

# **From Low-Skilled to Key Workers: The Implications of Emergencies for Immigration Policy**

## **Abstract**

The COVID-19 pandemic has increased public awareness of the extent to which the economy relies on a low-wage workforce. Many of those lower-waged occupations that have been recognised as essential in the emergency are heavily dependent on migrant workers. We explore the implications of the COVID-19 pandemic for future immigration policies and provide an example using data for the UK. We suggest that there are three key considerations for governments in this context. First, whether the management of emergencies themselves requires a certain type of immigration policy. Second, whether the experience of the current pandemic brings to light new information about the 'value' of certain types of immigration. Finally, whether immigration is the right response to pandemic-driven increases in labour demand.

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## **I. Introduction**

A common feature of immigration systems around the world is a preference to select workers with higher levels of education and who are likely [to](#) earn higher wages (Ruhs, 2013). There are many factors behind this feature of immigration systems. In economic terms, higher-waged workers are more likely to make a positive contribution to public finances (Dustmann and Frattini, 2014) and other factors such as innovation, entrepreneurship and productivity (Nathan, 2014). From a political standpoint, evidence on public opinion suggests that the public consistently favours the prioritisation of higher-skilled over other migrants (e.g. Heath and Richards, 2019; Naumann et al., 2018; Helbling and Kriesi, 2014; Hainmueller and Hiscox, 2007, 2010; Hainmueller and Hopkins, 2015).

The COVID-19 pandemic has increased public awareness of the extent to which the economy – including access to many consumer goods and services – relies on a low-wage workforce in businesses from supermarkets to care homes. Media coverage during the coronavirus crisis has in many cases highlighted the health risks to which these ‘front line’ workers are exposed, alongside low pay and difficult working conditions. For instance, delivery drivers, food producers, and supermarket staff have been recognised as ‘essential’ workers in the current context. Many of those lower-waged occupations that have been recognised as essential in the crisis are heavily dependent on migrant workers. The social and economic impact of the COVID-19 pandemic has also generated a context of institutional and policy uncertainty where significant shifts in public opinion towards some types of migrants could eventually be translated into policy. Therefore, it is important to ask if, and how, future immigration policies should take account of the early lessons of the COVID-19 pandemic? This paper combines a conceptual breakdown of the fundamental issues with an illustration of these using data for the UK in order to shed light on this question.

## **II. Key workers and immigration systems**

### **(i) Who is a key worker?**

There is no single definition of a key worker. Several countries have published lists of ‘key’ or ‘essential’ workers who are considered central to maintaining basic economic and public health infrastructure during the crisis period. The role of these lists is to identify people who —during a pandemic in which most people are being asked to stay home—should be able to go to work if they need to and/or send their children to schools.

The United States, United Kingdom and the European Commission have produced lists of essential workers (Cabinet Office and Department for Education, 2020; European Commission, 2020; United States Department of Homeland Security, 2020). These lists include most occupations in the health sector (from doctors and nurses to care assistants and diagnostic technicians) and people working in law enforcement and public safety, the production and distribution of food, utilities (i.e. gas, water, and electricity), transportation and logistics, various types of manufacturing (including of medical equipment), financial services and various others. The level of precision of these lists varies across countries and sectors. For example, in some sectors such as health, the UK list of key workers is very

precise, while in others all workers in a given sector (e.g. oil, gas, electricity and water industries) are considered essential (Cabinet Office and Department for Education, 2020).

These occupations and industries employ workers across the skills spectrum, from highly specialised professionals to minimum-wage workers requiring relatively few formal qualifications or training. This means that potential migrants who intend to work in these key occupations and industries will receive different treatment in current immigration policy systems.

## **(ii) How do labour immigration policies deal with key workers in ‘normal times’?**

Most labour immigration policies around the world select migrants based on their occupational profile. Occupations are categorised as low- or high-skilled depending on the duration of training and/or formal education and work experience required to perform the tasks and duties of a given job (Office for National Statistics, 2010; International Labour Organisation, 2012). In this context, skills mostly indicate the educational level and experience of the average worker in an occupation and do not measure other types of skills that could be valued in society or by employers. Immigration systems in high-income countries are typically more open towards workers in higher-skilled or higher-paid jobs, while imposing restrictions towards those coming to work in lower-skilled occupations (Ruhs, 2013). For example, work visas for high-skilled jobs are less likely to be restricted by numerical caps and labour market tests (i.e. the requirement to look for workers locally first), and will have a path to permanent residence and citizenship. By contrast, employers recruiting migrant workers in low-skilled jobs will often face more complex bureaucracy (such as detailed regulations on pay and working conditions), with a maximum duration of stay and no path to permanent status (Sumption and Fernandez-Reino, 2018).

The nature of selection in labour immigration programmes means that migrants coming to work in high-skilled occupations will not necessarily need special treatment in emergency times in order to be eligible for long-term work visas, although they may still be given more attractive conditions, such as a faster path to permanent status.

In addition to selecting migrants based on their skills, using indicators such as the salary of the job offer or the educational credentials required, immigration systems often apply different rules to specific occupations that are considered important for some reason. For example, countries such as the UK have a shortage occupation list designed to identify positions in high demand where it is difficult to recruit workers from the local labour market at the current wages and employment conditions. Depending on the country in question, being on this list may mean that workers qualify for visas despite a lower salary, and/or that there is a lower administrative burden for employers sponsoring these migrant workers.

