

Article

Graduates' labour market outcomes during the coronavirus (COVID-19) pandemic: occupational switches and skill mismatch

The impact of the coronavirus (COVID-19) on the labour market outcomes of graduate workers in the UK, focusing on unemployment, occupational shifts and the skills mismatch.

Contact:
Marina Romiti
marina.romiti@ons.gov.uk
+44 (0)20 7592 8657

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1 . Main points

- The unemployment rate for graduates, non-seasonally adjusted (NSA), was 4.6% in Quarter 3 (July to Sept) 2020, compared with 5.1% for the overall unemployment rate; the latest (Quarter 4 (Oct to Dec) 2020) NSA figure for the overall unemployment rate was 5.2%.
- Graduate skill mismatch, defined as the proportion of graduates not employed in graduate occupations, decreased by 5.0 percentage points to 25.5% between Quarter 3 2019 and Quarter 3 2020.
- Of all graduates who changed occupation but remained in employment in Quarter 2 (Apr to June) and Quarter 3 (July to Sept) 2020, we recorded an outflow of 1.0 percentage point in high-skilled occupations.
- A smaller proportion of graduates (6.7%) switched occupation in Quarter 3 2020 compared with that of non-graduates (7.0%).

2 . Overview

The coronavirus (COVID-19) pandemic has had a marked impact on the UK labour market so far, with the latest period (Quarter 4 (Oct to Dec) 2020) showing further increases in the unemployment rate. Using the [Quarterly Labour Force Survey \(QLFS\) and Longitudinal Labour Force Survey](#), this work assesses the early impacts of the pandemic on the graduate labour force.

Graduates are among the highest-skilled workers and they play an important role in the economy. Higher levels of skills promote innovation and growth (Barro 2001, Lucas 2015, Mason and others 2008) and are therefore crucial in dealing with the challenges imposed by the pandemic. Graduates are also more occupationally and geographically mobile, a factor that may support their employment in times of crisis. However, the skill mismatch among graduates is reportedly higher than in other skill groups (Savic and others 2019) and this could hamper productivity performance in the long run.

Our article starts with an overview of graduate numbers for the period Quarter 1 (Jan to Mar) 2017 to Quarter 3 (July to Sept) 2020. Graduate unemployment is compared with the overall unemployment rate, and the unemployment rate for recent graduates, to address the questions of whether graduates are facing deteriorating job prospects¹ and assess how their outcomes compare with non-graduate workers. We then focus on labour market transitions of graduates across occupations. We present a detailed evaluation of occupational switching and skill mismatch in the UK labour market prior to and during the coronavirus pandemic, accounting for variations in the whole economy and across industries.

Our analysis focuses on the first three quarters of 2020, which cover different phases of the coronavirus pandemic, including the first lockdown period (March to June 2020) and the period of limited restrictions during the summer months (July to September 2020). We compare figures for 2020 with earlier data to evaluate how the labour market outcomes of graduates have been affected by the pandemic.

Specifically, our study aims to:

- analyse movements in the unemployment rate for graduates before and during the pandemic
- investigate changes in the distribution of graduate workers across different occupations, comparing the situation during the pandemic (Quarters 1, 2 and 3 of 2020) with previous years
- analyse graduates' occupational shifts
- explore the incidence of skill mismatch and whether this has been affected by the pandemic
- investigate changes in the extent of the skill mismatch across industries

In our analysis, we assume there has been a significant reallocation of workers in the light of the pandemic, as workers have moved out of some professions and sectors badly hit by the crisis (for example, pilots in travel and tourism), and into other professions and sectors (for example, nursing and grocery retail). Such reallocation has the potential to affect the skill mismatch in the labour market. The direction of this effect is unknown as displaced workers can either improve their job match, for example, in case of a promotion, or they might not be able to match their skills to new openings in the labour market, in which case the mismatch will increase.

Given the negative association between the skill mismatch and productivity performance, understanding this phenomenon is important in assessing the potential scarring effects that this crisis may cause.² Our analysis of the changing labour market conditions of graduates overall and of recent graduates (those who graduated within the past five years) will provide an important outlook for economists and policy-makers.

Notes for Overview:

1. Economic contributions have shown that graduating during a recession may have long-lasting consequences on labour market outcomes in terms of career paths and wages (Altonji and others 2016); there is also evidence that experiencing recessions during youth affects long-run perceptions of redistribution policies (Giuliano and Spilimbergo 2014).
2. See, for example, Mason and others 2018

3 . Graduate labour market characteristics

The number of graduates has been steadily increasing in the UK. In 2017, [approximately 42% of the 34 million individuals aged 21 to 64](#) years¹ had a graduate degree. In aggregate, the graduate labour market comprises approximately 14 million of the UK population. Women account for around 56% of graduates in the labour market with a modest increase in their share over time.²

Graduates have specific skills related to their subject type (for example, engineering, accountancy, psychology), as well as more general transferrable skills (writing, communication, critical thinking). Because of these skills, graduates may have greater resilience during times of economic crisis, although the evidence is mixed³. Graduates may therefore be less likely to be unemployed in comparison with those who do not have a degree.

