



What has been the Impact of COVID-19 on Self-employment Relative to Paid Employment in the UK

Alex Bowyer and Richard Dorsett

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An econometric model is used to estimate the relative impact of the pandemic on self-employed people. The results suggest, first, that the self-employed were harder hit in respect of the probability of remaining in work. However, this relative effect was arguably quite small, at just 0.6 percentage points, although it was roughly twice that for certain occupations (managers (directors) and senior officials; associate, professional and technical) and for those working in banking, finance & insurance etc. For comparison, we show that it is a similar relative impact to that of the Great Recession. A more notable impact is found on the second outcome considered: hours worked. The pandemic reduced hours worked among self-employed people more than among employees. The relative impact of 3.7 hours per week reflects both the reduction in the proportion in work and reduced hours among those remaining in work. Again, there was considerable variation across individuals, with stronger effects among men, non-whites and those in their mid-forties, and a mixed pattern of impact variation by occupation and industry. The third outcome is the probability of working zero hours for those in work. The results suggest the pandemic increased this probability by 4.7 percentage points more among the self-employed than among employees.

Keywords: Self-employment, COVID-19, labour supply, hours worked

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Preface

This research has been part funded by the Office for National Statistics (ONS) as part of the research programme of the Economic Statistics Centre of Excellence. Any views expressed are solely those of the authors and so cannot be taken to represent those of the ESCoE, its partner institutions or the ONS.

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1 Introduction

A long-term trend in the UK labour market is the growing share of the workforce who are self-employed. By the end of 2019 – before the onset of the coronavirus (COVID-19) pandemic – this accounted for five million people, or 15% of those currently in work.

In this paper, we use data from the Labour Force Survey (LFS) to document the changing nature and characteristics of the self-employed. In the LFS, after having established that someone meets the international definition of employment, an individual is classified as 'self-employed' based on their response to the question: "Were you working as an employee or were you self-employed?" Consequently, it is based on the respondent's self-classification.¹ A particular focus is on how self-employment has changed under the pandemic relative to paid employment. To put the results in longer-term perspective we show trends from 2001 to 2020.

Our results should be seen in the context of other analyses of self-employment. This is an area that for a long time attracted little research interest but has recently seen an upsurge in activity. Cribb et al. (2019) use HMRC self-assessment data to show the growth in self-employment between the 2000/2001 and 2015/2016 financial years. This growth has been seen for sole traders (which they define as a person reporting positive sales to HMRC in their self-assessment form) and owner-managers of single-director companies, while partnerships have seen a decline. The HMRC data also provide an insight into business income. This varies substantially by legal status, with most recently recorded mean income lowest for sole traders and highest for partners. Individuals in paid employment earn more on average than sole traders but less than partners or owner managers.

More recently, specially-commissioned surveys have been used to focus on how self-employment has fared under the pandemic. Each of these surveys allows a distinct aspect of self-employment to be analysed. At a high level, they are consistent in highlighting the difficulties besetting the self-employed as captured by reductions in their number. Cominetti et al. (2021) report on a series of surveys of working-age adults to show that, among those self-employed in February 2020, 14% were still not working at all in January 2021. Blundell et al. (2021) analyse a series of surveys of the self-employed to show that, among those continuing to report themselves as self-employed, the distribution of incomes and hours worked in January 2021 – a period of lockdown – was broadly similar to during the first (Spring 2020) lockdown. They also provide evidence from the LFS of the reduction in the number of self-employed workers, driven both by increased transitions to other activities but also a reduction in entrants. Reuschke et al. (2020) analysed the April and May 2020 rounds of Understanding Society COVID-19 Study data. Among those self-employed immediately prior to the pandemic, the proportion working zero hours in May 2020 was considerably higher than for those in paid employment (35% compared to 23%).

The LFS is the primary source of labour market data in the UK. At the beginning of the pandemic, an ONS report used the LFS to profile the self-employed, describing the distribution of types of self-employment and the prevalence of self-employment by a range of characteristics in 2019.² More recently, Reuschke et al. (2021) used the LFS to outline the key changes to self-employment in the last quarter of 2020. They focused particularly on variation by region, industry and personal characteristics.

Our results complement these existing analyses. In section 2, we use the longitudinal LFS to describe quarter-on-quarter transitions into and out of self-employment. We set the changes seen since the onset of the pandemic in longer-term context, showing trends back to 2001. Section 3 draws on the larger sample size of the quarterly LFS to describe long-term trends in self-employment

¹ Further details are available in Volumes 2, 3 and 4 of the [LFS user guides](#).

² [Coronavirus and self-employment in the UK](#)

in more detail. We compare these against those seen for paid employment and thereby provide some indication of the relative effect of the pandemic. Section 4 builds on this comparison, using regression analysis to provide an estimate of the extent to which the pandemic has affected the self-employed differently from employees. Section 5 concludes.

2 Flows from self-employment into paid employment and other activity

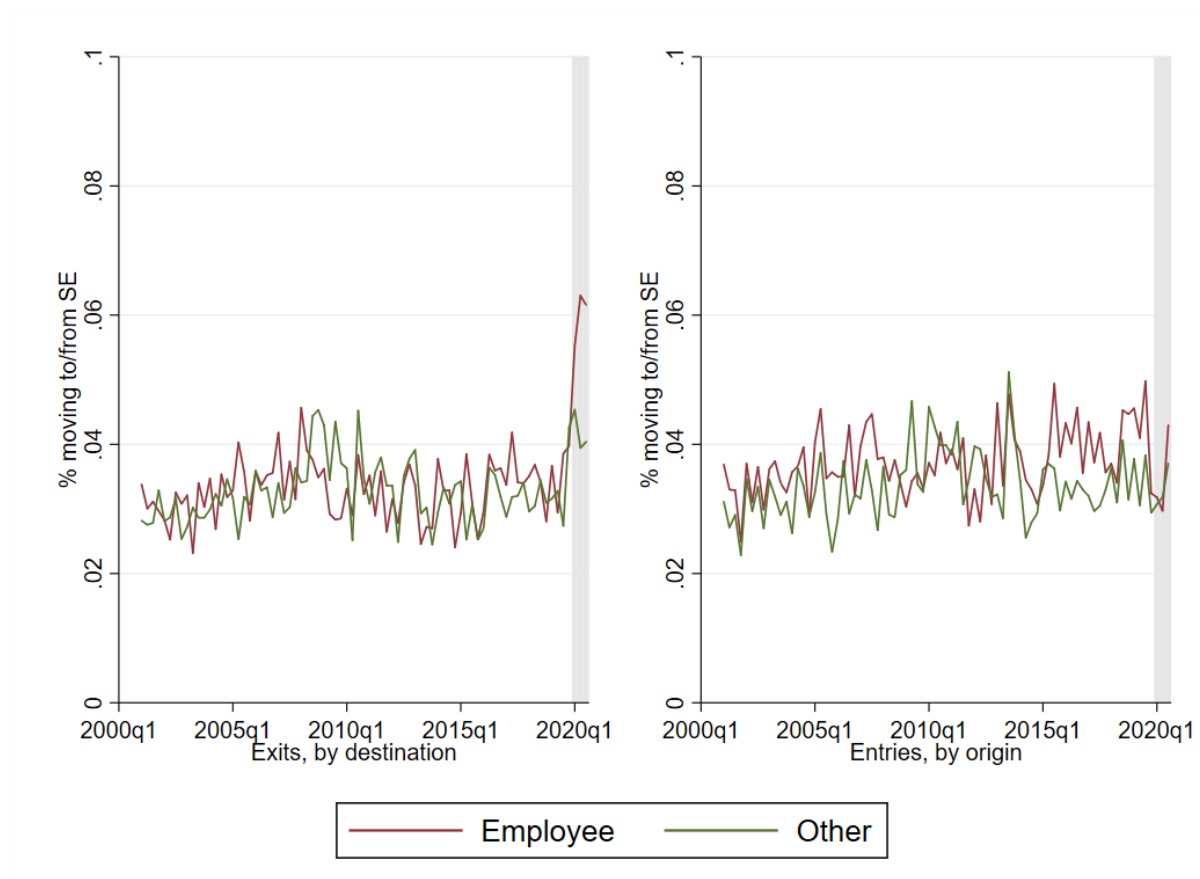
In this section, we use the two-quarter longitudinal LFS to consider individuals' quarter-on-quarter transitions.³ The purpose of doing this is to understand the dynamics underlying the snapshots captured by the quarterly LFS and presented in the next section. It also highlights particular features of the data which should be borne in mind when interpreting later results.

Given the self-employed population at a point in time, the self-employed population in the next period is determined by the number leaving self-employment and the number entering self-employment. Figure 1 shows, in the left panel, the proportion of those self-employed during the quarter when first observed but either employees or not working in the subsequent quarter. The right panel shows the proportion of individuals self-employed in the second quarter who were either employees or not working in the previous quarter. In both cases, trends were fairly stable prior to the pandemic (all graphs highlight the pandemic period with grey shading). Since then, the most notable change is the increase in the proportion of self-employed becoming employees. This has risen to 6 per cent, considerably higher than any level previously seen. Exits to a different status have also risen but to a lesser extent (comparable in fact to the rates seen following the 2008 financial crisis). Hence, it appears to be exits to employment that are primarily responsible for the reduction in self-employment. This has been reinforced by the drop in transitions from employment to self-employment, although this was short-lived. Entries from other statuses appear little affected by the pandemic.⁴

³ The analysis in this paper uses the most recent weights available for each wave. Watson (2020) describes more recent changes to the weighting approach for longitudinal LFS. For more on the challenges to the LFS posed by the pandemic see <https://blog.ons.gov.uk/2021/07/08/carry-that-weight-reducing-the-effects-of-covid-19-on-the-labour-force-survey/>.

⁴ A change from April 2020 to the rules governing off-payroll working may have contributed to this, although this only applies to individuals supplying their services through an intermediary <https://www.gov.uk/government/publications/rules-for-off-payroll-working-from-april-2020>

Figure 1 Entries to and exits from self-employment



This picture is complicated by the possibility that there may have been a change since the onset of the pandemic in how some self-employed people report their status in the LFS. Leaker (2021) points out that since the start of the pandemic, around 500,000 people reported switching from self-employed to employed despite there being no commensurate change in jobs. She suggests that the coronavirus may influence how individuals view their status and, in particular, that self-employed workers who were owner-managers and paid themselves through PAYE started viewing themselves as employed once they began receiving compensation under the Coronavirus Job Retention Scheme; or ‘furlough’ scheme. This would mean that the trends seen in Figure 1, at least in part, reflect changes in reporting rather than genuine shifts in work.

The scale of the CJRS is such that such an effect appears plausible. Questions were added to the LFS to measure the take up of CJRS and the Self-Employment Income Support Scheme (SEISS). However, these implied total claims different from the official statistics using HMRC data, raising questions over their reliability. For this reason, LFS-based statistics on coronavirus-related support are not considered in this report. The official statistics suggest [CJRS](#) claims during quarter 2 of 2020 were between 8.9m (in April) and about 6m (in June) and [SEISS](#) claims numbered 2.6m by end June 2020.

Figure 2 illustrates this, showing the length of time individuals have been with their current employer, for those who report themselves self-employed initially but employees in the next quarter. If these were genuinely new jobs, we would expect them to have started within the same quarter, or perhaps the previous quarter.⁵ Instead, there is no evidence of an increase in such new jobs (see “Same quarter” and “Previous quarter” panels). We also see a substantial proportion of jobs that started two or more quarters earlier (see “Longer” panel). This inconsistency appears to be long-standing. Interestingly, there is a small increase in the proportion who do not report how long their employee job has lasted. We might speculate that this reflects respondent difficulty in reconciling length of time in an apparent new employment with the reality that this is in fact a continuation of the previous state.

Figure 2 When started with current employer, among individuals moving from self-employed to employee

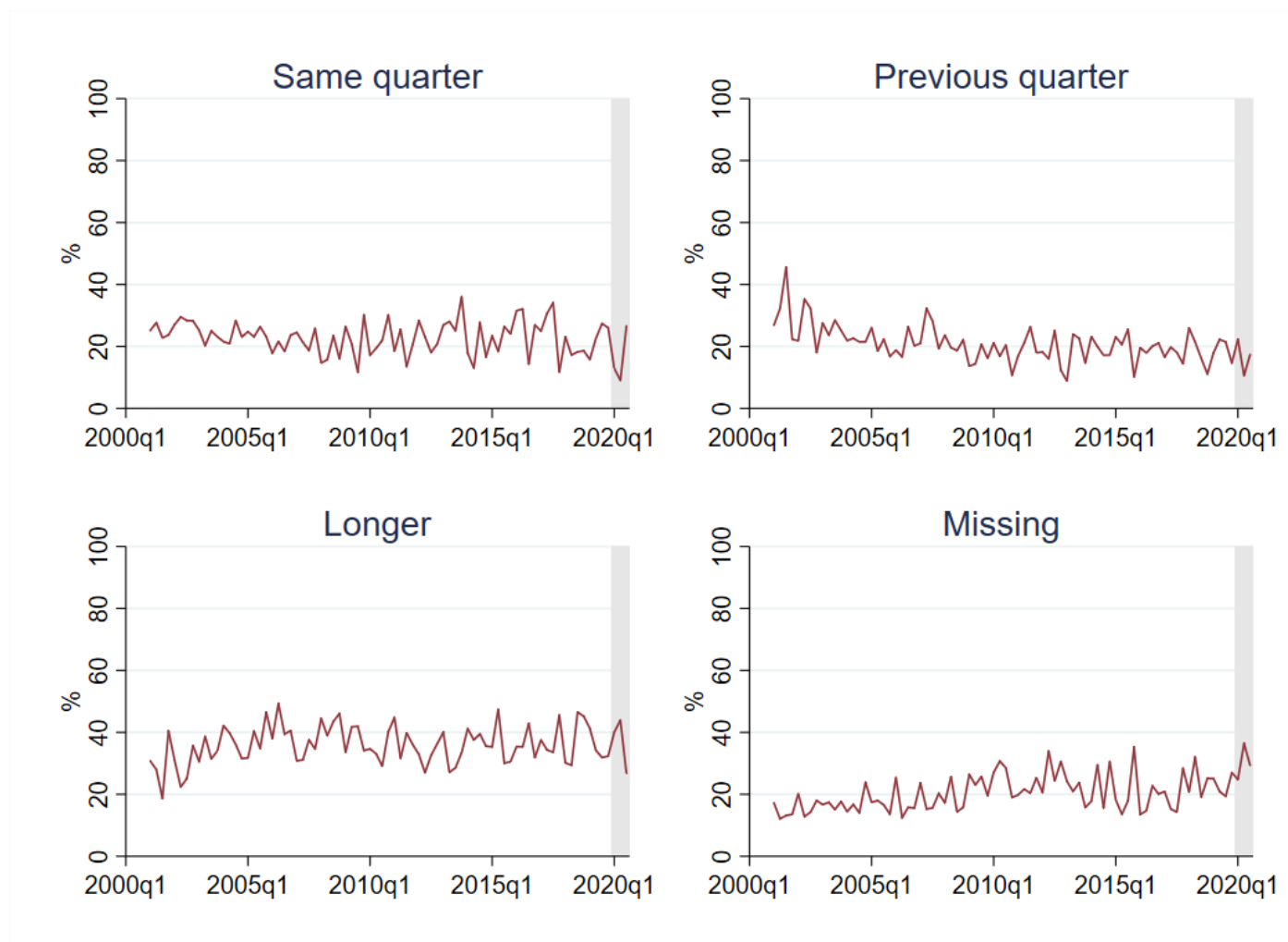
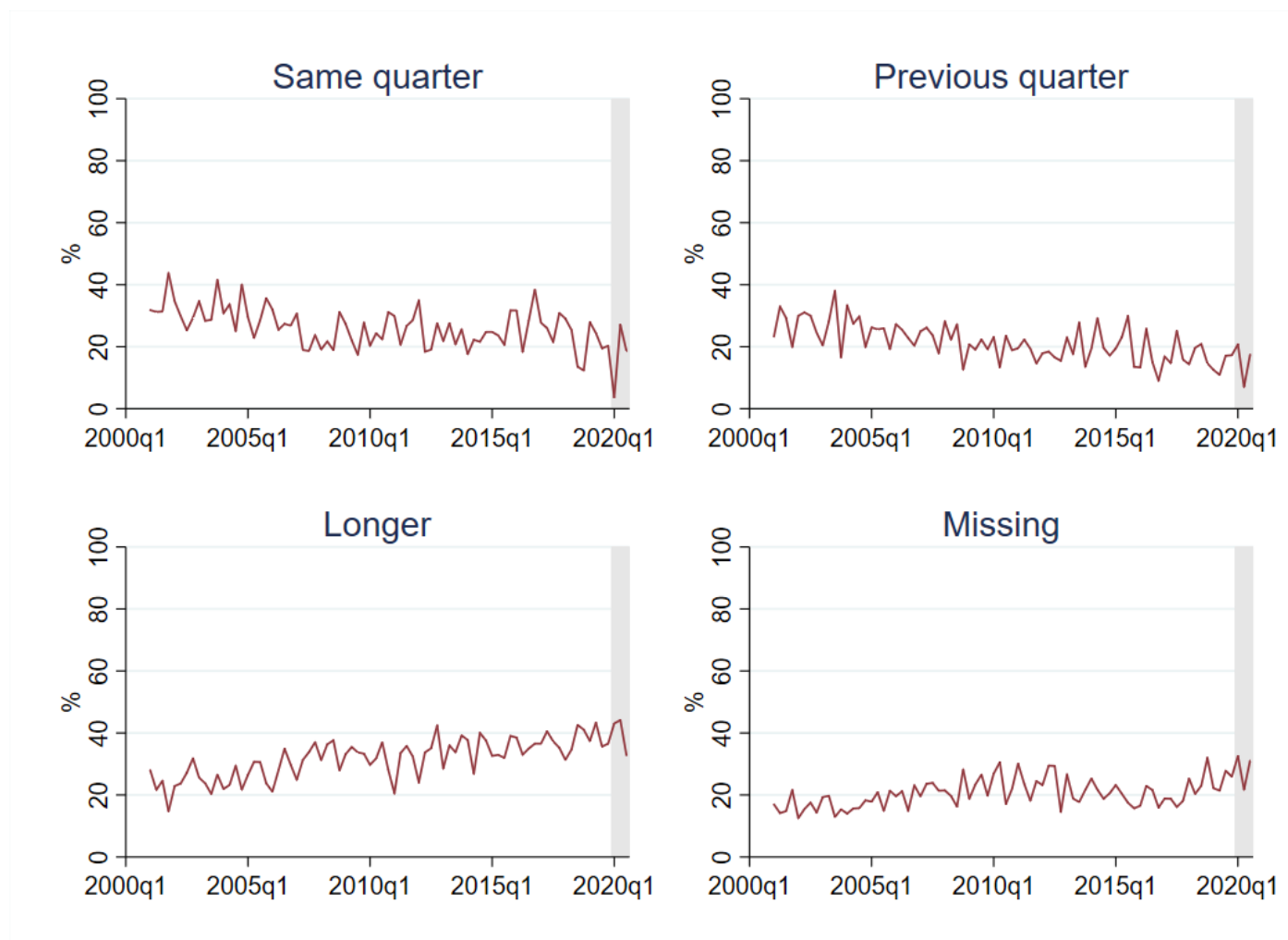