Sector-specific temporary worker programmes admitting workers in low-wage jobs are also relatively common, targeting particular industries. Many countries have seasonal agricultural worker programmes, in recognition of the fact that employers typically struggle to recruit for these low-paid temporary roles from the domestic labour force (Gibson and McKenzie, 2014). For example, before it became clear that EU free movement would provide a significant supply of workers in low-wage jobs, the UK operated sector-specific

schemes for low-paid workers in food manufacturing and hospitality (McGuinness and Grimwood, 2017).

There are also cases of immigration provisions responding to specific crises. After the 2011 earthquake in Christchurch, for example, New Zealand defined several construction and infrastructure-related roles to be included in a 'critical skills' list that facilitated work visa applications, in which jobs covered range from engineers and skilled trades to truck drivers (New Zealand Immigration, 2020). However, several of the jobs that are currently seen as essential in light of the COVID-19 crisis, such as warehouse and logistics workers or retail assistants in supermarkets, are not included in such arrangements.

### **III. Does the pandemic change the assessment of which work routes should exist for migrant essential workers?**

Immigration policies are determined by a combination of economic and political thinking. Governments often adopt restrictive immigration policies when migration-related issues become salient in public opinion (Ford et al., 2015). However, national governments face constraints when adopting immigration policies, such as international law and organised economic interests (Somerville and Goodman, 2010). Given the different economic conditions and political environments, not all countries come to the same judgment about which workers should be admitted in 'normal' times. As a result, it is unlikely that there will be a single 'best' immigration policy response to emergencies. This section lays out some considerations that governments might take into account.

We address three essential considerations. First, whether the management of emergencies themselves requires a certain type of immigration policy (e.g. one that is more favourable to key workers who may not otherwise qualify for work visas, on the basis that they are in high demand during this period). Second, whether the experience of the current pandemic brings to light new information about the 'value' of certain types of immigration that should be taken more seriously in the future and perhaps *should have been* taken into account in the past. Third, whether immigration is the right response to pandemic-driven increases in labour demand, or whether employers should be expected to look to other solutions such as automation or hiring from within the existing labour force.

#### **(i) Admitting workers for the emergency and/or the recovery**

While in principle one might assume that immigration policy can easily respond to an emergency such as the current pandemic by admitting the workers who are most needed, the reality is more complicated. Immigration systems are not finely tuned machines whose settings can be perfectly calibrated to a rapidly changing external environment.

In particular, immigration policy does not necessarily have an immediate and predictable effect on the size and composition of the workforce. In a handful of cases, such as very short-term seasonal worker programmes, the immigration system may be able to 'switch on and off' a supply of workers to meet periods of peak labour demand—so long as those peaks can be predicted sufficiently far in advance to allow for recruitment, visa applications and travel to take up work. If governments want to use immigration to address *unexpected*

demand for workers, this would be harder to arrange, not least in a pandemic that restricts international travel. In the event of a 'short, sharp' crisis, it is even possible that by the time the system has moved from introducing a new, less restrictive policy to allowing workers to take up jobs on the ground (perhaps several months), the original need may have abated or been met in other ways.

A different way of thinking about readiness for a pandemic-driven period of high labour demand is not that migrant workers should be admitted in the short run to meet peak demand, but that certain industries and sectors that have strategic value during an emergency need to have (or have access to) a sufficient workforce beforehand, so that they are in a position to provide essential goods and services when an emergency arrives.

According to this argument, industries that are well staffed before the emergency will be more resilient and better able to increase capacity or deal with staffing shortages, than ones that were already facing recruitment difficulties. Creating such conditions cannot only be addressed with immigration policies, which is just one part (and in many occupations a relatively small part) of the picture. Other factors such as the pay and conditions, or the quality of training systems will also be important.

If this is the goal, the task for immigration policy is somewhat easier, but still not entirely straightforward. Immigration policies could in theory aim to build a 'pool' of workers in certain jobs by admitting people for longer time periods and potentially allowing long-term settlement. However, these policies cannot necessarily tie people to the sectors for which they are admitted for years on end. Employers want to employ the minimum workers needed for the job and in many of the low-skilled jobs they will be workers in part-time or zero-hours contracts. If the jobs on offer are short-staffed because the conditions are unattractive to local workers, migrant workers too are likely to try to move to other sectors when they get the opportunity. Using the immigration system to tie workers to low-wage positions for long periods creates risks of exploitation, including by limiting mobility away from specific employers (Sumption, 2019).

## **(ii) The value of key workers**

If immigration policy is to facilitate migration to lower-paid essential occupations not just to meet short-term peaks in demand, but rather over the medium and long term—and especially if workers are expected to be able to move between sectors—then governments must consider the longer-term economic impacts of these workers when developing immigration policy.

Research on the economic impacts of low-wage workers (e.g. impacts on wages, employment, productivity and prices) has generally found that these are relatively small (Migration Advisory Committee, 2018). The implications of this finding for policy are, however, disputed. Some suggest that because low-skilled immigration does not appear to have large costs, it can safely be allowed; while others conclude that because it does not appear to have large benefits, it is not needed and can safely be restricted (Borjas, 2016). This makes decisions about immigration into low-wage jobs largely a political question—one that will be informed by public opinion towards workers in these jobs.

The fact that low-wage migrant workers help to produce goods and services that society values has been recognised in past research. For example, immigration can reduce the prices of non-tradable services such as housekeeping and gardening (Cortés, 2008), construction (Migration Advisory Committee, 2018) and childcare (Cortés and Tessada, 2011). However, this type of impact has been less salient in public debates about migration than other potentially negative impacts, such as effects on wages or public finances (Allen and Blinder, 2016). In general, past research has shown that respondents hold more negative attitudes towards low-skilled than high-skilled workers regardless of respondents' own educational levels and income (e.g. Naumann et al, 2018; Hainmueller and Hiscox, 2010, Hainmueller and Hopkins, 2015). This, however, might have changed since the COVID-19 outbreak, with the media and political elites highlighting the positive contribution of migrants working in key sectors of the economy, including those in low-skilled occupations.

