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# **Inequality and the Covid crisis in the United Kingdom**

## Inequality and the Covid crisis in the United Kingdom

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### Abstract

We review the effects of the Covid-19 pandemic on inequalities in education, the labour market, household living standards, mental health, and wealth in the UK. The pandemic has pushed up inequalities on several dimensions. School closures particularly disrupted the learning of poorer children, leading to lower attainment. Mental health worsened for those groups (women and younger adults) who had poorer mental health pre-pandemic. Lockdowns and social distancing particularly reduced the ability of younger, lower-earning, and less educated people to work. However, job-support programmes combined with the expanded welfare system meant that, if anything, disposable income inequality fell. Rising house prices have benefited people in particular around the middle of the wealth distribution. In the longer term, lower work experience for the less educated and missed schooling could push up some inequalities. Increased rates of working from home seem likely to persist which may increase some inequalities and decrease others.

Keywords: inequality; Covid-19 pandemic; education; living standards; wealth.

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## 1. Introduction

Far from pushing inequality down the agenda, the COVID-19 pandemic shone a spotlight on inequalities in education, income, work, health, savings, and wealth. It also opened up new gaps along dimensions that were previously less significant, such as the ability to work from home and digital access.

Policy interventions to counteract the changes caused by the pandemic and associated lockdowns have been remarkably powerful. Examining the evolution of the Gini coefficient of income during the pandemic across a range of developed economies, Almeida et al (2020) find that without the policy interventions this measure of disposable income inequality would have risen significantly - by more than 3 percentage points in the European Union (EU), for example. After accounting for the various income support schemes put in place, what we actually see is a small fall in disposable income inequality as measured by the Gini (1 percentage point in the EU).

But many policies have been temporary, and many of them have papered over cracks that would have been immediately visible (e.g. falling household incomes) without being able to prevent likely long-term damage (e.g. a loss of human capital arising from time away from education or paid work). And disposable income is a narrow metric to use to assess the impact on economic inequalities, not least for a phenomenon with impacts as wide-ranging as a pandemic. As well as the direct health implications, this crisis was a profound shock to virtually all aspects of social and economic life.

In this paper we review the implications of the pandemic for inequalities. We focus on the case of the United Kingdom (UK) and draw parallels to what has happened in other countries where information is available. We place emphasis on interpreting currently available data and

measurements through a forward-looking lens: building a bridge between what we have seen occur so far, and what we might reasonably expect the resulting implications to be for future inequalities. The UK has a particularly wide range of rich data available for this purpose, simultaneously spanning many of the domains of life across which the pandemic had its impacts. These include longitudinal household survey data collected prior to, and several times during, the pandemic, collecting information on economic, health and family circumstances; real-time financial transactions data; bespoke real-time surveys set up to understand the impacts on schooling, home learning and educational progress; and high-quality real-time job vacancies data.

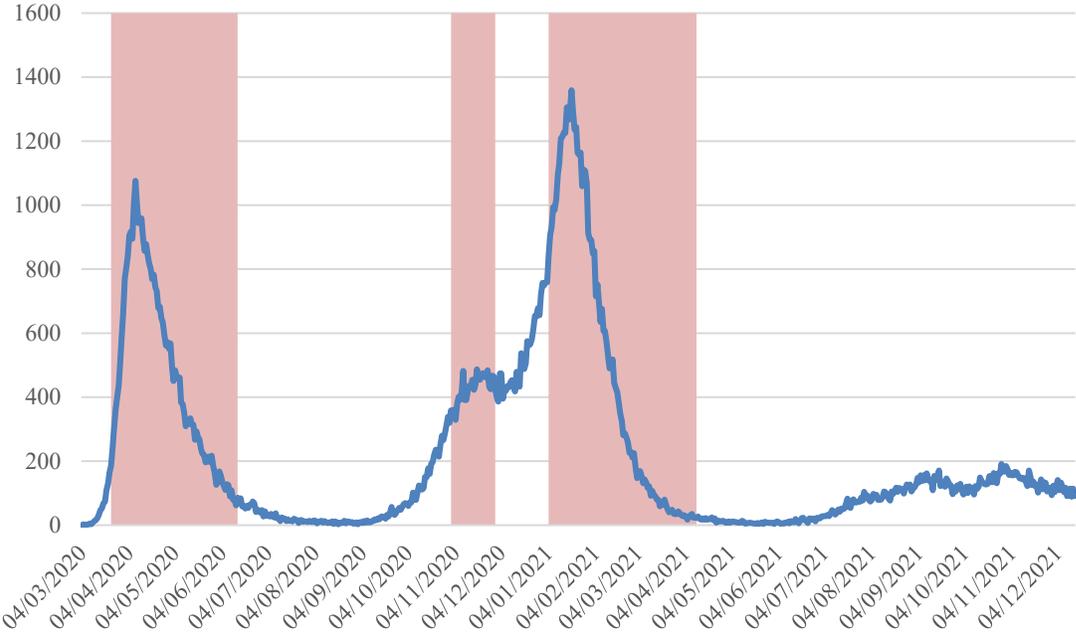
Given the rich data available, we make a point of reviewing impacts of the pandemic on a wide range of inequalities considered over the life cycle – specifically in terms of education, in the labour market, material living standards, mental health, and household wealth – to build a comprehensive picture of the likely short- and long-term effects of the pandemic.

Figure 1 shows the timing of the main pandemic waves and national lockdowns in the UK up to May 2021. The qualitative pattern here is typical of many developed countries, with large waves in Spring 2020 and the Winter of 2020/2021, though the UK was hit harder than many developed economies in both the first wave in Spring 2020, and in the Winter 2020/2021 as the more transmissible Alpha variant originated in South East England. National lockdowns, of which the UK had three in total, followed similar timing. After approving vaccines made by Pfizer/BioNTech and AstraZeneca in December 2020, the UK had a relatively swift rollout of the Covid-19 vaccines. With relatively high levels of vaccination, particularly amongst older people, the third wave of cases (driven by the Delta variant) that occurred through Summer and Autumn 2021 led to relatively few deaths. Considerable uncertainty remains about what happens

next, not least given the emergence of the Omicron variant, and the possibility of other new virus variants and waning efficacy of vaccination.

The UK is a country with relatively high levels of income inequality for a developed economy, but headed in to the pandemic with underlying disparities that will be familiar to readers from many countries. Educational outcomes varied significantly by socio-economic background, with fewer paths to well paid jobs for those without university education (see Blundell, Green and Jin, 2021). The broad trend over the previous few decades had been towards increased earnings inequality (offset with higher in-work transfers from the government), and wage progression over the lifecycle for those with little formal education was typically low (Belfield et al, 2017). A large fraction of poorer households had low savings and/or high debt and health vulnerabilities correlated strongly with economic inequalities (Blundell et al., 2020).

**Figure 1. Deaths per day from Covid-19 in the UK, March 2020 to December 2021**



Note: Lockdowns, shown shaded, are based on the dates of national restrictions in England. The first and third lockdowns were lifted particularly gradually. Date of the end of these lockdowns is therefore based on date on re-opening of non-essential retail.

Source: <https://coronavirus.data.gov.uk/details/deaths>

To provide further framework for what follows, it is helpful to set out the key ways in which the economic effects of the pandemic were similar to, and different from, a more typical recession. The specificities of the pandemic broadly belong to two categories. First, the pandemic caused huge sectoral changes in economic activity, due to the contraction of output being concentrated in sectors that rely on social contact. Second, the pandemic was distinctive because there were simultaneous disruptions to virtually all aspects of life, including education, health and healthcare, and social interaction. These other disruptions all have the potential to have persistent economic effects of their own.

In the UK, the Covid-19 pandemic does not look especially remarkable compared to past recessions with respect to its immediate impacts on the employment rate (which fell from 61.7% of the adult population at the end of 2019 to 60% in Spring 2021) or median household incomes (which are actually projected to have risen by 1.5% between 2019-20 and 2020-21 according to Handscomb et al., 2021) – a remarkable fact, given the 22% contraction in GDP between 2019Q4 and 2020Q2.

These details do differ in important ways from country to country. For example, employment declines were much more severe in the United States, which is consistent with what would be predicted from its use of expanded unemployment insurance rather than the ‘furlough’ or ‘short-time work’ arrangements used in the UK and much of Europe, which emphasized the retention of existing employer-employee matches. But the broad picture of surprisingly robust incomes, in the face of such a momentous economic shock, is very representative of the international experience (see Stantcheva, 2021).

These remarkable facts are reconciled by the huge amount of state intervention. This has papered over the cracks but leaves the public finances in an unusually precarious position, with a public

sector deficit of 15% of GDP in the UK in 2020-21 and public sector net debt reaching 98% of national income in 2021-22 (Office for Budget Responsibility 2021). This public debt will need to be financed in future, which is the first of many reasons why the long-term effects of this pandemic are likely to be far from normal, despite the superficial appearance of normality given by contemporaneous measures of household living standards.

The profound immediate impacts of the Covid-19 pandemic on the UK's labour market becomes much clearer once we look at measures of actual hours worked, which fell by 18% between February and May 2020, much more commensurate with the measured drops in national income. This is typical of many countries, because hours of work were not held afloat by furlough schemes or short-time work schemes in the same way as employment or income. This unprecedented impact matters enormously. We care about demand-induced reductions in hours of work even if they are not associated with contemporaneous reductions in household income, because experience in paid work brings human capital and earnings progression. Relative to a counterfactual of the labour market continuing to look like it did in 2019, the pandemic had, by mid-2021, caused a reduction of 2.7 million person-years of full-time work and a further 1.5 million of part-time work. That is equivalent to 14% of the workforce stopping working for a year. For those with lower educational attainment (GCSEs – national exams taken at age 16 – or less), the figure is even higher at 24%, with two-thirds of the effect coming from reduced full-time work.

The human capital effects are likely to extend significantly beyond the simple loss of experience in paid work, due to other unusual features of the Covid-19 pandemic. The number of apprenticeships fell substantially – another, even more direct, illustration of the general theme here, that while significant state intervention has often stopped employment ties from being

severed (or prevented the immediate cliff-edge in incomes resulting from job loss, as in the US), this is not the same as providing the economic activity that underlies much human capital development and career progression.

Perhaps the most extraordinary feature of all, when it comes to human capital, was the simultaneous disruption to the education system. Here, comparisons to normal recessions are of course entirely unnecessary. There is widespread evidence of lower school attainment, with reading test scores in the UK in autumn of 2020 showing learning loss equivalent to around 2 months of progress, even before the closures of schools in early 2021 (Department for Education 2021) and which larger for those from more disadvantaged backgrounds.

Another two unusual features of the Covid-19 pandemic, with potentially profound longer-term implications, arise from the premium that it placed on the ability to do work without social contact: notably the sector-specificity of the shock and the huge rise in remote working. Both of these create the potential for significant structural change in the longer term – something that poses challenges for certain groups of workers, and with policymakers often have an uneasy history in managing effectively. A common theme is the changed premium on certain technologies, with e-commerce and digital industries actually booming. Wage inequalities are likely to rise if the premium on skilled use of technology increases. It would increase the value of designing a skills and education policy that can maximise opportunities to attain those skills.

In the shorter term, the mere fact of sectorally imbalanced labour market disruption creates the possibility of large-scale skill mismatches whereby available jobs and available skill-sets do not align well at a local level. Mismatch is always a concern when emerging from a recession (see Sahin et al., 2014; Patterson et al., 2016), but perhaps unusually so this time around given the highly uneven level of disruption experienced across people in different lines of work. We

present early evidence from vacancy data in the UK suggesting there are already signs of significant skill mismatch in the economy as it emerges from the pandemic. Viewed through a lifecycle lens, structural change is typically most difficult for those who have already acquired human capital that becomes obsolete - particularly those late in their careers for whom new investments may be less worthwhile. Indeed, possibly for this reason, we show in this paper that re-employment probabilities for older workers made redundant have been particularly low in this pandemic.

Finally, for some obvious and some not so obvious reasons, the health effects of the past year are likely to be far more significant than any normal economic contraction. In addition to the widespread mental health impacts of the pandemic, which particularly affected young women, the direct immediate impacts of Covid-19 itself have clearly been unequally spread, with inequalities in cases and deaths now particularly well-documented between more and less affluent areas and different racial groups. The story of Covid-19 affecting already-disadvantaged groups more than others is not unique to the UK – see, for example, Case and Deaton (2021) for the protective effect of university education in the US. And the longer-term effects of Covid-19 infection on morbidities and mortality remain highly uncertain, but it is possible that they are significant, given the disease's ability to infect multiple vital organs and leave pathologies in them, including the brain, and not limited to those suffering severe symptoms during the period of infection (Douaud et al., 2021). Given the numbers infected, any long-term health effects could have non-trivial implications for future productivity, health and wellbeing, and healthcare systems.

In the rest of the paper we step through different key elements of the pandemic's impacts in turn, examining inequalities in education, the labour market, material living standards, mental health,

and household wealth. We conclude with a discussion of what we have learnt about the pandemic's longer-term legacy.

## **2. Education**

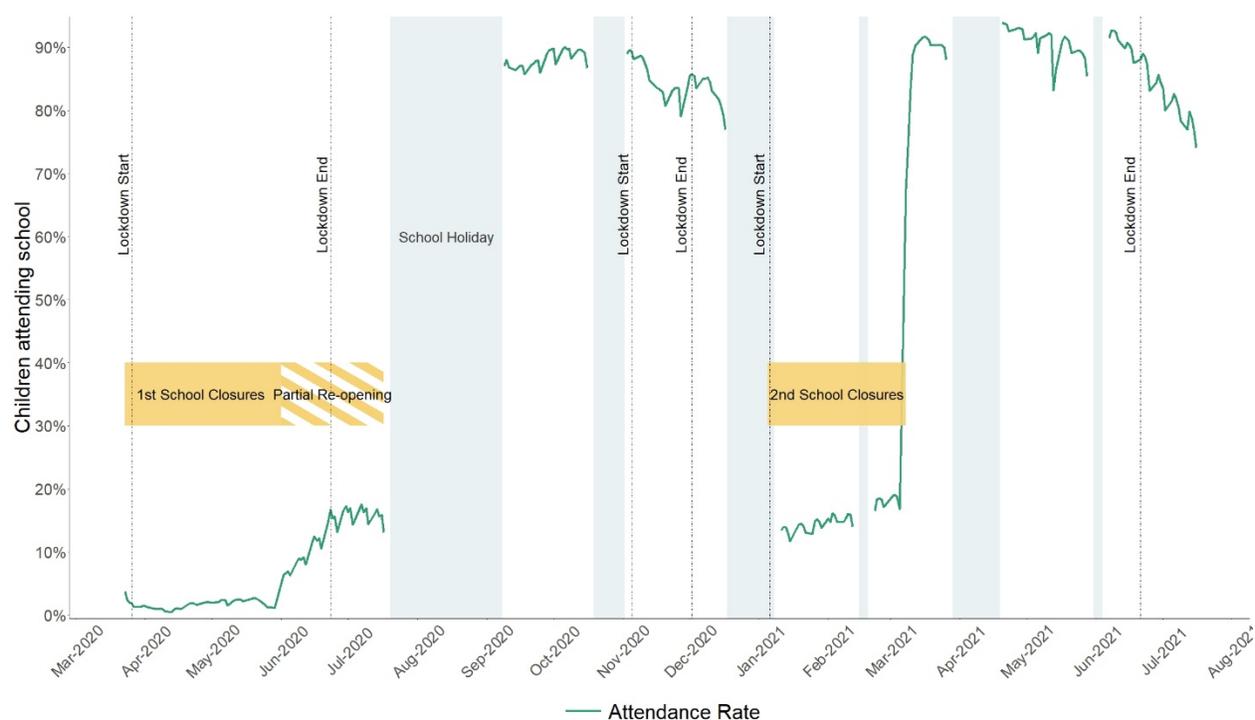
One of the most distinctive features of the pandemic crisis was the sudden and extended closure of schools and childcare providers, resulting in a shift of most, if not all, education and care responsibilities to parents and families. School disruptions were widespread across the world, though to different extents in different countries (UNESCO 2021). In the UK there were two major periods of school shutdown: the first, during the spring 2020, lasted for 10 weeks, and the second, during the start of 2021, lasted for another 9 weeks. Other periods saw schools open intermittently, sometimes only for selected groups of children and for shorter daily hours, and attendance was incomplete, in part due to isolation as a result of the test-and-trace program.