In Quarter 3 (July to Sept) 2020, people aged 25 to 64 years without a degree accounted for 37% of the unemployment rate, followed by those without a degree aged 16 to 24 years (31%). Comparatively, graduates aged 25 to 64 years and young graduates (aged 16 to 24 years) accounted for 15% and 9% of the overall unemployment rate respectively. Individuals aged 25 years or over who hold a higher degree, accounted for 8%. These figures suggest that graduates on average are less likely to experience unemployment than non-graduates. Overall, 76% of individuals who are unemployed do not hold a graduate degree.

Figure 1 shows the unemployment rate in total, and separately for graduates and recent graduates, (those graduating in the past five years) using the non-seasonally adjusted Quarterly Labour Force Survey (QLFS). Between Quarter 1 (Jan to Mar) 2017 and Quarter 4 (Oct to Dec) 2019, total unemployment was on a declining trend. Unemployment only increased marginally during the first two quarters of 2020. The introduction of the [UK government's Coronavirus Job Retention Scheme \(CJRS\) and Self-Employed Income Support Scheme \(SEISS\)](#) helped to keep unemployment lower than it would otherwise have been during the initial phase of lockdown restrictions. However, total unemployment increased between Quarter 2 (Apr to June) and Quarter 3 (July to Sept) 2020, when in the latter the unemployment rate reached 5.1%.

Unemployment amongst graduates has been consistently lower than the total. The average unemployment rate for graduates between Quarter 1 2017 and Quarter 3 2020 was 3.0%, compared with the total average unemployment rate of 4.2%. However, average unemployment for recent graduates was the highest, averaging at 6.3% over the period and reaching a peak of 12.0% in Quarter 3 2020. This suggests that recent graduates have been hardest hit by the pandemic in terms of unemployment. Nevertheless, the unemployment rate for recent graduates remains below the non-seasonally adjusted [youth unemployment rate \(aged 16 to 24 years\), which stood at 14.2% and 13.6% in Quarter 2 and Quarter 3 of 2020 respectively](#).

Figure 1 also illustrates recent seasonal trends in the unemployment rate for recent graduates, which shows an increase in the third quarter of every year. This usually coincides with the period immediately after graduation and indicates the presence of a lag between obtaining a degree and successful job search. However, the unemployment rate in the third quarter of 2020 was the highest over the past three years.

Figure 1 Unemployment rates (%) for total labour force, graduates and recent graduates (aged 16 to 64), from Quarter 1 2017 to Quarter 3 2020, non-seasonally adjusted

Unemployment rates for total labour force, graduates and recent graduates (aged 16 to 64 years), from Quarter 1 2017 to Quarter 3 2020, UK, non-seasonally adjusted

[Download the data](#)

Notes for: Graduate labour market characteristics

1. See, for example, Clegg (2017).
2. Hesa (2020).
3. See, for example, Burke and Scurry (2019).
4. Younger workers (those aged 18 to 24 years) have been disproportionately impacted by the pandemic. In the three months to July 2020, 18- to 24-year-olds experienced [the largest decrease in employment, the largest increases in unemployment and the second-largest increase in economic inactivity](#). The increase in youth unemployment is linked to younger workers' tendency to work in industries that were worst affected by the pandemic, that is, accommodation and food service activities and arts, entertainment and recreation. The number of job vacancies across the economy remain historically low, suggesting deteriorating job-market prospects for graduates.

4 . Graduates in employment and reallocation since the start of the coronavirus crisis

Figures 2 and 3 use the Quarterly Labour Force Survey (QLFS) to report the distribution of graduates who stayed in employment across different occupations. The switching in occupation may potentially have led to a change in skills mismatch.

We present figures pre-crisis (averaged over the Quarter 1 (Jan to Mar) 2017 to Quarter 1 2020 period) and compare these with the second (Apr to June) and third (July to Sept) quarters of 2020, when the impact of the crisis becomes evident, as shown in Figure 1.