### **(iii) Findings the right response to the demand for essential workers**

Governments should consider the role of migration alongside other potential solutions to labour demand in essential industries. These include whether demand can be met from the domestic labour force by increasing wages and improving working conditions, or by relying on labour-saving technologies.

A feature of the labour market under the pandemic—one that does not apply to other peaks in demand that policymakers are more used to addressing—is that increased demand for certain workers takes place at the same time as mass layoffs of workers in other industries (Adams-Prassl et al., 2020; Bell and Blanchflower, 2020). There are, however, some limitations to the transferability of workers across industries, especially if the skills required by the occupations in demand are very different to those of unemployed workers, or if the pay and working conditions are particularly unattractive, even for unemployed workers. This partially explains why many employers still prefer to recruit from abroad even in periods of high domestic unemployment (Ruhs and Anderson, 2010). It also highlights the need to explore employment transition data carefully in the future to understand which low-skilled occupations actually have entry from other low-skilled occupations and understand transferability of workers across these occupations.

The scope for automation as an alternative to migration in essential roles is more complicated. There is some evidence that low-wage migration may discourage the adoption of labour-saving technologies (Lewis, 2011). However, not all jobs can be easily automated, including some 'essential worker' roles such as social care. Even where technologies exist, implementing them may be expensive or require skills that managers lack (for example in small businesses with tight profit margins).

## **IV. An illustration using data for the UK**

In this section, we use the 2019 UK Labour Force Survey to illustrate the high dependence on the migrant workforce in some sectors that are deemed essential in the COVID-19 emergency and discuss the implications for future immigration policy. The UK has a long history of UK recruiting 'key workers' from abroad, especially for the National Health Service

(Simpson et al., 2010). However, the COVID-19 emergency comes at a time of policy uncertainty when the UK is on the verge of shifting to a new immigration system as a result of the Brexit process.

### **(i) The proposed post-Brexit immigration policy in the UK**

Early in 2020, the government published a blueprint for its future immigration policy, to be implemented after the post-Brexit transition period when freedom of movement comes to an end (Home Office, 2020). The proposed rules represent a fundamental change to previous policy in that they will end free movement and substantially restrict the migration of EU citizens into jobs that are not considered high-skilled (Home Office, 2020). Crucially, both EU and non-EU citizens coming to work in the UK will be subject to the same immigration rules for the first time in decades, which entails meeting specific skills, salary and language requirements. Potential migrants would need to have a job offer for a position that is classified as requiring qualifications at the Regulated Qualifications Framework (RQF) level 3 or above, which is roughly equivalent to completing compulsory education to age 18. They would also need to be paid at least £25,600 (or a higher, occupation-specific rate in higher-paying occupations). Jobs on a list of 'shortage occupations', yet to be determined, or with a PhD in a subject relevant to the job, might qualify at lower salaries, so long as it is no less than £20,480. The new immigration rules follow the recommendations of the UK Migration Advisory Committee to lower the skill threshold, from graduate-level job to those requiring A-level or equivalent education, and to lower the salary threshold from £30,000 that currently applies to non-EU citizens applying for long-term work visas (Migration Advisory Committee, 2018).

These proposals prompted debate about the idea of 'skills' in the immigration system and the contributions of workers in low-skilled occupations, with some commentators criticising this terminology (e.g. McGovern, 2020). Some of the criticism includes the overreliance on educational credentials and the exclusion of soft skills, which are valued in both the labour market and educational settings (Heckman and Kautz, 2012).

This criticism became more relevant in the context of the current pandemic, when the contributions of key migrant workers at all skill levels have received considerable media attention (e.g. The Guardian, 2020). This included, most notably, migrant nurses and doctors working for the NHS, who would likely be eligible for visas under the proposed immigration system, but also those in social care or food manufacturing, who would not.

### **(ii) Foreign-born workers and key occupations in the UK**

The UK government published in March 2020 a list of occupations and sectors considered critical to the COVID-19 response (Cabinet Office and the Department for Education, 2020). This list is not exhaustive and leaves some room for interpretation as to which occupations, based on the Standard Occupational Classification (SOC), can be included. A detail explanation of the list of occupations and industries likely to be considered essential are included in Table A1 of the Online Appendix. The Online Appendix also includes Table A2, which identifies the list of essential workers using the European Commission guidelines

(European Commission, 2020) as reference, but our empirical analysis follows the UK list. See also Fassani and Mazza (2020) for a discussion of related issues in different contexts.

Key workers are primarily identified using the UK SOC 2010 at either 3 or 4 digit level and the Standard Industrial Classification (SIC) 2007. In the analysis below we use data from the 2019 UK Labour Force Survey to shed light on the share of workers in each industry who are likely to be classified as essential and explain the current migrant-share of each. Importantly, we also provide these shares for EU and non-EU migrants in order to highlight the implications of the proposed immigration system after the end of the transition period.

Table 1 shows the share of likely essential workers in each economic sector, ranging from 95.1% of workers in the health sector to 3.5% in hospitality and accommodation industries. Most of the businesses in the latter two industries have been shut down due to the social distancing measures imposed by the government to slow the spread of the virus (Cabinet Office and the Department for Education, 2020), which makes them about the most negatively affected industries during the pandemic (Joice and Xu, 2020).

Migrant workers account for a substantial share of the essential workforce in key industries, such as transport and storage (18.8% of essential workers are foreign born) or information and communication (24.2%). Of particular interest is the health sector, where migrants account for 18.6% of the essential workforce. The split across the EU and non-EU also provides interesting dynamics. In the case of the health industry more than two-thirds of the migrants come from outside the EU, while other sectors such as transport and storage are dominated by EU migrants.

