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Job opportunities after the pandemic

Economic and Social Research Council

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Key findings

1 **Vacancy postings have exceeded pre-pandemic levels for nearly a year.** The number of vacancies has been stable, and at least 20% above pre-pandemic levels, since Autumn 2021. As a result, almost all unemployed workers face more job vacancies that match their skills than they would have done before the pandemic.

2 **After a massive collapse in hiring and a large skew in vacancies towards sectors such as healthcare during the pandemic, the overall mix of vacancies advertised today is remarkably similar to before the pandemic.** That is, some occupations have become more represented, and some less, when compared with 2019 – but the overall amount of change (as measured by a standard dissimilarity index) is no greater than it was during the more 'normal' period between 2017 and 2019.

3 **However, if we focus on those changes that *have* taken place, we can see a systematic pattern: a shift towards vacancies in lower-skilled and lower-paid occupations.** For example, vacancies for warehouse workers in the five months to February 2022 were more than double their pre-pandemic level, and vacancies for drivers were 80% higher. Higher vacancies in some occupations do not appear to have pushed up wages – there is no correlation between the change in vacancies and the change in wages across occupations since 2019.

4 **The fact that vacancies have risen most in lower-skilled occupations means that job market opportunities have improved most for low-educated workers.** 70% of unemployed workers without a degree had opportunities that were more than 40% higher than they would have had before the pandemic, compared with just 44% of those with a degree. It also means that, while vacancies are high across the board, many of the new opportunities facing jobseekers are in relatively low-paying jobs.

5 **It remains to be seen whether these changes in the level and composition of vacancies reflect a permanent change in the labour market**, as opposed to a transitory adjustment to the pandemic and Brexit.

1. Introduction

The coronavirus pandemic was an unprecedented shock to the labour market. Lockdown measures and general uncertainty led to a collapse in hiring across the economy, leading to sizeable and unequal impacts on people's ability to work and to progress their careers. Now, two years on from the start of the pandemic, all restrictions have been lifted, GDP has returned to pre-pandemic levels, and vacancy postings have stabilised well above pre-pandemic levels. In this briefing note, we reflect on the current state of the labour market and ask whether the composition of jobs demanded looks different in ways which could affect the careers of workers.

We combine data on vacancy postings from Adzuna, an online job aggregator, with information on the characteristics of workers from the Labour Force Survey.[1] Following substantial changes in the occupational composition of jobs advertised during the pandemic, the overall mix of occupations in vacancy postings is rapidly returning to that seen in 2019. In fact, quite remarkably, changes in the composition of vacancies since the pandemic began have been no bigger than what we would normally expect over a two-year period. But some important differences in the vacancy mix remain: in particular, there has been a shift towards lower-skilled and lower-paid occupations, including drivers and warehouse workers.

It is still too early to tell whether there is a 'new normal' in the labour market, with more abundant opportunities for workers and a permanent shift in demand towards lower-skilled and lower-paid occupations. The level and composition of vacancies today are also likely to reflect the currently high level of job turnover, as workers who take new jobs leave vacancies in their wake, and changes in the composition of the supply of suitable workers due to outmigration and job exits due to factors such as early retirement. It remains to be seen to what extent these shifts persist beyond the aftermath of the pandemic and Brexit.

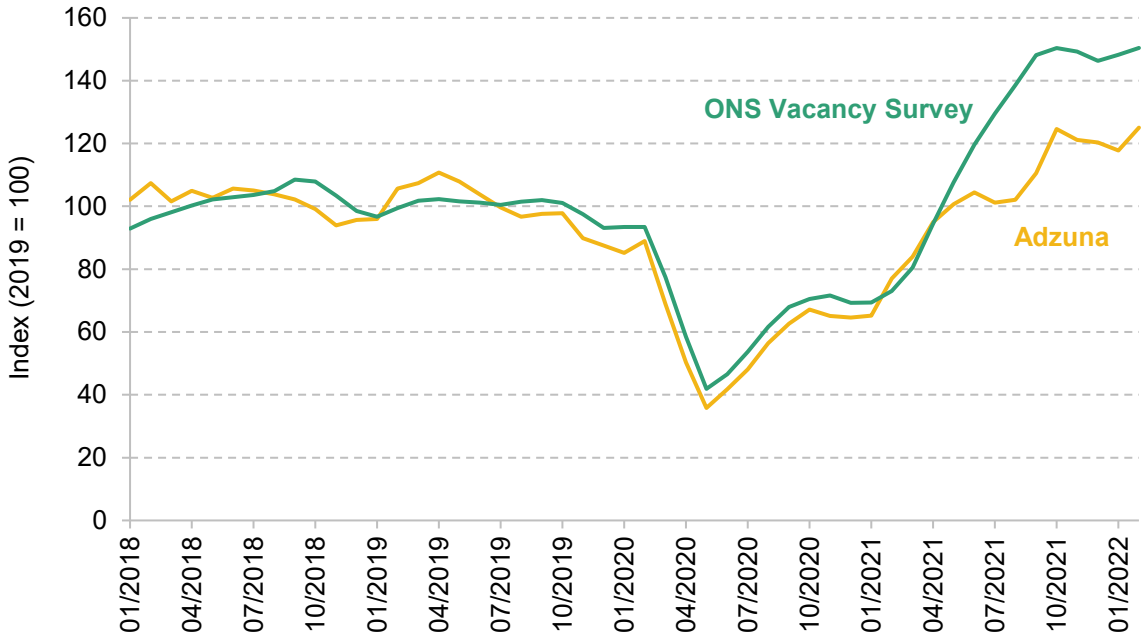
2. Vacancy numbers have stabilised at above pre-pandemic levels, and the mix of occupations is remarkably similar to before the pandemic

After huge changes over 2020 and 2021, the number of job vacancies has stabilised over the past few months at levels higher than before the pandemic. As seen in Figure 2.1, both the ONS Vacancy Survey and Adzuna data on online job adverts show vacancies falling dramatically in April 2020, recovering to 2019 levels by May 2021, and plateauing substantially above pre-pandemic levels in Autumn 2021. The ONS Vacancy Survey shows vacancies stabilising at around 50% above 2019 levels from September 2021, while the Adzuna data show vacancies

[1] We use microdata from UKDS: https://discover.ukdataservice.ac.uk/series/?sn=2000026.

stabilising at around 20% above 2019 levels from October 2021.[2] The higher level of vacancies could reflect a number of factors, including a reduction in the labour force due to outward migration (Office for National Statistics, 2022) and a rise in inactivity (Institute for Employment Studies, 2022), higher rates of labour turnover (Carrillo-Tudela, Clymo and Zentler-Munro, 2022) and potential mismatch in skills, preferences or locations between jobseekers and employers looking to hire (Cribb and Salisbury, 2021). We discuss the likely role of each of these in more detail in Section 4.