The extent of the disruption is summarized in Figure 2. Attendance was very low during the entire second half of the 2019-20 school year, never exceeding 20%, even when schools reopened; it then recovered in the school year 2020-21, hovering between 80% and 90% while schools were opened but falling back to around 20% during the second period of school closures. Relative to the counterfactual of the pre-pandemic attendance rate at 95% (see Department for Education 2021a), these figures imply that an average of 20 additional in-person school weeks per pupil were lost between March 2020 and July 2021 due to the pandemic, or about half of a school year.

While some learning that would otherwise take place in school was delivered remotely or by parents during school closures, it is unlikely on its own to compensate for the entirety of the lost time in school. Studies so far have been documented that the disruption in school life significantly affected the education experiences and attainment of children, and more so for the

most economically disadvantaged among them, who already achieve less on average than their better-off peers. School closures removed key equalizing education inputs, in the form of broadly standardized curriculums and similar learning environments. These have been replaced with very heterogeneous home environments and mixed home learning support provided by schools. In this section, we document how the pandemic crisis affected, and affected differently, the learning experiences and education attainment of school-age children.

**Figure 2. Proportion of school pupils attending school during the pandemic crisis**



Source: Cattan et al (2021), using attendance data drawn from Department for Education (2021a), “Attendance in education and early years settings during the coronavirus (COVID-19) outbreak”.

## 2.1 *Inequalities in learning experiences at home during school closures*

Various studies in many countries have reported a large drop in the amount of time that children spend doing school work and learning activities during the extended periods of school closures.

For instance, Huber and Helm (2020) show that, early in the pandemic, only about 30% of the

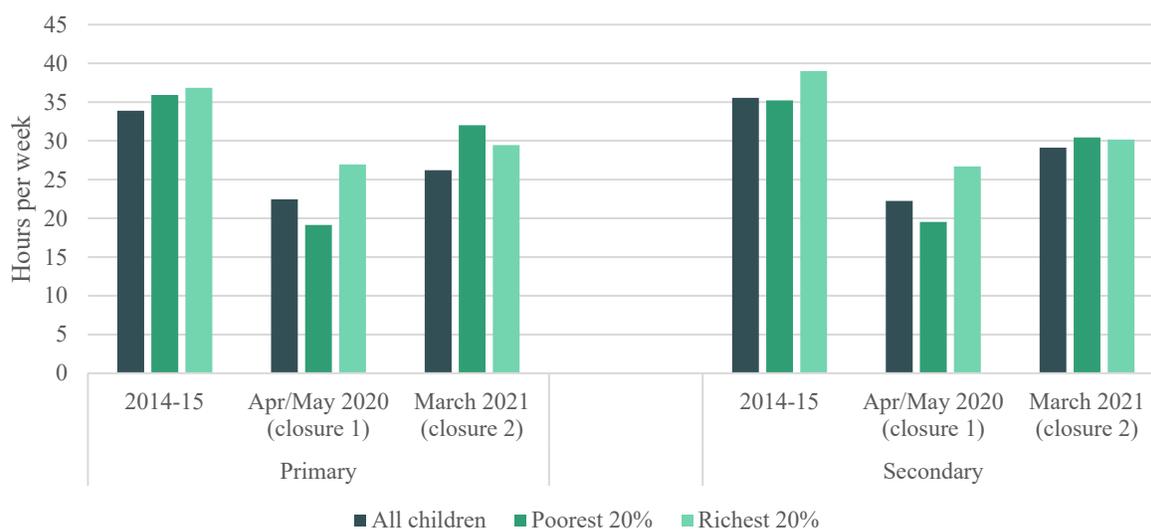
students in Switzerland, Austria and Germany engaged in school work for a similar number of hours as during normal times. In contrast, about 20% of children reduced their time doing school work to 9 or fewer hours per week.

To quantify the extent to which the education experiences of school-age children in England were disrupted during the pandemic, Andrew et al. (2020a, 2020b) and Cattan et al. (2021) combined time-use data collected online for children and parents living in England during the two periods of school closures, in the Spring 2020 and Winter 2021 with data from the latest survey of time-use for the UK, from 2014-15. The first closure, which arrived unexpectedly and caught schools and families unprepared, saw more than a third of the normal learning hours that children do during term time being wiped off on average; this amounted to 12 to 13 fewer learning hours per week than normal (Figure 3). The experiences from the first lockdown helped improve home learning during the second, but learning time remained low as compared to pre-pandemic levels: weekly learning time was down from normal times by 8 and 6 weekly hours for primary and secondary school children, respectively.

Learning time did not fall uniformly across socio-economic groups, and again differences were sharper early in the pandemic. Figure 3 shows learning time for children in the bottom and top fifth of the distribution of family pre-tax earnings. During the first lockdown, learning time fell by 7 to 8 weekly hours more among primary and secondary school children from the most disadvantaged backgrounds than among children from the better-off families. By the second closure, however, this gap had closed completely. Other studies found similar patterns. For instance, Bayrakdar and Guveli (2020) found that children who received free school meals (a

government welfare benefit provided to low-income families),<sup>2</sup> children from lower-educated and single parent families and children with Pakistani or Bangladeshi backgrounds (who have historically on average been more socio-economically disadvantaged than white children or those from Indian backgrounds) devoted significantly less time to schoolwork at home. A recent report (Sharp et al. 2021) also found that learning losses has been more significant among pupils of schools with the highest proportion of student on free school meals: 51% of teachers in schools in the top quintile by this measure (most deprived schools) report that children in their classes were four or more months behind at the end of the 2019-20 school year, while the comparable number is 15% for school in the bottom quintile (least deprived).

**Figure 3. Average weekly learning time among children, before and during the school closures**

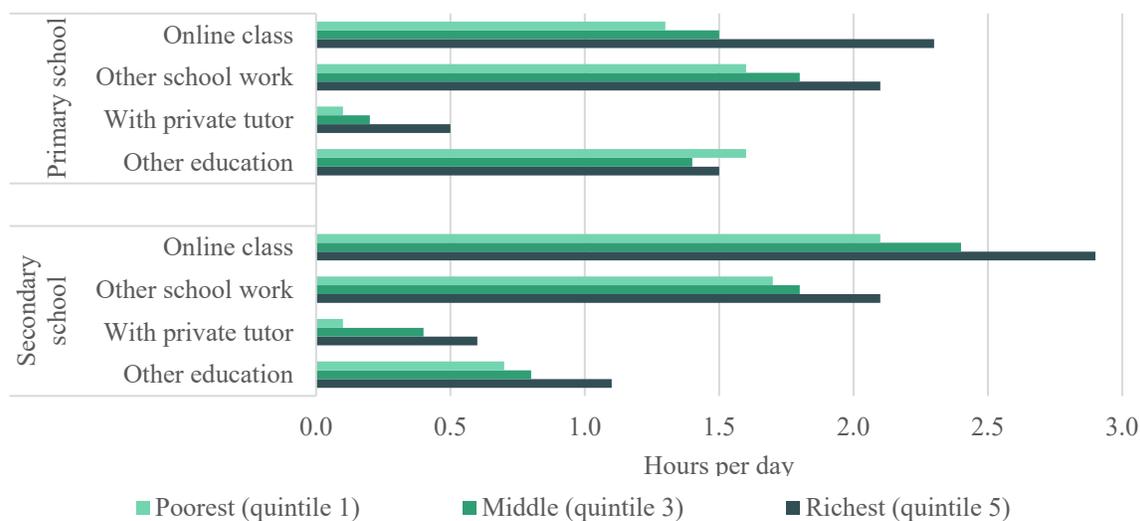


*Note:* Chart shows the average number of weekly hours that children spend on learning activities on a school week, based on reported weekly hours on each activity. Activities include classes (online or in person), school work, tutoring, and other education activities. Poorest and Richest 20% defined based on pre-tax family earnings. *Source:* IFS-IoE Survey (data since 2020) and UK Time Use Survey (2014-15)

<sup>2</sup> Free school meals is a benefit that funds free meals for school age children during school days. In January 2020, about 18% of school age children were on free school meals.

The socio-economic gaps in learning time that opened in the first lockdown have been compounded by gaps in the activities that children did during this time and in the learning setting they found at home. For instance, Cattan et al. (2021) documented inequalities in the composition of learning time, showing that the better-off fifth of pupils spent around 47% of their learning time during the first lockdown on interactive activities such as online classes with their teachers and paid tuition, compared to just 40% for the poorest fifth. Since these interactive activities are expected to be among the most productive in supporting home learning, differences in learning time-use may contribute to increase learning gaps along the socio-economic divide.

**Figure 4. Children’s daily learning time during lockdown 1: gaps in educational activities by family income**



*Note:* Chart shows the number of hours per school day, based on reported weekly hours on each activity. The primary school sample includes pre-primary children (currently aged 4, entering Reception next year). *Source:* Andrew et al (2020a) using IFS–IoE Survey.

Figure 4 shows evidence of large socio-economic gaps in how children spent their learning time. Among children of secondary school age, those from the top fifth of family income spent 80 more daily minutes in online classes and private tutoring than those from the bottom fifth; the difference is slightly larger for primary school children, at 85 daily minutes. Differences in time

spent on passive learning activities are less pronounced but further reinforce asymmetries in learning.<sup>3</sup> These findings are consistent with findings for other countries, for example, Chetty et al (2020) show that the fall in the proportion of mathematics lessons completed has been much larger for poorer pupils than higher income pupils.

## ***2.2 Inequalities in learning experiences when schools re-opened***

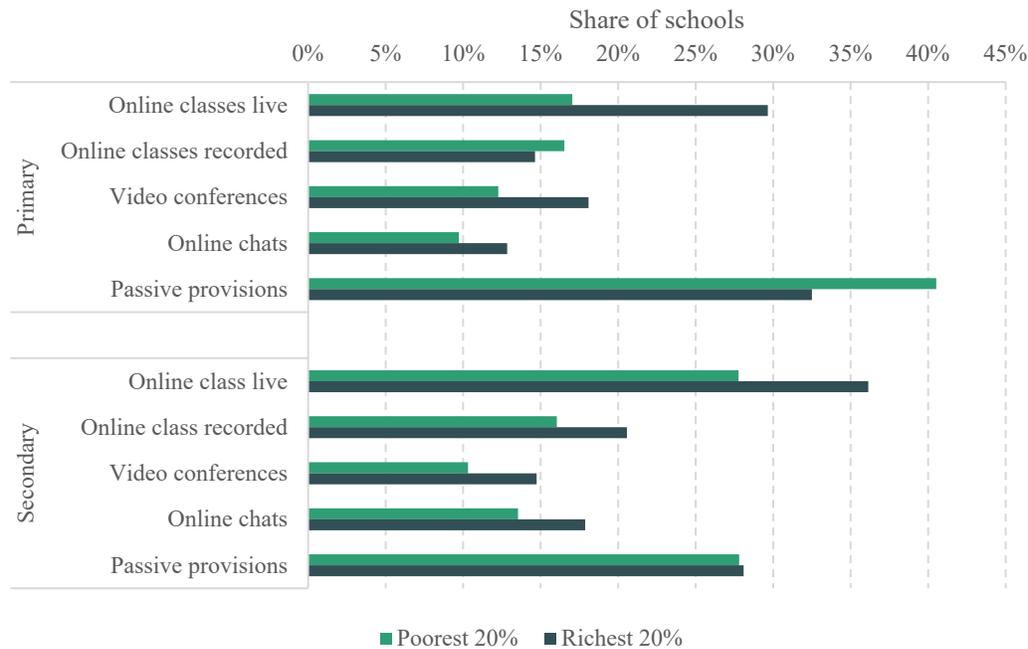
Some of the socio-economic gaps in learning that characterised the period of school closures were still visible after schools re-opened. In England, children were back in school during the Autumn term of 2020, but self-isolation of teachers and pupils often disrupted the normal delivery of classroom teaching. Figure 2 showed that attendance rates were consistently below pre-pandemic levels of 95%. Since the incidence of Covid-19 was larger in poorer communities, children in these areas are also likely to have been disproportionately hit by consequent disruptions to the delivery of school education.

Sibieta (2020) finds a clearer negative relationship between local Covid-19 infection rates and school attendance. Eyles and Elliot-Major (2021) estimate that a 10 percentage point increase in the proportion of pupils eligible for free school meals was associated with 1.4-1.8 extra days missed per pupil during the Autumn term 2020. Cattan et al. (2021) calculate that, on average, the poorest fifth of primary school children lost an average of 8.5 school days during the Autumn of 2020, compared to 6.5 days among pupils from better off families.

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<sup>3</sup> Elliot-Major et al. (2020) also shows that nearly three quarters (74%) of privately-educated school pupils benefitted from full school days during school closure 1, which compares with only 2 in 5 for state school pupils (38%).

**Figure 5. Home learning provisions during periods of self-isolation, Autumn 2020 term**



Note: Graph shows disaggregated active provisions. Passive provisions include online platforms, learning packs, and emails.

Source: IFS-IoE Survey, wave 2.

The consequences for learning and for learning inequalities of these high absence rates depends crucially on what children were doing while staying at home. Figure 5 from Cattan et al (2021) provides some detail. It shows that poorer students in self-isolation were less likely to have access to effective learning resources to support their home learning. While 30% of self-isolating primary school children from the richest families had online classes, as did 36% of better-off secondary school children, these proportions were 17% and 28% for their poorer peers, respectively. Access to other active learning provisions was also lower for disadvantaged children.