**Table 1. Share of likely essential workers in each industry, by place of birth (employees and self-employed aged 16 and above)**

Industry sector	Share of likely essential workers in each industry (%)	Share of foreign born among likely essential workers (%)			Share of foreign born among all workers (%)		
		EU born	Non-EU born	All foreign born	EU born	Non-EU born	All foreign born
Health	95.1	5.2	13.4	18.6	5.2	13	18.2
Primary Sector	74.2	4.9	4	8.9	5.3	3.9	9.2
Social Work & Residential Care	72.9	5.2	11.5	16.7	5.1	10.6	15.7
Education	69.1	4.7	7.4	12.1	4.8	7.6	12.4
Information & Communication	49.4	7	17.1	24.1	6.7	14.3	21
Public Administration	49.4	2.7	6.1	8.8	3	5.5	8.5
Transport & Storage	43.7	10.2	8.5	18.7	11.2	12.5	23.7
Financial, Insurance & Real State	28.2	13.6	9.5	23.1	10.3	7.4	17.7
Manufacturing	24	4	11.7	15.7	5	10.1	15.1
Professional & Scientific	18.5	8.2	9.9	18.1	6.9	9.4	16.3
Retail	17.2	4.1	9.7	13.8	5.2	7.5	12.7
Other Services & Recreational Activities	13.8	10.6	8.4	19	7.8	7.9	15.7
Support Services and Administration	11.5	7.7	10.9	18.6	9.5	10	19.5
Construction	8.9	5	8.6	13.6	6.6	4.6	11.2
Hospitality and Accommodation	3.5	16.1	22	38.1	11.5	13.7	25.2



All industries	38.2	6.2	9.9	16.1	6.9	8.9	15.8
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Source: Labour Force Survey 2019 (average of 4 quarters, waves 1 and 5 only)

Notes: Based on UK government guidelines (see the Online Appendix for details).

Table 2 provides a list of occupational groups where more than 70% of workers are likely to be essential. The share of foreign-born workers is particularly high in certain high-skilled essential occupations, such as health professionals (26.9%) and IT and telecommunications professionals (23.2%). However, foreign-born workers are also overrepresented in essential low- and medium-low skilled occupations. For example, EU migrants account for over 10% of road transport drivers and workers in elementary agricultural occupations. Interestingly, non-EU migrants, whose migration into low-skilled jobs is highly restricted, are also strongly represented in some low- or medium-low skilled occupations which are deemed to be essential, such as caring personal services (13.6%) and elementary administration occupations (11.7%). This reflects the fact that work visas are not the only immigration routes allowing migrant workers into the country, with other routes such as family, study and asylum playing a key role (Ruiz and Vargas-Silva, 2018).

**Table 2. List of occupational groups where more than 70% of workers are likely to be essential (employees and self-employed aged 16 and above)**

Occupations based on SOC 2010 (3 digit)	Share of foreign born among essential (%)		
	EU born	Non-EU born	All foreign born
Health Professionals	8.8	18.1	26.9
IT and Telecommunications Professionals	7.7	15.6	23.2
Nursing and Midwifery Professionals	5.9	16.2	22.1
Caring Personal Services	5.3	13.6	18.9
Road Transport Drivers	10.7	7.2	17.9
Other Drivers and Transport Operatives	7.7	10.1	17.9
Elementary Admin Occupations	5.2	11.7	16.9
Science, Engineering and Production Technicians	7.9	8.3	16.2
IT Technicians	4.8	10.8	15.6
Engineering Professionals	6.3	9.0	15.3
Welfare Professionals	3.5	10.9	14.4
Teaching and Educational Professionals	4.9	8.0	12.9
Therapy Professionals	5.4	7.1	12.5
Elementary Agricultural Occupations	10.3	1.7*	12.1
Health Associate Professionals	3.9	7.1	11.0
Childcare and Related Personal Services	4.1	6.7	10.9
Legal Professionals	3.7	6.0	9.7
Welfare and Housing Associate Professionals	1.6	7.5	9.0
Transport Associate Professionals	6.3*	2.1*	8.4*
Senior Officers in Protective Services	2.8*	4.6*	7.3*
Protective Service Occupations	2.3	3.2	5.5

Admin Occupations: Government and Related Organisations	1.6	2.7	4.3
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Source: Labour Force Survey 2019 (average of 4 quarters, only waves 1 and 5)

Note: \* indicates a cell with fewer than 10 observations. Based on UK government guidelines (see the Online Appendix for details).

### (iii) Post-Brexit policy implications

Under the newly proposed post-Brexit immigration rules (Home Office, 2020), migrants applying for a general work visa must have an offer for a middle-skilled job or higher and be paid the general salary threshold for workers above age 25 (set at £25,600). Applicants coming to work on a shortage occupation, yet to be determined, will have a lower salary threshold of £20,480. The new rules will take effect from 1 January 2021, assuming that the transition period is not extended. Table 3 reports the share of likely essential workers who would not qualify for a general work visa under the proposed post-Brexit immigration rules. For reference, the same table for non-essential workers is included in the Online Appendix (Table A4). For purposes of simplicity, we will not take into consideration the specific salary thresholds that apply to high-paying occupations and that are typically higher than the general salary threshold. We also do not explicitly model the fact that certain occupations are likely to face rates of pay determined by official pay scales (e.g. the NHS 'Agenda for Change' pay rates) and thus would be exempt from the £25,600 threshold. Finally, we removed 18-24 year olds because younger people would face the new entrant rate.