Figure 3 shows the corresponding case of individuals moving from paid employment to self-employment. Again, the “Longer” panel suggests a possible inconsistency, with a substantial minority of individuals newly reporting themselves as self-employed despite stating that they have been continuously self-employed for more than two quarters.

⁵ For example, if a job started after the reference week in the previous quarter.

Figure 3 When started as continuously self-employed, among individuals moving from employee to self-employed



The argument set out in Leaker (2021) implies that it is among self-employed people operating through limited companies that the change in perception of employment status is most likely. Such individuals are able to put themselves on the payroll of their company. Figure 4 shows the proportion of self-employed individuals who report being employed in the following quarter, broken down by type of self-employment. There is indeed a more noticeable increase among sole directors, as the previous logic might suggest. However, the increase is not limited to sole directors; several of the charts show employment rates that are elevated relative to the pre-pandemic trend.

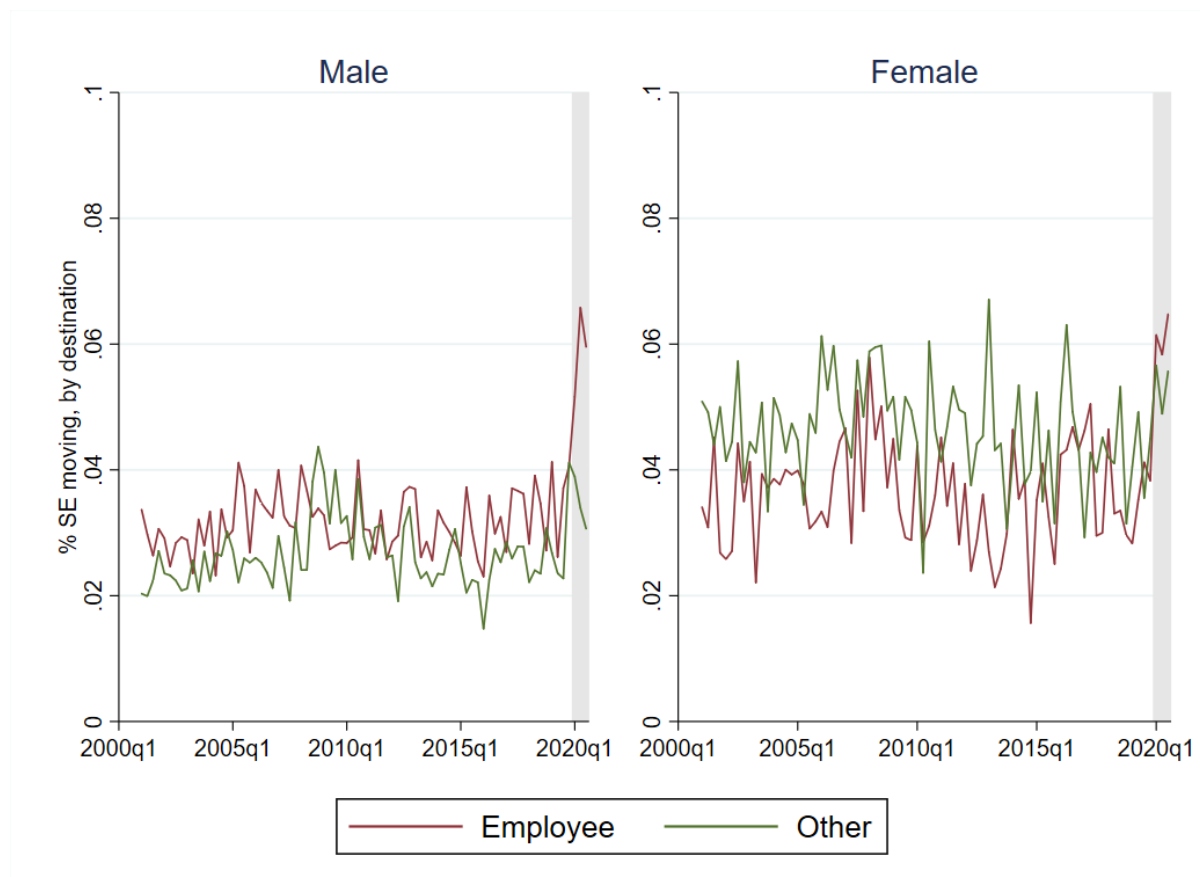
Taken together, these results show a marked increase under COVID in reported moves from self-employment into employment but at the same time highlight a caution that this may not correspond to a genuine change in status. This concern influences the estimation approach used later in this paper. It is also a caveat that should be borne in mind when considering the descriptive results presented in the remainder of this section.

Figure 4 Employment rate in subsequent quarter among individuals self-employed in initial quarter, by type of initial self-employment



The remainder of this section focuses on how the increase in the rate of reported exits from self-employment has varied across groups. Figure 5 shows that this is seen for both males and females, although the break from the pre-pandemic case is more evident for men. This partly reflects the fact that, pre-pandemic, exits from self-employment have typically been less common among men than among women.⁶

Figure 5 Variations in self-employment exits, by gender



⁶ Recent [research](#) has identified that older self-employed workers saw a higher movement into economic inactivity in 2020 with 33,000 more moving to economic inactivity between Quarter 2 and Quarter 3 2020 than in 2019.

With regard to hours worked, Figure 6 shows that, among those working fewer than 16 hours per week, exits to something other than employment are much more common than exits to employment. Under the pandemic, non-employment exits saw little change but exits to employment spiked to a rate of 7.7 per cent. This is considerably higher than at any point in the pre-pandemic period, aside from an outlier exit rate of 6.9 per cent in the second quarter of 2017. Among self-employed working 16 or more hours per week, exits to employment followed a similar pattern to that seen among those working fewer hours. Non-employment exits, while much less common among this group, showed relatively little change.

Figure 6 Variations in self-employment exits, by hours worked

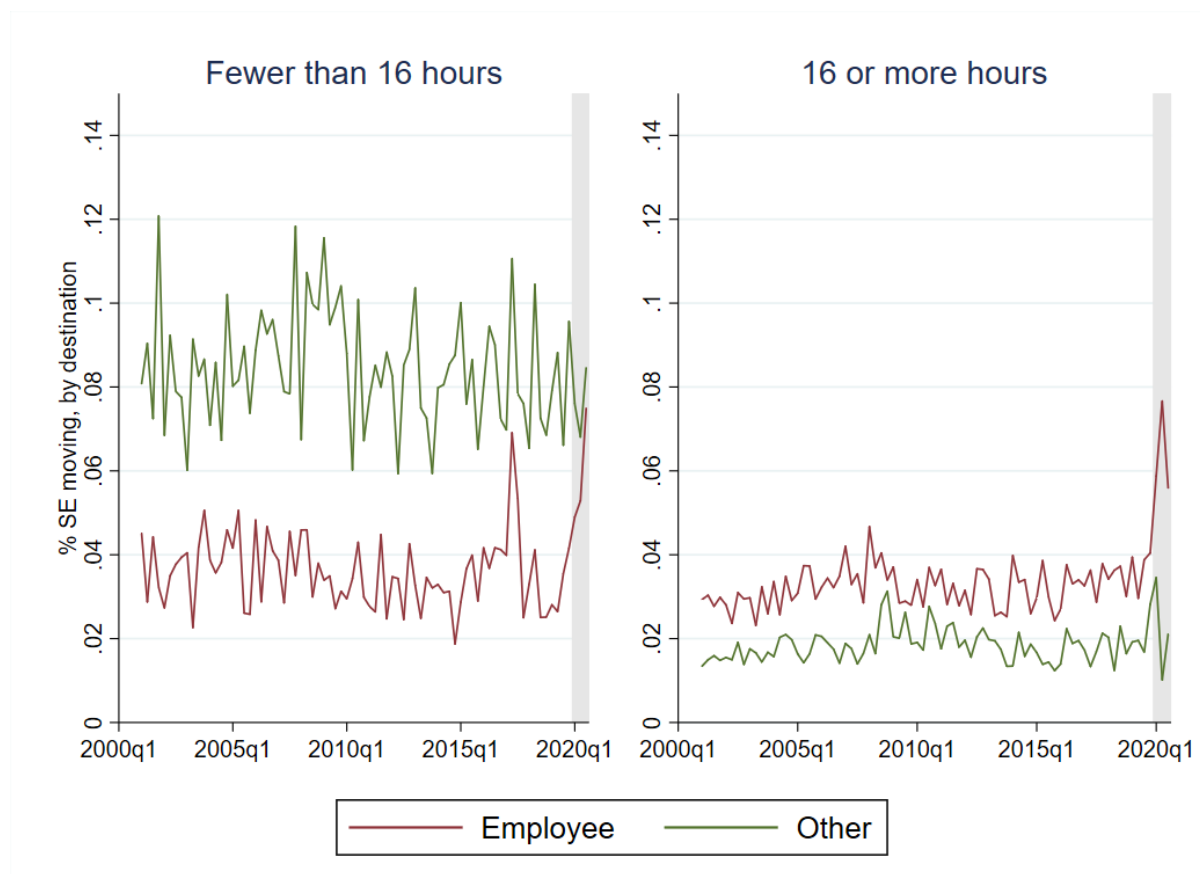
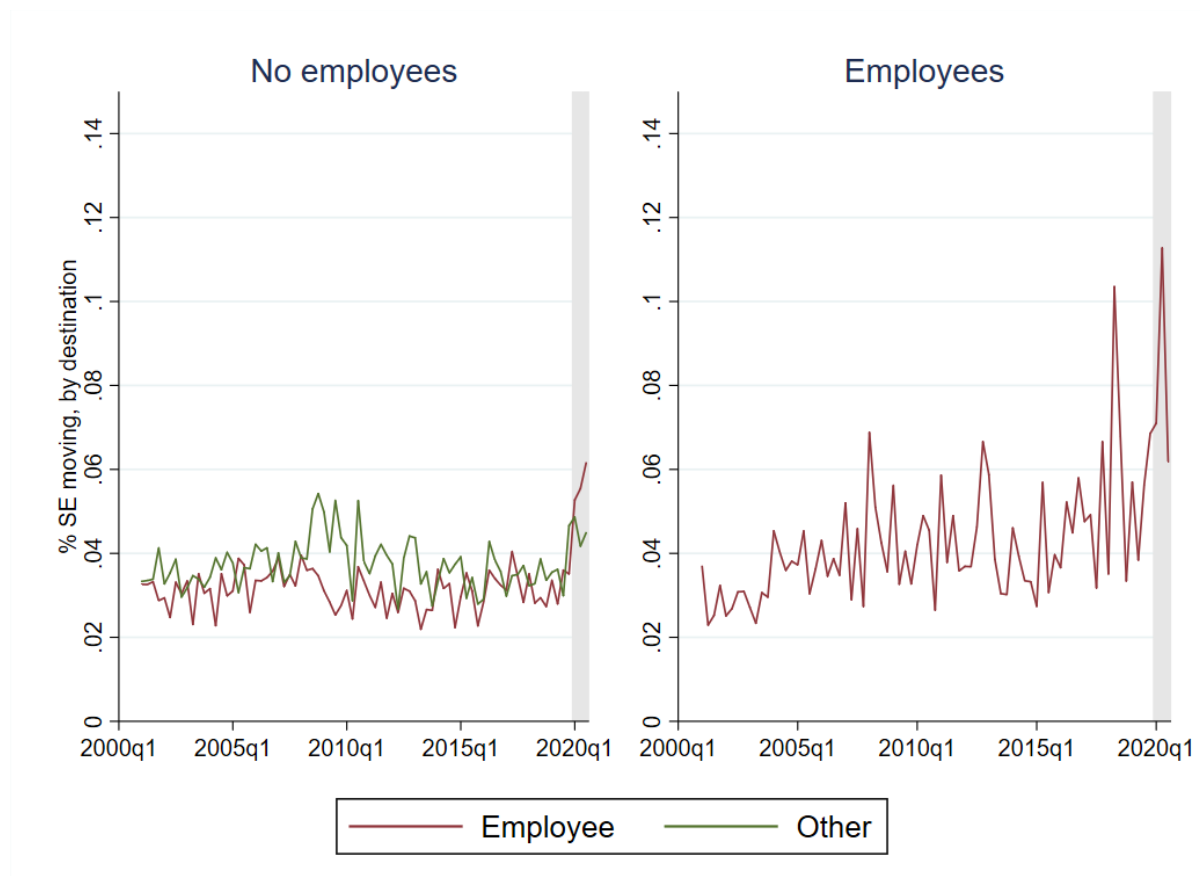


Figure 7 shows the difference according to whether the self-employed person had any employees. A clear jump in exits to employment is seen among those with no employees. Among those with employees, exits to employment reached their highest rate in 2020. However, it is also apparent that the time series of exits shows considerably variation before that point, probably reflecting small sample size. It is possible then that part of the measured spike in 2020 is random variation. This small sample size also means that it is not possible to construct a series showing the changing rate of exits to non-employment among self-employed with employees.