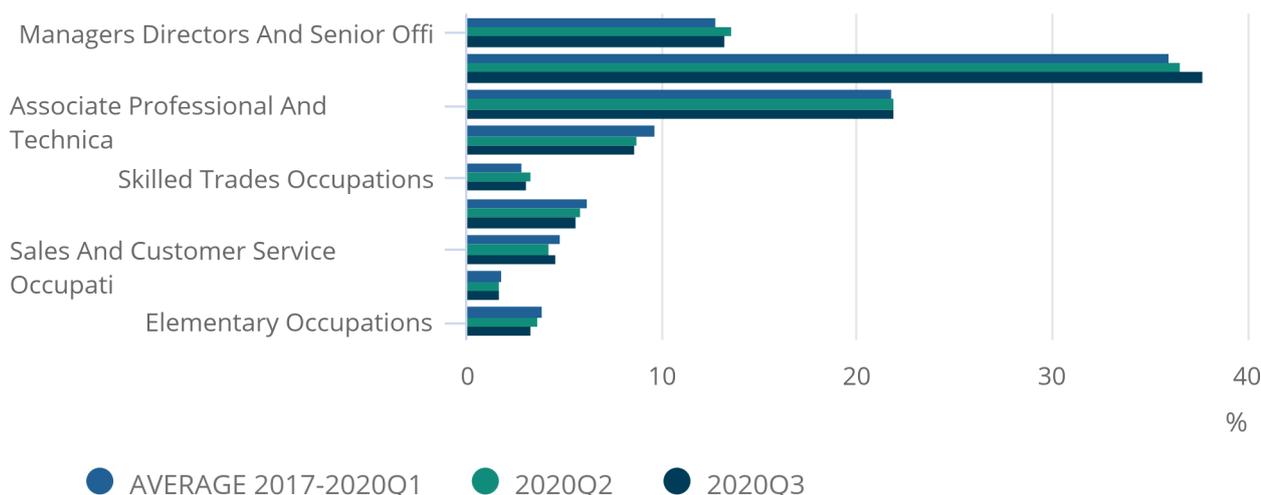
In Figure 2 we classify occupations following the [Standard Occupational Classification \(SOC\) one-digit](#) groupings. This figure shows that over 70% of graduates in employment are concentrated in the top three occupations: managers and directors, associate professional and technical occupations, and professional occupations. Their proportion in these occupations increases during the crisis, possibly because these occupations have been able to expand, and therefore employ more graduates, because they could more easily relocate online. Administrative and secretarial occupations registered the largest difference in the proportion of graduates' employment in Quarter 3 2020 of 1.0 percentage point compared with the average for the Quarter 1 2017 to Quarter 1 2020 period.

Figure 2: Employment of graduates is concentrated in the top occupations

Distribution of graduates across occupations, from Quarter 2 (April to June) to Quarter 3 (July to September) 2020, UK

Figure 2: Employment of graduates is concentrated in the top occupations

Distribution of graduates across occupations, from Quarter 2 (April to June) to Quarter 3 (July to September) 2020, UK



Source: Office for National Statistics – Quarterly Labour Force Survey

Figure 3 uses information on the [skill content of occupations](#) provided by the Office for National Statistics (ONS) (2010)¹, which classifies all occupations into four skill groups, based on qualifications and length of time (experience) deemed necessary for a person to become fully competent in the performance of the tasks associated with the job. In line with expectations, the movements across skill levels are small.

Figure 3 shows that over 60% of graduates who stayed in employment, were employed in high-skilled or upper-middle-skilled occupations over the Quarter 1 2017 to Quarter 1 2020 period. During Quarter 2 and 3 of 2020, we observe an increase in the proportion of graduates in high-skilled occupations, while there is a decrease in the middle-low- and low-skilled occupations. The proportion of graduates in the upper-middle-skilled occupations show a very small increase in Quarter 2 but, in Quarter 3, revert to the average over the period.

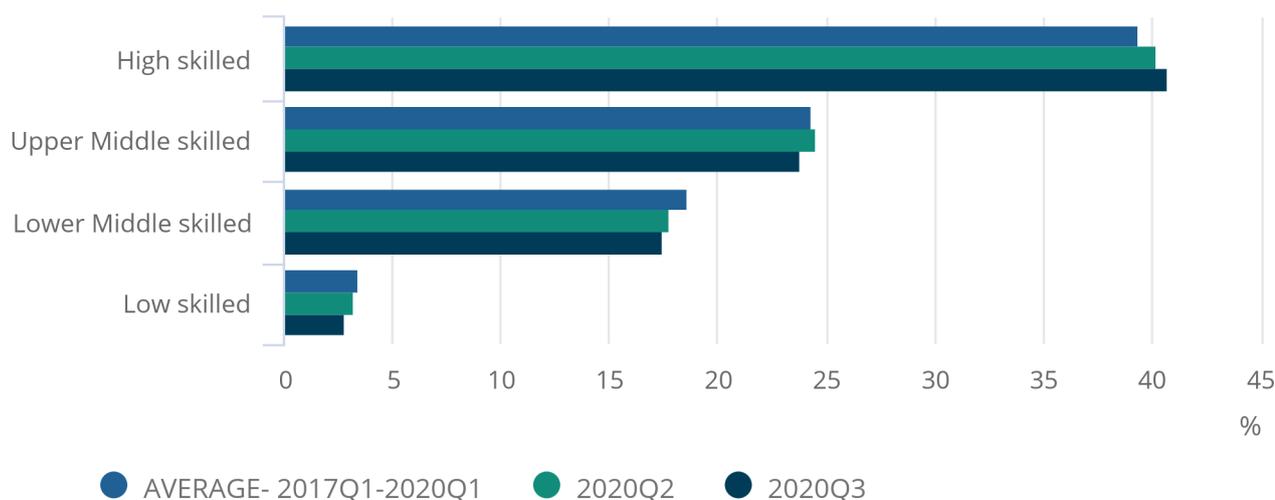
High-skilled workers have been better able to continue working during the pandemic, since [nearly 70% of professional occupations reported working from home](#). Meanwhile, only 5.4% of machine operative professionals, a low-skilled occupation, worked from home in the reference week.