Figure 2.1. Number of vacancies relative to 2019



Note: Shows three-month moving average.

Source: ONS single month vacancies estimates (ONS dataset X06); Adzuna vacancy data.

The rise in vacancies has been more pronounced in some occupations than others. Figure 2.2 shows that between October 2021 and February 2022, vacancy postings for elementary storage occupations (a category that includes warehouse workers) in the Adzuna data were more than double their pre-pandemic level, while vacancy postings for road transport drivers (which include couriers and lorry drivers) were nearly 80% higher than in the same months before the pandemic. In contrast, there has been little change in the number of vacancy postings for teachers, and the number of nursing and midwifery vacancies is lower than pre-pandemic.

[2] The ONS Vacancy Survey asks employers about the number of unfilled vacancies, while our Adzuna data capture the number of new job adverts posted online. Possible reasons for the divergence between the series in mid 2021 include an increase in the share of vacancies not posted online; an increase in job adverts for multiple vacancies; and an increase in the time taken to fill a posting, which would cause the stock and flow measures to diverge.

Figure 2.2. Number of vacancies by occupation, October 2021 to February 2022 relative to pre-pandemic

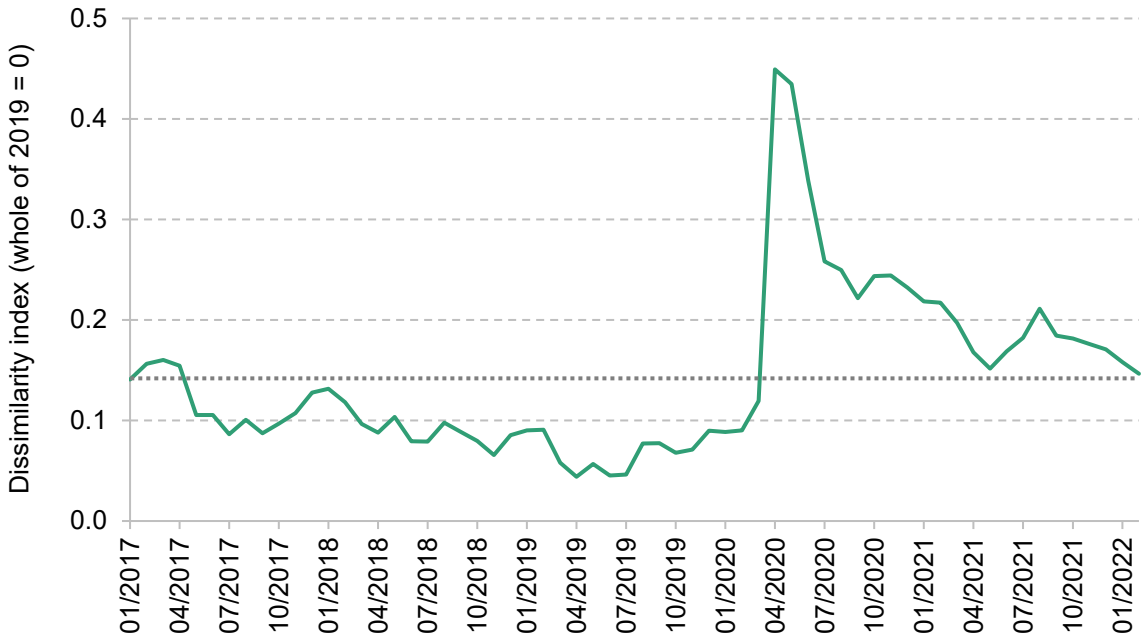
Note: Percentage change in the number of vacancy postings relative to the period October 2019 to February 2020. Shows 20 largest occupations (three-digit SOC) based on vacancy postings in 2019.

Source: Adzuna vacancy data.

Figure 2.2 implies that the mix of vacancies advertised now is different from that before the pandemic. However, it is not unusual for the composition of jobs that are demanded to change over time to some degree. It is useful to compare the overall amount of change with the amount we might typically expect. Figure 2.3 shows a 'dissimilarity index', a summary measure of the change in the occupational mix of vacancies indexed to average occupational shares in 2019.[3] The index ranges from 0 to 1: a value of 0 means that occupational shares in the given month are exactly the same as in (the whole of) 2019, while a value of 1 means that all occupations that posted vacancies in 2019 posted no vacancies in the given month and vice versa. By construction, the index is close to zero in the months of 2019 (though not exactly zero, since the occupational mix of vacancies in any month in 2019 is different from the occupational mix in 2019 as a whole).

[3] The dissimilarity index is constructed as $D_t = \sum_o \left| \frac{v_{ot}}{v_t} - \frac{v_{o,2019}}{v_{2019}} \right|$, where $\frac{v_{ot}}{v_t}$ is the number of vacancies in occupation o as a share of all vacancies at time t.

Figure 2.3. Difference in occupational mix from 2019 (dissimilarity index)



Note: The dissimilarity index in a given month is defined as the absolute difference between the share of all vacancies in a given occupation in that month and the average share in 2019, summed across all occupations.

Source: Adzuna vacancy data.

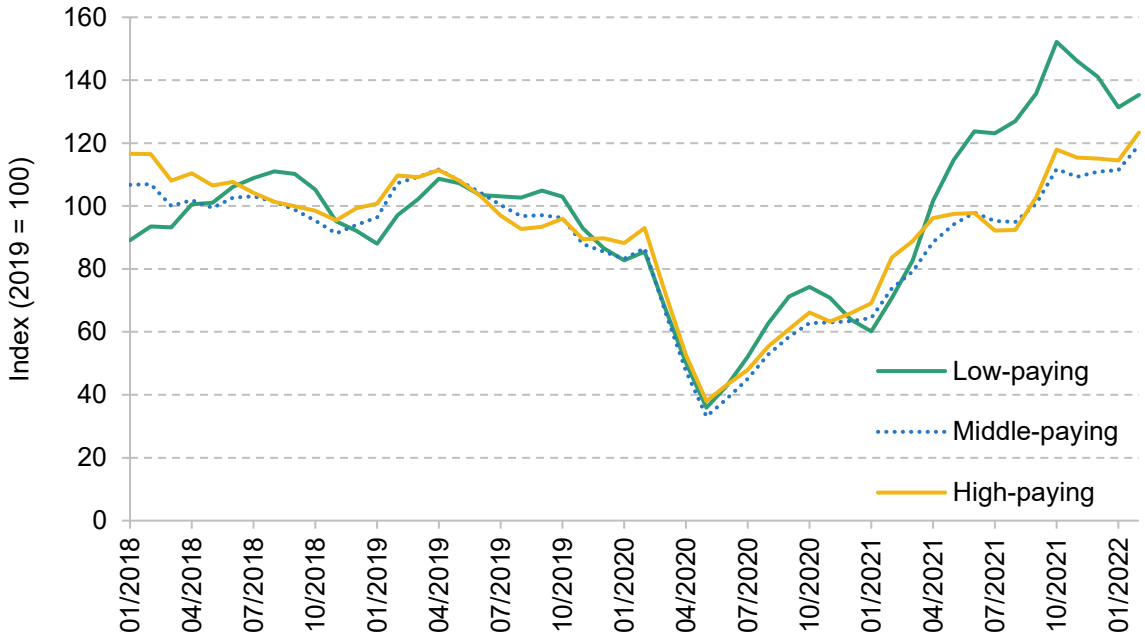
Figure 2.3 shows that the mix of jobs advertised changed dramatically at the start of the pandemic, with the dissimilarity index shooting up between February and April 2020. This was a period when vacancy postings collapsed across the board, and essentially the only job vacancies available were in health and social care occupations (Costa Dias et al., 2020). The mix of vacancy postings gradually stabilised over 2020 and 2021, which is reflected in a gradual decline of the dissimilarity index. By mid 2021, the overall level of vacancies had returned to pre-pandemic levels, but the recovery was still heavily skewed towards construction, warehousing and driving occupations (Costa Dias et al., 2021).