The results show that around 53% of EU-born and 42% of non-EU born full-time employees in essential occupations do not meet the proposed skills requirement or salary threshold. Close to 45% of EU-born employees and 31.5% of non-EU born full-time employees in essential occupations do not meet the proposed skills requirement because the job does not require a sufficient duration of training. This share is higher for EU-born workers as would be expected given that EU migrants have not been subject to any restrictions on moving to and working in the UK. Care workers, food processing operatives or van and truck drivers could not qualify for a Tier 2 (general) work visa under the new immigration rules despite working in essential occupations. About 10% of EU and non-EU born essential workers are in jobs requiring qualifications at or above RQF 3, but their annualised earnings are below the general salary threshold. However, some of them are in occupations that are expected to be exempt from the £25,600 salary requirement and instead would be paid according to public-sector pay scales, including nurses and teachers. Other occupations, such as engineering technicians, would need to be included on the shortage occupation list in order to be exempt from the salary requirement and face a lower rate of no less than £20,480.

Taken together, however, it is clear that the skills requirement is a crucial factor determining eligibility of key worker roles for work visas – changing salary requirements without changing the skill requirement would have a relatively limited impact. Similarly, the question of whether a job is classified as RQF 3 or above is more important than inclusion on the shortage occupation list, since only 6% of key workers meet the RQF 3 requirement but have salaries between £20,480 and £25,600.

**Table 3. Share of foreign-born workers in likely essential occupations who would not qualify for a work visa under the proposed post-Brexit immigration rules (full-time employees aged 25 to 64)**

	EU born (%)	Non-EU born (%)	All foreign born (%)
Low-skilled job (below RQF 3) or salary below £25,600	53.1	42	46.3
Low-skilled job (below RQF 3) or salary below £20,480	46.4	36.1	40
Low-skilled job (below RQF 3) any salary	44.7	31.7	36.5
RQF 3+ job but salary below £25,600	9.8	9.6	9.7
RQF 3+ job salary between £20,480 and £25,600	6.8	5.9	6.3
RQF 3+ job but salary below £20,480	3	3.7	3.4

Source: 2019 UK Labour Force Survey 2019 (average of 4 quarters, all waves included)

Note: Occupations are considered essential if included in the UK government guidelines (see the Online Appendix for details). Occupations classified as RQF 3/Lower skilled in the Home Office Immigration Rules Appendix J are considered low-skilled and hence do not meet the skill threshold. Estimation of annual earnings based on reported weekly earnings.

The discussion above suggests that the proposed immigration system for the UK is likely to impede the immigration of many ‘essential workers’ to the country. The UK Government could maintain this position and argue that other mechanisms in the labour market and beyond should adjust in order to account for the new restrictions on immigration. Alternatively, the UK Government could decide to facilitate immigration of these workers in the future. There are various ways this could be done. One of the key questions is whether such workers should be given access to the mainstream, long-term work visa system or whether people would be admitted through temporary schemes.

Bringing key workers into the main, long-term work visa system would require an exemption from the skill requirement and probably lowering the salary threshold. Opening this route for these workers would allow them to stay for up to 5 years, bring dependants, and potentially apply for permanent status and eventually citizenship.

Alternatively, the government could consider temporary schemes for key workers. Most temporary labour immigration programmes are employer-driven and have typically been implemented to fill low-wage positions, such as those in the agricultural sector. These types of schemes tend to offer workers more limited rights and few opportunities to stay permanently (Ruhs, 2013). Governments may find employer-driven temporary programmes attractive under certain conditions, i.e. such as if they are concerned that the economic need for workers is only short-term or that the workers’ long-term outcomes will not be good; and/or if they are concerned that workers who stay long term will move out of the sectors to which they were recruited because the jobs are not very desirable. Other temporary labour migration programmes are worker-driven and thus applicants are not tied to specific employers. This is the case of the Youth Mobility Scheme (YMS), which currently admits people aged 18 to 30 from certain non-EEA countries to work in the UK for up to 2

years. However, there is no guarantee that YMS visa holders, who can work in jobs at any skill level, will fill occupations that are unattractive to the local labour force due to their low pay and precarious working conditions.

However, these goals are in tension with other objectives of immigration policy. Temporary schemes with restricted rights to move between employers may reduce labour market efficiency by removing employers' incentives to provide competitive pay and working conditions and preventing mobility into jobs in which workers could be more productive. They may also increase the risk of exploitation (for a review, see Sumption and Fernández-Reino, 2018). And they discourage social and economic integration, a set of processes that take place over time.

## **V. Conclusion**

This paper provides a discussion of important issues to comprehend the implications of the COVID-19 pandemic for future immigration policy. In particular, we focus on understanding if and how future immigration policy should accommodate the need for key workers in a period of emergency. While we discuss this in the context of COVID-19, it is worth noting that there are different types of emergencies to which the same reasoning would apply, such as a war or natural disaster. In addition to discussing conceptual issues, we provide an illustration of the challenges using data for the UK, a country that is currently reformulating its immigration policy.

Our discussion suggests that there are three key aspects for governments to consider in this context. First, whether the management of emergencies themselves requires a certain type of immigration policy. Second, whether the experience of the current pandemic brings to light new information about the 'value' (economic and social) of certain types of immigration. And finally, whether immigration is the right response to pandemic-driven demand or employers should be expected to look for other alternatives.

Taking these issues together, can we conclude that the pandemic should change policymakers' judgment about how essential workers should be treated in the immigration system? On the one hand, it is possible to argue that certain industries and sectors that have strategic value during an emergency need to have (or have access to) a sufficient workforce beforehand, so that they are in a position to provide essential goods and services when an emergency arrives. Deciding exactly which industries should be considered 'strategic' is of course no easy matter and certainly not one that is easily done through statistical analysis. Judgments about whether certain industries should be supported because of their strategic value are likely to be quite subjective.