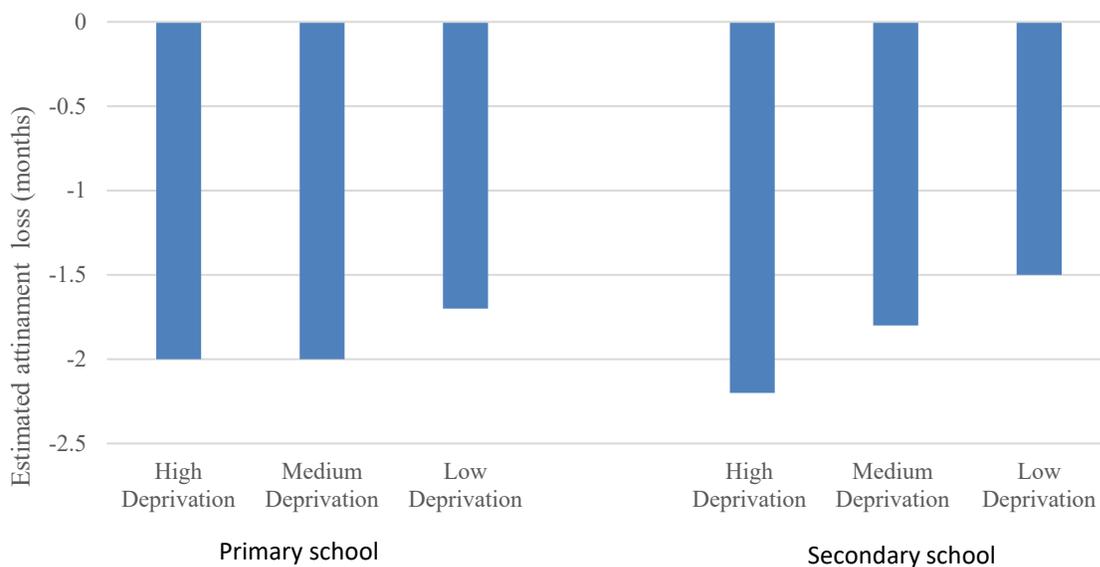
### 2.3 *Inequalities in attainment*

The huge disruption to the provision of school education that characterised the majority of two school years is likely to leave lasting impacts on the attainment of children. Several studies

suggest that instructional time delivered by teachers significantly increases test scores (Lavy 2015, Pischke, 2007, Steward, Watson and Campbell 2018). Moreover, the unequal learning experiences faced by children from different socio-economic backgrounds may further widen existing gaps in attainment.

While it is still early to reach definite conclusions on the impacts of the lockdowns on children's attainment, recent studies summarise the evidence available so far (e.g. Weidmann et al. 2021, Rose et al. 2021, Blainey and Hannay 2021). Figure 6 plots test score data for England, from the Department for Education. It shows average attainment loss (as measured by actual progress of students relative to expected progress) in reading test scores taken by over a million pupils in the autumn of 2020. The results are split by level of school deprivation as measured by the proportion of pupils on free school meals. It shows losses of between 1.5 and 2 months of progress across the board, that are larger in the most deprived schools and especially so for secondary school pupils.

**Figure 6. Mean attainment loss in autumn 2020 in reading for primary and secondary aged pupils by level of disadvantage in the school**



*Notes:* ‘High Deprivation’ means that 25% or more children attending school are entitled to “Free School Meals”, a government benefit to which a family is eligible if they have a family income of less than £7300 per year (around \$9500); ‘Medium FSM’ and ‘Low FSM’ mean 10%-25% or <10% of children attending school are entitled to Free School Meals, respectively. Rates of learning loss use prior performance by pupils in the previous year, adjusted for historic rates of progress. *Source:* Department for Education (2021).

Various international studies reached similar conclusions. For example, national primary school tests are regularly carried out twice yearly in the Netherlands (Engzell, Frey, and Verhagen 2021). In 2020, these tests were administered just before and soon after the short lockdown of 8 weeks that the country experienced in the Spring. Despite the high-penetration of broadband nationwide, and an equitable and well-funded school system, the tests revealed an average loss in learning of about 3 percentile points relative to what happened prior to the pandemic, with larger losses among children from less educated homes. Maldonado and De Witte (2020) study the effects of school closures of test scores taken at the end of primary school in the Flemish part of Belgium. They find that the cohort taking the tests in 2020 did significantly worse than prior cohorts, with math scores dropping by 0.19 standard deviations and Dutch scores by 0.29 standard deviations. Moreover, inequality in children attainment rose by 17% for math and 20% for Dutch. Kogan and Lavertu (2021) used test scores from the ‘Ohio 3rd Grade English Language Arts’ to assess the impacts of the pandemic on attainment. They found that the average achievement of 3rd graders declined by approximately 0.23 standard deviations between fall 2019 and fall 2020, roughly equivalent to one-third of a year’s worth of learning, and that black students were especially penalised. Studying a wider set of school districts across the US, Domingue et al. (2021) found widening geographical inequalities in the reading fluency of children attending Grades 2 and 3, with children living in lower-achieving districts falling further behind those living in higher achieving districts. Pier et al. (2021) considered a wider group of children attending Grades 4-8 in California. Using interim assessments taken in the Winter 2021,

it quantifies learning losses in English language of approximately 2.6 school months and in math of 2.5 months.

## **2.4 Apprenticeships**

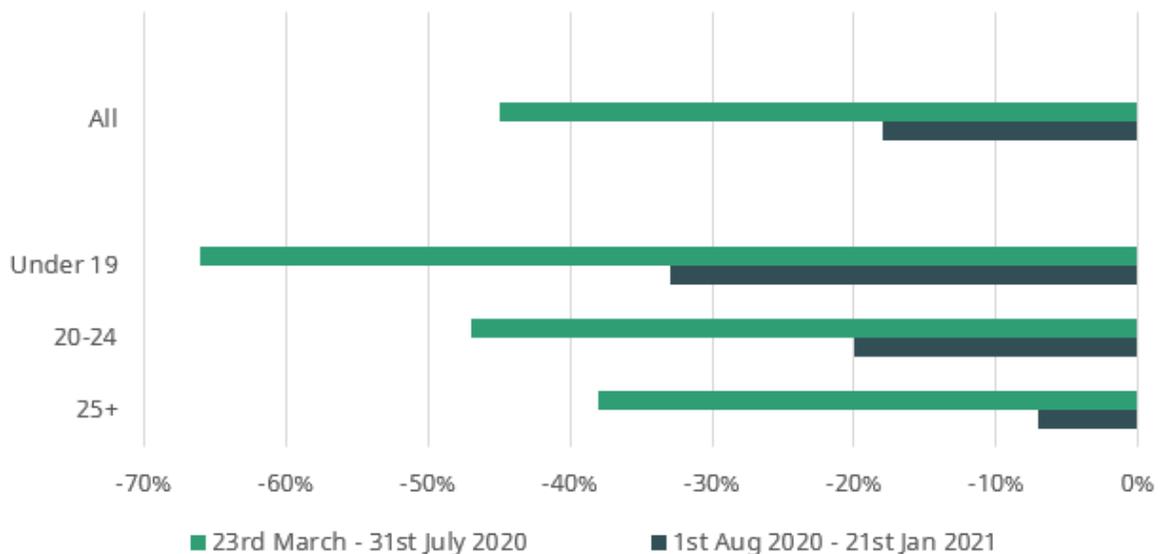
While most recent studies have focused on the learning experiences of school-age children, some of the most consequential impacts of the pandemic may have been felt by those nearing the end of their education and preparing to transition into the labour market. In the UK, apprenticeships combine (part-time) formal education with paid work in the workplace. Historically, compared to countries like Germany and Switzerland, apprenticeships in the UK have been short (up to a year), generally at low skill levels, and relatively rare. Since the early 2010s, they have become more common, however, with big jumps in the proportion of people undertaking higher skill level apprenticeships (see McNally 2018). Of all education routes, work-based vocational education and apprenticeships, were most penalized by the closure of entire sectors and many firms, and the requirements for social distancing.

In comparison, the disruption to university education was much more limited as classes continued online and most university places remained unaffected. Apprenticeships provide key pathways out of low pay for those with low academic qualifications, and are often preferred to the university route by children from disadvantaged backgrounds, particularly for boys (Cavaglia, McNally and Ventura, 2020; Cavaglia et al., 2020). The massive disruption in their provision is likely, therefore, to most affect the young people who have few alternative routes into good jobs.

Both on-going and new apprenticeship places were affected by the prolonged crisis. Data from the Sutton Trust (Doherty and Cullinane, 2020) shows that in the UK, only 40% of

apprenticeships that were operating when the pandemic first hit continued as normal, with the rest facing learning disruptions, furlough or redundancy. The number of new apprenticeships also fell dramatically and remained low over an extended period. Figure 7 illustrates the extent of the fall by comparing new apprenticeships during the pandemic with those than happened one year before using House of Commons Library data (2021). The first four months since the first lockdown saw a 45% fall in new apprenticeships year-on-year. The reduction was especially large for prospective apprentices aged 17-19, down by 66% year-on-year. The reduction in apprenticeships continued into the next 6 months albeit at to smaller, though still very substantial degree. Overall, the number of new places dropped by 18% between August 2020 and January 2021, and by 33% for the younger group.

**Figure 7. Change in number of Apprenticeship starts during pandemic compared to same time a year earlier, by age**



Source: House of Commons Library (2021)

### **3. Inequalities in work**

The pandemic crisis inflicted abrupt changes to the working routines of many workers and the activity of many firms. In most rich countries, enacted social distancing measures demanded the shutdown of entire sectors of the economy. In the UK there were three extensive lockdown periods between March 2020 and June 2021, during which businesses in sectors deemed non-essential and that required close social interactions were required to close temporarily, while workers who could work from home were asked to do so. The requirement for people to stay at home also impacted the demand for different goods and services. For instance, footfall in high streets collapsed while online retail flourished. The immediate consequence of these changes was that many workers saw their jobs abruptly interrupted by a combination of lack of demand and lockdown rules, while others, such as essential workers in the health sector or those doing home deliveries, went through an especially busy period.

To avoid the worst of the crisis, governments were quick to implement policies protecting the jobs and incomes of workers. These new policies have been most significant in the countries with least generous safety nets. The UK and the US are two key examples of this, though they took different approaches. The US increased support for unemployed workers, to see them through the worst of the crisis, while the UK introduced the Coronavirus Job Retention Scheme (known as the “furlough scheme”) in a massive effort to simultaneously protect incomes, preserve jobs and support firms.

Under the furlough scheme, the government paid 80% of salaries for furloughed employees up to a cap of £2,500 (\$3,250) per month (see Cribb and Johnson 2021 for more details) between March 2020 and September 2021. The employer was initially not required to make any

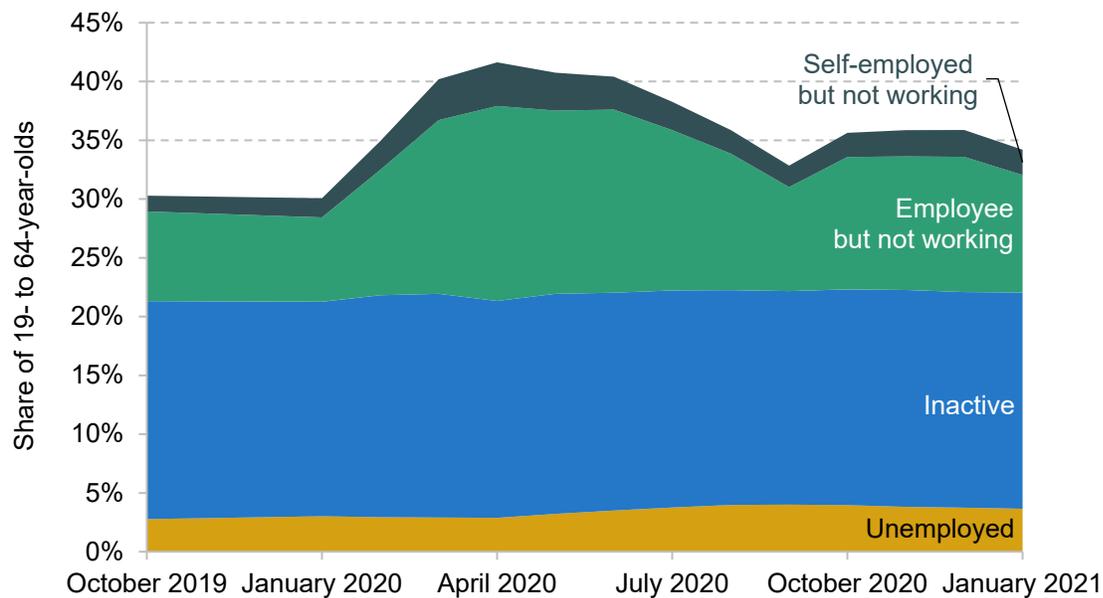
contributions.<sup>4</sup> This provided far more support to employees who would have otherwise lost their jobs than they would have been eligible under the UK's pre-pandemic welfare system, which provides out-of-work means-tested benefits that are not related to individual's previous level of earnings. The unemployment rate in the UK peaked at 5.2% in 2020Q4, up from 3.8% a year earlier. This is fairly similar to the increase seen in Germany over the same period, whose government implemented an extended version of their existing Short Term Work ("Kurzarbeit") scheme in response to the pandemic (see Eichhorst and Rinne 2020). In comparison, the US experienced a strong increase in unemployment early in the pandemic.

In total, non-working rates in the whole working-age population jumped by over 10% in the first lockdown, mostly due to workers interrupting their jobs temporarily while on furlough (Figure 8). Many more workers were furloughed; indeed, the increase in employees reporting not working in June 2020 is only about half the size of the number that were furloughed according to official figures. This may be accounted for by employees finding other jobs they could do while on furlough, which was allowed for by the scheme; separate survey evidence (Adams-Prassl et al., 2020) also suggests that some furloughed workers continued working in the jobs they had been furloughed from (despite programme rules to the contrary). Non-working rates fell very significantly over time as the restrictions were relaxed and firms, individuals and families adapted to the new ways of working.

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<sup>4</sup> Small changes to the scheme were gradually introduced, requiring increasing contributions from employers. The scheme was always planned as a temporary measure, to be discontinued with the re-opening of the economy.