Since then, vacancies in other occupations have also risen, so the dissimilarity index has continued to fall back. By February 2022, the composition of vacancies was still different from that before the pandemic. But to put this in context, the index in February 2022 was similar to the index in early 2017. That is, despite the massive upheaval over the pandemic, the mix of vacancies now is no more different from 2019 than the mix of vacancies at the start of 2017.

3. But focusing on the changes that *have* occurred, they follow a pattern: a shift towards lower-paid, lower-skilled vacancies

Although the magnitude of change in the mix of vacancies since the start of the pandemic is (perhaps remarkably) not very remarkable, the changes that have occurred have followed a systematic pattern. In particular, recent increases in vacancies have been highest in lower-paying occupations, and so these occupations make up a greater share of vacancies than was the case before the pandemic. This is shown in Figure 3.1, which groups vacancy postings into high-, middle- and low-paying occupations.

Figure 3.1. Number of vacancies relative to 2019, by pre-pandemic wage tertile



Note: Shows three-month moving average. Wage tertiles are based on occupation-level average hourly wages in 2019, controlling for demographic characteristics.

Source: Adzuna vacancy data; Labour Force Survey.

We rank occupations based on their pre-pandemic hourly wage, but our main findings are unchanged if we base the ranking on post-pandemic wages instead.[4] This is because there have been no systematic changes in wages since the pandemic, as shown in Figure 3.2. The graph plots the percentage change in vacancies between the latter half of 2019 and the latter half of 2021 against the percentage change in wage premiums over the same period. There is no

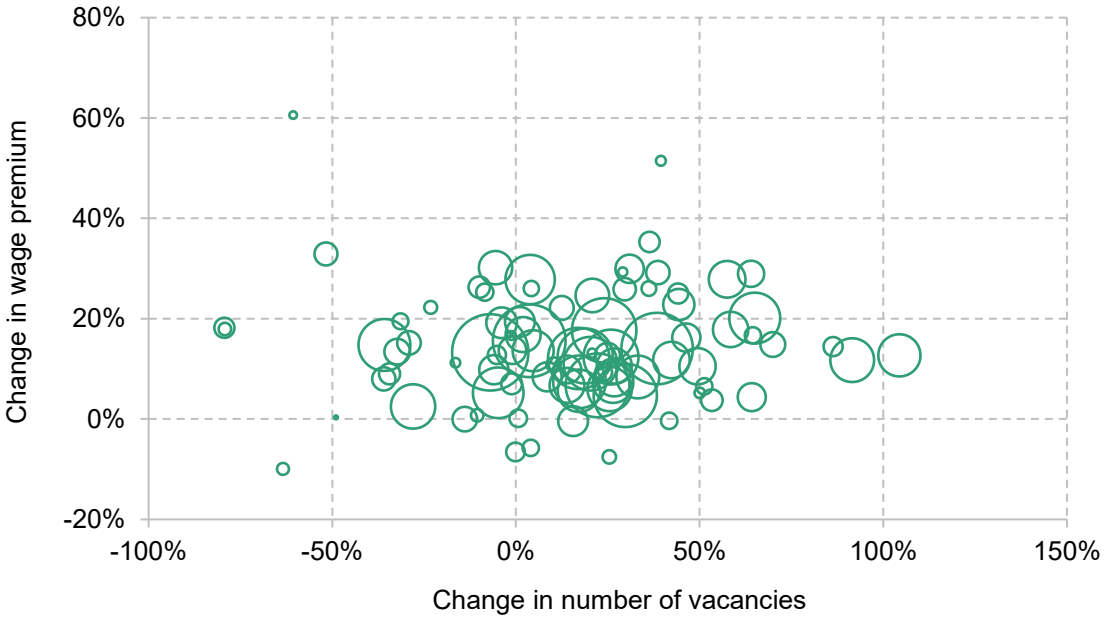
[4] We rank occupations by their average hourly wage in 2019, controlling for workers' demographic characteristics (sex, age, ethnicity, education and region). This can be interpreted as the 'wage premium' associated with working in each occupation. We note that there have been no systematic changes in the way occupations are ranked since 2019 – see Figure A.1 in the appendix. For further details on calculations, see Costa Dias et al. (2021).

correlation – the rise in vacancies in some occupations does not seem to have pushed up wages in those occupations.[5]

Figure 3.1 shows that since the spring of 2021, the increase in vacancies (relative to 2019) has been largest in low-paying occupations. This contrasts with the relatively stable changes in vacancies by wage group in 2018, 2019 and during the early stages of the pandemic. By February 2022, occupations in low-paid vacancies were 35% higher than before the pandemic, compared with 23% for high- and 19% for middle-paying occupations.

This shift in vacancy postings towards lower-paid jobs is also reflected in the task requirements of the occupations where vacancies are being posted. Figure A.2 in the appendix shows that compared with the same months before the pandemic, vacancies in recent months (October 2021 to February 2022) are more skewed towards jobs that require less training, have a lower concentration of cognitive non-routine and interpersonal tasks, and a higher concentration of manual tasks.