The current emergency context is also different from other instances of increased demand for certain workers, since it takes place at the same time as mass layoffs of workers in other industries. Therefore, there is more potential than usual to hire from within the domestic labour market (with the caveat that in the past, even in periods of high domestic unemployment, many employers have still preferred to recruit from abroad).

More broadly, it is not clear that the pandemic fundamentally changes what we know about the economic consequences of migration. The findings from existing research on the impacts of migration are quite broad brush. It has shown, for example, that the economic benefits are greatest for migration into high-skilled or well-paid jobs, but provides little guidance on more fine-grained questions such as how many migrant workers should be admitted into each occupation. As a result, governments have always had some leeway to translate an understanding of the economic evidence into quite different policies on the ground – many of which are very restrictive towards low-wage migrant workers, but some of which are more open.

It may thus be that the political impacts of the crisis – how it affects attitudes towards migrant workers and their contributions to society and the economy – will in the long run be more important than any change to policymakers' understanding of how the crisis affects the economics of migration. An important uncertainty for the near future is whether the current emergency will have a major impact on public preferences for different types of immigrant workers in terms of skills. The economic impacts of essential workers in low-wage jobs has been less salient in public debates about migration than other potentially negative impacts such as effects on wages or public finances. If this changes sustainably, the result could be more open immigration policies. If it does not, then it seems likely that governments will continue to follow the long-established trend in high-income countries of maintaining immigration policies that strictly curtail the availability of work visas for 'essential' workers. If, as expected, the COVID-19 pandemic has a strong negative effect on public finances, this could even provide more support for a high-skilled focused immigration policy going forward given the need to pay off large accumulated debt.

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## Online Appendix

The Cabinet Office and the Department for Education jointly published the *Guidance for schools, colleges and local authorities on maintaining educational provision* on 19 March 2020, which included a list of occupations and infrastructure sectors considered essential for the COVID-19 response. Table A1 includes the list of occupations and industrial sectors included in each of the 8 categories of the list. This is the list used in the analysis of the paper. Table A2 includes the list of those occupations and sectors specified by the European Commission (Communication 2020/C 102 I/03) for comparison purposes. The list published by the United Kingdom includes entire industry sectors and hence, compared to the list provided by the European Commission, a higher share of the working population is defined as essential workers (38% vs 21%). Please refer to Table A3 below and Table 1 in the paper.

**Table A1. List of occupations and sectors critical for the COVID-19 response as specified by the Cabinet Office and the Department for Education**

List of occupations and sectors critical for the COVID-19 response as specified by the Cabinet Office and the Department for Education	List of occupations and/or economic sectors included in each of the categories
<p><b>Health and Social care</b> Doctors, nurses, midwives, paramedics, social workers, care workers, and other frontline health and social care staff including volunteers; the support and specialist staff required to maintain the UK's health and social care sector; those working as part of the health and social care supply chain, including producers and distributors of medicines and medical and personal protective equipment.</p>	<p>Based on the Standard Occupational Classification (SOC) 2010 (at 3 or 4 digit) and the Standard Industrial Classification (SIC) 2007 (at 2 or 3 digit)</p> <p>221 Health professionals 222 Therapy professionals 223 Nursing and Midwifery Professionals 321 Health associate professionals 7114 Pharmacy and other dispensing assistants 9271 Hospital porters 923 Elementary cleaning activities (if in health or care sectors) 244 Welfare professionals 323 Welfare and Housing Associate Professionals 614 Caring personal services</p> <p><i>All workers in the following sectors are included:</i> 21 Manufacture of basic pharmaceutical products and pharmaceutical preparation 325 Manufacture of medical and dental instruments and supplies 861 Hospital activities 862 Medical and dental practice activities</p>
<p><b>Education and childcare</b> This includes childcare, support and teaching staff, social workers and those specialist education professionals who must remain active during the COVID-19 response to deliver this approach.</p>	<p>231 Teaching and Educational Professionals 612 Childcare and Related Personal Services</p>
<p><b>Key public services</b> This includes those essential to the</p>	<p>2412 Barristers and judges 2413 Solicitors</p>

running of the justice system, religious staff, charities and workers delivering key frontline services, those responsible for the management of the deceased, and journalists and broadcasters who are providing public service broadcasting.	2471 Journalists, newspaper and periodical editors 2444 Clergy (note: already included in 244 Welfare professionals) 6148 Undertakers, mortuary and crematorium assistants (note: already included in 614 Caring personal services)
<b>Local and national government</b> This only includes those administrative occupations essential to the effective delivery of the COVID-19 response, or delivering essential public services, such as the payment of benefits, including in government agencies and arms length bodies.	1116 Elected officers and representatives 4112 National government administrative occupations 4113 Local government administrative occupations
<b>Food and other necessary goods</b> This includes those involved in food production, processing, distribution, sale and delivery, as well as those essential to the provision of other key goods (for example, hygienic and veterinary medicines).	5111 Farmers 5112 Horticultural trades 5114 Groundsmen and greenkeepers 5119 Agricultural and fishing trades n.e.c. 8111 Food, drink and tobacco process operatives 8223 Agricultural machinery drivers 9111 Elementary Agricultural Occupations 9119 Fishing and other elementary agriculture occupations n.e.c.  <i>The following occupations are included only if workers are in any of the relevant industry sectors listed below:</i> 5431 Butchers 5432 Bakers and flour confectioners 5433 Fishmongers and poultry dressers 711 Sales assistants and retail cashiers 713 Sales supervisors 913 Elementary Process Plant Occupations 925 Elementary Sales Occupations 926 Other Elementary Services Occupations  <i>List of relevant industry sectors:</i> 01 Crop and animal production, hunting and related service activities 03 Fishing and aquaculture 10 Manufacture of food products 11 Manufacture of beverages 4611 Agents involved in the sale of agricultural raw materials, live animals, textile raw materials and semi-finished goods 4617 Agents involved in the sale of food, beverages and tobacco 462 Wholesale of agricultural raw materials and live animals 463 Wholesale food, beverages and tobacco 472 Retail sale of food, beverages and tobacco in specialised stores