Figure 3: The proportion of graduates in high-skilled occupations has increased during the pandemic

Distribution of graduates across occupations, from Quarter 2 (April to June) to Quarter 3 (July to September) 2020, UK

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Distribution of graduates across occupations, from Quarter 2 (April to June) to Quarter 3 (July to September) 2020, UK



Source: Office for National Statistics – Quarterly Labour Force Survey

The current coronavirus (COVID-19) crisis may have resulted in the redeployment of workers from occupations that have been most adversely affected by lockdown restrictions towards occupations that have continued to operate. Using the Longitudinal Labour Force Survey (LFS), we can follow graduates employed in two consecutive quarters, and so we can analyse the extent of occupational changes (occupational shifts) and compare them with the occupational shifts over the same period in previous years. Figure 4 presents occupational shifts for graduates next to that for all workers (graduates and non-graduates).

Changes in occupation, for all workers and for graduates, are evident in all years in our sample, although the proportion of graduates who switched occupation was consistently higher - with the exception of Quarter 2 to Quarter 3 2020.

Graduates are more likely to have both general and transferrable skills, which allows movements across different occupations. By looking across years, we observe proportions of occupational switching having remained relatively constant. There was a small increase in occupational shifting for both graduates and overall, from 2018 onwards, with the highest proportions occurring during the first two quarters of 2020. Graduates experience the highest level of occupational change between Quarter 1 and Quarter 2 of 2020, when 8.0% of graduates changed occupations, compared with 7.2% in 2019, 7.7% in 2018 and 6.8% in 2017. Hence, the initial phase of the coronavirus crisis saw higher levels of occupational shifts, among graduates and non-graduates. Occupational shifts among graduates declined to 6.7% in Quarter 3 2020, lower than the same period in 2019 (7.7%), but broadly equivalent of the shift recorded in 2017.

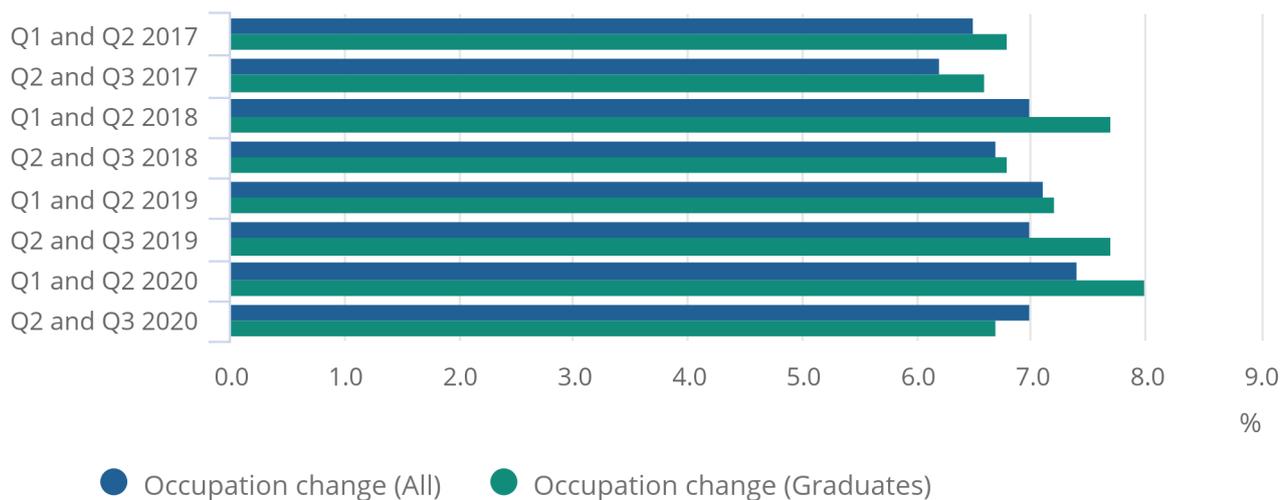
The user should be aware that these results for occupational switching differ from those reported in [previous publications](#) as this analysis focuses only on those aged 16 to 64 years and uses the Longitudinal Labour Force Survey rather than the QLFS.