Figure 3.2. Correlation between change in vacancies and change in wages, second half of 2019 to second half of 2021

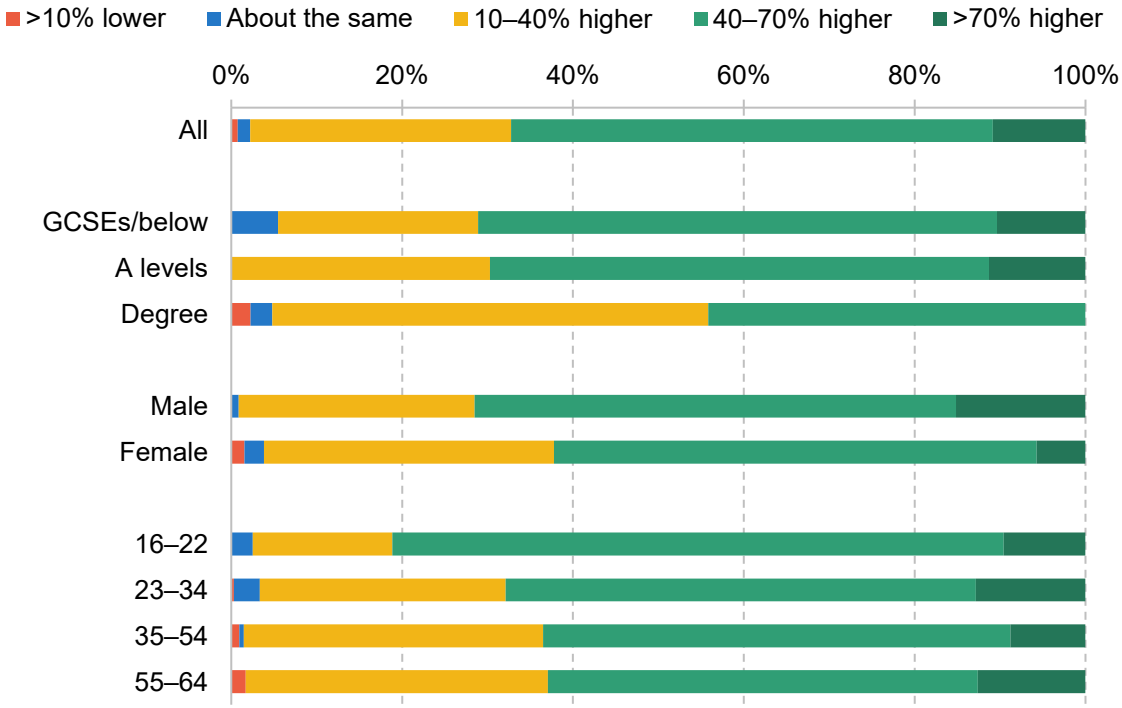


Note: Vertical axis shows change in the occupation-level wage premium in the period July 2021 to January 2022 relative to the period July 2019 to December 2019. Excludes elementary sales occupations, a small occupation group that recorded 300% growth in vacancies between the two periods and wage premium growth of 12.5%. Size of dots reflects number of employees in each occupation in July–December 2019.

Source: Adzuna vacancy data; Labour Force Survey.

[5] There is also no correlation between the change in vacancies and the change in raw wages (not controlling for demographics), or between the change in vacancies and the *difference* in the change in wage premiums between 2017–19 and 2019–21 (i.e. the increase in wage growth).

Figure 3.3. New job opportunities for unemployed workers by education level and demographic group, October 2021 to February 2022 relative to pre-pandemic



Note: Shows change in job opportunities by education and demographic group in five-month period up to February 2022, relative to five-month period up to February 2020, weighted by number of unemployed workers by occupation in October–December 2021.

Source: Adzuna vacancy data; Labour Force Survey.

The change in composition of vacancy postings, with higher numbers of lower-skilled jobs than was the case before the pandemic, means that some workers face higher increases in relevant job opportunities than others. To quantify differences in the job prospects facing different types of jobseekers, we apply the measure of labour market opportunities developed in Costa Dias et al. (2021) to our more recent data. This measure aggregates the relevant vacancy postings for a given type of worker, based on their demographic group and current or most recent occupation, and the jobs to which workers of that type typically move.[6]

Figure 3.3 shows the distribution of new job opportunities for workers who were unemployed in October 2021 to February 2022, relative to the same months pre-pandemic. The top bar shows that almost all unemployed workers had more relevant job vacancies than would have been the

[6] The calculations are set out in Costa Dias et al. (2021). The intuition is as follows: suppose that half of retail workers who move jobs move into another retail job, a quarter move into hospitality and a quarter move into social care. Our measure of job opportunities would then weight vacancies in retail, hospitality and care jobs according to historical job moves. We further control for the mix of vacancies and jobseekers at any given point in time to estimate an underlying 'suitability' of jobseeker types to occupations.

case before the pandemic, with two-thirds seeing opportunities more than 40% higher. However, because the rise in vacancies has been greatest in lower-paid occupations, the rise in opportunities is also most pronounced for low-educated jobseekers: 70% of unemployed workers without a degree had opportunities that were more than 40% higher than they would have had before the pandemic, compared with just 44% of those with a degree. To a lesser extent, there is also variation in the distribution of new opportunities by age and sex, with men and younger workers seeing the most elevated labour market opportunities.

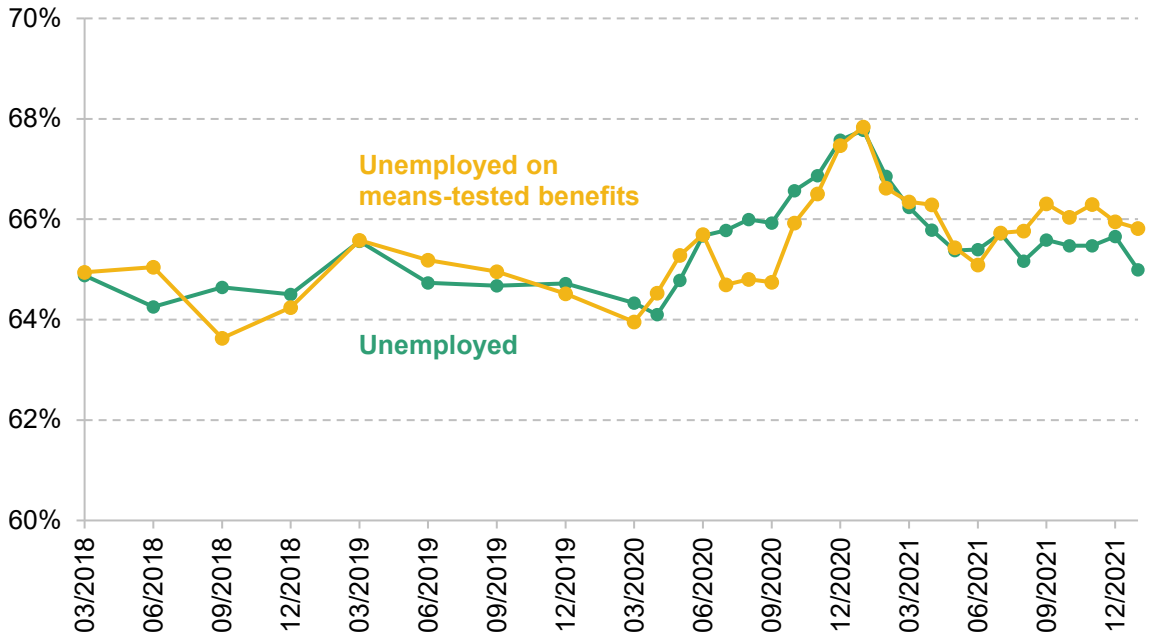
When measuring relevant job opportunities in this way, it is natural to ask – and straightforward to answer – how many of these opportunities are in workers' previous occupations and how many are in other occupations. Figure 3.4 plots over time the share of unemployed workers' opportunities that would, if taken, involve switching occupations. This share reflects both the degree to which unemployed workers have skills that transfer easily across occupations, and the mix of jobs available.[7] As we would expect given the sector-specific nature of the collapse in economic activity during the pandemic, this share rose during 2020 and remained elevated during much of 2021. But as the occupational mix of vacancies posted moved closer to the pre-pandemic mix (as shown in Figure 2.3), the share of opportunities in other occupations has fallen back since the autumn of 2021 and is now much more similar to its pre-pandemic level (about two-thirds). It therefore does not appear that concerns about large changes in occupational structure that many had at the start of the pandemic – that would have required jobseekers to switch occupations to find a job more than was previously the case – have come to pass.