Figure 7 Variations in self-employment exits, by whether employing others

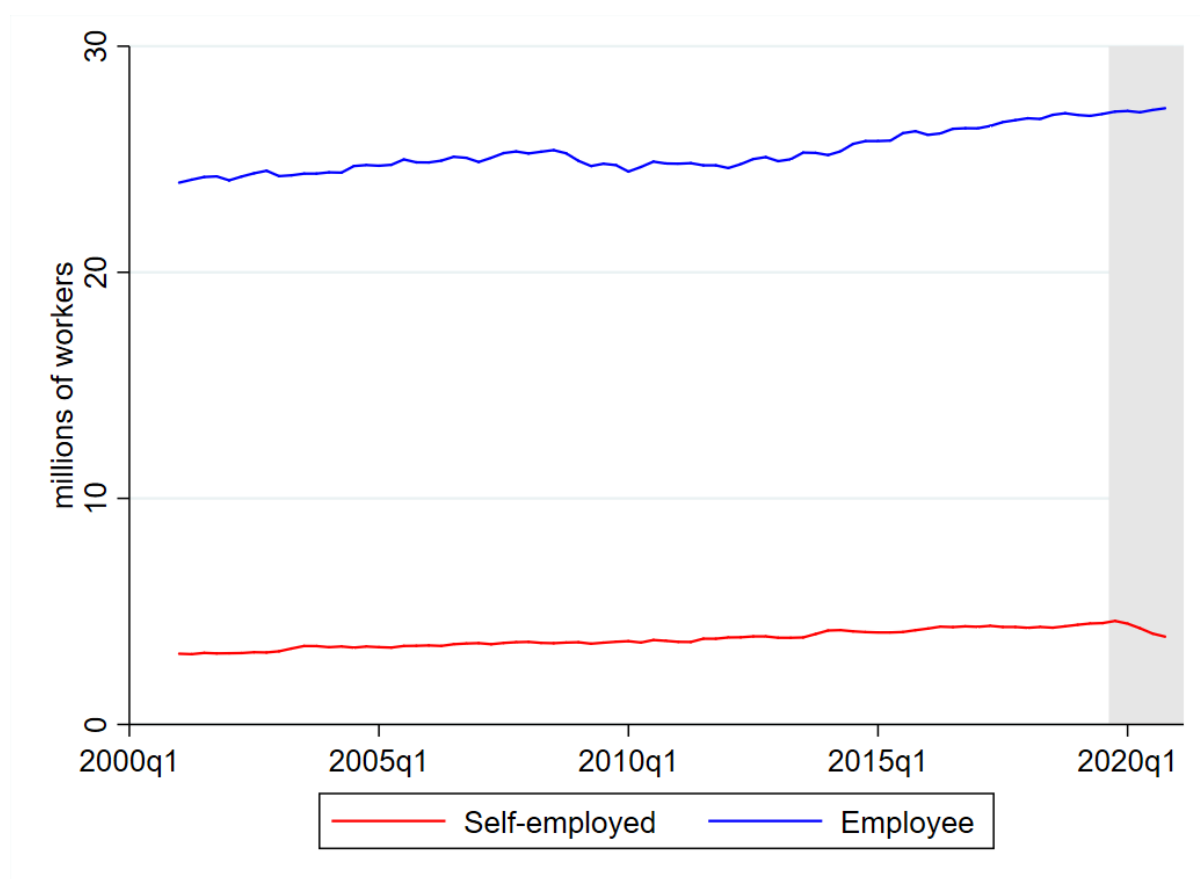


3 Long-term trends in self-employment

3.1 How common is self-employment?

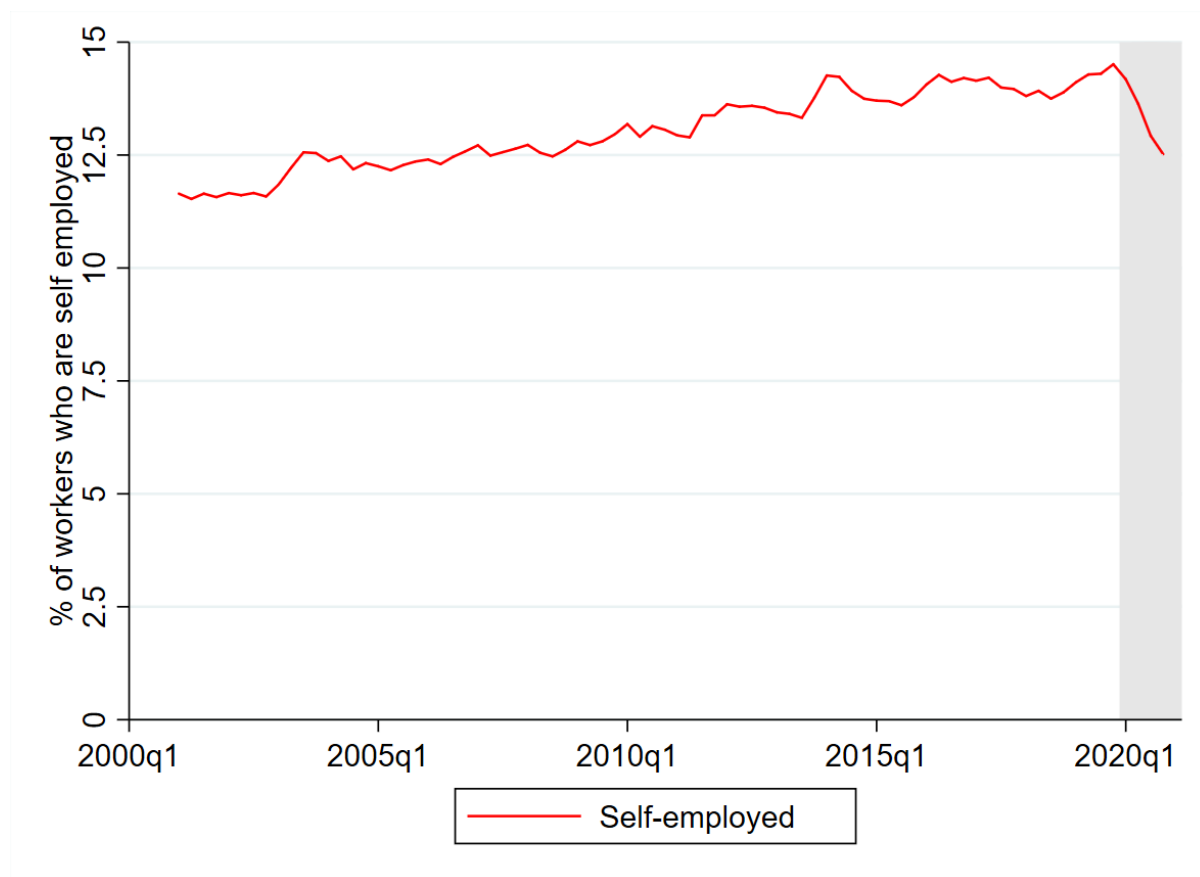
During the 2008 financial crisis, the number of people self-employed increased even as the number of employees fell. However, under the pandemic it is the self-employed who appear harder hit. In numbers, Figure 8 shows that between the final quarter (Oct-Dec) of 2019 and the final quarter of 2020, they have fallen from 4.6 million to 3.9 million, a drop of 15%. By contrast, the number of employees rose slightly by 0.5%.

Figure 8 Levels of self-employment and employment



The effect that this has had on the composition of workers is shown in Figure 9. While there is some year-on-year variation, there is a clear long-term upward trend in the share of workers who are self-employed. The reduction since the pandemic is very marked.

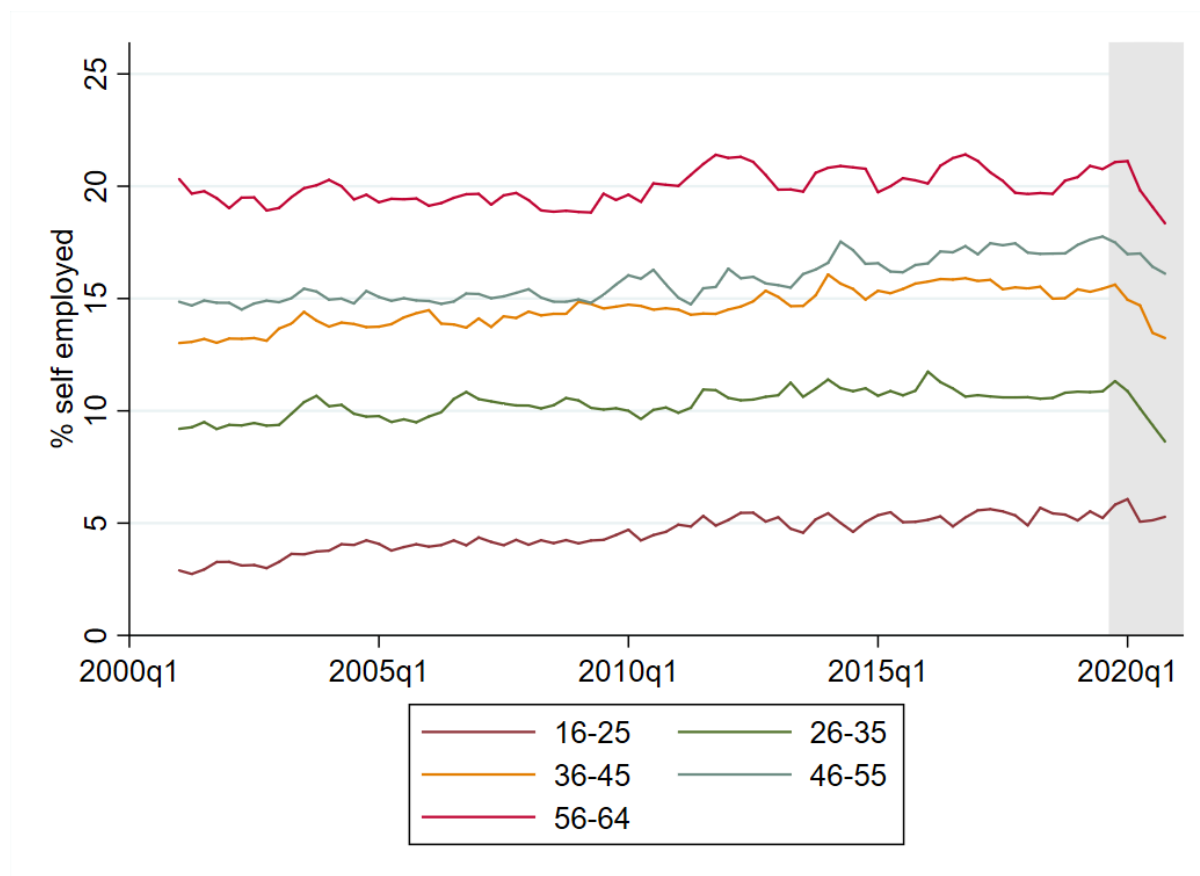
Figure 9 Self-employed as a percentage of all those in work



3.2 Who are the self-employed?

Figure 10 shows a distinct age profile to self-employment, with it rare among the youngest age group (16-25) but increasingly common among progressively older age groups. These relativities are quite consistent over time, although some narrowing is visible as the youngest age group saw more growth in the proportion self-employed than the older age group. The effect of the pandemic is likewise visible for all age groups, with the possible exception of the youngest workers.

Figure 10 The self-employed share of those in work, by age



From Figure 11 it is apparent that self-employment is much more common among males than females. However, growth in the self-employment share has been somewhat faster among females. There is some evidence of the resilience of self-employment relative to paid employment being greater for females than for males. For instance, following the 2008 financial crisis, the self-employment share grew more strongly for females than for males. The percentage drop-off in the female self-employment share under the pandemic is comparable to that for males. In the year to 2020 quarter 4, the 1.4 percentage point drop in the female self-employment share translates into a fall of 13.7 per cent. For men, the drop of 2.4 percentage points translates into a fall of 13.2 per cent.

Figure 11 The self-employed share of those in work, by gender



Figure 12 presents results by whether the respondent is white or non-white. Such a distinction is likely to mask considerable variation but is all that is possible given the sample size of the LFS. Even at this level of aggregation, the trend shown for non-whites is likely to reflect substantial random variation. This notwithstanding, the long-term trends for both groups look more similar than different. Both have seen a long-term growth in the relative importance of self-employment and both have seen a reduction in this share since the onset of the pandemic.

Figure 12 The self-employed share of those in work, whites and non-whites



Figure 13 shows that it is among those with no qualifications that the relative importance of self-employment has grown most strongly. While there may be a range of factors behind this trend, it is suggestive of the possibility that self-employment might grow as a result of limited opportunities for paid employment among those without academic credentials. While the fall in the share of self-employment under the pandemic affects all individuals regardless of their qualification level, it is most pronounced for those without qualifications.