Figure 4: Proportion of workers changing occupations in two consecutive quarters, from 2017 to 2020

Occupational change: Quarter 1 to Quarter 2, to Quarter 2 to Quarter 3, 2017 to 2020, UK

Figure 4: Proportion of workers changing occupations in two consecutive quarters, from 2017 to 2020

Occupational change: Quarter 1 to Quarter 2, to Quarter 2 to Quarter 3, 2017 to 2020, UK



Source: Office for National Statistics – Quarterly Labour Force Survey

Delving more deeply into graduates' changes in occupation, Figure 5 shows the percentage of employed graduates who have (a) changed occupation and (b) shifted across different types of occupation, grouped according to the occupations' skill requirement, from Quarter 2 to Quarter 3 2020 and 2019.

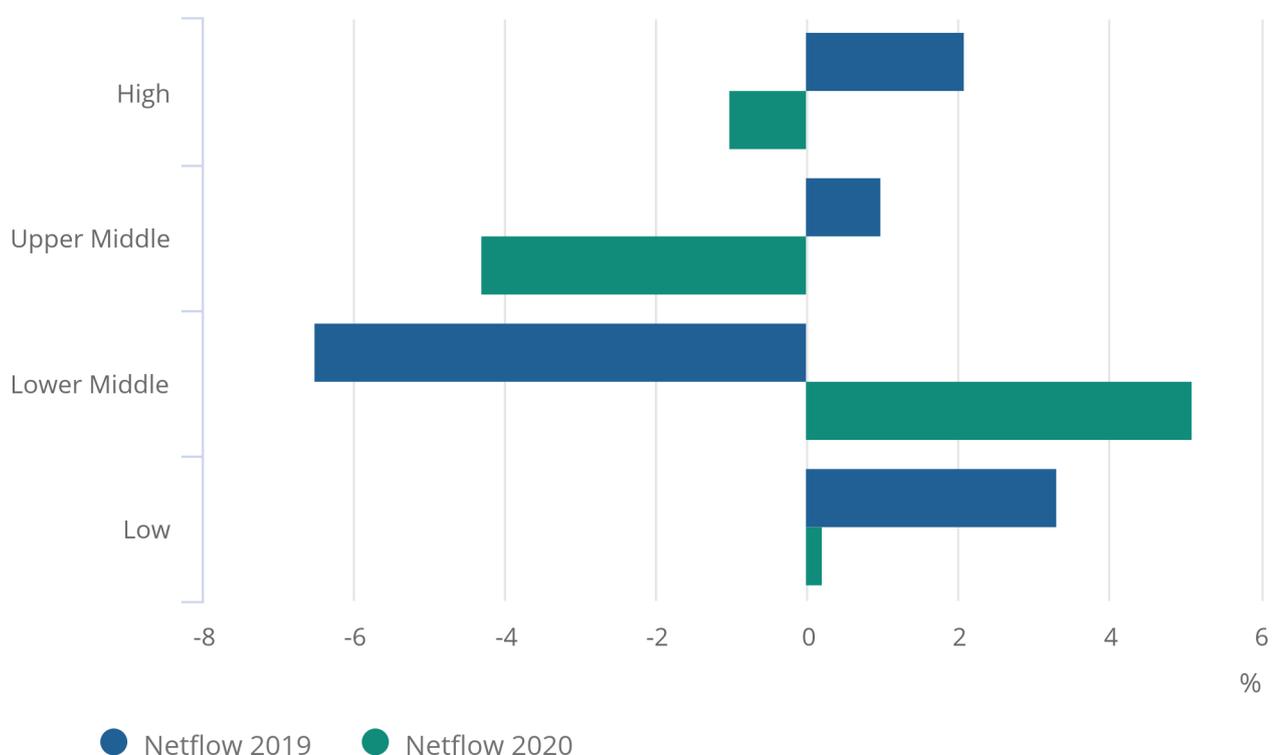
There has been a 1.0 percentage point decrease in the number of graduates in high-skilled occupations between Quarter 2 and Quarter 3 2020. The same period in the previous year had an increase of 2.1 percentage points. The upper-middle-skilled occupations have experienced a negative net flow of graduate workers of 4.3 percentage points between Quarter 2 and Quarter 3 2020, whilst the same period in 2019 saw an increase of 1.0 percentage point. Lower-middle-skilled occupations recorded a 5.1 percentage point increase between Quarter 2 and 3 2020, while the lowest-skilled group shows a 0.2 percentage point inflow of graduate workers.

Figure 5: Graduates in employment in the first three quarters of 2020, who changed occupation

Graduates' skill net flow: Quarter 2 to Quarter 3, 2019 to 2020, UK

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Graduates' skill net flow: Quarter 2 to Quarter 3, 2019 to 2020, UK



Source: Office for National Statistics – Quarterly Labour Force Survey

Notes:

Bar chart showing graduates in employment in the first three quarters of 2020, who changed occupation.