<p><b>Public safety and national security</b> This includes police and support staff, Ministry of Defence civilians, contractor and armed forces personnel (those critical to the delivery of key defence and national security outputs and essential to the response to the COVID-19 pandemic), fire and rescue service employees (including support staff), National Crime Agency staff, those maintaining border security, prison and probation staff and other national security roles, including those overseas.</p>	<p>117 Senior officers in protective services 331 Protective service occupations</p>
<p><b>Transport</b> This includes those who will keep the air, water, road and rail passenger and freight transport modes operating during the COVID-19 response, including those working on transport systems through which supply chains pass.</p>	<p>351 Transport associate professionals 4134 Transport and distribution clerks and assistants 8211 Large goods vehicle drivers 8212 Van drivers 8213 Bus and coach drivers 823 Other Drivers and Transport Operatives</p>
<p><b>Utilities, communication and financial services</b> This includes staff needed for essential financial services provision (including but not limited to workers in banks, building societies and financial market infrastructure), the oil, gas, electricity and water sectors (including sewerage), information technology and data infrastructure sector and primary industry supplies to continue during the COVID-19 response, as well as key staff working in the civil nuclear, chemicals, telecommunications (including but not limited to network operations, field engineering, call centre staff, IT and data infrastructure, 999 and 111 critical services), postal services and delivery, payments providers and waste disposal sectors.</p>	<p>212 Engineering professionals 311 Science, Engineering and Production Technicians 213 Information Technology and Telecommunications Professionals 313 Information Technology Technicians 5242 Telecommunications engineers 5245 IT engineers 9211 Postal workers, mail sorters, messengers and couriers 7211 Call and contact centre occupations</p> <p><i>The following occupations included only if workers are in 6411 (central banking) and 6419 (other monetary intermediation):</i> 1131 Financial managers and directors 1150 Financial Institution Managers and Directors 412 Administrative occupations in Finance 353 Business, Finance and Related Associate Professionals 7219 Customer service occupations n.e.c. 7220 Customer service managers and supervisors</p> <p><i>All workers in the following industry sectors are included:</i> 351 Electric power generation, transmission and distribution 352 Manufacture of gas; distribution of gaseous fuels through mains 360 Water collection, treatment and supply 370 Sewerage 381 Waste collection 382 Waste treatment and disposal 390 Remediation activities and other waste management services</p>



**Table A2. List of occupations and sectors critical for the COVID-19 response as specified by the European Commission**

<b>Workers exercising critical occupations</b> , as specified by the Communication from the Commission on Guidelines concerning the exercise of the free movement of workers during COVID-19 outbreak 2020/C 102 I/03	<b>List of occupations and/or economic sectors included in each of the categories</b>  Based on the Standard Occupational Classification (SOC) 2010 (at 3 or 4 digit) and the Standard Industrial Classification (SIC) 2007 (at 2 or 3 digit)
<b>Health and care</b>  Health professionals, including paramedical professionals  Personal care workers in health services, including care workers for children, persons with disabilities and the elderly  Scientists in health-related industries  Workers in pharmaceutical and medical devices industry  Workers involved in the supply of goods, in particular for the supply chain of medicines, medical supplies, medical devices and personal protective equipment, including in their installation and maintenance	221 Health professionals 222 Therapy professionals 223 Nursing and Midwifery Professionals 321 Health associate professionals 7114 Pharmacy and other dispensing assistants 614 Caring personal services  <i>All workers in the following industries are included:</i> 21 Manufacture of basic pharmaceutical products and pharmaceutical preparation 325 Manufacture of medical and dental instruments and supplies 266 Manufacture of irradiation, electromedical and electrotherapeutic equipment 4646 Wholesale of pharmaceutical goods 4773 Dispensing chemist in specialised stores 861 Hospital activities 862 Medical and dental practice activities
<b>Information and communication</b>  Information and Communications Technology Professionals  Information and Communications Technicians and other technicians for essential maintenance of the equipment	213 Information Technology and Telecommunications Professionals 313 Information Technology Technicians 5242 Telecommunications engineers 5245 IT engineers
<b>Engineering and science</b>  Engineering professionals such as energy technicians, engineers and electrical engineering technicians  Science and engineering associate professionals (includes water plant technicians)	212 Engineering professionals 311 Science, Engineering and Production Technicians
<b>Persons working on critical or otherwise essential infrastructures</b> (due to vagueness of the statement, we include the occupations and sectors mentioned by the UK government)	9211 Postal workers, mail sorters, messengers and couriers 7211 Call and contact centre occupations  <i>The following occupations included only if workers are in 6411 (central banking) and 6419 (other monetary intermediation):</i>