Figure 13 The self-employed share of those in work, by highest qualification

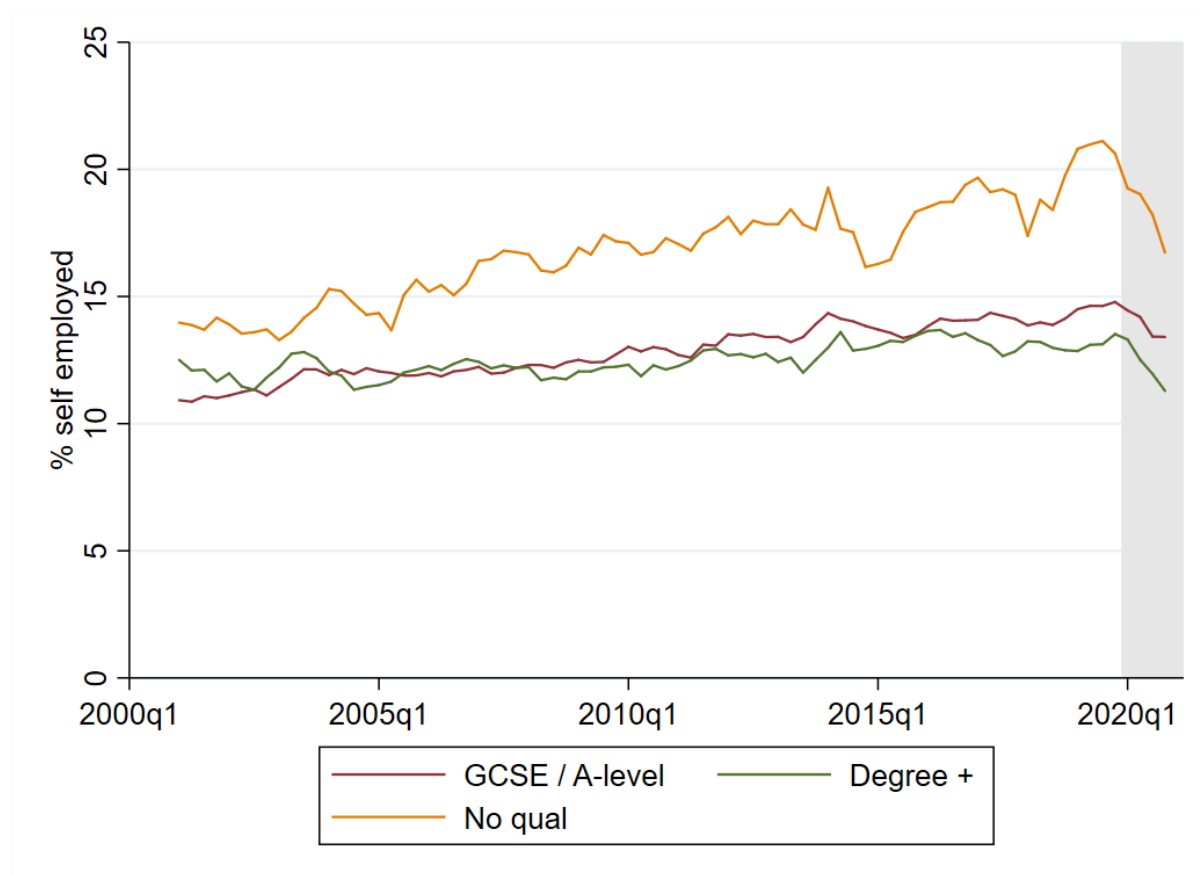
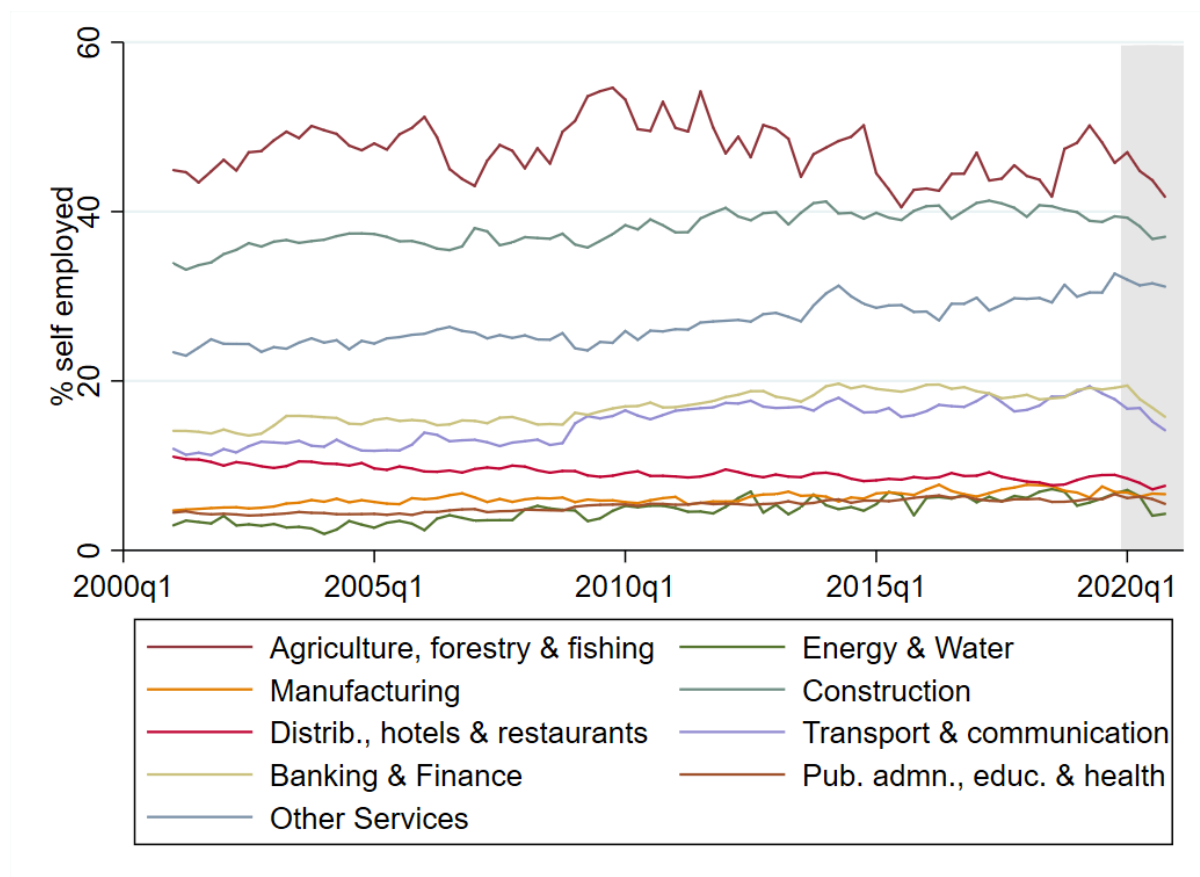


Figure 14 shows considerable variation by industry sector in trends over time in the self-employment share. Construction, transport and communications and banking and finance have all seen self-employment become relatively more important. The most noticeable drops under the pandemic are also seen in these industries.

Figure 14 The self-employed share of those in work, by industry sector



There is also substantial variation by occupation. The self-employment share is highest among skilled trade workers (Figure 15). In fact, the self-employment shares have remained fairly consistent for each occupation. Managers and directors have seen the most marked fall in the self-employed share under the pandemic.

Figure 15 The self-employed share of those in work, by occupation

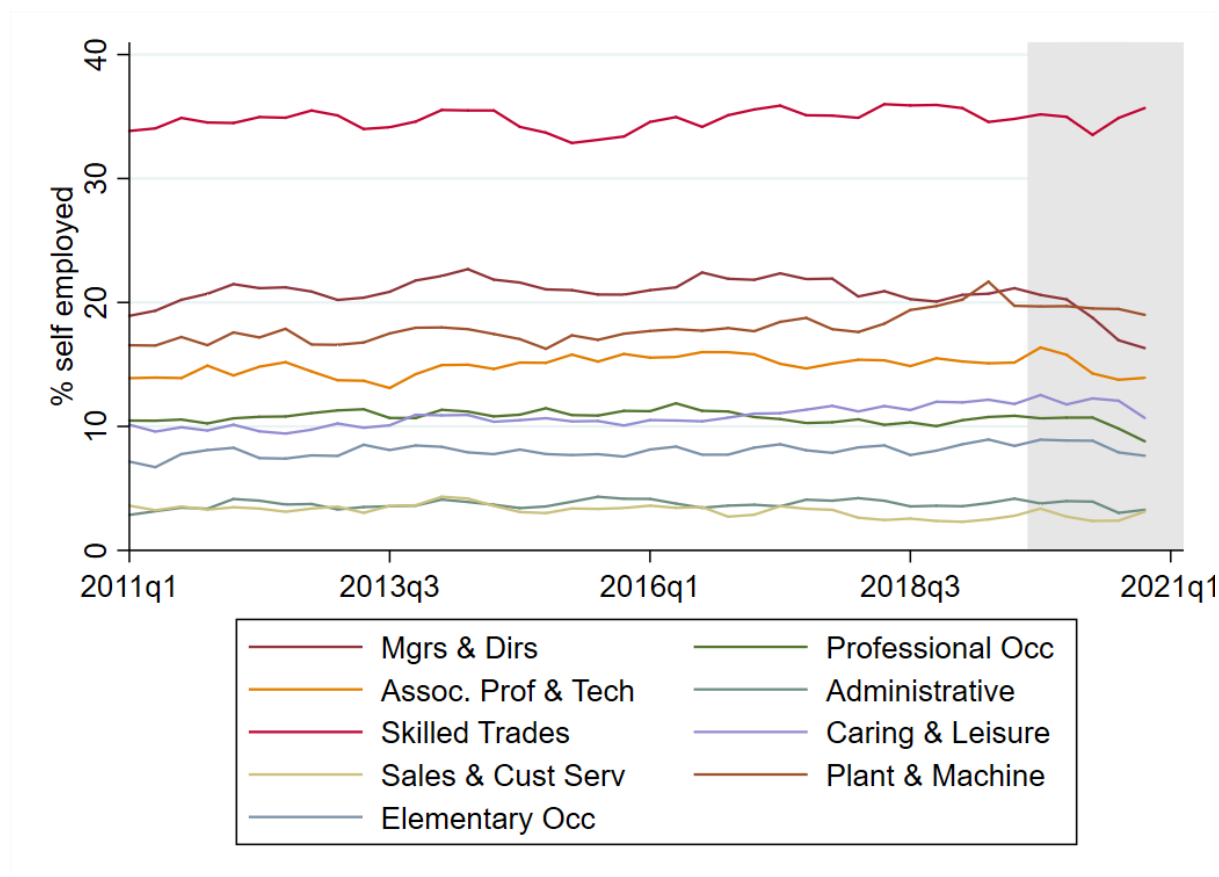


Table 1 gives an impression of the extent to which the reduction in the self-employment share under the pandemic varies by government office (summary) region. Comparing the fourth quarter of 2020 with the fourth quarter of 2019, we see that this reduction has occurred everywhere, albeit to varying degrees. In four areas (East Midlands, London, South East and Northern Ireland) the self-employment share has fallen by approximately 20 per cent, while in one (Merseyside) it has fallen by more than 30 per cent. The North West and Yorkshire and The Humber appear the most resilient, with self-employment reducing its share by just five percent in both cases.

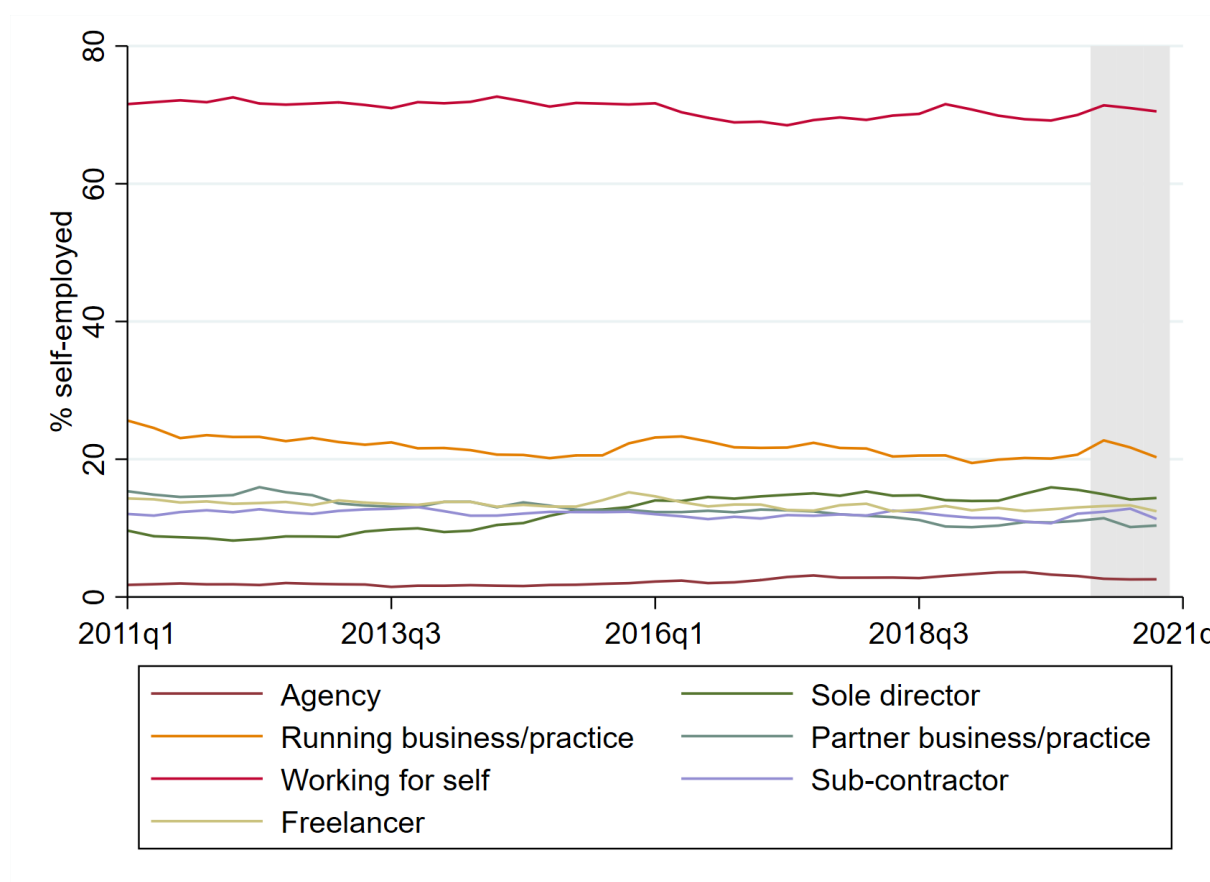
Table 1 The self-employed share of those in work, by government office (summary) region (%)

	Q4 2019	Q1 2020	Q2 2020	Q3 2020	Q4 2020
England					
North East	11.5	11.8	10.8	10.7	10.5
North West	12.7	13.4	12.8	12.8	12.3
Merseyside	10.1	8.3	7.6	6.4	7.0
Yorkshire and The Humber	13.3	13.1	12.2	12.2	12.4
East Midlands	13.4	13.4	12.9	12.0	11.2
West Midlands	12.9	12.8	13.2	11.8	11.4
East England	14.8	14.5	14.5	13.8	13.1
London	18.7	18.0	16.2	15.9	15.3
South East	15.9	14.9	14.5	12.7	12.8
South West	15.8	15.3	14.7	14.7	13.8
Wales	12.3	11.6	11.6	11.3	10.8
Scotland	11.9	11.6	12.0	11.0	10.6
Northern Ireland	14.7	14.7	14.5	13.6	12.4
United Kingdom	14.5	14.1	13.6	12.9	12.5

3.3 Types of self-employment

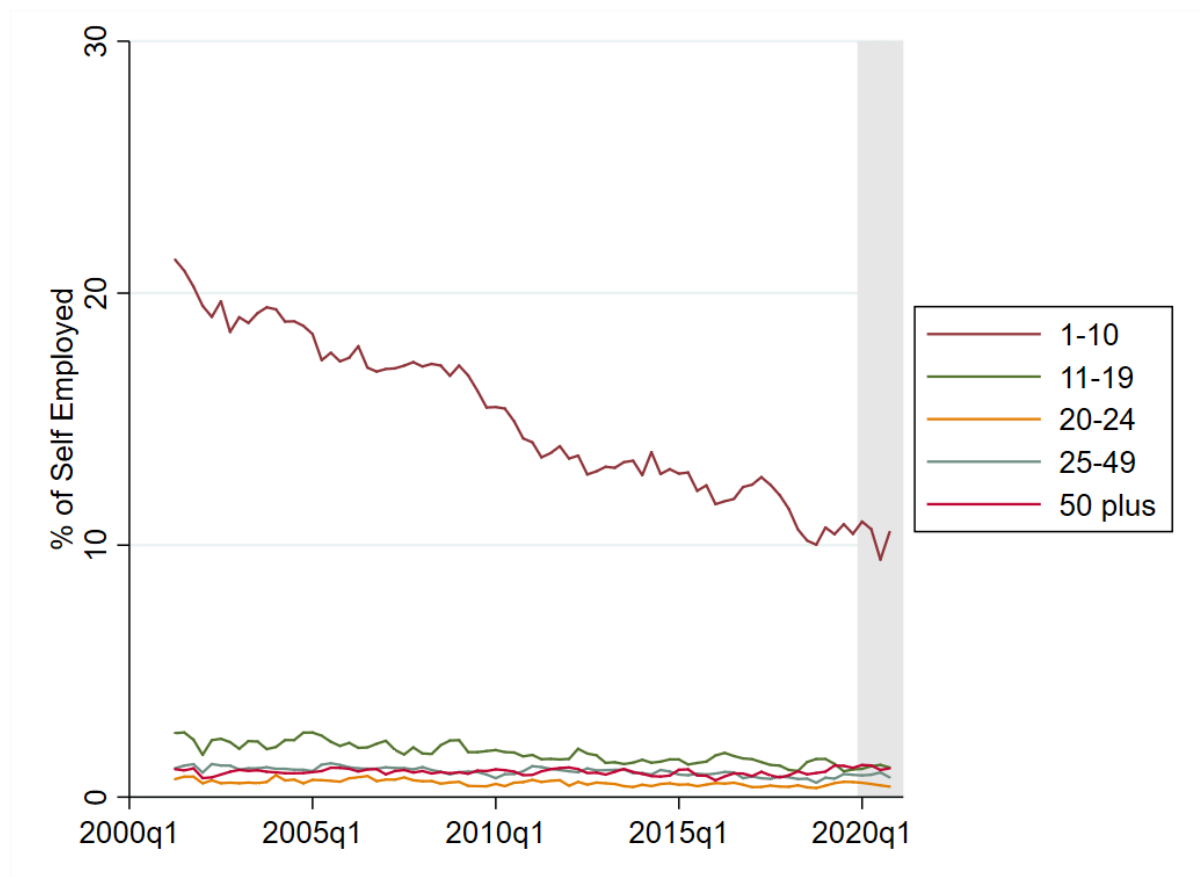
The LFS asks those who are self-employed to describe the nature of their self-employment arrangement. The prevalence of these types is shown in Figure 16. Note that up to four responses may be provided hence the percentages do not sum to 100. By far the most common description is “working for self”. Other responses are more informative of the organisational arrangement. “Running a business or professional practice” is the most common of these more specific responses, albeit one that has declined somewhat over time. Being a “partner in a business or professional practice” was the next most common status in 2001 but this has declined in importance over time and is now comparable in its prevalence to “sole directors of a limited business”, “sub-contractors” and “freelancers”. Over time, it is the “sole directors” that have seen the most growth, rising from 5 per cent in 2001 to 16 per cent just before the pandemic (final quarter of 2019). Lastly, we note that there is little to suggest the pandemic has altered the organisational set-up of the self-employed.