This has some relevance to the changes in universal credit regulations, announced in February 2022, requiring claimants to look for jobs outside their previous occupation or sector after four weeks of job-search – a large reduction from the previous period of three months. Figure 3.4 therefore also includes the same analysis as described above for the (changing) sample of unemployed benefit claimants, who are likely to be affected by the policy change. It shows much the same conclusion: the share of new job opportunities that fall outside of the most recent occupation for this group is now back to around its pre-pandemic level.[8] This does not directly adjudicate on the wisdom of the policy change – in particular, one would need to take a stand on whether the previous grace period of three months was too long or short. But it does suggest that, perhaps contrary to what we might have expected after the huge upheaval of the pandemic, the most recent trends in the labour market do not (on average) suggest much additional need for people to search for jobs outside of their previous line of work.

[7] All else equal, unemployed workers from less specialised occupations (such as retail cashiers) will face more opportunities from outside occupations than those from more specialised occupations (such as teachers). Further, because of changes in labour demand, the share of opportunities from outside occupations will change over time for unemployed workers from a given occupation.

[8] The small (less than 1 percentage point) rise in the share of opportunities coming from outside occupations for this group reflects a shift in the composition of unemployed benefit claimants towards less specialised occupations – see Figure A.3 in the appendix.

Figure 3.4. Share of opportunities facing unemployed workers that are in other occupations



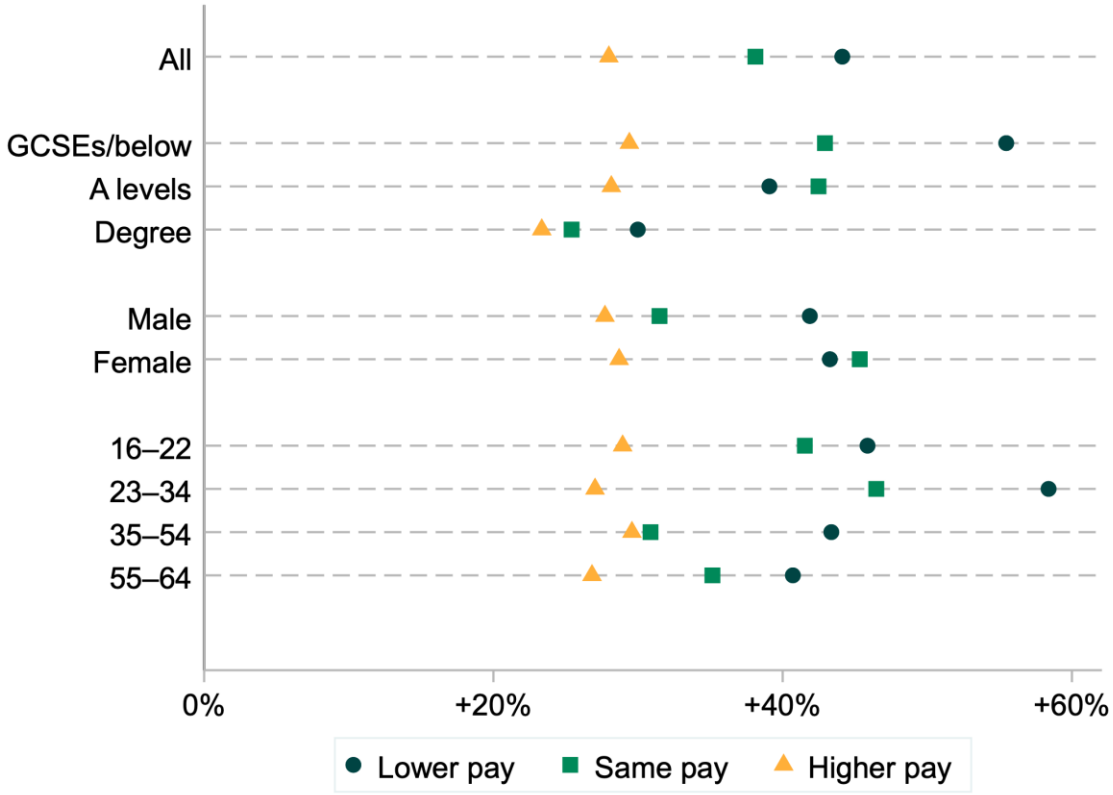
Note: Shows three-month periods up to given month. For example, January 2022 data point shows share of opportunities in the period November 2021 to January 2022. Means-tested benefits include universal credit, housing benefit, tax credits, income support, jobseeker's allowance, employment & support allowance and pension credit.

Source: Adzuna vacancy data; Labour Force Survey.

The fact that vacancies have risen most in low-paid occupations means that many of the new opportunities facing jobseekers are in occupations with low pay. Figure 3.5 decomposes the overall increase in new job opportunities for unemployed workers one step further, demarcating 'other' occupations into those that tend to pay more than one's previous occupation, those that pay less and those that pay the same.[9] While new job opportunities are up across the board, the largest increase in relevant openings in recent months has come from occupations that pay less than workers' most recent occupation. This is especially the case for the lowest-educated group (GCSEs and below), for whom opportunities in occupations that paid less than their previous occupation were 55% higher than they would have been pre-pandemic, while opportunities in higher-paid occupations were up by only 29%.

[9] Because no two occupations have exactly the same wage premium, the last group consists of vacancies in the worker's previous occupation.