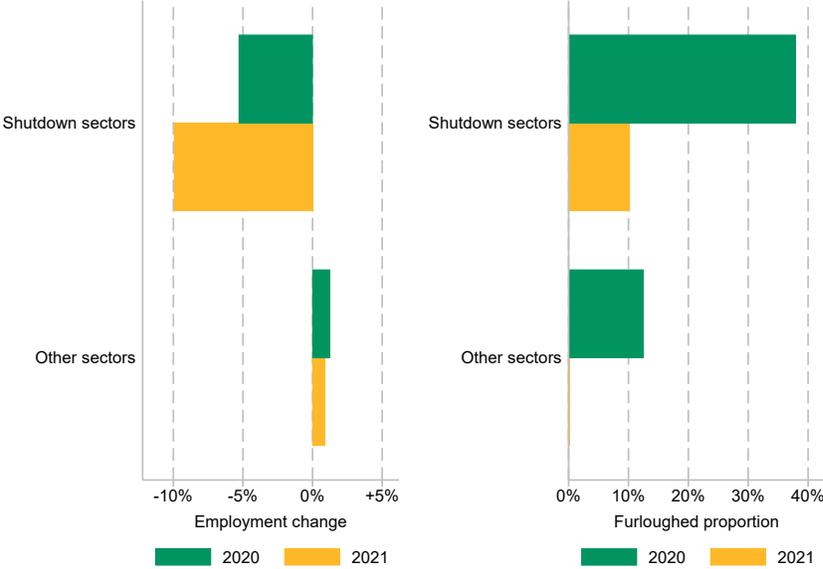
**Figure 8. Share of people not working over course of pandemic**



Notes: From Cribb et al. (2021) using the UK Labour Force Survey.

Workers in shutdown sectors such as hospitality or non-essential retail were especially exposed to work interruptions. Figure 9 shows that shutdown sectors shrank dramatically in 2020 and 2021. In terms of employment, 10% of their workforce in 2019 had been shaved off by 2021. Moreover, furlough rates in these sectors jumped in 2020 to almost 40% of their workforce, but were more modest in 2021 at about 10%. In contrast, sectors that remained opened managed to modestly expand their workforce by over 1%, but nevertheless saw high furloughing rates in the first stages of the pandemic. Some of the initial work interruptions, and particularly those in sectors that remained opened, may have been induced by workers being incapable of combining increased domestic responsibilities imposed by the lockdown with the demands of their jobs, or by those of frail health and whose jobs require physical contact.

**Figure 9. Changes in employment and furlough rates from before the pandemic to after, by sector shutdown status**

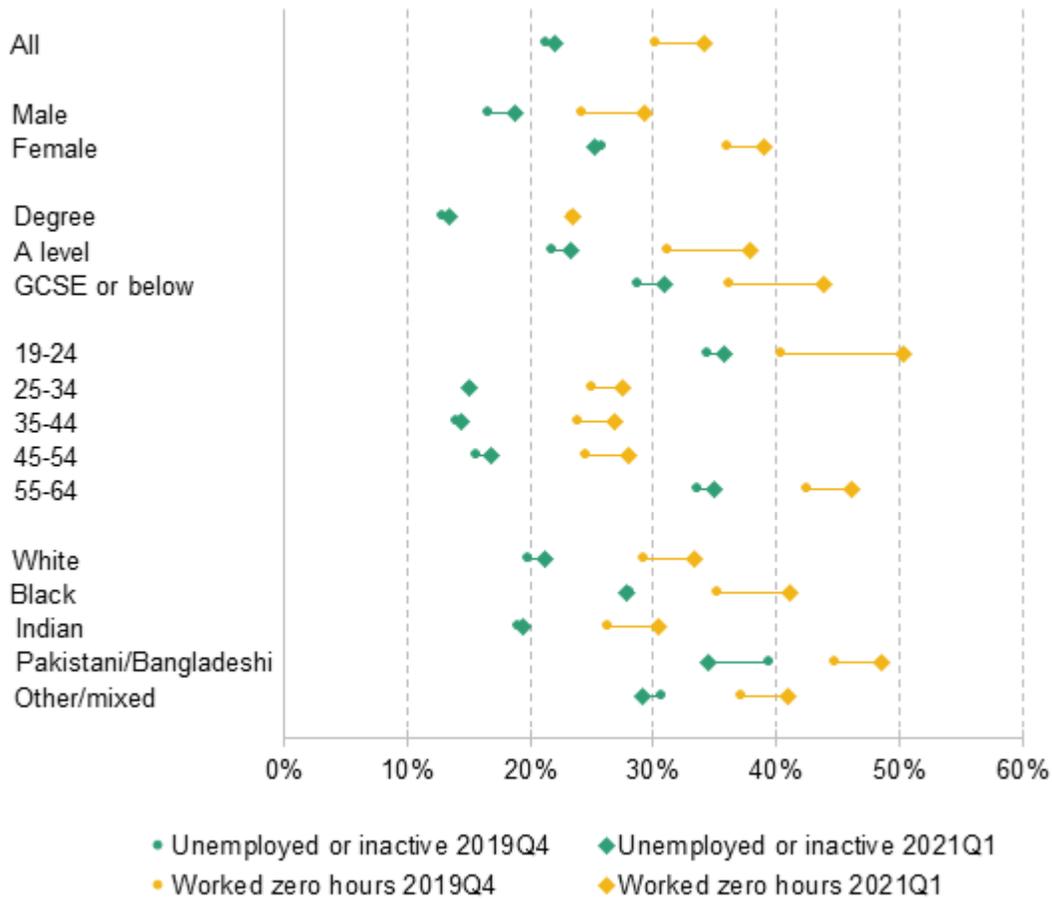


Source: UK Labour Force Survey

**3.1 How have different groups been affected by employment changes during the pandemic?**

Workers were differently exposed to the pandemic shock. That much is visible from inspection of how unemployment and furlough rates changed over the crisis by demographic groups (Figure 10). For instance, the increase in non-working was largest among the youngest workers by the start of 2021, as their jobs were less secure and disproportionately concentrated in the lockdown sectors (Blundell et al., 2020). However, their non-working rates have since converged to levels similar to those observed for other groups as they returned to work, moved into new jobs or remained in education for longer (with an 8ppts (12%) increase in the rate of 18-year-olds in full time education between 2019 and 2020; Cribb et al., 2021).

**Figure 10. Share not working, by demographic group, 2019Q4 and 2021Q1**



Source: UK Labour Force Survey

The gender split is somewhat surprising. Early in the pandemic many predicted that female work would suffer more than that of men, for two main reasons (Adams-Prassl et al. 2020, Alon et al. 2020). First, the service sector, where women are disproportionately represented, was especially exposed to the lockdown. Second, the sudden and lasting closure of schools and childcare providers meant that families with children faced huge additional demands on their time. The traditional division of responsibilities within the household suggested that mothers would take on most of the additional burden, with implications for their continued working. Against expectations, however, furloughing and job loss rates in the UK were initially lower for women

than for men, and later converged to similar levels. Part of the reason for this is that female jobs are concentrated in essential sectors, such as health, and occupations that can be done from home.

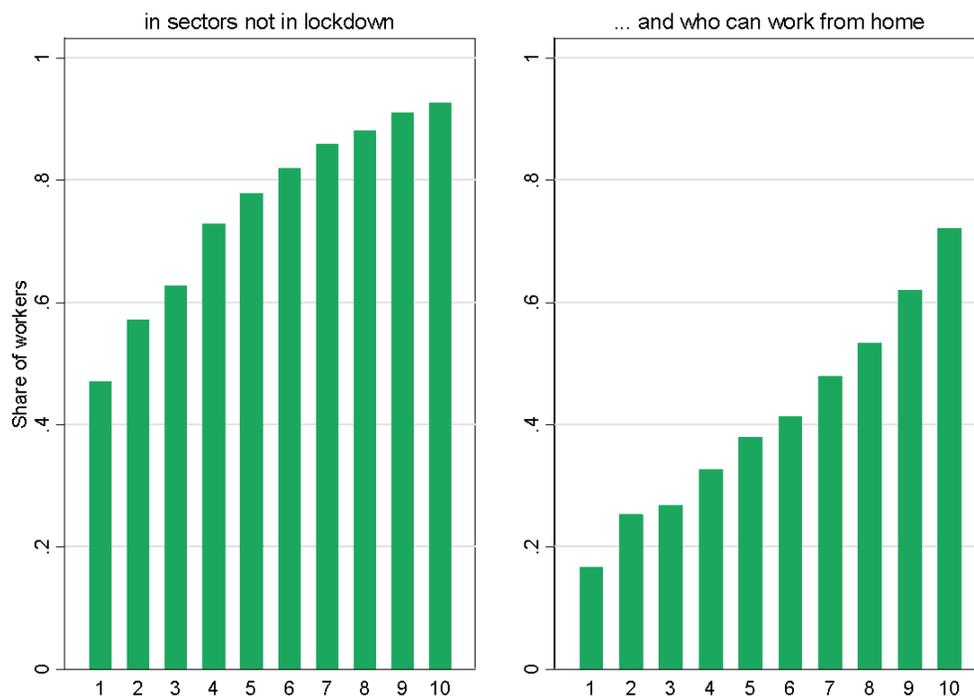
However, the picture was different for families with children. Andrew et al (2020) studied changes in employment and time-use among parents. It showed that indeed the jobs of mothers were not more vulnerable to the pandemic than those of fathers, but that mothers did take on more of the additional domestic responsibilities than fathers did, and were more likely to interrupt their work. Most of the gender difference in work interruptions within families with children could be rooted to mothers being more likely than fathers to take on furlough that was agreed between the worker and employer and justified on increased care responsibilities, rather than because of a lack of work for them to do in their jobs.

Perhaps unsurprisingly, it was those with lower education levels that experienced steeper increases in non-working rates. Compared with university graduates, more among the lower educated individuals work in sectors that were shutdown. They are also more likely to be older, have health vulnerabilities and work in jobs that require physical proximity to others. The combination of these factors may have weighted in their decision to continue working if their jobs remained opened.

All these dimensions of inequality are tightly related to pre-existing differences in earnings. Various studies have found that those in low paid jobs were disproportionately affected. Blundell et al. (2020) show that the ability of workers in non-essential sectors to remain actively engaged in work and do so from their homes was strongly associated with pre-pandemic earnings (see Figure 11). While less than 50% of those in the bottom earnings decile worked in sectors that remained open, over 90% in the top decile did so. The ability to continue working from home

was also unevenly distributed. The right-hand panel in the Figure shows that fewer than one in five non-key workers in the bottom earnings decile had jobs that could be done from home in sectors that remained active. But among non-key workers in the top earnings decile, the figure rises to three in four.

**Figure 11. Share of workers in sectors not in lockdown and who can work from home, excluding key workers, by decile of earnings distribution**

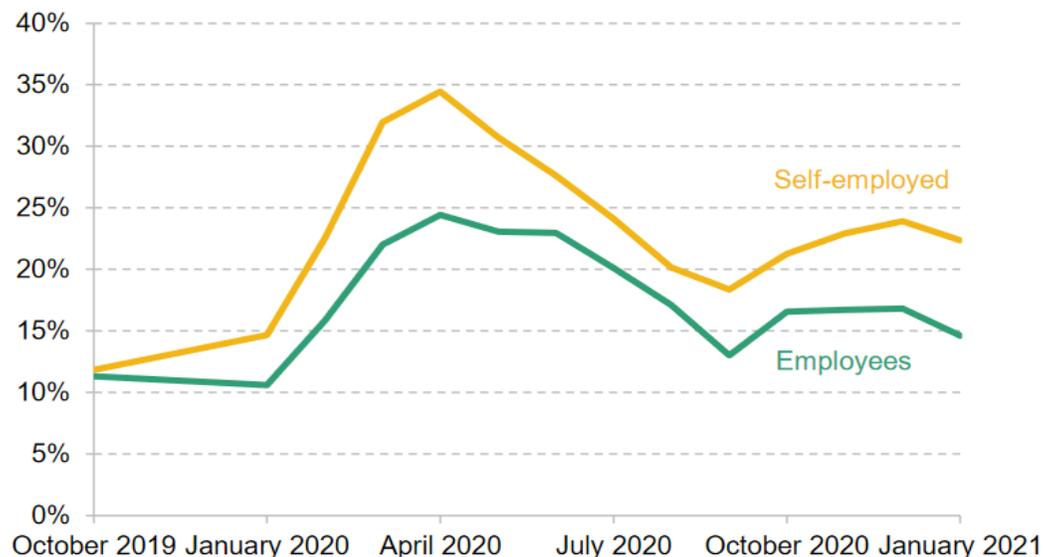


*Source:* Blundell et al. (2020), using Labour Force Survey, quarters 1–4 2019, waves 1 and 5 only.

Other studies corroborate these findings. Crossley, Fisher and Low (2021a) find that those workers in lower income households were more likely to stop working. Gardiner and Slaughter (2020) find those without a salaried permanent job (including those with no guaranteed minimum hours, on a temporary contract, or who do agency work) were especially likely to lose work.

Self-employed workers have been affected particularly hard. Cribb et al. (2021) find that a higher proportion of self-employed people than employees worked no hours throughout the pandemic up to January 2021. This is shown in Figure 12. Blundell, Machin and Ventura (2021) find that earnings of the self-employed failed to recover after the first lockdown on average. They also find differences between self-employed workers, with workers who work via apps, such as drivers, the least badly affected. Rather than being eligible for furlough, self-employed workers could claim the Self-Employment Income Support Scheme (SEISS). The SEISS scheme provided a grant, equal to 80% of past profits, to self-employed workers who declared that they had been negatively affected or suffered reduced demand because of the pandemic. While the generosity of the grant means that many self-employed workers will have been more than compensated for pandemic earnings losses, a number of eligibility conditions – especially a requirement that the worker have previously got most of their income from self-employed work – excluded 38% of self-employed workers altogether (Adam-Prassl et al., 2020).

**Figure 12. Share of workers working zero hours in the last week, over time and by employment status**



Note: Includes people aged 19–64. Shows forward-looking three-month moving average. Data are available quarterly before January–March 2020 and monthly thereafter.

Source: Quarterly Labour Force Survey.

The labour market impact of the pandemic has been particularly severe in particular parts of the country. Davenport and Zaranko (2020) construct an index of how affected the labour market in different areas were during the first six months of the pandemic. They find that areas that are dependent on tourism, such as many coastal towns, and more remote areas such as Northern Scotland, Cumbria, and Cornwall, were particularly badly hit, though so were many large cities, including Glasgow, Liverpool, Newcastle and large parts of London.

Over time, evidence has increased that London stands out as the area where the labour market is most affected by the pandemic. Workers in London accounted for 16% of the redundancies made during the first year of the pandemic, up from 12% in the three years before the pandemic.

Vacancies in London were much slower to recover than in other parts of the country. Lower labour demand meant that Londoners were more likely to still be furloughed by July 2021, and

Londoners made redundant over the pandemic were less likely to have found new work within six months than workers elsewhere (Cribb and Salisbury 2021). One reason for the slower recovery could be more widespread working from home for people in (the large number of) professional jobs in London, which reduces demand for services such as food and entertainment in central London. International travel restrictions are also likely to have played a role: London suffered from the fall in international tourism over the pandemic but did not benefit from the boom to domestic tourism, as it is not a particularly popular destination for UK holidaymakers.