Figure 16 Self-employment, by type



A striking trend is the reduction in the proportion of the self-employed who themselves employ others. Figure 17 shows that, among those with any employees, by far most common is to have 10 or fewer. Overall, there has been a very strong downward trend in the proportion of the self-employed with any employees, from 28 per cent in 2001 to 14 per cent in the final quarter of 2020 (similar to the final quarter of 2019).

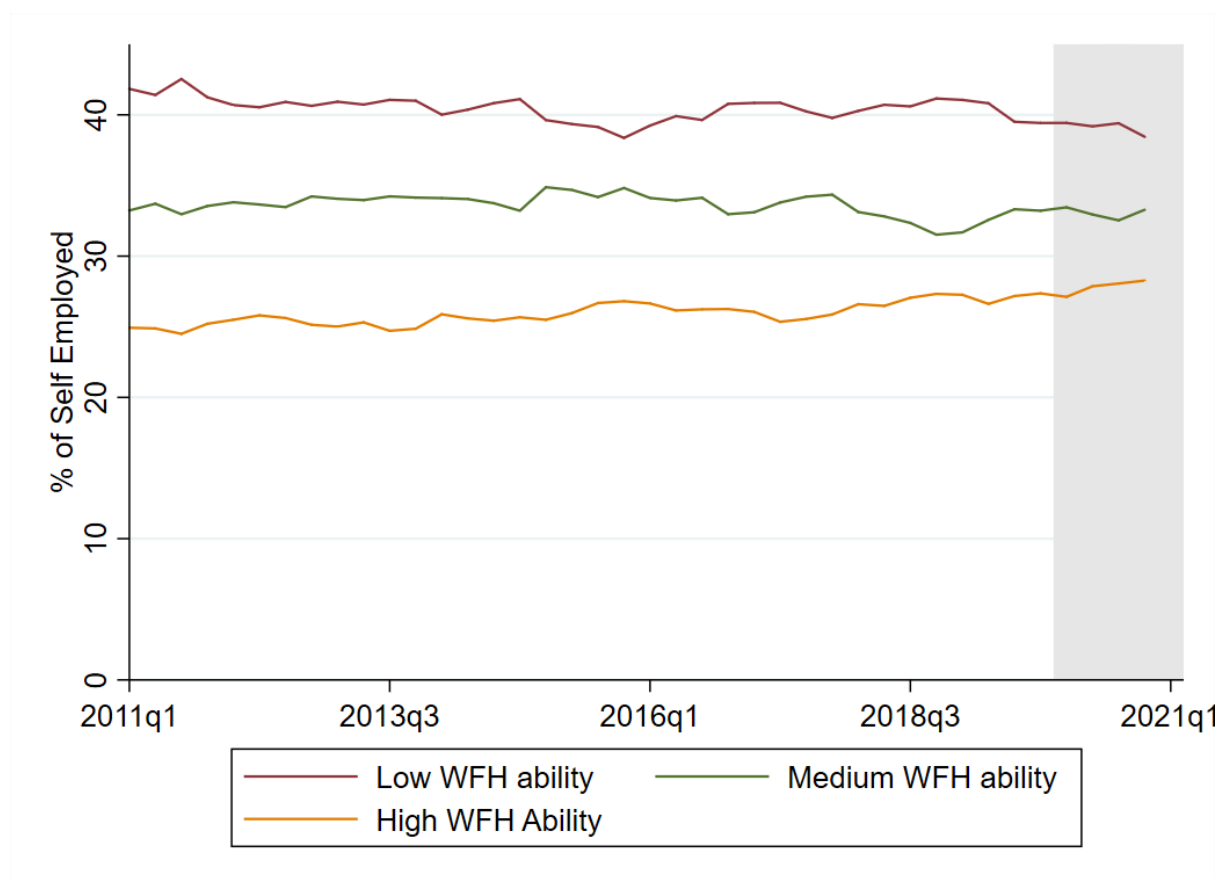
Figure 17 Self-employment, by number of employees



A relevant consideration when assessing the potential effect of the pandemic is the ability of the self-employed to work from home. On the basis of occupation, we imputed the ability for individuals to carry out their jobs from home. The approach used to do this follows the ONS Report '[Which jobs can be done from home?](#)'. Using the results of this imputation, we divided the workforce into three roughly equal-sized groups according to how suited their occupation is to working from home. The resulting three groups are labelled “low”, “medium” or “high” but we note that these are relative rather than absolute terms.

Figure 18 charts the percentage of the self-employed falling into each of these categories. It shows a gradual long-term trend towards increasing ability to work from home, with little suggestion that this has been disrupted by the pandemic. We note though two features of this chart that should be borne in mind. First, the data used to define the ability to work from home was obtained from the Occupational Information Network (O*NET), which contains information about the features and the nature of work in the US. This includes the technology and tools that are employed, and tasks performed in different jobs roles, as well as the traits of workers in those occupations. It is possible that this does not carry across directly to the case of the UK. Second, this approach reflects the ability to work from home as perceived prior to 2020. As such, it does not allow for the fact that the pandemic has forced a re-think of whether some jobs can be performed remotely.

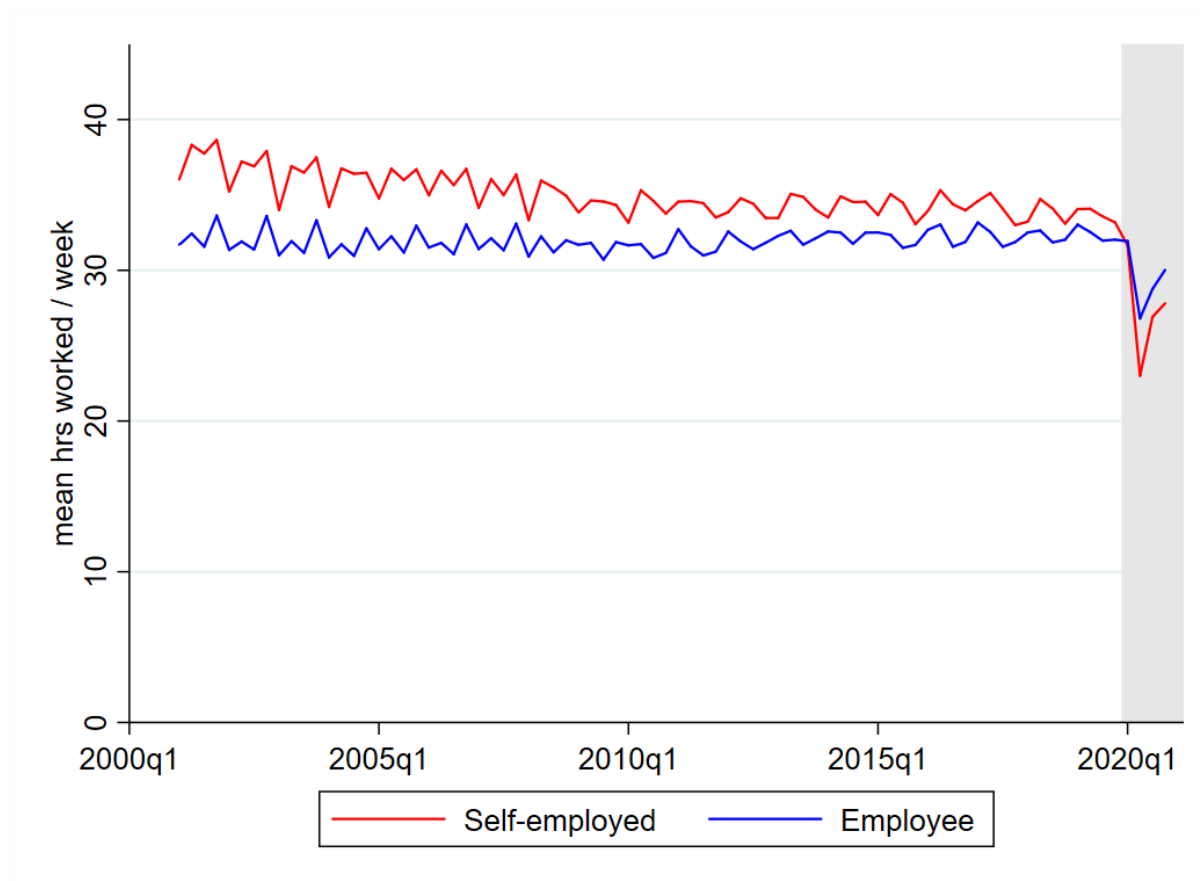
Figure 18 Self-employment, by ability to work from home



3.4 Hours worked

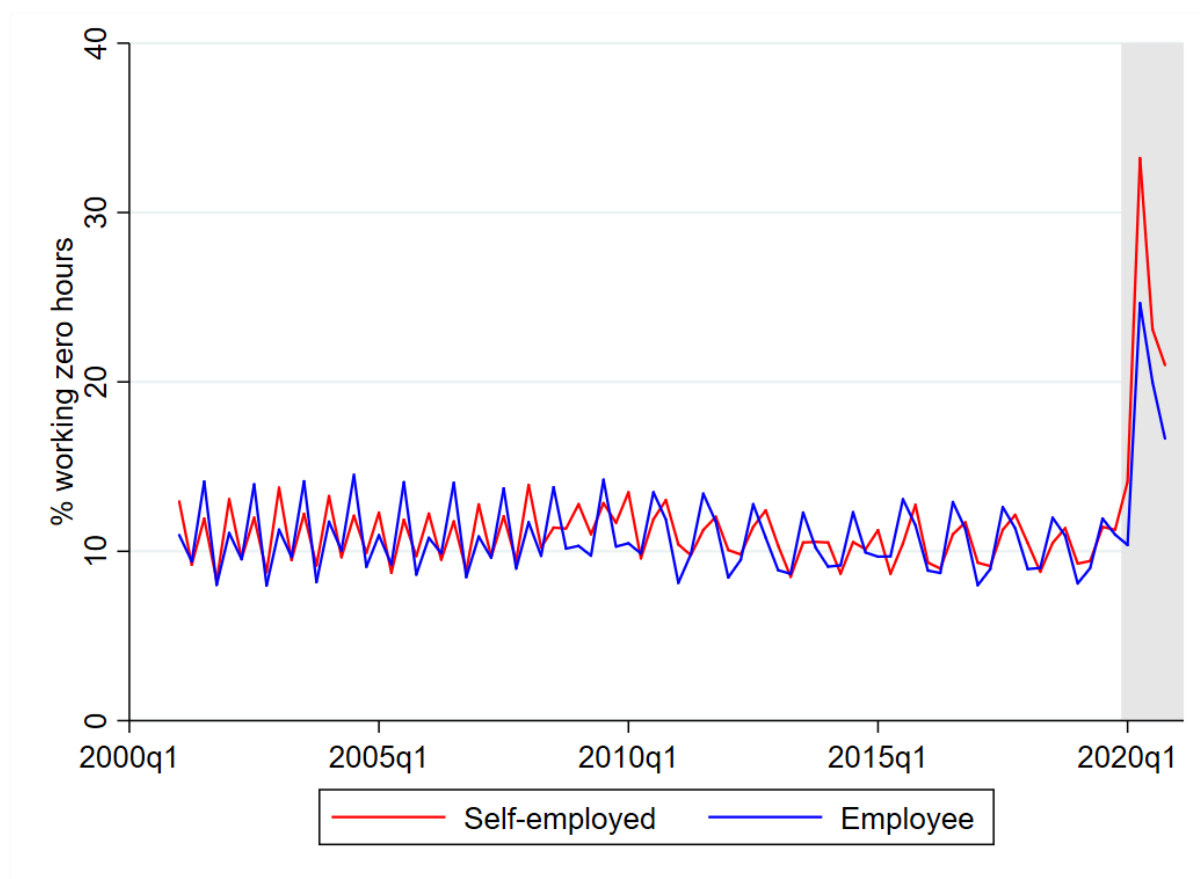
We have seen from Figure 9 that the proportion of those in work who are self-employed fell under the pandemic. Put differently, the percentage drop in the number of self-employed was greater than that seen among employees. Another aspect to consider is the amount of work done. Figure 19 shows that, whereas self-employment was characterised by longer hours than paid employment, this difference has narrowed over time to the point of convergence by 2019. Since then, there has been a drop in the number of hours worked on average. This has been particularly marked for the self-employed. Between the first two quarters of 2020, mean hours worked per week by the self-employed fell from 31.7 to 23.0. The corresponding drop among employees was from 31.9 to 26.8. Since then, there has been some recovery. However, in the final quarter of 2020, the self-employed worked 27.8 hours per week on average compared to 33.2 in the final quarter of 2019. The average employee, on the other hand, worked 30.0 hours per week in the final quarter of 2020, compared to 32.0 in the final quarter of 2019. Overall, the self-employed have seen a greater reduction in hours worked.

Figure 19 Mean hours worked, self-employed vs. employed



Part of this is driven by working zero hours. Figure 20 shows the close comparability of self-employment and paid employment in this regard before the pandemic. Between the first two quarters of 2020, the prevalence of working zero hours rose from 14.1 per cent to 33.2 per cent among the self-employed and from 10.4 per cent to 24.6 per cent among employees. By the final quarter of 2020, this had reduced to 21.0 per cent among the self-employed (compared to 11.3 per cent a year earlier) and 16.7 per cent among employees (compared to 11.0 per cent a year earlier). As with mean hours, it is the self-employed who appear to have been more affected.