<p>Staff needed for essential financial services provision (including but not limited to workers in banks, building societies and financial market infrastructure), the oil, gas, electricity and water sectors (including sewerage), information technology and data infrastructure sector and primary industry supplies to continue during the COVID-19 response, as well as key staff working in the civil nuclear, chemicals, telecommunications (including but not limited to network operations, field engineering, call centre staff, IT and data infrastructure, 999 and 111 critical services), postal services and delivery, payments providers and waste disposal sectors.</p>	<p>1131 Financial managers and directors  1150 Financial Institution Managers and Directors  4123 Bank and post office clerks  412 Administrative occupations in Finance  353 Business, Finance and Related Associate Professionals  7219 Customer service occupations n.e.c.  7220 Customer service managers and supervisors</p> <p><i>All workers in the following industries are included:</i>  06 Extraction of crude petroleum and natural gas  351 Electric power generation, transmission and distribution  352 Manufacture of gas; distribution of gaseous fuels through mains  360 Water collection, treatment and supply  370 Sewerage  381 Waste collection  382 Waste treatment and disposal  390 Remediation activities and other waste management services</p>
<p><b>Protective services workers</b></p> <p>Firefighters/Police Officers/Prison Guards/Security Guards/ Civil Protection Personnel</p>	<p>331 Protective service occupations</p>
<p><b>Food</b></p> <p>Food manufacturing and processing and related trades and maintenance workers</p> <p>Food and related products machine operators (includes food production operator)</p>	<p>8111 Food, drink and tobacco process operatives  8223 Agricultural machinery drivers  9111 Elementary Agricultural Occupations</p> <p><i>The following occupations are included only if workers are in any of the relevant industry sectors listed below:</i>  5431 Butchers  5432 Bakers and flour confectioners  5433 Fishmongers and poultry dressers  711 Sales assistants and retail cashiers  713 Sales supervisors  913 Elementary Process Plant Occupations  925 Elementary Sales Occupations  926 Other Elementary Services Occupations</p> <p><i>List of relevant industry sectors:</i>  01 Crop and animal production, hunting and related service activities  03 Fishing and aquaculture  10 Manufacture of food products  11 Manufacture of beverages  4611 Agents involved in the sale of agricultural raw materials, live animals, textile raw materials and semi-finished goods  4617 Agents involved in the sale of food, beverages and tobacco  462 Wholesale of agricultural raw materials and live animals  463 Wholesale food, beverages and tobacco  472 Retail sale of food, beverages and tobacco in</p>

	specialised stores
<b>Transport workers</b> , in particular: Car, Van and Motorcycle Drivers , Heavy Truck and Bus Drivers (includes Bus and tram drivers) and ambulance drivers, including those drivers who transport assistance offered under the Union Civil Protection Mechanism and those transporting repatriated EU citizens from another Member State to their place or origin; Airline pilots; Train drivers; wagon inspectors, maintenance workshops' staff as well as the infrastructure managers' staff involved in traffic management and capacity allocation; Maritime and inland navigation workers	351 Transport associate professionals 4134 Transport and distribution clerks and assistants 8211 Large goods vehicle drivers 8212 Van drivers 8213 Bus and coach drivers 823 Other Drivers and Transport Operatives
Fishermen	9119 Fishing and other elementary agriculture occupations n.e.c.
Staff of public institutions, including international organisations, in critical function	1116 Elected officers and representatives 4112 National government administrative occupations 4113 Local government administrative occupations 2412 Barristers and judges 2413 Solicitors

**Table A3. Share of likely essential workers in each industry, by place of birth (employees and self-employed aged 16 and above), as detailed by the European Commission guidelines**

Industry sector	Share of likely essential workers in each industry (%)	Share of foreign born among likely essential workers (%)		
		EU born	Non-EU born	All foreign born
Health	55.1	6.1	15.4	21.5
Primary sector	54.9	6.0	5.1	11.1
Information & communication (incl. IT)	46.2	7.3	17.5	24.8
Transport & storage	42.7	10.5	8.5	19.0
Public administration and defence	39.9	2.7	5.2	7.9
Manufacturing	22.9	15.1	9.5	24.6
Financial, insurance & real state	21.4	4.4	12.1	16.5
Professional & scientific	17.4	8.5	10.0	18.5
Retail	13.3	11.0	8.5	19.4
Support services and administration	8.9	8.9	9.6	18.5
Construction	8.3	5.1	8.7	13.9
Other services & recreational activities	7.1	4.3	12.6	16.9
Social work & residential care	6.7	6.8	11.8	18.6
Education	4.2	5.4	6.1	11.5
Hospitality and accommodation	2.8	19.6	27.2	46.7
<b>All industries</b>	<b>21.0</b>	<b>7.7</b>	<b>10.6</b>	<b>18.2</b>

Source: Labour Force Survey 2019 (average of 4 quarters, waves 1 and 5 only).



**Table A4. Share of foreign-born workers in likely non-essential occupations who would not qualify for a work visa under the proposed post-Brexit immigration rules (full-time employees aged 25 to 64)**

	EU born (%)	Non-EU born (%)	All foreign born (%)
Low-skilled job (below RQF 3) or salary below £25,600	65.2	55.7	60.4
Low-skilled job (below RQF 3) or salary below £20,480	59.4	48.6	54
Low-skilled job (below RQF 3) any salary	54.4	43.8	48.9
RQF 3+ job but salary below £25,600	10.7	11.7	11.2
RQF 3+ job salary between £20,480 and £25,600	5.7	7.1	6.4
RQF 3+ job but salary below £20,480	5	4.6	4.8

Source: 2019 UK Labour Force Survey 2019 (average of 4 quarters, all waves included)

Note: Occupations are considered essential if included in the UK government guidelines (see Table A1 for details). Occupations classified as RQF 3/Lower skilled in the Home Office Immigration Rules Appendix J are considered low-skilled and hence do not meet the skill threshold. Estimation of annual earnings based on reported weekly earnings.