### ***3.2 Long lasting effects of the pandemic***

The huge disruption that the pandemic inflicted on the labour market will likely have lasting costs, and some workers will suffer more than others. Those who stopped working for an extended period, even if they remained employed, may have lost human capital, missed the opportunity to learn essential new skills at a time of rapid technical change in how work is organized, or become disconnected from their professional networks. Younger workers, those at key transition stages in their careers, and workers who permanently lose their jobs may struggle even more if opportunities for new and better jobs do not match their skills. Evidence from past recessions indicate that workers more directly affected can suffer persistent earnings losses and reductions in employment (Oreopoulous et al 2012).

The longer-term effects of the pandemic on the careers of workers depends crucially on the opportunities for work that they face. The initial stages of this crisis saw vacancies collapse. In the UK, vacancies dropped by more than 60% for the majority of occupations (Costa-Dias et al 2021a). While by June 2021 new vacancy postings exceeded their pre-pandemic levels (and have stayed high throughout the summer and autumn), equally important for progression, earnings, and employment is whether the new skills demanded match those supplied.

Figure 13 shows how job opportunities varied from before to after the pandemic, between June 2019 and June 2021, by the pay level of advertised jobs. Job opportunities are synthesized by an index constructed at the occupation level using vacancy data from Adzuna (see Costa-Dias et al 2021b for details on the construction of the index and underlying theory). For each origin occupation, the index weights existing vacancies with historical transition probabilities from that origin occupation towards those vacancies' occupations. The job opportunities facing each worker are then measured by the value of the index corresponding to their last (or current, if employed) occupations. We further split occupations by three levels of pay, which correspond to tertiles (thirds) of pre-pandemic average hourly wages residualised of demographic characteristics of workers in that occupation.<sup>5</sup>

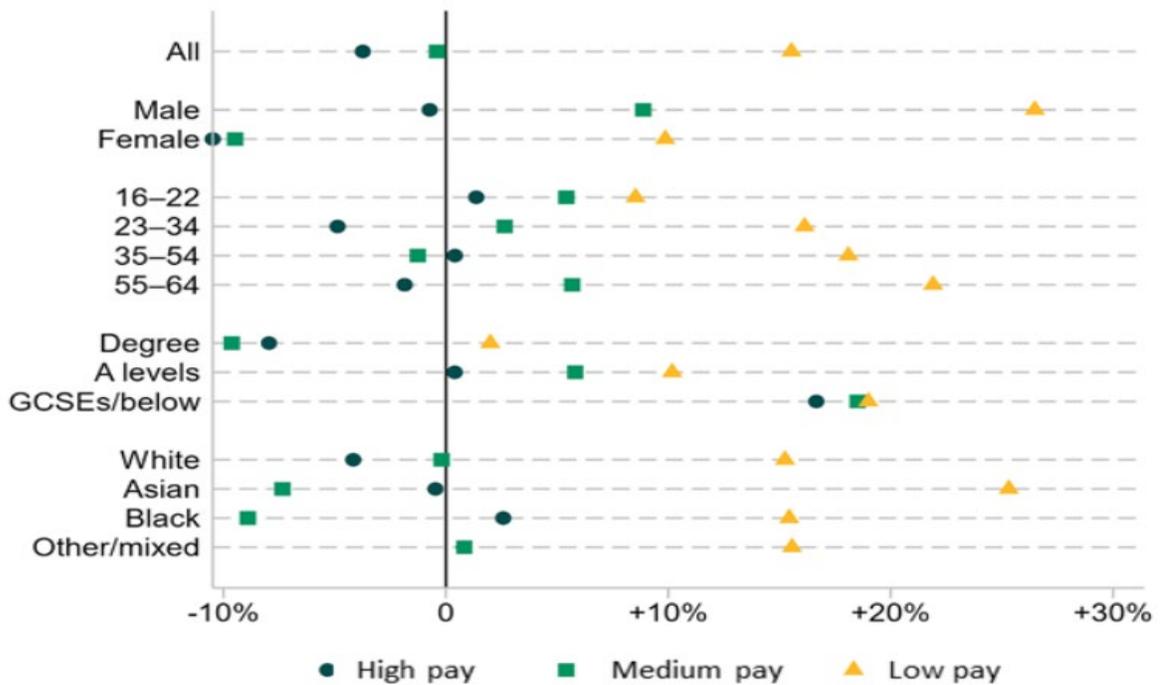
The key take-away from the figure is that the initial rebound in job opportunities concentrates mostly on lower paid occupations. Job opportunities in the lowest paid third of occupations were almost 20% higher in June 2021 than two years earlier. The early recovery was not seen to the same extent in better paid occupations, with those in the highest paid tertile still down from pre-pandemic levels at the same point in time. Similar patterns can be observed for all demographic groups, though some faced tougher conditions. Most prominently, the best opportunities for women and college educated workers were still lagging behind those for other groups, down by 10% relative to pre-pandemic levels. This reflects the slower recovery in higher-paid service jobs, such as legal, business and health professionals, which are particularly relevant for these two groups.

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<sup>5</sup> Specifically, we use individual-level data in 2019 and estimate ordinary least squares (OLS) regressions of hourly pay as a function of occupation indicators, along with controls for sex, age, ethnicity, education and region. We use the estimated coefficients on the occupation indicators as our measure of occupation pay. It can be interpreted as the 'wage premium' to working in each occupation.

These figures indicate that while jobs may have started to rebound soon after the onset of the crisis, opportunities for good jobs and career progression remained scarce. That conclusion is reinforced if we look at competition for jobs by weighting available opportunities by the number of suitable workers in need of jobs.

**Figure 13. Change in opportunities in June 2021/ relative to pre-pandemic, by pay tertile and demographic group**



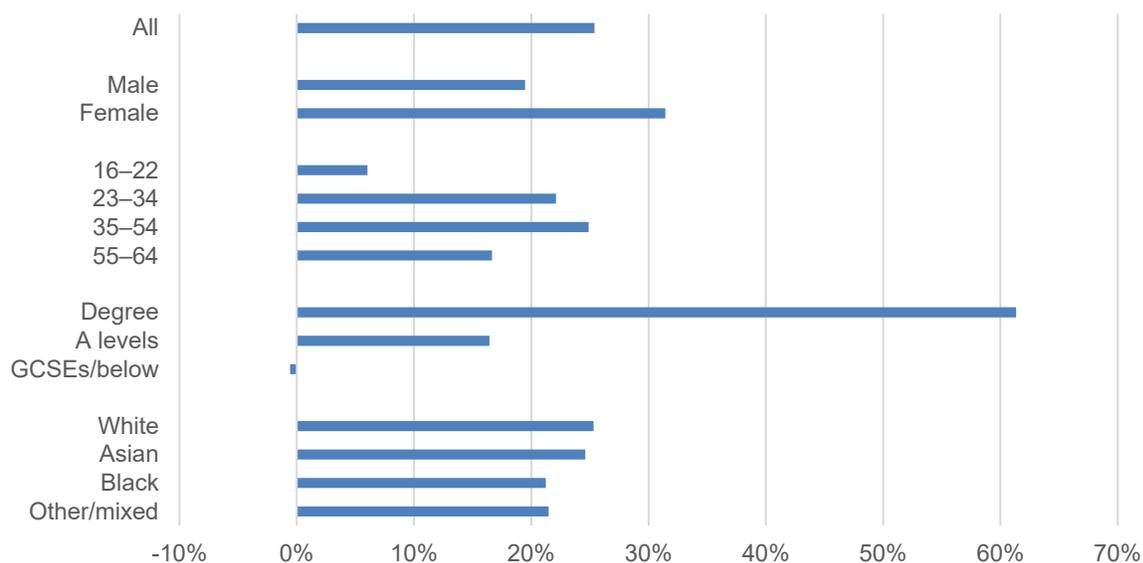
Source: Costa-Dias et al (2021a), using Adzuna vacancy data and the Labour Force Survey.

Figure 14 shows how competition for new job opportunities (unemployed workers per opportunity) changed from before to after the start of the crisis by demographic group, again comparing June 2021 with June 2019. Across the board, the labour market was tighter in June 2021 than it used to be and workers seeking jobs face more competition from co-workers.

Women and university graduates faced tighter competition than workers in other groups and, as we have seen, for jobs that are low-paid in historical terms. In general, these patterns reflect

differences in the recovery of vacancies relevant to each demographic group, rather than differences in their rates of unemployment or furlough.

**Figure 14. Unemployed workers per opportunity in June 2021 relative to pre-pandemic, by demographic group**



*Source:* Costa-Dias et al (2021a), using Adzuna vacancy data and the Labour Force Survey.

#### 4. Measures of households' material living standards

We now turn to analysing how the shocks to the labour market and the wider economy and policy environment have fed through to (inequalities in) material living standards. Several factors have limited the extent to which labour market disruption for households has meant living standard declines. Most prominent of course are the policy interventions to support family incomes. But there have been other mechanisms too.

First, wage top-ups over and above what was reimbursed by the government were paid to 70% of furloughed workers at the start of the pandemic; this was more common among higher paid individuals (Adams Prassl et al. 2020a). Second, transfers from family or friends were received

by 12% of those in households with a significant earnings loss in Spring 2020 (Crossley et al. 2021a), with the rate being even higher among poorer individuals. Third, a quarter of those in households with significant earnings losses drew on savings, and 8% increased borrowing; both were more common among poorer individuals (Crossley et al 2021a). Fourth, the availability of mortgage holidays has provided a form of credit to mortgagors who are disproportionately middle or higher income. Fifth, some younger adults – around 5% of those not in full-time education – moved back in with parents, providing some protection to their living standards (Cribb et al 2021). Sixth, reduced costs – in particular commuting – will have blunted the effect of earnings losses on living standards.

There are challenges to measuring material living standards during the pandemic. We discuss three measures of living standards: income, expenditure, and indicators of deprivation. Each of these tells us something different about material living standards. Often it is argued that expenditure is a better measure of living standards than income since it more closely approximates the actual current consumption of goods and services and, for consumption smoothing reasons, better approximates long-term consumption opportunities (see Blundell and Preston, 1995). This latter argument is considerably less compelling in the context of the pandemic where much of the economy has been shut down, resulting in ‘forced saving’ unrelated to consumption smoothing. Effects on income (inequality) therefore may be more indicative of longer-term effects on living standards. Deprivation measures look at specific outcomes clearly indicative of poor living standards, but therefore are less instructive about changes in inequality outside the worst off.

#### *4.1 Income*

There are three broad sources of information on income changes over the pandemic. First, direct surveys of households (Brewer and Gardiner 2020; Handscomb and Judge 2020; Handscomb et al 2021). These find that the share of people reporting increases or decreases in income was roughly similar across the (pre-COVID) income distribution, over the course of the pandemic. Second, 'nowcasting' exercises. These use tax-benefit microsimulation, taking pre-pandemic household data and updating them to reflect known changes to the labour market and changes to the tax and transfer system. Two nowcasts focusing on Spring 2020 find a clearly progressive impact of the pandemic (Brewer and Tasseva 2021; HM Treasury 2020); another (Bourquin et al. 2020) finds broadly distributionally-neutral changes in income. As the economy recovered from the first lockdown, growth in income was stronger. Looking at 2020-21 as a whole, Handscomb et al. (2021) predict large increases in income at the bottom of the distribution relative to 2019–20, with more modest gains further up. Third, evidence from bank account data in Bourquin et al. (2020) shows roughly distributionally neutral changes across the income distribution.

It is notable that while these papers do not all come to an identical conclusion, none of them estimate a regressive impact of the pandemic. It appears that its effects on incomes were either neutral or progressive. An important factor highlighted in many of these studies is that the increase in benefits brought in at the start of the pandemic boosted incomes for low income families regardless of the economic shock they were exposed to, tending to actively equalise incomes rather than simply mitigate the effects of the crisis. This is a feature of a large number of countries; EUROMOD (2021) looks at tax and benefit changes during the pandemic and finds that most European countries undertook progressive policy changes in a similar, albeit not identical, way to the UK.

## ***4.2 Expenditure***

Unsurprisingly, aggregate household spending fell precipitously in the wake of the pandemic as much of the economy was closed and incomes fell, and it has not yet recovered to pre-pandemic levels (Office for National Statistics 2021).

Brewer and Gardiner (2020a) use survey data to show that falls in spending were considerably larger for higher income households in Spring 2020, a pattern that was replicated in the summer 2020 reopening (Brewer and Patrick, 2021), though by summer 2021 there was relatively little between poorer and richer households (Handscomb et al., 2021). These studies find greater declines in spending for households without children, and among poorer families with children spending appears to have *increased*. The authors, drawing on qualitative evidence, attribute this to a combination a greater quantity of purchases of certain items (energy, food, ways to entertain children at home, and materials for remote learning) and higher effective prices with fewer discounts on groceries, limited local shopping options, and the closure of charity shops and free services like libraries. These increases in prices are likely to have larger (proportional) effects on the budgets of poorer households.

Davenport et al. (2020), using bank account data from a budgeting app, confirm the key findings of survey data: higher income households experienced a larger proportional fall in spending by September 2020. Poorer households saw larger proportional increases in spending on items whose availability was largely unaffected by the pandemic (e.g. groceries), and richer households saw larger absolute and proportional cuts in spending on items more affected (e.g. restaurants).

A straightforward reading of these findings would indicate that the pandemic had a more negative impact on the immediate living standards of higher income households. But the qualitative evidence suggests that perhaps poorer households have experienced a larger effective increase in prices, meaning that the differences in real consumption might be somewhat closer.<sup>6</sup> And, as emphasised above, because much of the decline in spending was driven by lockdown restrictions rather than consumption smoothing, these differences are probably not very indicative about long-run changes in consumption opportunities. At the time of writing, rising inflation in the UK and elsewhere is bringing increased attention to living standards and in particular real expenditure. Early evidence suggests that this will be felt evenly across the income distribution on average (Levell and Karjalainen, 2021), though further increases in natural gas prices could tilt the burden towards lower income households.

### ***4.3 Deprivation***

Outcomes examined in studies looking at deprivation fall into two main categories:

First, whether households report being able to afford basic items. A data difficulty here is that there are few measures which are consistently asked of respondents both pre- and post-pandemic. An exception is foodbank usage examined by Cribb et al. (2021), who find that usage rose in the immediate wake of the pandemic, but by early 2021 was actually slightly lower than pre-crisis. Other studies focus on changes since the *start* of the pandemic or between groups. Benzeval et al. (2020) find that in April 2020, 5% of UK adults reported not eating in the past week when hungry, with rates considerably higher for those who are younger, lower educated, or had a lower

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<sup>6</sup> Richer households also may have cut their spending on commuting by more than poorer ones. Since commuting is a work-related expense rather than a consumption good, this may have resulted in a relatively larger decline in expenditure for richer households which did not translate to a difference in genuine consumption.

pre-pandemic income. Xu and Ziliak (2021) show that hunger rates fell slightly between mid-2020 and early 2021. Handscomb and Judge (2020) measure inability to afford various basic items (including, for example, to heat the home when needed). They find that rates are much higher for those whose income had been persistently hit during the pandemic (29% unable to afford at least three basic items) than for those whose income was unaffected (10%).