Figure 20 Percentage working zero hours, self-employed vs. employed



Among the self-employed, the reduction in hours worked is not restricted to those occupations least suited to working from home (WFH). Figure 21 shows it was the group with ‘medium’ WFH ability whose average hours worked dropped to the lowest level under the pandemic rather than the group with ‘low’ WFH ability. One potential explanation for this is that the group identified as having ‘low’ WFH ability includes key workers who continued to work during the pandemic. It is also notable that it is among the ‘low’ WFH ability group that there has been the biggest rebound in hours worked. The right panel of Figure 21 shows the proportion working zero hours. Again, it was among the ‘medium’ WFH group that this reached its highest level. The tendency to work zero hours has fallen for all groups since its peak in the second quarter of 2020 but remains highest for the ‘medium’ WFH ability group.

Figure 21 Hours worked by self-employed, by ability to work from home

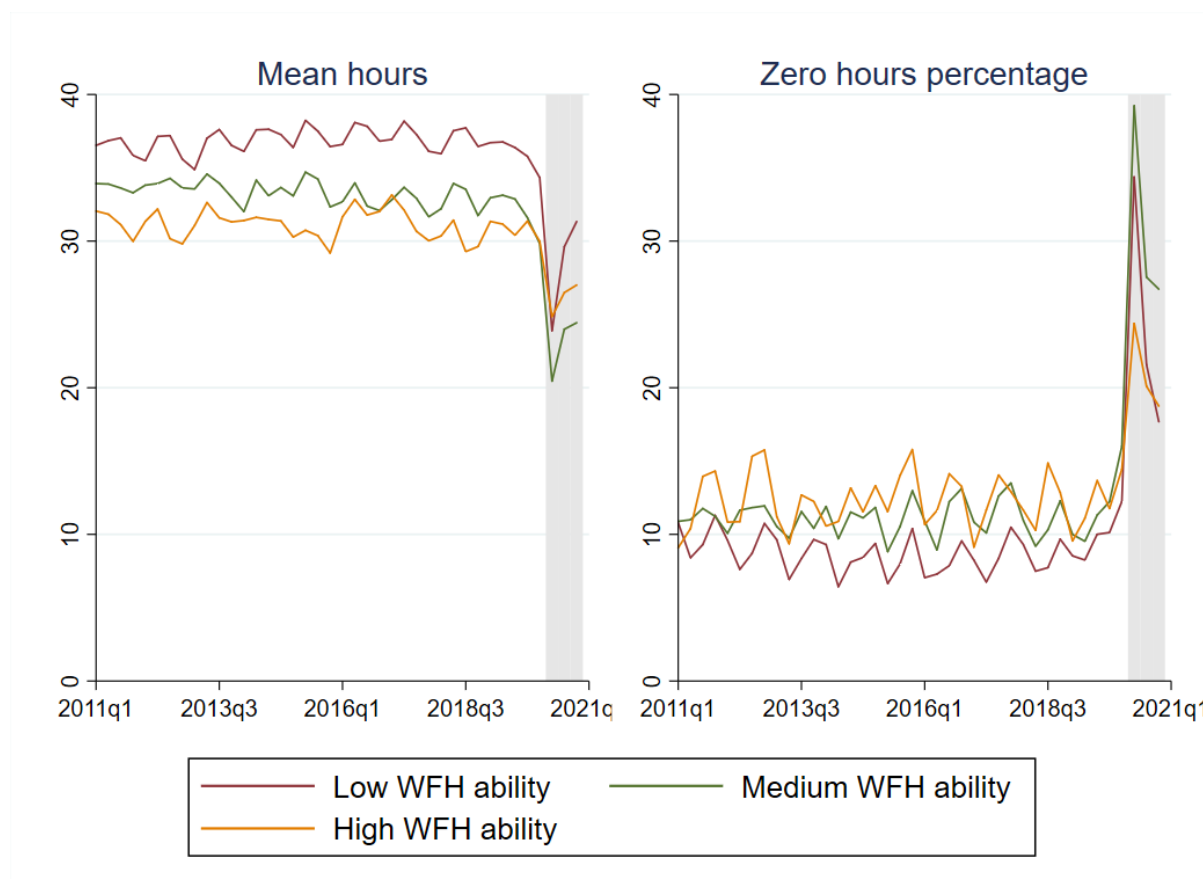


Table 2 allows a comparison by industry sector of hours worked in quarter 4 of 2020 with those worked in the same quarter of 2019. Both employees and self-employed experienced a reduction, but this was more substantial for the latter. This difference held across all industries but was most substantial among the public administration, defence, education and health sector which saw a reduction of 20 per cent among self-employed compared to two per cent among employees and among “Other” industries, which saw a reduction of 31 per cent compared to 13 per cent. The other sectors where mean hours dropped the most among the self-employed were Energy and Water (23 per cent reduction) and Distribution, hotels and restaurants (19 per cent).

With regard to the proportion working zero hours, the increase was highest for the Distribution, hotels and restaurants and “Other” sectors, both for employees and the self-employed, with the incidence more than doubling and the differences between employees and self-employed less stark than with mean hours. Among the self-employed, Manufacturing and Banking and Finance both saw increases of more than 50 per cent in the incidence of working zero hours.

Table 2 Hours Worked, by industry sector

	Employees					Self-employed				
	Q4 2019	Q1 2020	Q2 2020	Q3 2020	Q4 2020	Q4 2019	Q1 2020	Q2 2020	Q3 2020	Q4 2020
Mean hours worked										
Agriculture, forestry and fishing	36.6	37.7	37.3	39.4	35.9	49.9	51.0	51.0	52.9	46.0
Energy and water	35.6	36.4	32.8	35.4	35.3	34.8	34.2	38.3	33.4	26.7
Manufacturing	35.5	35.8	28.9	31.7	32.8	35.0	33.9	28.4	31.8	31.0
Construction	36.1	36.0	28.2	31.8	34.1	36.3	34.9	24.9	29.8	31.4
Distribution, hotels and restaurants	29.0	28.0	19.7	23.9	25.0	36.6	34.1	24.4	29.9	29.8
Transport and communication	36.3	35.5	31.9	33.3	34.0	36.0	34.6	23.7	27.6	31.6
Banking and finance	33.9	34.0	30.1	31.6	31.7	30.4	29.6	23.7	26.5	27.2
Public admin, education and health	29.9	30.3	27.1	27.4	29.3	28.3	26.2	18.6	21.9	22.5
Other services	30.0	29.6	21.1	24.4	26.0	29.0	26.6	14.4	19.3	20.1
All sectors	32.0	31.9	26.8	28.7	30.0	33.2	31.7	23.0	26.9	27.8
Percentage working zero hours										
Agriculture, forestry and fishing	7.7	7.3	11.9	7.1	15.2	7.5	x	9.0	x	x
Energy and water	11.7	8.3	17.4	13.2	12.4	26.7	x	x	x	x
Manufacturing	9.7	8.4	25.6	18.3	16.0	13.0	14.1	22.0	19.4	19.3
Construction	10.7	9.7	26.8	18.6	14.4	11.1	13.8	34.0	23.8	21.9
Distribution, hotels and restaurants	9.0	11.1	39.1	25.5	21.0	9.0	10.8	34.8	22.0	20.5
Transport and communication	9.1	8.7	18.3	15.1	13.1	10.3	13.5	34.3	22.8	15.6
Banking and finance	9.2	8.1	18.4	15.0	14.1	11.9	14.7	25.7	21.0	18.2
Public admin, education and health	14.3	12.7	19.9	21.0	16.7	12.3	15.1	35.5	23.1	20.4
Other services	9.3	9.7	38.1	29.2	23.0	11.4	16.6	51.1	32.3	32.7
All sectors	11.0	10.4	24.7	20.0	16.6	11.3	14.1	33.3	23.1	21.0

Table 3 provides a similar comparison by occupation. Again, mean hours were mostly reduced more among the self-employed than among employees; the exception is among those in “Trades” (‘Skilled Trades Occupations’) where the reduction is equal. In terms of zero hours, all occupations show an increase over the year to 2020 quarter 4. Interestingly, there is variation across occupations in whether the increase in zero hours work has been greater among employees or the self-employed. In “Caring” (Caring, Leisure and Other Service Occupations), for instance, the increase is much higher among the self-employed, whereas among “Elementary” occupations the increase is much higher among employees.

Table 3 Hours Worked, by occupation

	Employees					Self-employed				
	Q4 2019	Q1 2020	Q2 2020	Q3 2020	Q4 2020	Q4 2019	Q1 2020	Q2 2020	Q3 2020	Q4 2020
Mean hours worked										
Managers	38.1	37.9	33.1	35.1	34.6	37.5	35.7	27.3	33.0	31.3
Profession.	33.3	34.1	31.4	31.6	32.4	31.8	31.0	25.6	27.1	26.9
Ass. Prof.	33.8	33.9	29.3	30.5	32.3	28.9	27.1	18.4	20.1	23.0
Admin.	29.0	29.3	24.5	26.8	28.0	25.6	23.1	20.7	20.7	22.7
Trades	36.5	35.5	25.3	30.1	32.2	36.4	34.9	26.0	30.9	32.3
Caring	27.4	26.9	21.1	22.1	24.5	29.3	27.2	13.9	20.9	22.2
Sales	26.2	25.4	19.4	22.5	24.1	35.6	31.1	24.4	31.2	29.6
Plant	36.5	36.2	29.3	31.2	33.8	36.4	36.0	21.3	26.8	29.4
Elementary	26.5	25.6	19.3	23.3	23.3	27.9	26.5	21.3	23.6	23.1
All occups.	32.0	31.9	26.8	28.7	30.0	33.2	31.7	23.0	26.9	27.8
Percentage working zero hours										
Managers	9.5	8.4	18.7	15.0	14.3	10.4	12.7	29.4	19.7	21.6
Profession.	13.3	10.8	14.8	16.4	15.1	11.8	11.8	21.1	16.7	16.6
Ass. Prof.	10.2	8.8	20.3	17.8	14.2	14.5	19.5	38.1	31.2	24.3
Admin.	10.7	9.8	24.0	17.8	15.1	9.1	20.4	24.5	20.0	17.7
Trades	9.1	9.4	34.8	23.4	17.4	11.0	13.7	32.7	21.7	20.5
Caring	14.1	14.7	32.7	30.9	22.6	9.2	14.3	54.7	33.4	28.8
Sales	9.3	11.0	33.3	22.5	17.7	11.1	x	31.4	16.1	15.7
Plant	9.4	9.6	26.4	21.4	14.6	8.5	10.5	40.6	25.5	19.9
Elementary	9.9	11.5	38.0	25.0	23.6	11.6	13.5	32.4	19.0	19.2
All occups.	11.0	10.4	24.6	20.0	16.6	11.3	14.1	33.2	23.1	21.0

x: cell refers to a number below the disclosure threshold

4 Estimating the effect of the pandemic on self-employed workers

The preceding sections have highlighted several differences between self-employed workers and employees in the extent to which they appear to have been affected by the pandemic. In this section, we present the results of regression analyses that examine this more formally. There are two main advantages of doing this. First, the statistical significance of these differences can be assessed. The results presented earlier show variation even before the pandemic so regression analysis can allow us to judge whether changes since the onset of the pandemic are outside the usual range of variation. Second, it allows us to control for the influence of individual characteristics on outcomes. This makes estimation more precise and also allows us to establish whether impacts vary for particular groups of individuals.

4.1 Estimation approach

The analysis is based on 2-quarter longitudinal LFS data from 2001 and involves regressing second quarter outcomes on characteristics observed in the first quarter. Intuitively, the approach amounts to comparing outcome trends among those observed to be self-employed initially (i.e. in the first quarter) against outcome trends among those observed to be employed initially. We allow the relationship between trends to change in 2020 and interpret that as capturing the effect of the pandemic on self-employed people relative to employees.

The estimation approach is informed by the issues noted in section 2, in particular the possibility that self-employed people may become more likely to describe themselves as employed following the introduction of the furlough despite there being no ostensible change in their status. One implication of this is that the dependent variables considered in the econometric analysis need to be defined without reference to whether an individual is an employee rather than self-employed in quarter 2. In line with this, we consider three second-quarter outcomes: whether working in the reference week (either self-employed or as an employee); hours worked in the reference week (again, either self-employed or as an employee) and whether those working in the reference week work zero hours.

4.2 Inspecting pre-COVID trends in outcomes

As noted, the estimation approach compares the trend in outcomes for the self-employed against that for employees and views differences in this relationship since 2020 as capturing the impact of the pandemic. For this to be credible, it is important to establish the stability of the relationship prior to 2020.

Figure 22 shows the percentage of working individuals in a given quarter who are also working in the following quarter. This is shown separately according to whether they were employed or self-employed in the first of the two quarters for which they were observed. The impression is of a fairly stable relationship. Throughout the period shown, 96-97% of those employed or self-employed would still be working when next observed.

Figure 22 Percentage of workers employed in subsequent quarter, by whether initially self-employed or employed. Two-quarter longitudinal LFS.



To highlight the key trends, Figure 23 plots the self-employed percentage *less* the employee percentage. This is simply the vertical distance between the lines in Figure 22, shown with 95% confidence intervals indicating the statistical significance of the difference from zero. At the start of the period, the self-employed were significantly more likely to remain in work in the subsequent quarter. Over time, this reversed and the consistent pattern since 2006 has been for the percentage in work in quarter 2 to be lower among the self-employed.

Figure 23 Difference between self-employed and employees in percentage working in subsequent quarter. Two-quarter longitudinal LFS

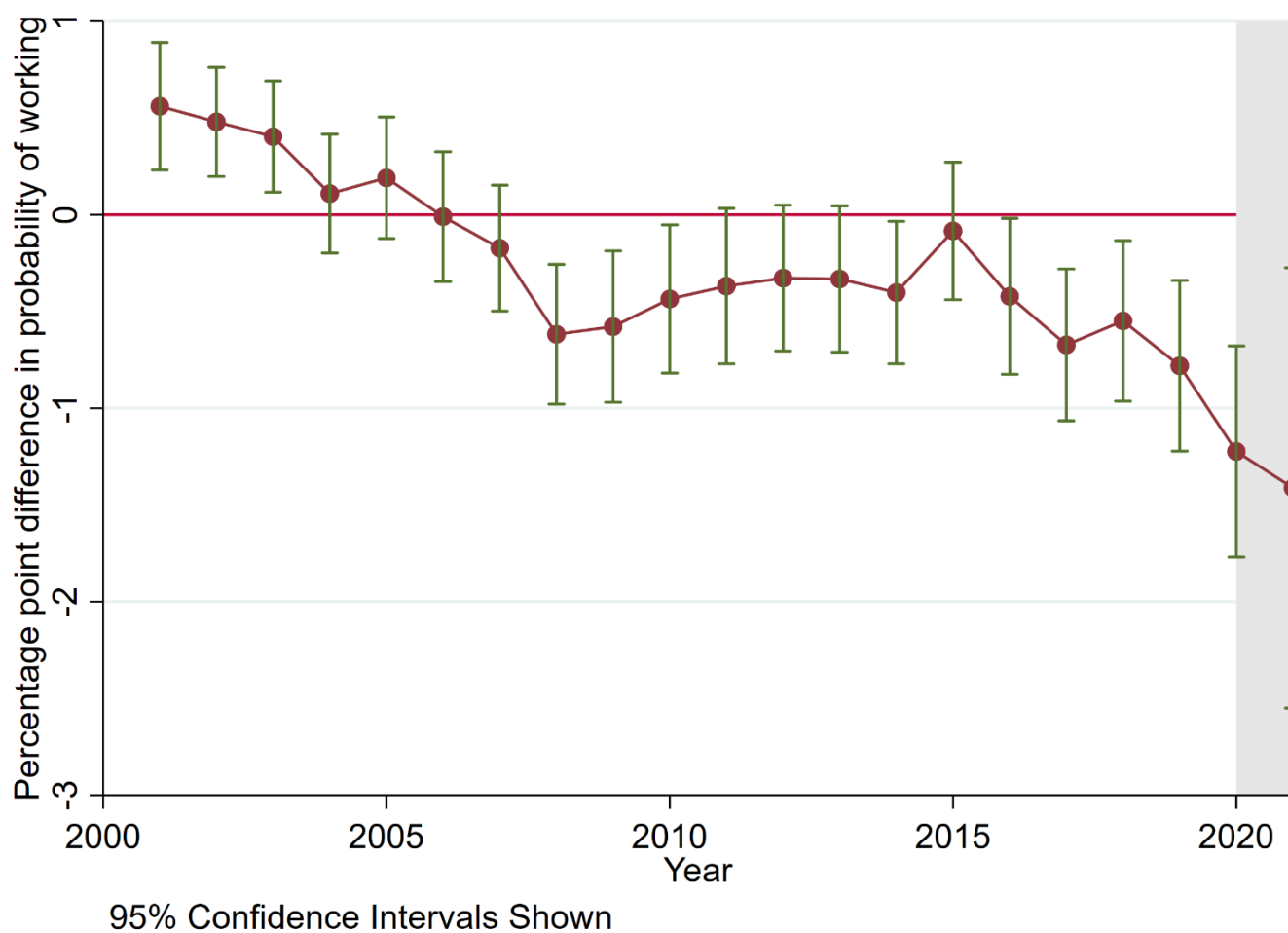


Figure 24 presents the same information, this time controlling for a range of background characteristics (age, sex, education, occupation, industry and quarter). A test of stability over the period 2001-2019 is rejected ($p < 0.01$). A statistical test does not reject the null hypothesis of stability over the period 2010-2019 ($p = 0.62$) so we focus on this period when estimating the impact of COVID. The years 2008 and 2009 are likely to be affected by the financial crisis and the Great Recession so are excluded. However, as an extension to our main results, we also consider the extent to which the impact of COVID compares to the impact of the Great Recession. In support of this approach, note that a statistical test does not reject the null hypothesis of stability over the period 2001-2007 ($p = 0.10$)