Figure 3.5. New job opportunities for unemployed workers by average pay compared with most recent occupation, October 2021 to February 2022 relative to pre-pandemic



Note: Shows change in job opportunities by education and demographic group in five-month period up to February 2022, relative to five-month period up to February 2020, weighted by number of unemployed workers by occupation in October–December 2021. Occupations are split into three groups: those with lower average pay than the most recent occupation, the most recent occupation (same pay) and those with higher average pay than the most recent occupation.

Source: Adzuna vacancy data; Labour Force Survey.

4. It is too soon to tell whether there is a new normal for workers

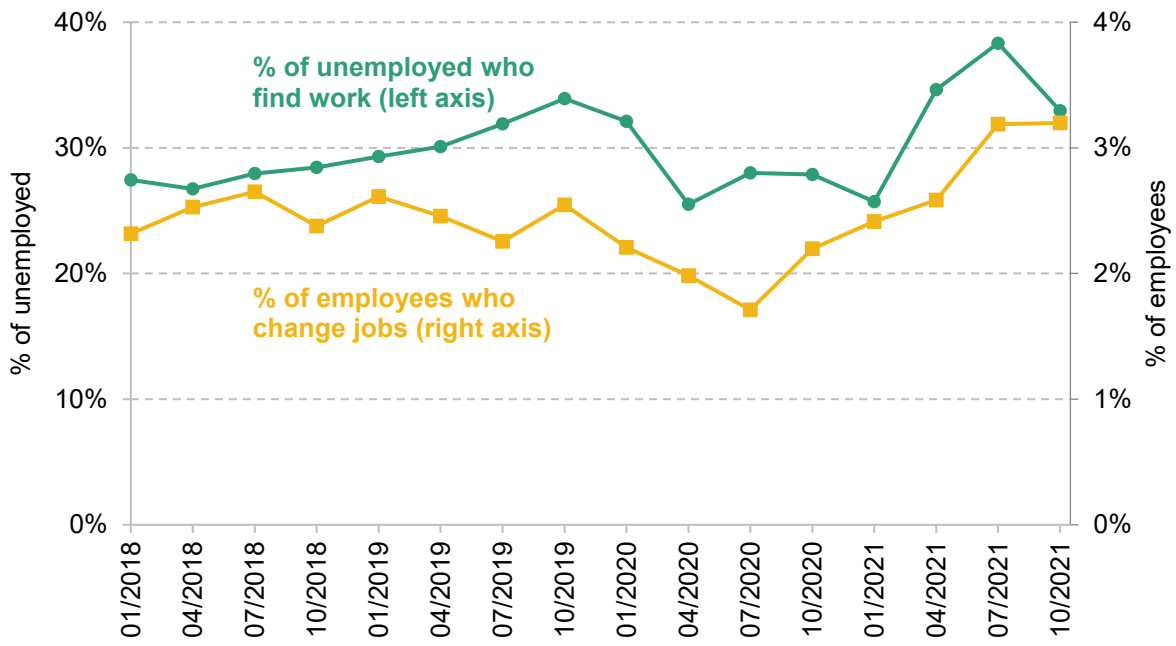
The previous sections have shown that vacancy postings are now consistently higher than before the pandemic, particularly in lower-paid occupations. Are these early signs of a new normal in the labour market, reflecting a fundamental shift in the level and composition of labour demand and supply?

The persistently high level of vacancies is likely due to increased labour turnover as the economy recovers, rather than fundamentally higher demand. This is a common feature of labour markets following economic downturns: after a period of holding onto previous jobs or accepting unsuitable jobs due to the economic uncertainty and reduction in outside opportunities, as the economy rebounds there is pent-up desire from workers to make the job moves that they would otherwise have made earlier (e.g. Barlevy, 2002). Figure 4.1 shows that the pandemic

recession was no exception. At the end of 2021, the share of employees who changed jobs between quarters was around 30% higher than in 2019. A natural consequence of increased labour turnover is rise in vacancies: when someone moves from one job to another, they leave behind a vacancy which needs to be filled. Indeed, the profile of job-to-job moves since the start of the pandemic closely resembles the profile of vacancy postings, shown in Figure 2.1.

Figure 4.1 also shows that unemployed workers today are no more likely to find work than those before the pandemic, despite record levels of vacancies: a third of those who were unemployed in July–September 2021 found a job by October–December 2021, which is similar to the job-finding rates in late 2019. This is consistent with the high level of vacancy posting reflecting increased labour turnover, rather than fundamentally higher labour demand (which would pull additional people into work).[10]

Figure 4.1. Flows from unemployment to employment and job-to-job moves



Note: Shows seasonally adjusted quarterly flows over a three-month period. For example, data point for January 2018 refers to flows from unemployment in October–December 2017 to employment in January–March 2018.

Source: ONS labour market flows (ONS dataset X02).

[10] This particular pattern is not unique to the UK. US data compiled by Fujita, Moscarini and Postel-Vinay (2021; see https://campuspress.yale.edu/moscarini/data/) show that the year 2021 was characterised by an unusual negative co-movement between the unemployed job-finding rate and the rate of direct employer-to-employer transition, suggesting that a large amount of labour reallocation was happening in the immediate aftermath of the crisis.

There is also reason to think that the change in the composition of vacancies – towards lower-paying occupations – may not be permanent. For example, recent increases in outward migration (Office for National Statistics, 2022) and inactivity (Institute for Employment Studies, 2022) over the pandemic led to a sudden drop in available workers in some parts of the economy. Indeed, Figure A.4 in the appendix shows that the rise in vacancies in recent months has been greatest in occupations that were most reliant on EU workers in 2019. It could also be the case that increased labour turnover is particularly concentrated in lower-paid occupations, further shifting the distribution of vacancies towards these jobs.