An occupational change may be the result of a promotion, in which case, workers' employment prospects improve; however, particularly in recession periods, workers may accept jobs in lower-level occupations that do not match their skills, experience and qualification levels, to avoid unemployment. This would contribute to the [skill mismatch or overeducation](#), a phenomenon that is often associated with lower earnings, lower job satisfaction (Battu and others 1999) and may also negatively affect productivity (Mason and others 2018, Augar 2019). Previous empirical evidence for the UK for 2017 shows that 16.1% of all those in employment had more education than required for their occupation; among graduates this proportion increases to 31% (Savic and others 2019). New graduates are currently entering a weakened labour market and so may be more likely to accept job opportunities that do not match their qualification profile.

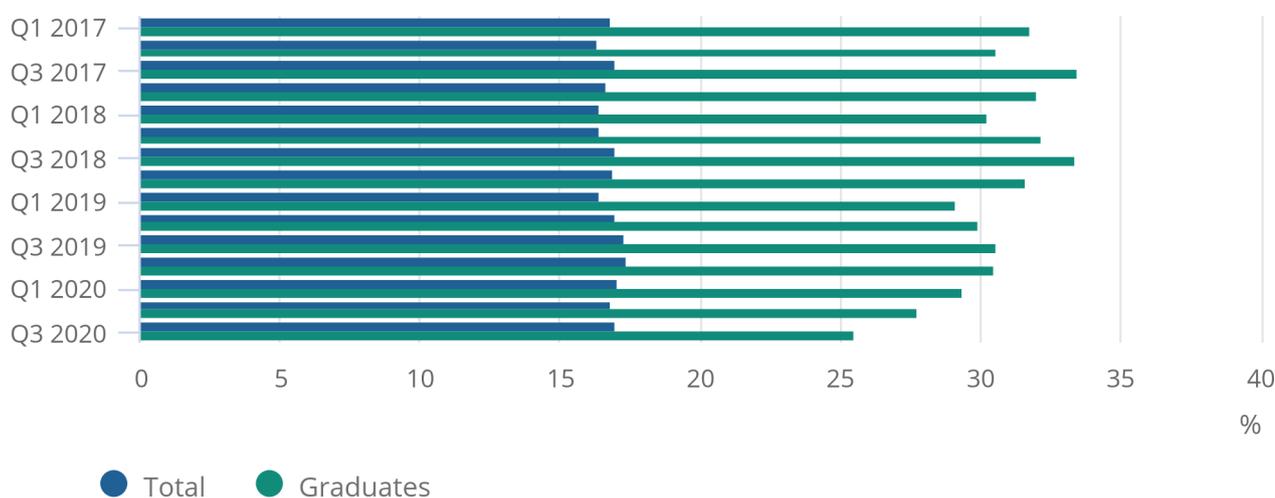
Using the same measure constructed in Savic and others (2019), Figure 6 presents the incidence of overqualification in the UK using the QLFS, from Quarter 1 2017 and Quarter 3 2020, comparing graduates with all in employment. Around 16.8% of those in employment, aged 16 to 64 years, are overqualified and this proportion remains quite constant over time. For graduates, the incidence is higher, averaging 30.5% throughout the period, consistent with existing studies.² However, we observe a decline in graduate overqualification from Quarter 3 2018 onwards. The decrease carries on during the initial phase of the coronavirus crisis, where the incidence of overqualification declines to 29.4% in the first quarter, 27.8% in the second quarter and 25.5% in the third quarter. Contrary to initial expectations, we do not find that the current crisis is associated with an increasing skill mismatch in the UK labour market.

Figure 6: The incidence of graduates' overqualification has declined during the coronavirus crisis

Percentage of those in employment who are overqualified, aged 16 to 64 years, UK

Figure 6: The incidence of graduates' overqualification has declined during the coronavirus crisis

Percentage of those in employment who are overqualified, aged 16 to 64 years, UK



Source: Office for National Statistics – Quarterly Labour Force Survey

Notes for: Graduates in employment and reallocation since the start of the coronavirus crisis

1. Skill levels are approximated by the length of time deemed necessary for a person to become fully competent in the performance of the tasks associated with a job.
2. Dolton and Vignoles (2000) shows a similar incidence of overqualification in the 1980s. Green and Henseke (2016a) estimate the incidence of graduate overeducation in the UK at 34.1% and in Green and Henseke (2016b) the proportion is 29.1% in the 1997 to 2001 period, and 30.5% between 2006 and 2012. See also Battu and others (2000).

5 . Industry

The analysis so far has focused on trends in occupation and skill mismatch at the whole economy level. However, the impact of the coronavirus (COVID-19) has most acutely been felt within industries such as tourism, entertainment and hospitality¹. In this section we take a broad sectoral view, providing major trends within seven industry aggregates: agriculture, energy and construction (AEC)²; manufacturing; hotels and recreation; transport services; financial services; government services; and other services.