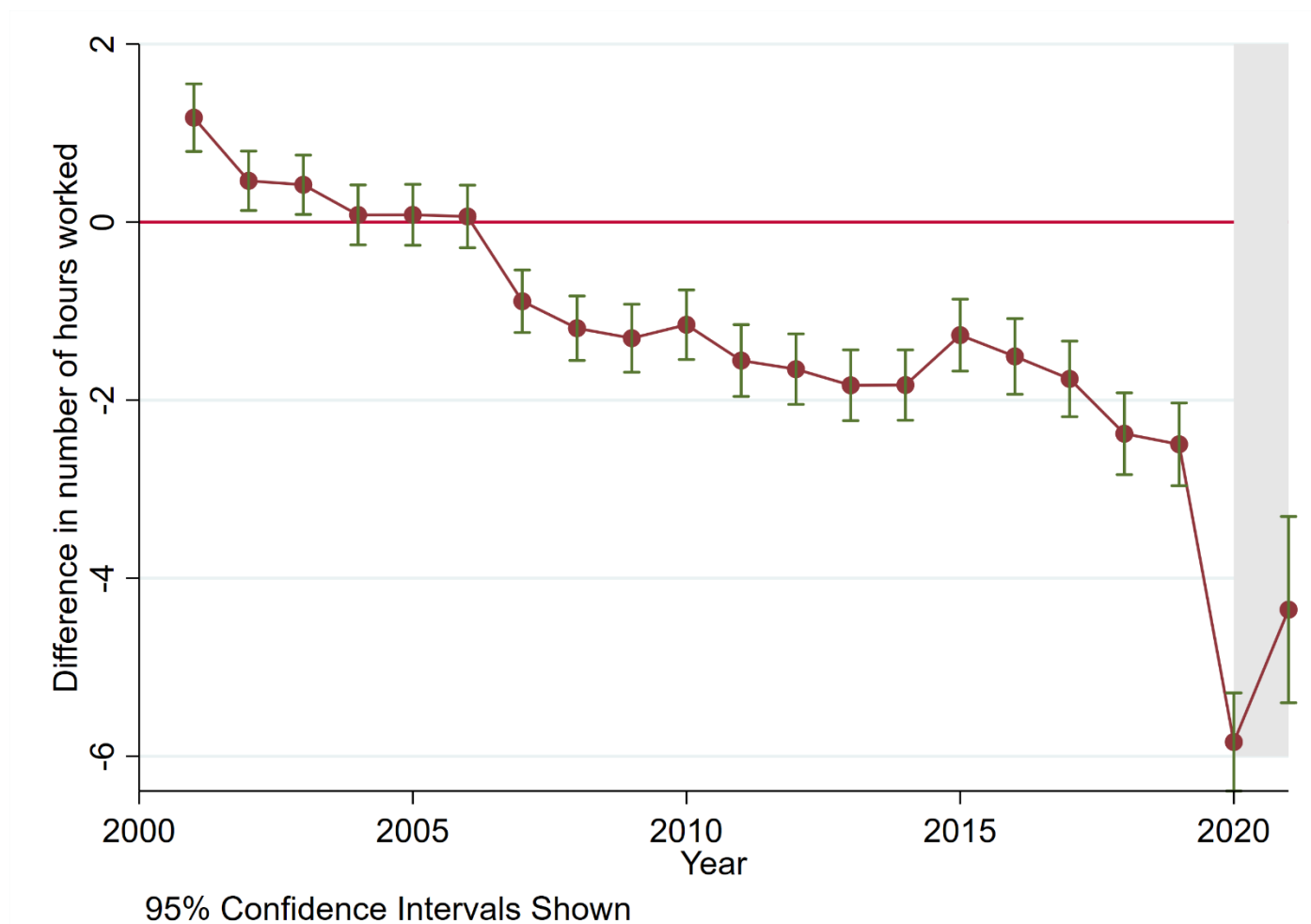
Figure 24 also provides a clue as to the relative impact of the pandemic. While the line dips in the pandemic period (indicating an increased likelihood of self-employed people no longer working), the change is relatively minor.

Figure 24 Difference between self-employed and employees in percentage working in subsequent quarter, conditioning on other characteristics. Two-quarter longitudinal LFS



Figure 25 presents an analogous chart for the second outcome considered (hours worked). Here, there is a downward trend, indicating that over time employees have increased their work hours relative to self-employed people. In considering this, it should be noted that those no longer in work are regarded as working zero hours and this is included in the calculation of average hours.

Figure 25 Difference between self-employed and employees in hours worked in subsequent quarter, conditioning on other characteristics. Two-quarter longitudinal LFS

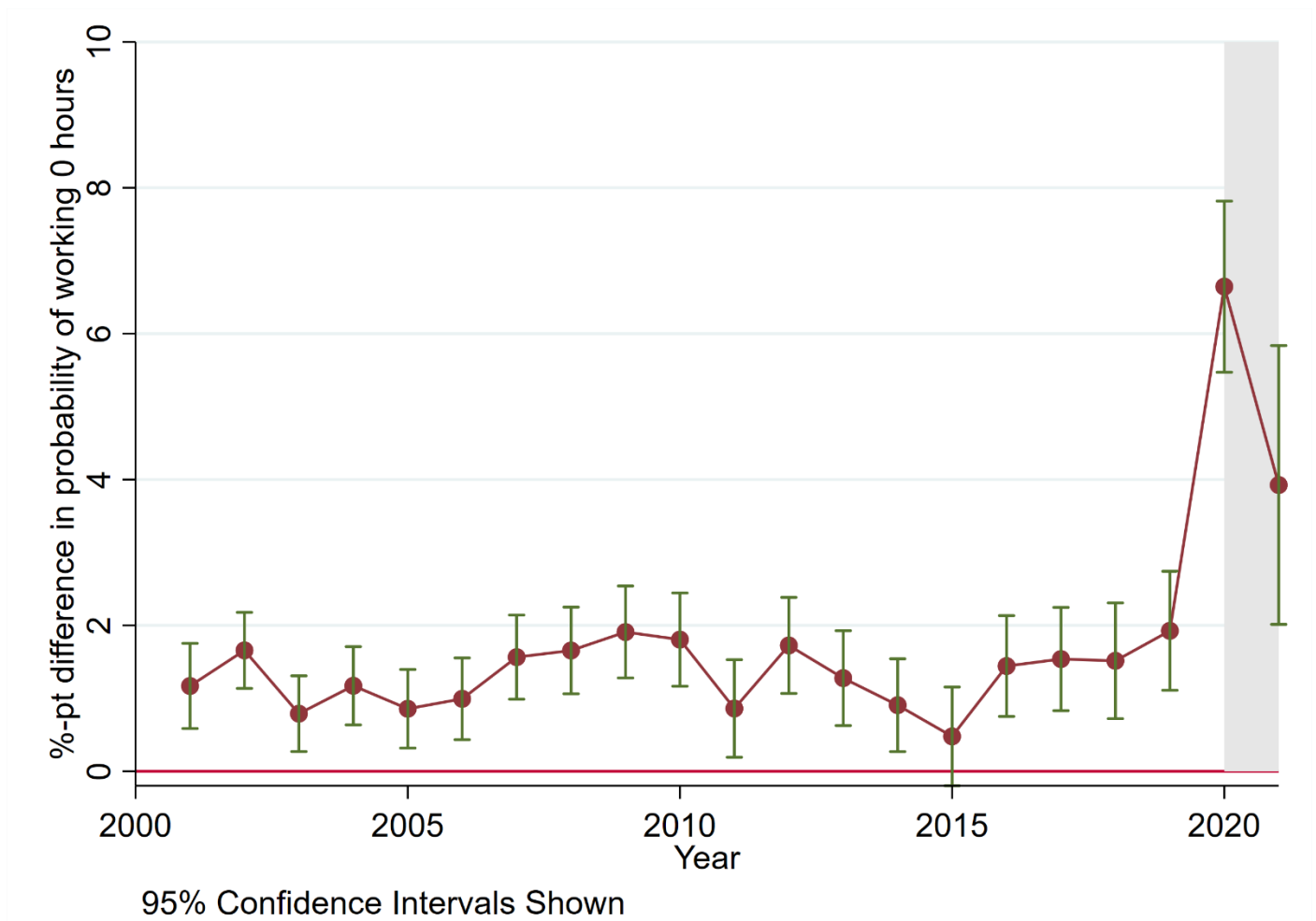


This downward trend complicates the analysis to the extent that it is not plausible to view changes emerging since 2020 to be due solely to the pandemic; in the absence of the pandemic, we might have expected the trend to continue regardless. We address this in two ways. First, we restrict the estimation period to 2012 onwards. This decision is based on the impression from Figure 25 that the relationship is fairly stable over the 2012-2019 period. However, testing rejects the null hypothesis of stability over this period ($p < 0.01$), suggesting that it is still not appropriate to disregard the pre-COVID trend even over this shorter period. A closer inspection reveals that over this period, the greater number of hours worked by employees varied between 1.3 (in 2015) and 2.5 (in 2018), a range of 1.2 hours. Our first approach is to ignore the trend when estimating the impact – essentially, assuming a stable relationship over time – but when interpreting the results, to allow for the pandemic effect to be overstated by about 1 hour. It is apparent from the chart that the change in the relationship post-2020 is much larger than this so it is likely that a significant impact will still be found. Our second approach, sometimes referred to as a ‘random growth’ model, is a more formal treatment based on the assumption that the downward trend since 2012 would persist post-2020. This allows impacts to be estimated as the deviations from this projected trend.

Lastly, Figure 26 presents an analogous chart for the third outcome considered (the probability of those in work working zero hours). Apart from a slight dip in 2015, the relationship is fairly stable

since 2012 and the null hypothesis of stability is not rejected ($p=0.10$). Consequently, we use the years 2012 onwards to estimate impacts.

Figure 26 Difference between self-employed and employees in the probability of being in out of work or working zero hours in subsequent quarter, conditioning on other characteristics. Two-quarter longitudinal LFS



4.3 Estimation approach

The regression analysis used to estimate impacts resembles a difference-in-differences estimator. For the overall impact, this can be written

$$Y_{it}^1 = \beta_0 + \beta_1' \mathbf{X}_{it}^0 + \sum_{j=2010}^{2021} \gamma_j 1(T_{it}^0 = j) + \beta_s SE_{it}^0 + \delta SE_{it}^0 \cdot Post20_{it}^0 + \epsilon_{it} \quad (1)$$

where Y_{it}^1 is the second-quarter outcome of interest for individual i , first observed at time t , \mathbf{X}_{it}^0 is a set of baseline characteristics, T_{it}^0 is the year when first observed, SE_{it}^0 is a dummy variable indicating that individual i is self-employed when first observed and $Post20_{it}^0$ is a dummy variable indicating that individual i was first observed in the January-March 2020 quarter or later. The relative impact of the pandemic is captured by δ . Under the assumption that the relative tendency to stop working is stable over time, this identifies the relative impact of the pandemic on the self-employed.

We also examine impact subgroup variation by estimating the augmented regression

$$Y_{it}^1 = \beta_0 + \beta_1' X_{it}^0 + \sum_{j=2010}^{2021} \gamma_j 1(T_{it}^0 = j) + \beta_s SE_{it}^0 + \delta SE_{it}^0 \cdot Post20_{it}^0 + \sum_{j=2010}^{2021} \gamma'_{jz} Z_{it}^0 \cdot 1(T_{it}^0 = j) + \beta_z' Z_{it}^0 SE_{it}^0 + \delta' Z_{it}^0 SE_{it}^0 \cdot Post20_{it}^0 + \epsilon_{it} \quad (1a)$$

where Z_{it}^0 is a single baseline characteristic for which we allow impacts to vary and δ is a vector of corresponding sub-group impacts.

The random growth model used for estimating the impact on hours can be written

$$Y_{it}^1 = \beta_0 + \beta_1' X_{it}^0 + \beta_s SE_{it}^0 + \beta_T T_{it}^0 + \beta_{ST} SE_{it}^0 \cdot T_{it}^0 + \beta_C Post20_{it}^0 + \delta SE_{it}^0 \cdot Post20_{it}^0 + \epsilon_{it}. \quad (2)$$

The trend term is captured by β_T , which is allowed to change from 2020 by an amount β_C . The impact of the pandemic is captured by δ , which is the amount by which the post-2020 change differs for self-employed people relative to employees.

4.4 Results

4.4.1 Impact on the probability of working

Table 4 presents estimates of the relative impact of the pandemic on the probability of working in the following quarter. Column 1 shows the overall effect for the post-2020 period as a whole; that is, for individuals first observed between the first quarter of 2020 and the first quarter of 2021. Column 2 shows how this varies by quarter since 2020 and subsequent columns (except for the last one – see below) show the extent to which impacts vary with particular characteristics: age, gender, qualification level, ethnicity, occupation and industry. Near the bottom of the table, p-values indicate whether the variation is statistically significant. Note that only the coefficients of main interest are included. All estimates also controlled for the full set of background characteristics, as well as year and quarter dummies.

Column 1 indicates that, post-2020, individuals initially self-employed were less likely than employees to be working when next observed. This difference is statistically significant ($p=0.02$). On the basis of the identifying assumption described in the previous section, the coefficient can be interpreted as the impact of the pandemic on the probability of working among the self-employed relative to employees. A positive impact would imply that, due to the pandemic, initially self-employed people were more likely than employees to be working when next observed. In fact, the coefficient is negative and therefore suggests the pandemic reduced the probability of initially self-employed people being in work in the next quarter by 0.6 percentage points relative to those initially employed.