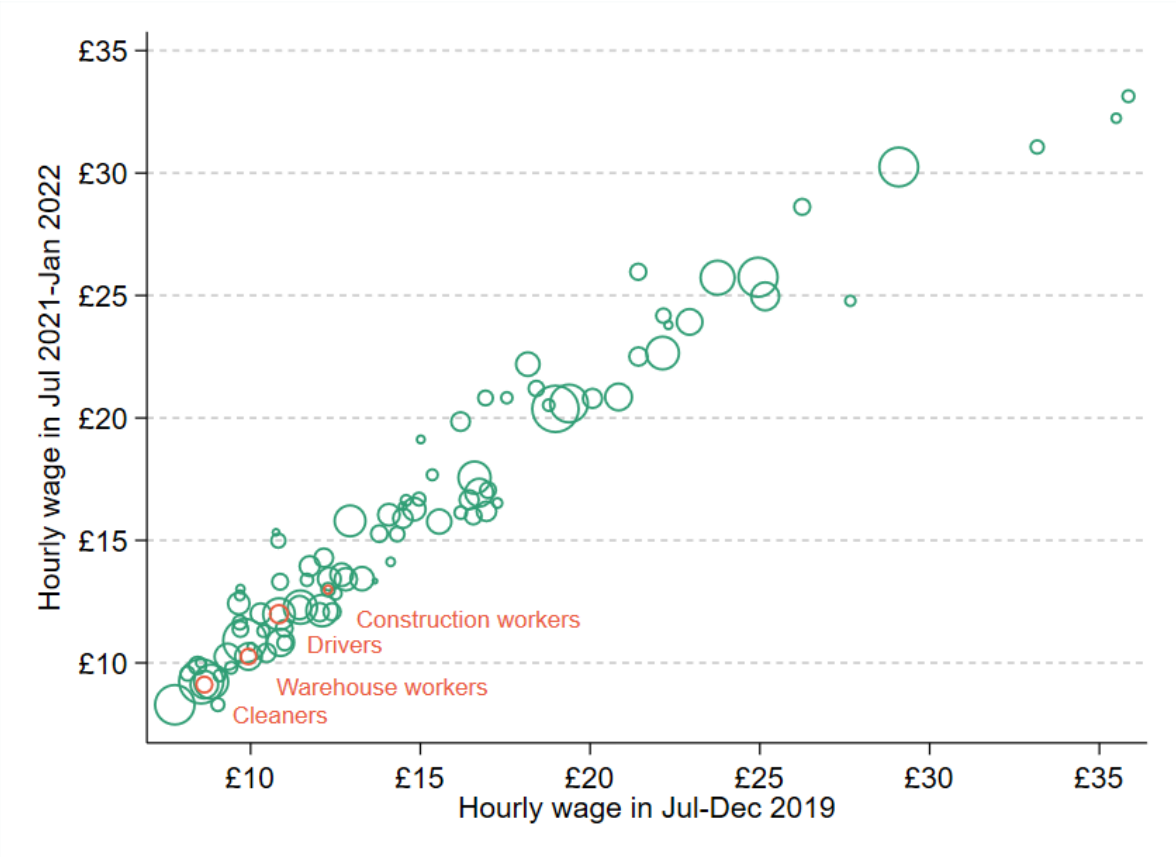
Of course, there may have also been fundamental changes in the demand for workers with different skills over the course of the pandemic, some of which may be long-lasting. For example, the specific occupations that have seen a large increase in vacancies – drivers and warehouse workers – are consistent with a shift in consumer preferences towards home delivery. It is still too early to tell the extent to which recent changes in the composition of vacancy postings reflect a permanent change in the labour market, and consequently the prospects for different workers, as opposed to a transitory adjustment.

5. Conclusion

Two years on from the start of the pandemic, after a period of massive upheaval, the number of vacancy postings has consistently exceeded pre-pandemic levels for nearly a year. While the overall mix of occupations is becoming increasingly similar to pre-pandemic, there has been a sustained shift towards lower-skilled and lower-paid occupations – for example, drivers and warehouse workers. This means that job opportunities have increased most for low-educated workers. It also means that while vacancies are higher across the board, many of the new opportunities facing jobseekers today are in relatively low-paying occupations. However, it remains too early to tell whether this reflects a new normal for workers – with persistently higher demand for lower-skilled jobs – or a more transient pattern owing to shocks to labour supply or post-recession reallocation in the labour market.

Appendix

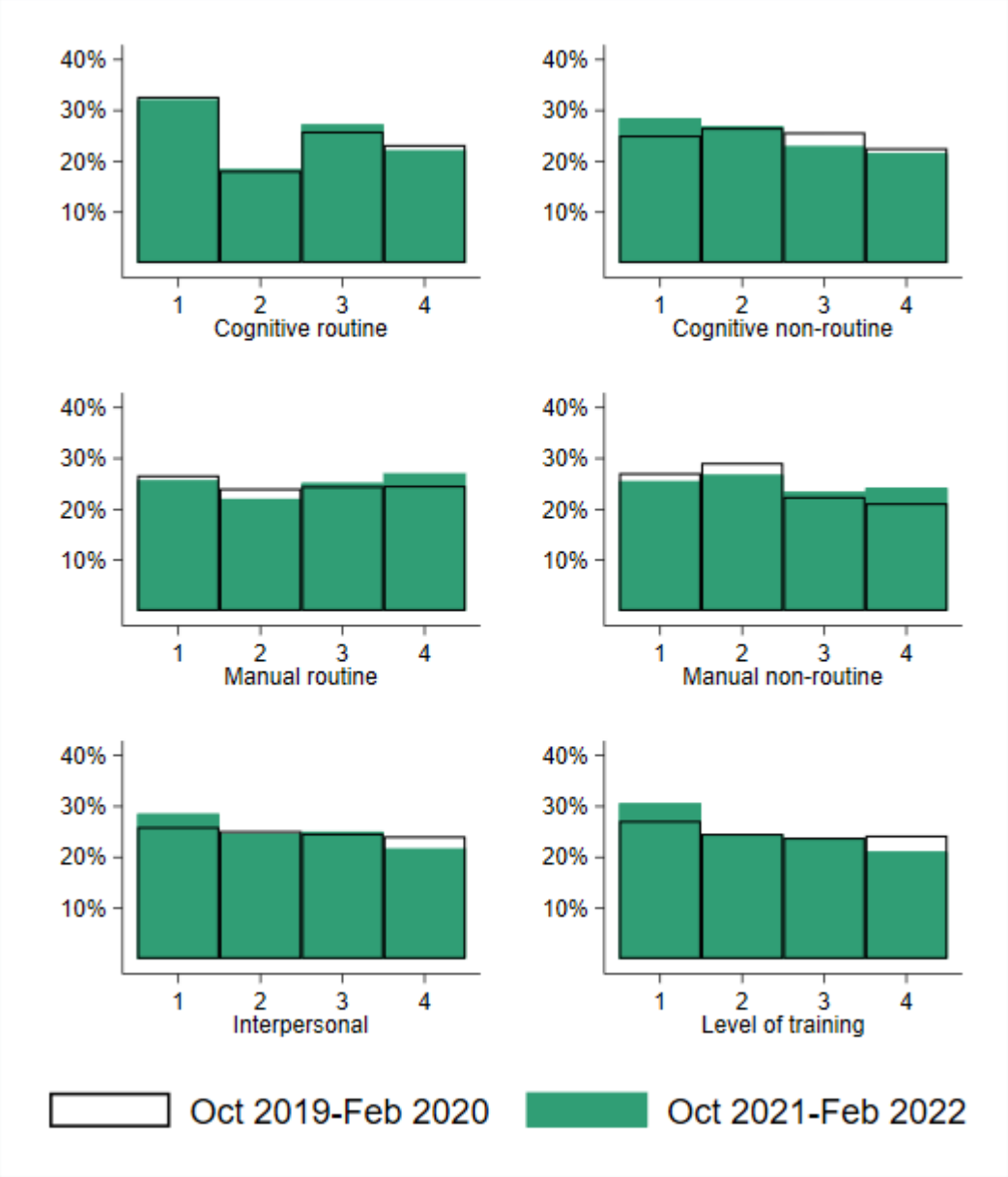
Figure A.1. Average hourly wage by occupation in July to December 2019 versus July 2021 to January 2022



Note: Size of dots reflects number of employees in each occupation in July–December 2019.