Other research examines whether households are behind on bills. There is clear agreement that housing bill (rent or mortgage) arrears rose in the wake of the crisis. Bourquin et al. (2020), using bank account data up to May 2020, find an 11% and 14% decline in rental and mortgage payments (including mortgage and rental holidays), relative to pre-pandemic trends. These are comparable to a survey in May 2020 (Judge, 2020) which found that 8% of mortgagors, 13% of private renters, and 17% of social renters were in housing arrears (though a small amount of that likely predates the pandemic).<sup>7</sup>

Since then, it seems that arrears for mortgagors have returned to slightly above pre-pandemic levels. Judge (2021) and DLUHC (2021) find increases of 2ppts by January and 1ppt by Spring 2021 respectively. The picture is a bit less clear for rent arrears. Baxter et al. (2020), NRLA (2020), DLUHC (2021), and Judge (2021) – surveying at various points between October 2020 and May 2021 – all find a moderate (~3-6ppt) increase in rent arrears compared to pre-pandemic.<sup>8</sup> Conversely, Earwaker and Elliot (2021) examine survey data from May 2021 and find that rent arrears have returned to pre-pandemic levels.

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<sup>7</sup> A survey in January 2021 by the same author (Judge, 2021) uses recall questions and finds much smaller arrears rates for Spring 2020: 2% for mortgagors, 5% for private renters, and 6% for social renters; and with just 1ppt, 2ppts, and 2ppts of that representing an *increase* since before the pandemic. We are inclined to put more weight on the contemporaneous questions from Judge (2020), though note that perhaps part of the explanation is that some families spent only a short amount of time in arrears, causing them to report no arrears for Spring 2020 as a whole when asked later.

<sup>8</sup> Though with some disagreement about arrears by renting tenure. DLUHC (2021) finds that the increase is almost entirely among private renters, while Judge (2021) finds a larger increase for social renters.

Researchers have also examined other forms of bills. Delestre et al. (2020) find a 9% fall in local tax payments by May 2020, and a decline in utility bill payments among poorer households.

Cribb et al. (2021) find arrears on non-housing bills increased by 1.5ppts at the start of the pandemic, but by early 2021 had – on average – returned to pre-pandemic levels. However, bill arrears remained elevated for households with self-employed workers, ethnic minorities, and those that entered the pandemic in poverty.

Taking this evidence in the round, it seems likely that material deprivation worsened along several margins in the immediate wake of the crisis.<sup>9</sup> It is less clear whether, or how much, it has recovered since.

## **5. Mental health**

In addition to the concern regarding the material living standards of families, the disruption to people's lives, school closures, and general isolation from friends and family, has led to intense interest in the impact of the pandemic on mental health in particular, and on happiness or life satisfaction more generally. While Helliwell et al (2021) use evidence from the Gallup World Poll that while evaluations of people's lives were relatively stable compared to pre-pandemic, there were widespread increases in measures of sadness and worry.

Turning to mental health, the evidence from the UK is that the pandemic led to a sharp deterioration in mental health. Banks and Xu (2020) use data from a household survey and find that a summary measure of mental health, the GHQ Likert scale, deteriorated by 1 point on a 36-point scale in April 2020, which is approximately equal in magnitude to the pre-pandemic

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<sup>9</sup> In addition to these, some surveys have asked about people's subjective experience of their financial situation. (see Benzeval et al. (2020), Cribb et al. (2021), Brewer and Gardiner (2020) and Handscomb and Judge (2020). However, these surveys do not come to clear conclusions on the direction, or magnitude of effects on these subjective measures of financial difficulties.

difference between the top and bottom deciles of the income distribution.<sup>10</sup> Mental health recovered during the summer of 2020 but was still below pre-pandemic levels in September 2020 (Banks et al. 2021).

The initial impact of the Covid-19 pandemic increased pre-existing mental health inequalities by gender and age. A number of studies in the UK using the GHQ measure find that women, who already had worse levels of mental health pre-pandemic, suffered a much larger deterioration as result of the pandemic than men (Banks and Xu 2020, Daly et al. 2020, Etheridge and Spantig 2020, Pierce et al. 2020). Studies from other countries using different measures of mental health also show a larger impact on women, including Adams-Prassl et al. (2020c) in the US, Bruelhart and Lalive (2020) in Switzerland and Yamamura and Tsutsui (2020) in Japan. Whilst school closures negatively affected the mental health of parents, and more so for mothers than fathers (Blanden et al. 2021), Etheridge and Spantig (2020) find that differences in caring responsibilities explain only a small part of the overall gender differences in mental health impact. Nor can they be explained by differences in men's and women's exposure to the health and economic consequences of the pandemic, for example, the fact that women disproportionately work in sectors affected by social distancing restrictions (Banks and Xu 2020). Instead, Etheridge and Spantig (2020) point to the importance of social factors: women had larger social networks than men pre-pandemic, and were therefore hit harder by the social restrictions imposed during the pandemic.

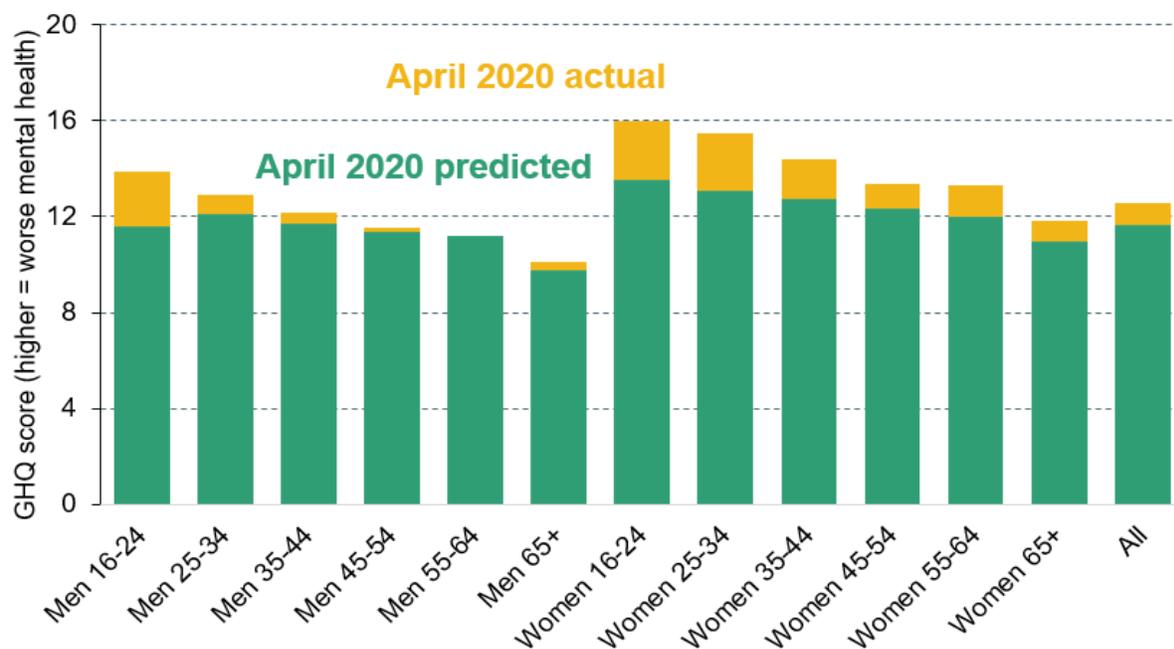
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<sup>10</sup> The GHQ is a composite measure of mental health that consists of 12 questions scored on a 0-3 scale that has been shown to perform well as a screening tool for general (non-psychotic) disorders (Anjara et al. 2020). These questions ask about a range of potential problems like losing sleep over worry, feeling under strain and feeling unhappy or distressed. The Likert measure is computed by summing up the scores across the 12 questions, hence arriving at a value between 0 (least distressed) and 36 (most distressed). An alternative way of scoring - the 'caseness' scale - which sums up the *number* of the 12 dimensions on which individuals report a problem also shows a large deterioration in mental health. Details of the questions included in the GHQ measure are given in Appendix B of Banks and Xu (2020).

In the early stages of the pandemic, the mental health impact was larger for young people, who had worse levels of mental health pre-pandemic (Banks and Xu 2020, Daly et al. 2020, Pierce et al. 2020), see Figure 15. However, young people's mental health recovered more quickly (Banks et al. 2021, Fancourt et al. 2020). Banks et al. (2021) find that whilst young women suffered the largest initial shock to mental health, the mental health shock experienced by elderly women was much more persistent, so that by September 2020 they were the group with the largest deterioration. This could reflect higher adaptability to shocks among young people as well as positive changes in circumstances that disproportionately benefited the young, like the (temporary) lifting of social restrictions and the reopening of schools and universities.

The large mental health impact on women means that although women did not experience a larger labour market shock - as initially feared - the pandemic did widen gender inequality on some dimensions. The evidence suggests that this stems from women's stronger response to social restrictions, rather than differences in 'material' impacts that have been captured elsewhere (such as increased caring responsibilities). The effect on inequalities by age in mental health mirrors that in the labour market: young people were hit hardest at the start of the pandemic, but bounced back relatively quickly, whereas older age groups were slower to recover from the shock.

**Figure 15. Actual and predicted mental health in April 2020, by age and gender**



Source: Banks and Xu (2020)

## 6. Wealth

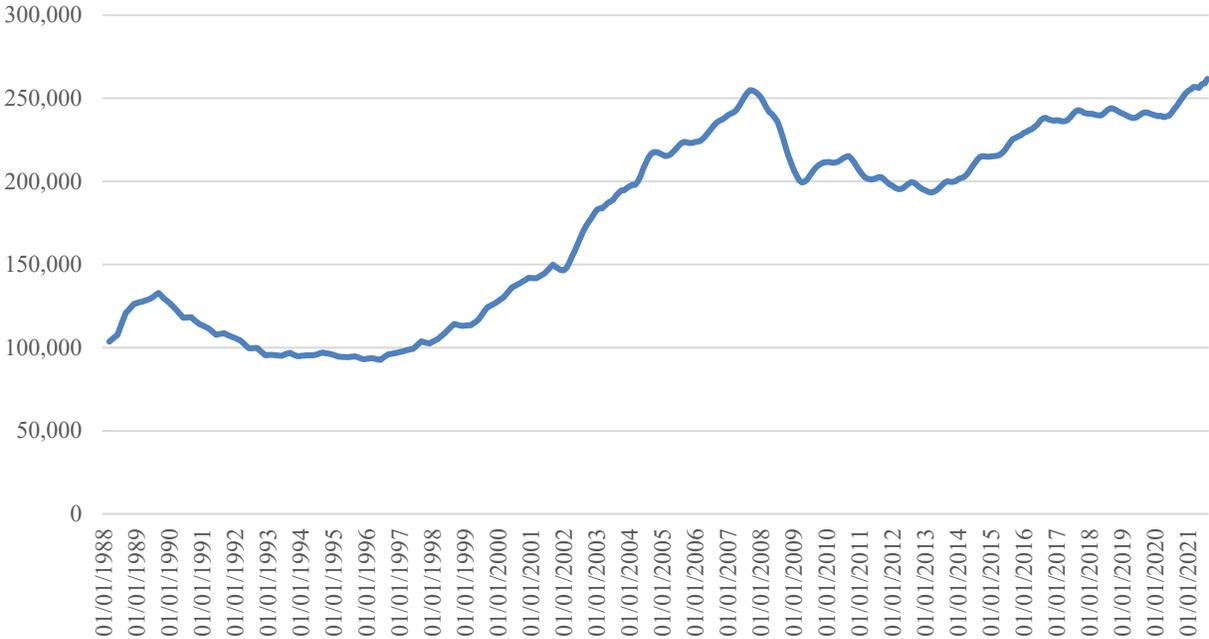
In addition to the effects on incomes, significant changes in asset prices and in savings behaviour have generated changes in wealth inequalities over the course of the pandemic. In the UK, the most important asset most families hold is their home, with the value of property (net of mortgage debt) making up half of private wealth for people close to the middle of the wealth distribution. For the richest 10% (see Leslie and Shah 2021), it only makes up a third of private wealth, compared to two thirds held in financial wealth or private pensions.

Similar to many developed countries, average UK house prices have increased significantly since the start of the pandemic. Figure 16 shows inflation-adjusted house prices increased by 9% between February 2020 and August 2021, to a level above that seen before the 2008 financial crisis. There have also been large increases in house prices in the United States (see Federal

Reserve Economic Data 2021). And a large number of EU countries also saw an acceleration in house price growth (see Eurostat 2021).

In comparison to overall house prices, and in contrast to some other nations, UK equities have seen little increase since the pandemic, with the FTSE 250 share index in December 2021 only a little above its pre-pandemic level in nominal terms (4%) and the FTSE 100 still below its pre-pandemic levels in nominal terms. This compares to large increases seen in major share indices in the United States, France, and Germany over the same period.

**Figure 16 Real average UK house prices 1988-2021 (£, August 2021 prices)**



Source: UK Land Registry data, deflated using the CPIH inflation index, 3 month rolling average.

Second, the crisis changed savings rates. The sharp decline in spending discussed in Section 5 more than outpaced the decline in income, resulting in rising savings rates. Survey and bank account evidence show that net savings increases were (in absolute terms) larger at the top of the income distribution (Davenport et al., 2020; Brewer and Patrick, 2021; Leslie and Shah, 2021).

Bringing these two effects together for the UK, Leslie and Shah (2021) simulate the effects of changes in asset prices and savings rates using pre-pandemic data and find the largest proportional increases in wealth are concentrated in the middle of the income distribution, with changes in asset prices having a much bigger impact than changes in savings. This is potentially unsurprising given the large increase in property values, which are particularly important around the middle of the wealth distribution. High wealth households saw moderate growth in their wealth, while the lowest wealth households saw only a small increase from higher savings rates – since they hold few assets outside of cash, they did not share much in rising asset prices.

Conversely, Crossley et al. (2021b) take a different approach - simply using survey data asking respondents whether their net wealth has gone up or down by more than 10%. The picture here is regressive, though it is a little difficult to know how well respondents are able to answer this question - for example, whether they would account for the value of their house changing (and the ability to answer this sort of question might itself vary across the distribution).