Turning to variation in the impact, column 2 shows the quarter-on-quarter evolution of the impact. Although the coefficients suggest variability, this is not significant ($p=0.59$). Columns 3-6 suggest no significant variation by age, gender, education or ethnicity. Columns 7 and 8, on the other hand, point to significant variation by occupation and industry. Most notable among occupations is the apparent positive relative impact on Sales and Customer Service workers. While striking, this occupation accounts for only a small minority of the self-employed. More relevant is the negative relative impact among Managers (Directors) and Senior Officials, who accounted for 16 per cent of all self-employed workers in 2019. Relative to employees in the same occupation, the pandemic reduced their probability of working by 1.2 percentage points. The biggest industry sector, accounting for 20 per cent of the self-employed in 2019, is Banking, Finance & Insurance etc. This saw a negative relative impact of 1.4 percentage points.

The last column of Table 4 is distinct in that, rather than providing an estimate of the relative impact of the pandemic, it provides an estimate of the relative impact of the Great Recession. This provides

a perspective on the size of the pandemic effect. At roughly -0.5 percentage points, the estimated relative impact of the Great Recession is very close to that of the pandemic.

Table 4 The estimated impact of the pandemic on the probability of working in the following quarter

Working	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Overall									
Post-2020	-0.578**		-0.112						
	(0.258)		(4.648)						
By quarter post-2020									
Jan-Mar 2020		-0.955*							
		(0.547)							
Apr-Jun 2020		-0.253							
		(0.578)							
Jul-Sep 2020		0.0540							
		(0.557)							
Oct-Dec 2020		-1.024*							
		(0.544)							
Jan-Mar 2021		-0.653							
		(0.579)							
By age									
Age			0.0253						
			(0.211)						
Age squared			-0.000730						
			(0.00231)						
By gender									
Male				-0.598*					
				(0.311)					
Female				-0.429					
				(0.451)					
By qualification (NQF equivalent)									
NQF 7-8					-1.252*				
					(0.724)				
NQF 4-6					-0.815**				
					(0.413)				
NQF 3					0.304				
					(0.514)				
NQF 2					-0.788				
					(0.681)				
Sub-NQF 2					1.450				
					(1.395)				
Other					0.474				
					(1.193)				
None					-1.803				
					(1.590)				
Missing					-1.178				
					(2.122)				
By ethnicity						-0.651**			
White						(0.270)			
						-0.154			
Non-white						(0.893)			

(continued on next page)

Working	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
By occupation (SOC 2010)									
managers (directors) and senior officials							-1.125*		
							(0.606)		
professional							-0.944*		
							(0.561)		
associate professional and technical							-1.273*		
							(0.661)		
administrative and secretarial							1.464		
							(1.404)		
skilled trades							-0.200		
							(0.508)		
caring, leisure and other services							0.898		
							(1.063)		
sales and customer service							5.146***		
							(1.493)		
process, plant and machine operatives							-0.949		
							(1.016)		
elementary							-1.307		
							(1.532)		
Missing							-4.402		
							(10.20)		
By industry (SIC 2007)									
A-B: Agriculture & fishing								3.379**	
								(1.675)	
C,E: Energy & water								-3.017	
								(4.649)	
D: Manufacturing								-1.498	
								(1.273)	
F: Construction								-1.071	
								(0.684)	
G-H: Distribution, hotels & restaurants								0.407	
								(0.777)	
I: Transport & communication								0.161	
								(1.112)	
J-K: Banking, finance & insurance etc								-1.372***	
								(0.493)	
L-N: Public admin, education & health								-0.805	
								(0.643)	
O-Q: Other services								0.813	
									-0.492***
Great Recession									(0.175)
Observations					885,492				2,040,270
P-value	0.02	0.59	0.26	0.76	0.27	0.59	0.00	0.06	0.01
R-squared	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Robust standard errors in parentheses									
*** p<0.01, ** p<0.05, * p<0.1									

4.4.2 Impact on hours worked

Table 5 presents estimates of the relative impact of the pandemic on hours worked in the following quarter. The pandemic reduced by 3.4 hours the amount of work done by the self-employed relative to employees (column 1). In considering this, it should be remembered that those no longer working in the second quarter they are observed are included in this calculation but have zero hours. Hence, the overall estimate reflects the combined relative impacts on employment and on hours worked among those who remain in work. It should also be remembered that the estimates in Table 5 take no direct account of the possible trend since 2012 in the reduced hours worked by self-employed relative to employees (see Figure 25). In line with the earlier discussion, we caveat the estimate with the possibility that it is overstated by about 1 hour. However, even allowing for this, the estimated reduction remains strongly significant.

Turning to variation in the impact, column 2 shows significant ($p=0.00$) variation in the quarter-on-quarter evolution of the impact. The relative impact was strongest at the start of the pandemic and then peaked again in the last quarter of 2020, a pattern that mirrors that seen for the probability of working (Table 4) albeit that variation was not statistically significant. Column 3 shows significant variation by age. The results imply that the reduction in hours worked was greatest for those in their mid-40s; for those aged 47, average hours worked were reduced by 4.6 more among self-employed than among employees. There was also a greater reduction relative to employees for males than for females (3.9 and 2.7 hours respectively) and for non-whites than for whites (5.5 and 3.3 hours respectively). However, the variation by qualification was not statistically significant. Columns 7 and 8 again point to significant variation by occupation and industry. The first three occupations accounted for more than half of all self-employed workers in 2019 and were roughly equal in size. Managers (Directors) and Senior Officials were most affected, with a relative reduction of 6.0 hours. The relative impact for Associate Professional and Technical Workers was a reduction of 4.4 hours while the relative reduction among Professionals was 2.0 hours. The other large category is Skilled Trades workers who accounted for nearly a quarter of the self-employed in 2019. The pandemic did not significantly reduce their hours relative to employees. There were however large negative relative impacts for those working in Caring, Leisure and Other Services occupations and Process, Plant and Machine Operatives (4.6 and 5.7 hours, respectively). These two occupations are similar in size and in 2019 combined to account for 15 per cent of all self-employed. With regard to industry, the relative impact was biggest in Transport and Communication (a relative reduction of 6.7 hours) while several other sectors (Construction; Distribution, Hotels and Restaurants; Banking, Finance & Insurance etc.; and Other Services) saw relative reductions of 2.7 to 3.5 hours).

Table 5 The estimated impact of the pandemic on hours worked in the following quarter

Hours worked	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Overall								
Post-2020	-3.692***		7.087*					
	(0.260)		(3.769)					
By quarter post-2020								
Jan-Mar 2020		-5.651***						
		(0.566)						
Apr-Jun 2020		-2.270***						
		(0.568)						
Jul-Sep 2020		-2.580***						
		(0.561)						
Oct-Dec 2020		-4.804***						
		(0.541)						
Jan-Mar 2021		-2.465***						
		(0.539)						
By age								
Age			-0.496***					
			(0.171)					
Age squared			0.00526***					
			(0.00186)					
By gender								
Male				-3.864***				
				(0.344)				
Female				-2.656***				
				(0.394)				
By qualification (NQF equivalent)								
NQF 7-8					-2.762***			
					(0.727)			
NQF 4-6					-3.225***			
					(0.438)			
NQF 3					-3.572***			
					(0.526)			
NQF 2					-3.380***			
					(0.632)			
Sub-NQF 2					-6.078***			
					(1.732)			
Other					-4.634***			
					(1.357)			
None					-3.522***			
					(1.218)			
Missing					-7.590***			
					(2.838)			
By ethnicity						-3.262***		
White						(0.272)		
						-5.507***		
Non-white						(0.887)		

(continued on next page)

Hours worked	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
By occupation (SOC 2010)								
managers (directors) and senior officials							-6.006*** (0.711)	
professional							-1.982*** (0.568)	
associate professional and technical							-4.395*** (0.591)	
administrative and secretarial							0.860 (1.188)	
skilled trades							0.324 (0.623)	
caring, leisure and other services							-4.635*** (0.966)	
sales and customer service							1.887 (2.041)	
process, plant and machine operatives							-5.702*** (1.055)	
elementary							-0.728 (1.094)	
Missing							-6.429 (20.21)	
By industry (SIC 2007)								
A-B: Agriculture & fishing								2.024 (1.998)
C,E: Energy & water								-4.122 (3.643)
D: Manufacturing								-2.538** (1.177)
F: Construction								-3.137***
G-H: Distribution, hotels & restaurants								(0.702) -3.128***
I: Transport & communication								(0.847) -6.721***
J-K: Banking, finance & insurance etc								(1.317) -2.719***
L-N: Public admin, education & health								(0.449) -3.886***
O-Q: Other services								(0.672) -3.471***
Observations (N=689,672)								
P-value	0.00	0.00	0.01	0.02	0.64	0.02	0.00	0.03
R-squared	0.129	0.131	0.129	0.130	0.130	0.129	0.132	0.134
Robust standard errors in parentheses								
*** p<0.01, ** p<0.05, * p<0.1								

4.4.2.1 Estimating the impact on hours allowing for a pre-existing trend

Table 6 presents the results of estimating the overall relative impact of the pandemic on hours worked, allowing for the possibility of a pre-existing linear trend over time in the difference between hours of the self-employed compared to employees that would be assumed to continue into the pandemic period. As explained in section 4.2, such a downward trend as is suggested by Figure 25 may bias downwards estimates of the relative impact of the pandemic. Rather than adjusting informally for this, estimating impacts using equation 2 rather than equation 1 can incorporate this trend directly.

Doing so suggests the pandemic reduced work among the self-employed by 3.3 hours per week relative to employees. Compared to the estimated relative impact of a reduction of 3.7 hours when not allowing for the pre-existing trend (column 1 of Table 5) suggests a possible bias of 0.4 hours per week. Allowing for this does little to change the qualitative interpretation of the results in Table 5.

Table 6 The estimated impact of the pandemic on hours worked in the following quarter (random growth model)

Hours worked	(1)
Overall	
Post-2020	-3.281*** (0.310)
Observations	689,672
P-value	0.00
R-squared	0.127

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

4.4.3 Impact on the probability of those in work working zero hours

Table 7 shows that the impact on the probability that those in work worked zero hours was 4.7 percentage points higher for self-employed people than for employees. There was significant variation by quarter and also by age, which again pointed to impacts being greatest for those in their mid-forties. The variation by gender, education and ethnicity was not significant, however. There was significant variation by occupation. The relative impacts were greatest among those working in Caring, Leisure and Other Services occupations and Process, Plant and Machine Operatives (15.2 and 12.5 percentage points, respectively) but were also high for Managers (Directors) and Senior Officials (8.9 percentage points) and Associate Professional and Technical Workers (8.3 percentage points). The impacts on self-employed Skilled Trades and Elementary workers were both less than for their employee counterparts (by 3.4 and 7.7 percentage points, respectively). With regard to industry, the relative impact was by far the greatest in Transport and Communication (12.5 percentage points) while several other sectors (Agriculture & Fishing; Construction; Banking, Finance & Insurance etc.; Public Administration, Education and Health; and Other Services) saw relative increases of 2.9 to 7.3 percentage points).

Table 7 The estimated impact of the pandemic on the probability of those working in the following quarter working zero hours

In work, zero hours	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Overall								
Post-2020	4.693***		-23.23***					
	(0.533)		(8.096)					
By quarter post-2020								
Jan-Mar 2020		9.957***						
		(1.280)						
Apr-Jun 2020		-0.0117						
		(1.130)						
Jul-Sep 2020		2.533**						
		(1.130)						
Oct-Dec 2020		6.930***						
		(1.147)						
Jan-Mar 2021		2.454**						
		(0.982)						
By age								
Age			1.382***					
			(0.369)					
Age squared			-0.0155***					
			(0.00405)					
By gender								
Male				4.382***				
				(0.670)				
Female				5.611***				
				(0.880)				
By qualification (NQF equivalent)								
NQF 7-8					4.660***			
					(1.306)			
NQF 4-6					4.076***			
					(0.884)			
NQF 3					3.880***			
					(1.120)			
NQF 2					4.975***			
					(1.347)			
Sub-NQF 2					4.212			
					(3.817)			
Other					6.937**			
					(3.080)			
None					0.367			
					(2.654)			
Missing					9.719			
					(6.299)			
By ethnicity						4.427***		
White						(0.555)		
						6.017***		
Non-white						(1.883)		

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In work, zero hours	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
By occupation (SOC 2010)								
managers (directors) and senior officials							8.929***	
							(1.337)	
professional							1.091	
							(1.005)	
associate professional and technical							8.345***	
							(1.345)	
administrative and secretarial							-0.617	
							(2.437)	
skilled trades							-3.353***	
							(1.287)	
caring, leisure and other services							15.23***	
							(2.141)	
sales and customer service							-3.001	
							(3.928)	
process, plant and machine operatives							12.53***	
							(2.270)	
elementary							-7.748***	
							(2.437)	
Missing							24.85	
							(30.77)	
By industry (SIC 2007)								
A-B: Agriculture & fishing								-5.096**
								(2.224)
C,E: Energy & water								-0.500
								(7.723)
D: Manufacturing								3.028
								(2.450)
F: Construction								4.408***
								(1.443)
G-H: Distribution, hotels & restaurants								-0.958
								(1.647)
I: Transport & communication								12.51***
								(2.792)
J-K: Banking, finance & insurance etc								2.867***
								(0.903)
L-N: Public admin, education & health								7.283***
								(1.321)
O-Q: Other services								5.299***
								(1.831)
Observations (N= 671,433)								
P-value	0.00	0.00	0.00	0.27	0.75	0.42	0.00	0.00
R-squared	0.023	0.027	0.025	0.023	0.025	0.023	0.028	0.028
Robust standard errors in parentheses								
*** p<0.01, ** p<0.05, * p<0.1								

5 Conclusion

Since 2000, self-employment has grown in importance as a form economic activity. Over time, the proportion of workers who are self-employed has increased. This paper has focused on the change brought about by the pandemic, as evidenced by the sharp drop in the self-employed proportion from 2020.

An examination of individual-level quarter-on-quarter transitions suggests that one reason for this reduction is that self-employed people responded to the pandemic by becoming employees. Indeed, reported transitions from self-employment to employment in 2020 were markedly in excess of anything seen before that time. Despite this, there was no accompanying increase in the number of people changing jobs. Leaker (2021) offers a potential explanation to reconcile these findings; that the introduction of the furlough scheme altered how individuals regarded their status. Specifically, once self-employed workers who paid themselves through PAYE realised that they were eligible for employee furlough payments they began to self-identify as employees.

Such a re-classification complicates the challenge of understanding the impact of the pandemic on self-employed people, the main focus of this paper. We are interested in meaningful transitions from self-employment to other states rather than spurious changes resulting from relabelling of ongoing activity. This concern guided the econometric analysis to focus on how the pandemic affected the probability of working among self-employed people relative to employees. The advantage of this approach is that transitions from self-employment to employment do not influence the outcome variable.

The econometric analysis is intended to provide evidence of the causal impact of the pandemic on self-employed people relative to employees. The results suggest the self-employed were harder hit in respect of the probability of remaining in work. However, this relative effect was arguably quite small, at just 0.6 percentage points, although it was roughly twice that for certain occupations (managers (directors) and senior officials; associate, professional and technical) and for those working in banking, finance & insurance etc.

The pandemic also reduced hours worked among self-employed people more than among employees. The relative impact of 3.7 hours per week reflects both the reduction in the proportion in work and reduced hours among those remaining in work. There was considerable variation across individuals, with stronger effects among men, non-whites and those in their mid-forties, and a mixed pattern of impact variation by occupation and industry.

Lastly, we estimated the relative impact on the probability of working zero hours for those in work. The results suggest the pandemic increased this probability by 4.7 percentage points more among the self-employed than among employees.

In summary, across all measures considered, we find that the pandemic hit self-employed people harder than employees. The variation in this impact – by age, gender, qualification, ethnicity, occupation and industry – offers further insight into where it was most keenly felt and provides clues as to where support is most needed. The fact that the self-employed seemed also to suffer more than employees under the Great Recession highlights the long-term vulnerability of self-employment as a form of economic activity and hence supports a call for additional support.

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