Data from the Quarterly Labour Force Survey (QLFS) show that financial services and government services traditionally employ a larger share of graduates compared with other industries. In government services we observe the largest increase (0.7 percentage points) in the proportion of graduate workers across all industries during the third quarter (July to Sept) of 2020. In AEC, manufacturing, hotels and recreation, and other services the proportion of graduate workers declined in Quarter 3 2020. However, these changes are not very dramatic, indicating that at this aggregate level graduates' employment within industries has not been greatly affected by the coronavirus.

Turning to the industry-level analysis of the skill mismatch across graduate workers, Figure 7 shows the proportion of graduates who are employed in jobs that do not require a degree qualification, comparing the average for Quarter 1 (Jan to Mar) 2017 to Quarter 1 2020 period with Quarter 2 (Apr to June) and Quarter 3 (July to Sept) of 2020.

In all years, the largest proportions of graduates without a graduate job are observed in the government services, hotels and recreation, and in financial services. In the case of government services and financial services, graduate workers may choose to enter the sector at positions which do not require a degree, to get a "foot in the door". In hotels and recreation, on the other hand, there are fewer graduate-level jobs and the skill-mismatch in this sector might be more long-lasting.

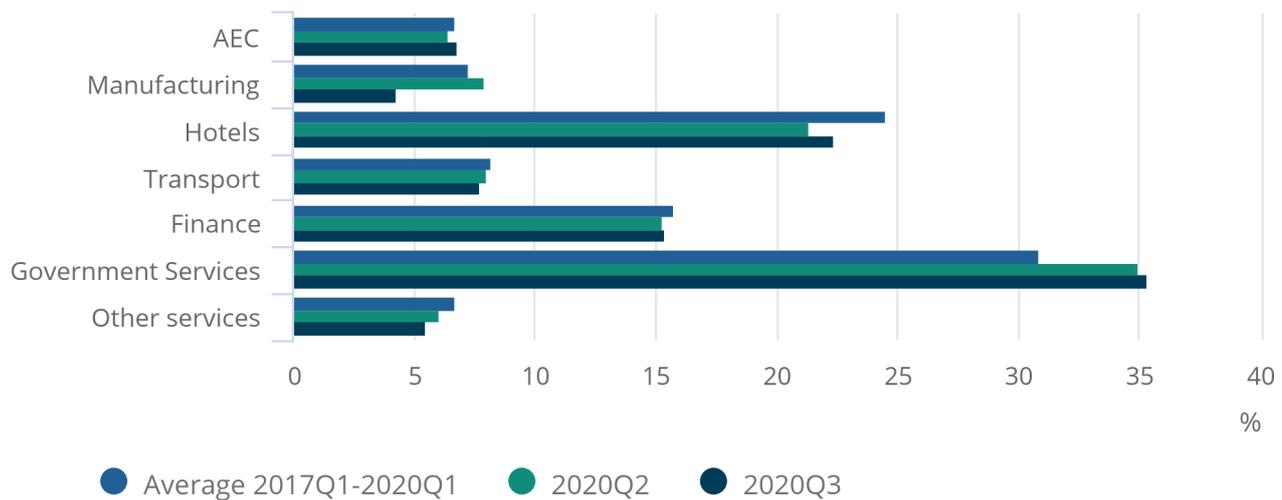
Broadly, Figure 7 shows that the skill mismatch in most sectors has marginally decreased during the coronavirus crisis, with the exception of government services, where the mismatch increased by 4.5 percentage points, if compared with the average period between 2017 and 2020. Between Quarter 2 and Quarter 3 of 2020, the proportion of graduates working in a non-graduate occupation shows a slight decline in most sectors. The limited change in occupational switching is likely to reflect the effect of [the government's job retention schemes, the Coronavirus Job Retention Scheme \(CJRS\) and Self-Employed Income Support Scheme \(SEISS\)](#), which encourage an attachment between individuals and a specific job. [Occupational switching might therefore become more prevalent as employment support unwinds.](#)

Figure 7: Overqualification by sector

Proportion of graduates who are overqualified across industries, Quarter 1 (Jan to Mar) 2017 to Quarter 3 (July to Sept) 2020

Figure 7: Overqualification by sector

Proportion of graduates who are overqualified across industries, Quarter 1 (Jan to Mar) 2017 to Quarter 3 (July to Sept) 2020



Source: Office for National Statistics – Quarterly Labour Force Survey

Notes for: Industry

- [Industry breakdowns using the LFS should be interpreted with caution, as they are based on respondents' views about the business for which they work. This may not be the same as the industry in which businesses are classified in estimates of the national accounts.](#)
- The category AEC has been created aggregating the following SIC major groups: A - agriculture, forestry and fishing; B,D,E - energy and water; and F - construction.