These two approaches both suggest that wealth inequality is likely to have increased between the poorest (who hold little wealth) households and the rest of the population. It is less clear what has happened within ‘the rest’, though we are inclined to put more weight on the simulation approach which suggests a decline in wealth inequality between middle and top of the wealth distribution. Since households seem unlikely to immediately spend their newfound wealth as the economy continues to recover (Levell, 2021), this is likely to persist somewhat beyond the pandemic. The widespread rises in house prices, combined with the fact that middle and high income families are much more likely to own their homes, means that the increase in wealth inequality between the poorest households and the rest is likely to be common across many countries, though extent of changes towards the top wealth distribution in each country may be

more specific to the performance of particular assets and changes in the levels of savings in each country.

## **7. Discussion and longer-term impacts**

The pandemic has affected inequalities across a number of margins. As we have examined here, the effects are complex, pointing in different directions and resisting easy simplifications.

On the one hand, the pandemic has pushed inequalities up across several dimensions. The effects on mental health, at least in the early stages of the pandemic, were larger for those groups whose mental health was already worse (though the effects were more ambiguous after the initial lockdown). Measures of deprivation also increased at the start of the pandemic. While the primary impact of the loss of learning on inequality is of course to hit the current cohort of school pupils relative to those older and younger than them, within the current cohort, school closures have affected children from poorer backgrounds harder. Access to technology caused different experiences of remote learning, and these effects seem to have fed through to differences in actual attainment. The labour market shock has also tended to increase existing inequalities in the world of work, with lower-earning and less educated workers more likely to be in shutdown sectors and unable to work from home – and hence to lose their job or be furloughed.

On the other hand, the pandemic has also served to reduce inequalities in other ways. The inequality in the labour market shock did not result in higher inequalities in income in the UK (though, as discussed shortly, it may have longer-term implications). Instead, the enormous job-support programmes combined with the expanded benefit system has meant that if anything

income inequality has fallen. Wealth seems to have increased in proportional terms the most for middle income households in the UK, rather than at the top or bottom of the wealth distribution.

We conclude by considering the legacy of the pandemic for economic inequalities. This is clearly a more speculative exercise than documenting how the pandemic has affected inequalities so far, and, again is focussed on the UK situation, though there are likely to be many parallels with other developed economies. Nonetheless, the body of research we have discussed does provide at least some guidance on what we might expect to happen to inequalities in the coming years, even if variants of Covid-19 do not cause further economic and health challenges.

Naturally the impact of the pandemic on educational inequality is very likely to have long term implications for inequalities later in life. Three further questions concerning longer term trends seem worthy of discussion. First, will the labour market shock have persistent effects? Second, will there be a move toward working from home, and with what implication for inequalities? Third, will the scale of the pandemic shift policy toward more redistribution and social insurance?

The disruption in the labour market may have so-called ‘scarring’ effects. Those out of work may see their human capital depreciate, or at least fail to appreciate, meaning that later in life they may be unable to command as high a wage. It is worth noting that the effects on actual skill development are presumably just as bad for those who are furloughed as for those who are actually unemployed. The empirical literature has indeed found that that unemployment early in life can have a persistent impact on labour market outcomes (Burgess et al., 2003; Gregg and Tominey, 2005), as can graduating into a recession (Oreopoulous et al 2012). Given that the immediate labour market impacts of the pandemic have been unevenly felt, so likely will be any “scarring” effects.

Any persistence in the move toward work from home would clearly have important impacts. Haskel (2021) finds that 21% of UK employees work in firms who say they intend to permanently increase remote work among their staff. Crucially, changes in working from home are not evenly split across industries: it is likely to become more common in the higher paid information, communication, professional and scientific sectors (Haskel, 2021). This matters because many people like working from home – on average, UK workers state that the value they place on working from home 2-3 days per week is equivalent to a 6% earnings rise (Taneja et al., 2021). Together these facts suggest that there may be an increase in inequality of compensation (including the value of working from home).

Working from home could perhaps also particularly benefit women. Given that mothers tend to undertake greater caring responsibilities, more home working could make it easier for them to fit work around childcare. Relatedly, the potential for working from home could reduce the effects of the ‘gender commuting gap’ (that men commute further than women; see Joyce and Norris Keiller, 2018): women may be able to search for jobs over a wider geographic area, leading to higher earnings.

Greater numbers of people working from home may imply changes in demand for certain goods and services which exert their own force on inequality. First, more working from home moves workers away from areas with significant locally consumed services (such as coffee shops, gyms) to residential neighbourhoods where there are many fewer of these businesses (De Fraja et al., 2020). There does not seem to be any precise estimates of this effect for the UK, but in the US Barrero et al. (2021) use survey evidence on work from home plans and spending to estimate a 5-10% reduction in spending in city centres. In contrast, working from home may increase demand for tech services, such as virtual meeting software, and for e-commerce. Since locally

consumed services (and e-commerce) tend to hire low paid workers and tech services higher paid, this shift in demand could increase inequality, at least in the short run. The permanence of this effect depends in part upon the extent to which the in demand for locally consumed services shifts to residential neighbourhoods, rather than disappearing altogether (e.g. coffee shops moving near homes rather than offices), and how quickly workers displaced from this change are absorbed into the new jobs in other sectors. Second, working from home has already changed relative house prices, with increases in rural and suburban areas compared to urban neighbourhoods (Judge and Pacitti, 2021). Since poverty is higher in urban settings (e.g. Bailey and Minton, 2017), should this change persist it could lead to a reduction in after-housing-cost income inequality.

Finally, the pandemic may have an impact on longer-term policy reform. The pandemic has certainly resulted in many people interacting with the welfare system for the first time. One might have reasonably expected that this could change voters' attitudes towards welfare, perhaps resulting in greater demand for benefit increases post-pandemic. However, while attitudes became a little more pro-welfare during the first and second waves of the pandemic, that was largely undone when the virus receded, and by May 2021 people were only slightly more positively disposed towards benefits than they had been in February 2020 (de Vries et al., 2021).

The pandemic has also substantially weakened the public finances (see OECD, 2020). If more spending is required in the short-run to clear healthcare backlogs or to make up for lost schooling, or if the pandemic causes a permanent hit to national income, that picture will only become weaker. Thus, some fiscal tightening is likely. The effects here could go either way – in broad terms, tax increases are likely to reduce inequality and spending cuts likely to increase it. In the UK, the initial response of the government has been to increase taxes, with tax revenue as

a share of GDP set to reach the highest level on record, and only minimal medium term spending cuts pencilled in (Johnson et al., 2021).

If governments wish to undo pandemic-induced inequalities, the preceding discussion shows that there are a number of fronts on which they can act – reflecting the huge number of domains which the pandemic has disrupted social and economic life. Many of these – particularly education and the labour market – are likely to have persistent effects, meaning that policy choices now may have impacts for years to come.

## References

- Adams, S., Miller, H. and Waters, T. (2020), 'Income protection for the self-employed and employees during the coronavirus crisis', IFS Briefing Note.
- Adams-Prassl, A., Boneva, T., Golin, M. & Rauh, C. (2020a), 'Furloughing', *Fiscal Studies*, 41(3), pp. 591-622
- Adams-Prassl, A., Boneva, T., Golin, M. & Rauh, C. (2020b), 'Inequality in the Impact of the Coronavirus Shock: Evidence from Real Time Surveys', *Journal of Public Economics*, 189
- Adams-Prassl, A., T. Boneva, M. Golin, and C. Rauh (2020c). The Impact of the Coronavirus Lockdown on Mental Health: Evidence from the US. Cambridge Working Papers in Economics 2037
- Almeida, V., S. Barrios, M. Christl, S. De Poli, A. Tumino, and W. van der Wielen (2020). Households' income and the cushioning effect of fiscal policy measures during the Great Lockdown. JRC Working Papers on Taxation & Structural Reforms 2020-06, Joint Research Centre (Seville site).
- Alon, T., Doepke, M., Oldstead-Rumsey J., Tertilt, M., (2020). 'The impact of Covid-19 on gender inequality', *Covid Economics Vetted and Real-Time Papers*, Issue 4, April 2020
- Andrew, A., S. Cattan, M. Costa-Dias, C. Farquharson, L. Kraftman, S. Krutikova, A. Phimister, A. Sevilla. (2020). Family time use and home learning during the Covid-19 lockdown. The Institute for Fiscal Studies. UK.
- Andrew, A., S. Cattan, M. Costa-Dias, C. Farquharson, L. Kraftman, S. Krutikova, A. Phimister and A. Sevilla (2020a). "Learning during the lockdown: real-time data on children's experiences during home learning," IFS Briefing Note 288
- Andrew, A., S. Cattan, M. Costa-Dias, C. Farquharson, L. Kraftman, S. Krutikova, A. Phimister and A. Sevilla (2020b). "Inequalities in Children's Experiences of Home Learning during the COVID-19 Lockdown in England," *Fiscal Studies*, 41(3), pp. 653-683
- Anjara, S.G., Bonetto, C., Van Bortel, T. et al. (2020). "Using the GHQ-12 to screen for mental health problems among primary care patients: psychometrics and practical considerations," *International Journal of Mental Health Systems*, Vol. 14, article 62.

- Bailey, N. and Minton, J. 'The suburbanisation of poverty in British cities, 2004-16: extent, processes and nature', *Urban Geography*, Vol. 39, issue 6.
- Banks, J., and X. Xu (2020), 'The mental health effects of the first two months of lockdown during the Covid-19 pandemic in the UK', *Fiscal Studies* 41(3), September 2020, 685-708
- Banks, J., Fancourt, D., and Xu, X. (2021) Mental Health and the Covid-19 pandemic, in *World Happiness Report 2021*, [https://ifs.org.uk/uploads/WHR%2021\\_Ch5\\_3.18.pdf](https://ifs.org.uk/uploads/WHR%2021_Ch5_3.18.pdf)
- Barrero, J., Bloom, N. and Davis, S. (2021). 'Why working from home will stick', *NBER working paper*. No. 28731
- Baxter, D., Casey, R. and Earwaker, R. (2020). 'Struggling renters need a lifeline this winter', Joseph Rowntree Foundation.
- Bayrakdar and Guveli (2020) Inequalities in home learning and schools' provision of distance teaching during school closure of COVID-19 lockdown in the UK, *ISER Working Paper No. 2020-09*
- Belfield, C., Blundell, R., Cribb, J., Hood, A., and Joyce, R., (2017) Two Decades of Income Inequality in Britain: The Role of Wages, Household Earnings and Redistribution, *Economica*, Vol. 84, No. 334, pp. 157-179
- Benzeval, M., Burton, J., Crossley, T. F., Fisher, P., Jäckle, A., Low, H., & Read, B. (2020a). 'The Idiosyncratic Impact of an Aggregate Shock: The Distributional Consequences of COVID-19', *Understanding Society Working Paper Series*, No. 2020-09, May 2020.
- Benzeval, M. M. Borkowska, J. Burton, T. Crossley, L. Fumagalli, A. Jackle, B. Rabe, and B. Read. (2020b). COVID-19 Survey. Home Schooling. Briefing Note. Understanding Society. Wave 1.
- Blainey, K. and T. Hannay (2021). "The effects of educational disruption on primary school attainment in summer 2021," [https://www.risingstars-uk.com/media/Rising-Stars/Assessment/Whitepapers/RSA\\_Effects\\_of\\_disruption\\_Summer\\_Aug\\_2021.pdf](https://www.risingstars-uk.com/media/Rising-Stars/Assessment/Whitepapers/RSA_Effects_of_disruption_Summer_Aug_2021.pdf)
- Blanden, J., Crawford, C., Fumagalli, L., Rabe, B. (2021), 'School closures and parents' mental health', *ISER Briefing Note* May 2021. <https://www.iser.essex.ac.uk/files/news/2021/school-closures/school-closures-mental-health.pdf>
- Blundell, R., Costa Dias, M., Joyce, R., and Xu, X. (2020). 'Covid-19 and Inequalities', *Fiscal Studies*, 41(2), pp. 291-319.

- Blundell, R., Green, D., and Jin, W. (2021) The UK as a Technological Follower: Higher Education Expansion and the College Wage Premium, *Review of Economic Studies*, forthcoming
- Blundell, R. and Preston, I. (1995). 'Income, Expenditure and the Living Standards of UK Households', *Fiscal Studies*, vol. 16, no.3, pp. 40-54.
- Blundell, J., Machin, S., and Ventura, M. (2021) Covid-19 and the self-employed: six months into the crisis, CEP paper CEPCOVID-19-012  
[https://cep.lse.ac.uk/\\_NEW/PUBLICATIONS/abstract.asp?index=7546](https://cep.lse.ac.uk/_NEW/PUBLICATIONS/abstract.asp?index=7546)
- Bourquin, P., Delestre, I, Joyce, R., Rasul, I., Waters, T. (2020). 'The effects of coronavirus on household finances and financial distress', IFS Briefing Note  
(<https://www.ifs.org.uk/publications/14908> )
- Brewer, M. and Gardiner, L. (2020a) 'Return to Spender', Resolution Foundation Briefing.
- Brewer, M. and Gardiner, L. (2020b) The initial impact of COVID-19 and policy responses on household incomes, *Oxford Review of Economic Policy*, Volume 36, Issue Supplement\_1, 2020, Pages S187–S199
- Brewer, M. and Patrick, R. (2021) 'Pandemic pressures', Resolution Foundation Briefing.
- Brewer, M. and Tasseva, I. (2021) 'Did the UK policy response to Covid-19 protect household incomes?', *The Journal of Economic Inequality*.
- Burgess, S., Propper, C., Rees, H., and Shearer, A. (2003), 'The class of 1981: the effects of early career unemployment on subsequent unemployment experiences', *Labour Economics*, Vol. 10, Issue 3.
- Case, A., and Deaton A. (2021). Life expectancy in adulthood is falling for those without a BA degree, but as educational gaps have widened, racial gaps have narrowed, *Proceedings of the National Academy of Sciences* Mar 2021, 118 (11)
- Cattan, S., C. Farquharson, S. Krutikova, A. Phimister, A. Salisbury and A. Sevilla (2021). "Home learning experiences through the COVID-19 pandemic," IFS Report 195.
- Cavaglia, C., McNally, S. and Ventura, G. (2020), 'Do Apprenticeships Pay? Evidence for England',  
Oxford Bulletin for Economics and Statistics, 82, 1094–134.