Source: Labour Force Survey.

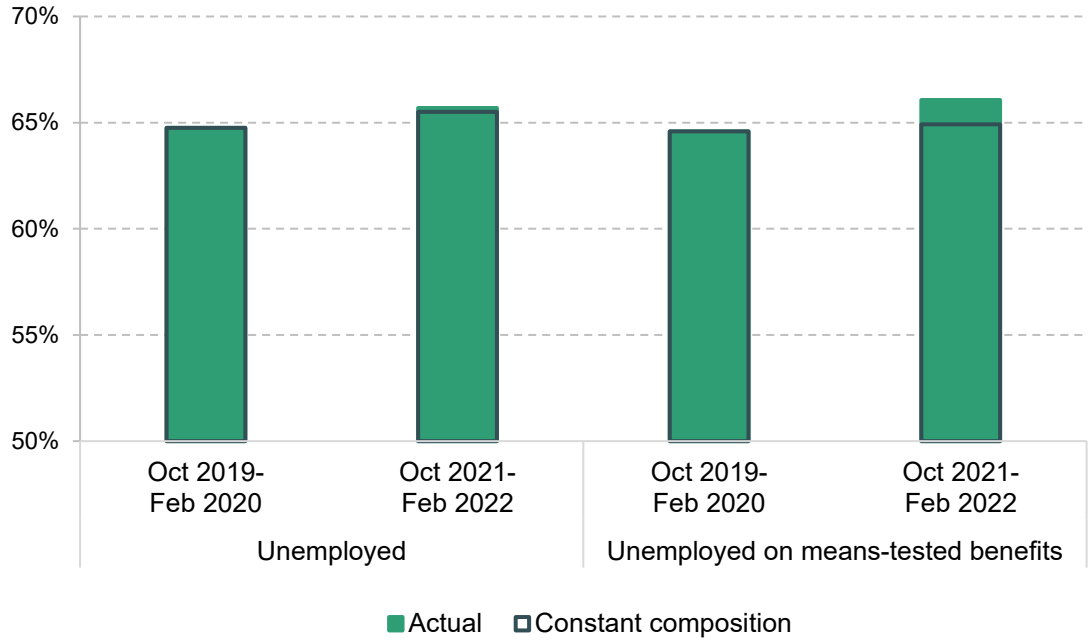
Figure A.2. Distribution of new vacancy postings across occupation types



Note: The figure shows the distribution of vacancies in the five-month period to February 2020 and in the five-month period to February 2022, across quartiles of task content. Occupations are grouped into quartiles based on their task content in the O*NET database, weighted by the number of vacancy postings in October 2019 to February 2020. The categories of tasks (cognitive routine, cognitive non-routine, manual routine etc.) are explained in Costa Dias et al. (2020).

Source: Adzuna vacancy data; Labour Force Survey; O*NET.

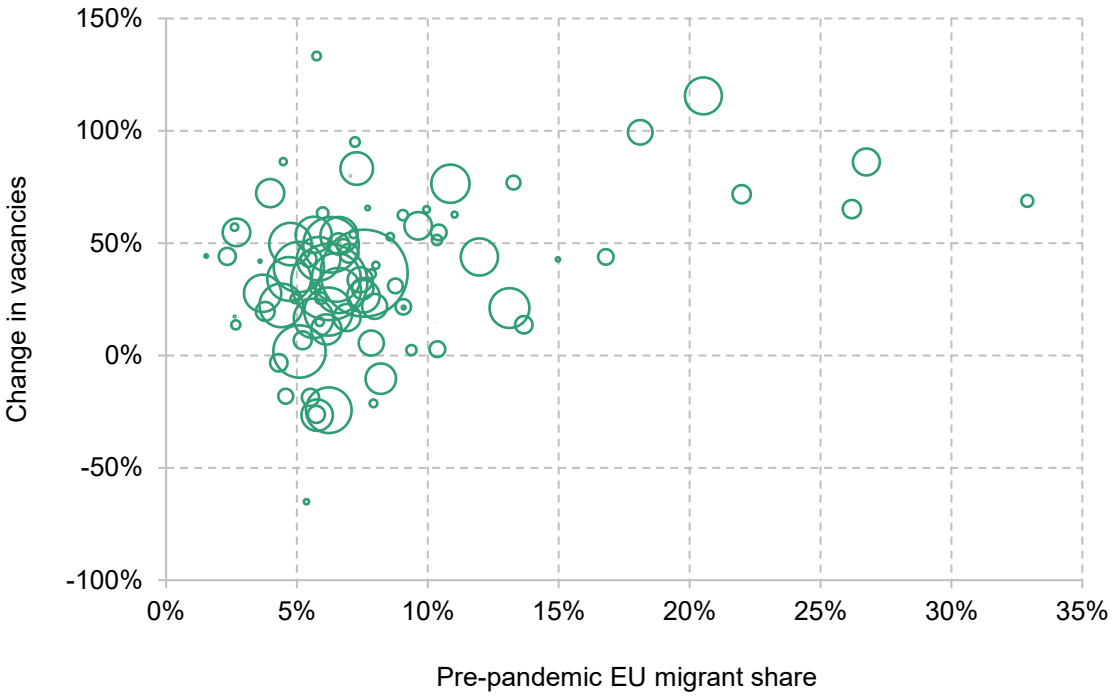
Figure A.3. Share of opportunities in other occupations by unemployment group, pre- and post-pandemic



Note: Means-tested benefits include universal credit, housing benefit, tax credits, income support, jobseeker's allowance, employment & support allowance and pension credit. The 'constant composition' series keep the distribution of unemployed workers across occupations fixed at pre-pandemic levels.

Source: Adzuna vacancy data; Labour Force Survey.

Figure A.4. Correlation between change in vacancies between October 2019 to February 2020 and October 2021 to February 2022 and EU migrant shares in 2019



Note: Vertical axis shows change in the number of vacancy postings in the period October 2021 to February 2022 relative to the period October 2019 to February 2020. Excludes elementary sales occupations, a small occupation group that recorded over 400% growth in vacancies between the two periods. Size of dots reflects number of vacancies in October 2019 to February 2020.

Source: Adzuna vacancy data; Labour Force Survey.

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