6 . Outcomes for graduates and non-graduates

This article has investigated changes in graduates' employment patterns during an ever-changing economic and social environment, using data from Quarterly Labour Force Survey (QLFS) and the Longitudinal Labour Force Survey. Our findings show that labour market outcomes for graduates are worsening slightly, as revealed by an increase in their unemployment rate, particularly among recent graduates. However, unemployment figures are still below those for the total labour force (graduates and non-graduates) and lower than comparable youth unemployment rates.

Graduate workers were better able to change occupations in the periods prior to and in the first few months of the crisis, compared with workers in the total labour force in the UK. These occupational shifts may have been helped by their wider skill set. Given the higher level of human capital, graduates may be in a stronger position to adjust to challenges imposed by the pandemic in terms of retaining jobs and finding new employment opportunities; however, these jobs may not be of the same quality and they may not fit their skill profile. However, the general population had a higher incidence of occupational switching between Quarter 2 (Apr to June) and Quarter 3 (July to Sept) 2020 as the effects of the pandemic began to be felt. This may suggest those who hold a degree were better able to remain in their jobs over the period.

Indeed, we find that during the first three quarters of 2020, graduates who changed occupations have moved out of the highest-skilled jobs and into intermediate and low-skilled ones. The skill mismatch, on the other hand, has been declining during the pandemic, continuing the downward trend that started in 2018. This may be because of a better match with the educational requirement of occupations, allowed by the fact that graduates are better able to work remotely because of the nature of their work.

A decline in the skill mismatch during the pandemic could also be a consequence of the increase in the unemployment rates among graduates, as sectors with a high proportion of overqualified graduates, such as hospitality and recreation, have drastically reduced their activity. These areas are some of the many questions for future research around this topic.

As the impact of the coronavirus (COVID-19) in the labour market is still unfolding, concrete conclusions on the basis of these findings are not possible. However, our analysis shows that graduate workers may fare better in their labour market outcomes in the current crisis, compared with non-graduates.

One caveat to our study is that a change to [Labour Force Survey data collection during the pandemic](#) has impacted both the level of response and the non-response bias of the survey, and consequently the survey estimates. Hence, figures from January to March 2020 onwards need to be interpreted with caution.

Collaboration

This article has been written in collaboration between the Office for National Statistics (Marina Romiti and Vicky Haigney) with Dr. Michela Vecchi, Associate Professor of Economics at the University of Middlesex and Dr. Catherine Robinson, Deputy Dean at the University of Kent.

7 . Glossary

Graduates

An individual aged between 21 and 64 years not enrolled on an educational course who have attained a higher education degree or equivalent.

Occupational switching

A change in a worker's [Standard Occupational Classification \(SOC\)](#) from one quarter to the next, which would not be reflected in the traditional flows between employment, unemployment and inactivity. This analysis classifies occupation switchers as those who have changed one-digit SOC code (major groups)¹ between periods. The analysis at the major group structure, although broad, compresses occupations that are similar in terms of qualification, training, skills and experience. Changes in occupations can occur for a number of reasons, such as promotion, and indeed workers can move occupation while remaining within an organisation.

Labour market mismatch

A worker with a level of education, experience, skills or interests that do not correspond to the requirements of the job where they are employed.

Overqualification and overeducation

A form of education skills mismatch where a person possesses more education than required for the job. This analysis follows a statistical method used by the International Labour Organization to compare the distribution of educational attainment of those in employment in the UK against the average educational attainment level for their occupation.

Notes for: Glossary

1. ["The major group structure is a set of broad occupational categories that are designed to be useful in bringing together unit groups which are similar in terms of the qualifications, training, skills and experience commonly associated with the competent performance of work tasks."](#)

8 . Data sources and quality

This article uses data from the UK Quarterly Labour Force Survey (QLFS) and Longitudinal Labour Force Survey to explore the incidence of occupational switching and educational mismatch (specifically overqualification) since the advent of the coronavirus (COVID-19) pandemic and associated UK lockdown. This covers Quarter 1 (Jan to Mar) 2020, Quarter 2 (Apr to June) and Quarter 3 (July to Sept) 2020. We compare these figures with the same periods from 2017 onwards to determine how the pandemic might have affected the data. The QLFS offers the most representative and timely data on labour market trends available.

9 . Related links

[Coronavirus and occupational switching: January to June 2020](#)

Article | 25 August 2020

Occupational flows across the labour market, focusing on the individual characteristics of the occupation movers, such as sex and age.

[Overeducation and hourly wages in the UK labour market: 2006 to 2017](#)

Article | 29 April 2019

This article examines overeducation in the UK labour market using Annual Population Survey (APS), for 2006 to 2017 including analysis on the relationship between overeducation and wages.

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