- Cavaglia, C., McNally, S., Machin, S. and Ruiz-Valenzuela, J. (2020), ‘Gender, Achievement, and Subject Choice in English Education’, *Oxford Review of Economic Policy*, 36, 816–35.
- Chetty, R., J. N. Friedman, N. Hendren, M. Stepner, and T. O. I. Team (2020). *The Economic Impacts of COVID-19: Evidence from a New Public Database Built Using Private Sector Data*. NBER Working Paper 27431. National Bureau of Economic Research
- Costa-Dias, M., E. Johnson-Watts, R. Joyce, F. Postel-Vinay, P. Spittal and X. Xu (2021a). “Job Opportunities During the Pandemic,” IFS Working Paper.
- Costa-Dias, M., E. Johnson-Watts, R. Joyce, F. Postel-Vinay, P. Spittal and X. Xu (2021b). “Worker Mobility and Labour Market Opportunities,” IFS Working Paper.
- Crossley, T., Fisher, P., and Low, H. (2021a). ‘The heterogeneous and regressive consequences of COVID-19: Evidence from high quality panel data’, *Journal of Public Economics*, vol. 193.
- Crossley, T., Fisher, P., Levell, P., and Low, H. (2021b). ‘A year of COVID: the evolution of labour market and financial inequalities through the crisis’, IFS Working Paper W21/39
- Cribb, J., Waters, T., Wernham, T. and Xu, X. (2021), ‘Living standards, poverty and inequality in the UK: 2021’, IFS Report R194.
- Cribb, J., and Salisbury, A. (2021) “Employment and the end of the furlough scheme”, in (eds) Emmerson, Johnson and Zaranko, *The IFS Green Budget: October 2021*. IFS: London
- Cribb, J., and Johnson, P. (2021) *Policies to preserve worker-firm links during the pandemic: lessons from the UK’s Coronavirus Job Retention Scheme*, mimeo
- Daly, M. A. Sutin and E. Robinson, 2020, ‘Longitudinal changes in mental health and the COVID-19 pandemic: Evidence from the UK Household Longitudinal Study’, *Psychological Medicine*. (Usoc data April-May-June) <https://psyarxiv.com/qd5z7/>
- Davenport, A., Joyce, R., Rasul, I. and Waters, T. (2020) ‘Spending and saving during the COVID-19 crisis: evidence from bank account data’, IFS Briefing Note.
- Davenport, A., and Zaranko, B. (2020) *Levelling up: where and how?* in (eds) Emmerson, Farquharson and Johnson *The IFS Green Budget October 2020*

- De Fraja, G., Matheson, J. and Rockey, J. ‘Zoomshock: The Geography and Local Labour Market Consequences of Working from Home’, *Covid Economics*, issue 64.
- Delestre, I., Joyce, R., Rasul, I., and Waters, T. (2020). ‘Income protection policy during COVID-19: evidence from bank account data’, IFS Briefing Note.
- Department for Education (2021a). Pupil absence in schools in England: autumn term, Autumn Term 2019/20 – Explore education statistics’ in <https://explore-education-statistics.service.gov.uk/find-statistics/pupil-absence-in-schools-in-england-autumn-term/2019-20-autumn-term#releaseHeadlines-summary>.
- Department for Education (2021b). Understanding progress in the 2020/21 academic year Interim findings January 2021. *Department for Education Research Report* [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/962330/Learning\\_Loss\\_Report\\_1A\\_-\\_FINAL.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/962330/Learning_Loss_Report_1A_-_FINAL.pdf)
- DLUHC (2021). Household Resilience Study: Waves 1-3.
- Doherty K. and C. Cullinane (2020). “COVID-19 and Social Mobility Impact Brief #3: Apprenticeships,” Sutton Trust Research Brief, May.
- Domingue, B., H. Hough, D. Lang and J. Yeatman (2021). “Changing Patterns of Growth in Oral Reading Fluency During the COVID-19 Pandemic,” PACE Working Paper.
- Douaud, Gwenaëlle, Soojin Lee, Fidel Alfaró-Almagro, Christoph Arthofer, Chaoyue Wang, Paul McCarthy, Frederik Lange, Jesper L.R. Andersson, Ludovica Griffanti, Eugene Duff, Saad Jbabdi, Bernd Taschler, Anderson M. Winkler, Thomas E. Nichols, Rory Collins, Paul M. Matthews, Naomi Allen, Karla L. Miller, Stephen M. Smith, (2021) Brain imaging before and after COVID-19 in UK Biobank, medRxiv 2021.06.11.21258690; doi: <https://doi.org/10.1101/2021.06.11.21258690>
- Education Data Lab (2021) “How much school did Year 11 miss this year?” <https://ffteducationdatalab.org.uk/2021/07/how-much-school-did-year-11-miss-this-year/>
- Elliot Major, L., A. Eyles, and S. Machin. (2020). Generation COVID: Emerging work and education inequalities. CEP Covid-19 Analysis, Paper No. 011.
- Elliot Major, L., A. Eyles and S. Machin (2021). “Learning loss since lockdown: variation across the home nations,” CEP Report 023

- Emmerson, C. and Stockton, I. (2021). ‘A £303 billion bill which may well rise further’, Institute for Fiscal Studies.
- Engzell P., A. Frey, M. Verhagen (2021). “Learning loss due to school closures during the COVID-19 pandemic,” *PNAS*, 118 (17), <https://doi.org/10.1073/pnas.2022376118>.
- Etheridge B., and Spantig, L. (2020). The gender gap in mental well-being during the Covid-19 outbreak: Evidence from the UK, *Covid Economics Vetted and Real-Time Papers*, Issue 33, June2020
- EUROMOD (2021) Effects of Tax-Benefit Policy Changes across the Income Distributions of the EU-27 Countries and the UK: 2019-2020, EUROMOD Working paper series EM 02/21
- Eurostat (2021). “House prices up by 5.8% in the euro area” Eurostat Euro Indicators 79/2021 <https://ec.europa.eu/eurostat/documents/2995521/11563171/2-08072021-AP-EN.pdf/39932480-e814-0a7f-8687-3563ffb9f53a?t=1625733931086>
- Fancourt D, Steptoe A, Bu F (2020), ‘Trajectories of anxiety and depressive symptoms during enforced isolation due to COVID-19 in England: a longitudinal observational study’. *The Lancet Psychiatry* 2020; published online Dec 9. DOI:10.1016/S2215-0366(20)30482-X.
- Federal Reserve Economic Data (2021). S&P/Case-Shiller U.S. National Home Price Index <https://fred.stlouisfed.org/series/CSUSHPINSA>
- Gardiner, L., and Slaughter, H. (2020). ‘The effects of the coronavirus crisis on workers’, Resolution Foundation Spotlight.
- Gregg, P. and Tominey, E. (2005). ‘The wage scar from male youth unemployment’, *Labour Economics*, Vol. 12, issue 4.
- Handscomb, K. and Judge, L. (2020). ‘Caught in a (Covid) trap’, Resolution Foundation Briefing.
- Handscomb, K., Henahan, K. and Try, L. (2021). ‘The Living Standards Audit 2021’, Resolution Foundation.
- Haskel, J. (2021). ‘What is the future of working from home?’, Economics Observatory.
- HM Land Registry (2021). ‘UK House Price Index: June 2021’.

- HM Treasury (2020). ‘Impact of COVID-19 on working household incomes: distributional analysis as of May 2020’.
- House of Commons Library (2021) Apprenticeship Statistics, Briefing Paper No. 06113  
<https://researchbriefings.files.parliament.uk/documents/SN06113/SN06113.pdf>
- Huber, S.G., Helm, C. (2020) COVID-19 and schooling: evaluation, assessment and accountability in times of crises—reacting quickly to explore key issues for policy, practice and research with the school barometer. *Educ Asse Eval Acc* **32**, 237–270
- Eichhorst, W. and Rinne, U. (2020). IZA Crisis Response Monitoring –Germany,  
[https://www.iza.org/wc/files/downloads/iza\\_crisismonitor\\_countryreport\\_de\\_202012.pdf](https://www.iza.org/wc/files/downloads/iza_crisismonitor_countryreport_de_202012.pdf)
- Helliwell, J., Huang, H., Wang, S., and Norton, M. (2021) Happiness, trust and deaths under Covid-19, *World Happiness Report*.
- Johnson, P., Emmerson, C., Miller, H., Phillips, D., Stoye, G., Delestre, I., Stockton, I., Ogden, K., Joyce, R., Adam, S., Waters, T., Warner, M. and Zaranko, B., ‘An initial response to the Prime Minister’s announcement on health, social care and National Insurance’, Institute for Fiscal Studies.
- Joyce, R. and Norris Keiller, A. (2018). ‘The 'gender commuting gap' widens considerably in the first decade after childbirth’, IFS observation.
- Judge, L. (2020). ‘Coping with housing costs during the coronavirus crisis’, Resolution Foundation.
- Judge, L. (2021). ‘Getting ahead on falling behind’, Resolution Foundation.
- Judge, L. and Pacitti, C. (2021). ‘Housing Outlook Q2 2021’, Resolution Foundation.
- Kogan, V. and S. Lavertu (2021). “The COVID-19 Pandemic and Student Achievement on Ohio’s Third-Grade English Language Arts Assessment,” unpublished manuscript.
- Lavy, V. (2015). “Do differences in schools’ instruction time explain international achievement gaps? Evidence from developed and developing countries,” *Economic Journal*, 125, F397–424, <https://doi.org/10.1111/eoj.12233>.
- Leslie, J. and Shah, K. (2021). ‘(Wealth) gap year’, Resolution Foundation.
- Levell, P. (2021). ‘Consumption spending in the wake of the pandemic’, Institute for Fiscal Studies Briefing Note BN336.

- Levell, P. and Karjalainen, H. (2021). ‘The cost of living crisis – who is hit by recent price increases?’, Institute for Fiscal Studies.
- Maldonado, J and K. De Witte (2020). “The Effect of School Closures on Standardised Student,” KU Leuven DPS20.17.
- McNally, S. (2018). Apprenticeships in England: what does research tell us? CVER Briefing Note <https://cver.lse.ac.uk/textonly/cver/pubs/cverbrf008.pdf>
- NRLA (2020). “Government needs to tackle rent arrears crisis”.
- OECD (2020). Sovereign Borrowing Outlook for OECD Countries 2020 SPECIAL COVID-19 EDITION <https://www.oecd.org/finance/Sovereign-Borrowing-Outlook-in-OECD-Countries-2020.pdf>
- Office for National Statistics (2020). ‘Child poverty and education outcomes by ethnicity’. February 2020.
- Office for National Statistics (2021), “Household final consumption expenditure: National concept CVM SA - £m” <https://www.ons.gov.uk/economy/nationalaccounts/satelliteaccounts/timeseries/abjr/ukeya?referrer=search&searchTerm=abjr>
- Office for Budget Responsibility (2021). ‘Economic and Fiscal Outlook: October 2021’
- Oreopoulos, P., von Wachter, T., and Heisz, A. (2012), ‘The Short- and Long-Term Career Effects of Graduating in a Recession’, *American Economic Journal: Applied Economics*, 4(1), 1–29.
- Patterson, C., Sahin, A., Topa, G, Violante G. (2014) “Working Hard in the Wrong Place: A Mismatch-Based Explanation to UK Productivity Puzzle”, *European Economic Review*, 2016, 84, 42-56.
- Pier, L., M. Christian, H. Tymeson and R. Meyer (2021). “COVID-19 Impacts on Student Learning: Evidence from Interim Assessments in California,” PACE Working Paper.
- Pierce M, Hope H, Ford T, et al. (2020), ‘Mental health before and during the COVID-19 pandemic: a longitudinal probability sample survey of the UK population’. *The Lancet Psychiatry* 2020; 0. DOI:10.1016/S2215-0366(20)30308-4.

- Pischke, J-S. (2007). “The impact of length of the school year on student performance and earnings: evidence from the German short school years,” *Economic Journal*, 117, 1216–42, <https://doi.org/10.1111/j.1468-0297.2007.02080.x>
- Rose, S., L. Twist, P. Lord, S. Rutt, K. Badr, C. Hope and B. Styles (2021) . “Impact of school closures and subsequent support strategies on attainment and socio-emotional wellbeing,” Education Endowment Foundation, [https://educationendowmentfoundation.org.uk/public/files/Publications/Covid-19\\_Resources/Impact\\_of\\_school\\_closures\\_KS1\\_interim\\_findings\\_paper\\_-\\_Jan\\_2021.pdf](https://educationendowmentfoundation.org.uk/public/files/Publications/Covid-19_Resources/Impact_of_school_closures_KS1_interim_findings_paper_-_Jan_2021.pdf).
- Şahin, A., Song, J., Topa, G., and Violante, G. (2014). "Mismatch Unemployment." *American Economic Review*, 104 (11): 3529-64.
- Sharp, C., J. Nelson, M. Lucas, J. Julius, T. McCrone and D. Sims (2021). “The challenges facing schools and pupils in September 2020,” NFER report, [https://www.nfer.ac.uk/media/4119/schools\\_responses\\_to\\_covid\\_19\\_the\\_challenges\\_facing\\_schools\\_and\\_pupils\\_in\\_september\\_2020.pdf](https://www.nfer.ac.uk/media/4119/schools_responses_to_covid_19_the_challenges_facing_schools_and_pupils_in_september_2020.pdf)
- Sibieta, L. (2020). School attendance rates across the UK since full reopening. EPI Report.
- Stantcheva, S. (2021) Inequalities in the Times of a Pandemic, *Economic Policy*, [https://scholar.harvard.edu/files/stantcheva/files/stantcheva\\_covid19\\_policy.pdf](https://scholar.harvard.edu/files/stantcheva/files/stantcheva_covid19_policy.pdf)
- Steward, H., Watson, N. and Campbell, M. (2018). “The cost of school holidays for children from low income families,” *Childhood*, 25, 516–29, <https://doi.org/10.1177%2F0907568218779130>.
- Sutton Trust, 2020. COVID-19 and Social mobility impact brief #3: Apprenticeships. Link: <https://www.suttontrust.com/our-research/covid-19-impacts-apprenticeships/>
- Taneja, S., Mizen, P. and Bloom, N. ‘Working from home is revolutionising the UK labour market’, VoxEU.
- de Vries, R., Baumberg Geiger, B., Scullion, L., Summers, K., Edmiston, D., Ingold, J., Robertshaw, D., Young, D. ‘Solidarity in a crisis? Trends in attitudes to benefits during COVID-19’, Welfare at a social distance
- UNESCO (2021) “Education: from disruption to recovery” <https://en.unesco.org/covid19/educationresponse>

- Weidmann, B., R. Allen, D. Bibby, R. Coe, L. James, N. Plaister and D. Thomson (2021). “Covid-19 disruptions: Attainment gaps and primary school responses,” Education Endowment Foundation. <https://onlinelibrary.wiley.com/doi/10.1111/1475-5890.12239>. First published in Covid Economics Issue 28 (June 2020)
- Xu, X. and Ziliak, J. (2021). ‘Did food hardship increase during the pandemic?’, Economics Observatory.
- Yamamura, E. and Y. Tsutsui (2020). Impact of the State of Emergency Declaration for COVID-19 on Preventive Behaviors and Mental Conditions in Japan: Difference in Difference Analysis using Panel Data. arXiv:2005.13008. Papers