive identity. Experience and entertainment will be an essential requirement for the physical store, where people will seek what they cannot experience online, from workshops and classes to immersive installations through digital channels, powered by data and geolocation, can ensure that captivating experiences translate into online sales.

### Which systems will support your experience?

The rise of online shopping and delivery services has accelerated during the pandemic and many changes are likely to stay. Urban warehouses and dark kitchens are invisibly materialising across cities and suburban areas to facilitate rapid fulfilment of food and other retail deliveries. Traditional restaurants are also exploring take out models, creating small balconies for walk-in pickups. Adopting mobile remote ordering apps reduce waiting times and allow people to focus on enjoying their food or shopping. Technologies such as facial recognition and proximity sensors can facilitate fast and touchless payments.



Source: Arup

# Longer-term recovery initiatives

## Transit post-COVID-19

### Is sustainable transport possible in times of isolation?

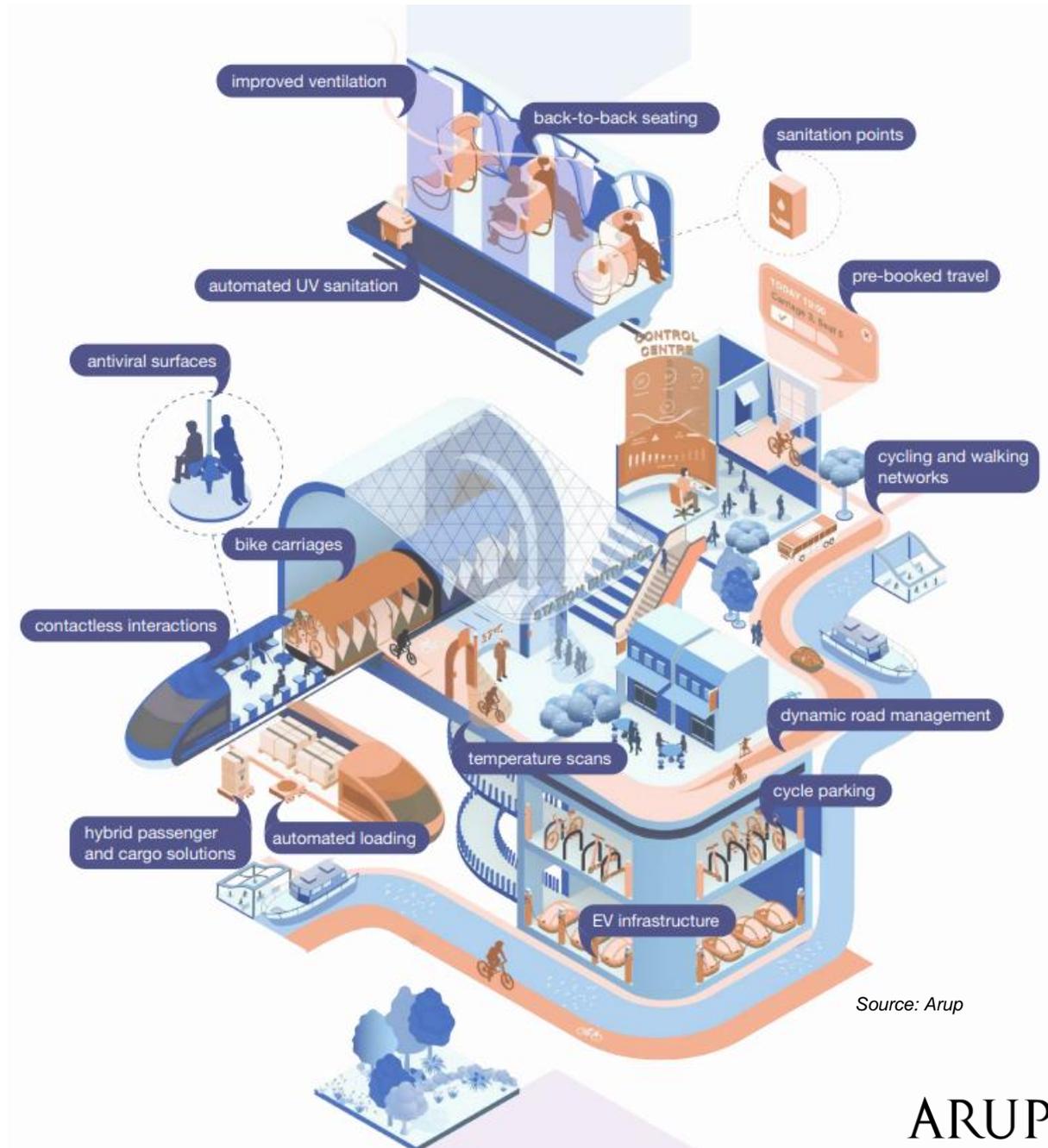
To reduce the risk of infection in transit, during the pandemic people have turned to personal vehicles and micro mobility options such as bikes, scooters or walking for essential journeys. These habits may be here to stay. And interconnected cycling and walking networks considering the end to end journey with cycle parking or dedicated bike carriages will help for longer daily commutes even after the pandemic.

### How can public transport adapt to this new reality?

Public transport systems have become high-risk travel options during COVID-19. To protect public health as we emerge from the pandemic, and to provide reassurance of safety in future, intervention on risk and pressure points is needed. These innovations can also ensure that optimal-crowding levels are not exceeded, providing more comfortable travel post-pandemic. Pre-booked travel, flexible working and 24/7 operation ensure reduced occupancy throughout the day. Carriage weight sensors can further signal when maximum capacity is reached; contactless interactions and barrier-free movements reduce congestion and exposure. Improved ventilation, antiviral surfaces and the regular, automated UV sanitation of high exposure zones, such as handrails, would minimise pathogens in public spaces.

### How can we adapt transport infrastructure to manage cargo demand?

The demand on the movement of goods has spiked to keep up with the new online behaviours and localised lifestyles. Airline operators have already shifted their focus to cargo solutions, adapting fleets to more flexibly handle people and goods. Introducing hybrid passenger and cargo solutions by repurposing underused space on metros, buses and trains for freight could improve the commercial viability of London's transit systems and help manage demand even after the pandemic. Automated loading systems and low-carbon distribution through consolidation and green last mile delivery solutions can ensure environmental sustainability, improve efficiencies and reduce the cost of operations.



Source: Arup

# Conclusions



# Conclusions

## London has to reinvent itself to reach a better new normal

### Footfall is the lifeblood of central London's diverse economy

Our analysis found that the absence of office workers in central London puts face-to-face economy workers, who heavily depend on office workers' spending, at risk of redundancy. We include a summary of our numerical results on the following slide.

Our more pessimistic 'worst case' scenario assumes no effective vaccine (or other solution) by December 2021 and that 87% of central London workers still work remotely by this time. This would lead to an estimated 117,000 jobs put at risk by the lack of footfall from office workers. These jobs are concentrated in sectors that depend on face-to-face interactions such as retail, entertainment, hospitality and accommodation. Many of these sectors employ predominantly lower paid workers.

Under this scenario, the economy of central London would contract by £84bn by December 2021, a significant hit to the UK economy as a whole.

### A vaccine (or other solution) would help to mitigate impacts

The introduction of a vaccine, as modelled in our 'base scenario', would increase office occupancy rates by 26% in comparison with the 'worst case', which would lead to a £22bn uplift in local economic activity and 31,000 jobs no longer at risk.

Even with an effective vaccine, however, office occupancy rates would still be 34% lower than pre-COVID-19 levels, and 51,000 jobs would still be at risk of redundancy. Under this 'base scenario', local economic activity risks being £37bn lower than pre-COVID-19 levels.

### Targeted interventions are required

In each of these scenarios, it is possible to mitigate the negative impacts through action. The government's furlough scheme has already had significant impact to mitigate potential job losses in vulnerable sectors of central London's economy. Beyond this, getting people back into town, safely, should be a priority. To enable this, our recommendations for employers include the redesign of office space to ensure that workers are interested and encouraged to visit offices more often. And whilst our analysis focuses on the importance of footfall from corporate sector workers, emphasis should also be placed on encouraging the return of others to central London (including tourists and overseas students).

Finally, despite this, remote work does not have to be merely an emergency response for business continuity, to be discarded when the pandemic subsides. Technological and social changes have reached a tipping point which will lead us to a 'new normal'. Finding the optimal balance between remote and office work, in a way that promotes the vitality of urban centres, our productivity at work, fruitful social interactions and mental health should be the drivers behind the future of work. In the long term, we may visit central London less often, but there will be many more of us doing so. New companies will step in to take up the office space vacated by the old.

The ability of cities to reinvent themselves is phenomenal. London, New York and Paris and others have weathered crises, wars and pandemics, but always managed to change course and come back stronger than ever. Although action is needed now, there is real opportunity in the years that lie ahead.

# Appendices



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