DataFirst

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The South African national lockdown has brought a substantial part of economic activity to a halt for five weeks and the economic impacts are already being felt, including job losses and large increases in the number of people going hungry. One way of estimating which workers are vulnerable to job loss is to determine which workers can and cannot continue to work during the lockdown. There are two groups of individuals who can continue work: workers in essential services or producing essential goods, and those whose work allows them to work from home.

To estimate who is more likely to be able to work and who is not we use Statistics South Africa's Quarterly Labour Force Surveys (QLFSs), which ask a representative sample of individual workers detailed questions to then classify the industry they work in ("Retail Trade In Food, Beverages And Tobacco" or "Growing of crops") and their occupation ("Spaza shop owner" or "Nursing and midwifery professionals"). We use the Post-Apartheid Labour Market Series (PALMS) version of the Quarterly Labour Force Survey data from 2017, 2018 and the first two quarters of 2019 (Kerr et al 2019). Unfortunately, Statistics South Africa has had to stop in person fieldwork, and has also stopped the Quarterly Employment Statistics firm Survey, so actual job losses will be difficult to estimate until these surveys resume. One obvious answer is for the Department of Labour to report new UIF claimant numbers, but these will only cover those whose employers pay UIF on their behalf, ie informal and low earning workers will not be counted, and these workers are likely to be hardest hit, as we discuss below.

In order to estimate how many workers in South Africa are classified as essential we use Government Gazette Numbers 11 062 and 11089 (the update on 16 April), which stipulate which industries, workers and services are essential. We use this to classify industries at the three-digit industry level in PALMS as essential or not, as well as assigning shares of employment in some industries where only some workers in the industry are likely to be essential workers (for example "land transport" or "Central government activities"). We also used occupation data to identify essential workers who cannot be identified solely through their industry- security guards and spaza shop owners are two important examples.

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The occupation data from the QLFS can also be used to classify occupations into those that can plausibly done from home and those that cannot. The classification we use comes from a recent paper (Dingel and Neiman, 2020) that estimated that 37% of Americans could work from home. The authors classified occupations as feasible to work from home or not based on their occupational context and activities using data from the Occupational Information Network (O*NET), a detailed occupational survey collated by the U.S. Bureau of Labour Statistics. For example, ability to work from home was coded depending on to what degree an occupation was required to work outdoors, operate vehicles, or use mechanised equipment, amongst other examples.

Some jobs may feasibly be done at home in the US, but not in South Africa. Teachers for example, are classified as able to work from home by Dingel and Neiman (2020), but in South Africa most primary and secondary teachers cannot work from home for reasons of access to internet on the parts of both teachers and students. We therefore adjust the Dingel and Neiman (2020) classification based on our own judgement for South Africa's context. Our classification of whether workers can work from home or are essential are available here. https://sites.google.com/site/andrewnicholaskerr/working-papers/Public%20files.zip.

Results

Using the QLFS we estimate that 26.7% of the employed before lockdown began would have been working in essential industries or occupations, or around 4.5 million workers. This is an overestimate of the number of essential workers currently working under lockdown, since some essential industries are not running at full capacity. Our methodology is useful because it is a way of estimating which workers are more likely to suffer job loss, based on whether they are essential workers or can work from home. If the definition of what industries are essential is widened our methods can be used to estimate how many and which workers are more likely to be able to return to work under less stringent lockdowns.

We estimate that there are approximately 750 000 agricultural workers, 650 000 health workers and 600 000 security guards who are all classified as essential. There are another 400 000 essential workers in food and beverage manufacturing, 300 000 in food retail and petrol stations, 250 000 mine workers (assuming 50% go back to work under the expanded list of essential industries), 200 000 minibus taxi drivers and 100 000 spaza shop owners. Police officers, the SANDF, correctional services workers, and workers in banking and insurance make up other substantial groups, with another 500 000 in other smaller industries.

Working from home is possible only for relatively skilled workers, because of the nature of tasks undertaken by skilled and unskilled workers. We estimate that 13.8% of the employed in South Africa could feasibly work at home, or just over 2 million people. Those who could work at home are all in more highly skilled occupations who undertake tasks as part of their jobs that could be done at home. We estimate that 65% of senior managers and 56% of professionals could work from home. But no workers in low skilled occupations could work from home, since their jobs involve tasks that require them to be at their workplace.

63% of workers are neither essential nor could work from home, which is around 10.5 million workers. The most severe job losses are likely to be concentrated amongst this group of workers. In the bottom half of the

earnings distribution only 28% of workers are either essential or could work from home. In contrast 61% of workers in the top 10% of the earnings distribution could work at home or are considered essential, meaning that low earnings workers face much higher probabilities of job loss.

Further results are provided in Figure 1 and 2. Figure 1 shows the overall breakdown of the employed into categories of essential work, work at home, neither of these, or both of these. We further detail the distribution of essential workers by 1-digit industry categories and those who could work from home by 1-digit occupational code. Figure 2 shows the share of categories essential, home worker, both and neither by earnings decile.

The estimates we have discussed are derived from household surveys and so there is some uncertainty about the true proportion of those that can work at home or do essential services. The 95% confidence interval for the total number of workers who cannot work from home and are not essential is 10.2 to 10.8 million. The confidence interval for the proportion of workers in essential services is 26% and 27.4%, ie the uncertainty is low. The estimates for groups with much smaller sample sizes (the number of spaza shop owners, for example) are more uncertain and therefore have wider confidence intervals. Readers are welcome to email us for these results.

Conclusion

Job losses resulting from lockdown will be much more likely amongst workers who cannot work from home and are not in essential services. We estimate that this group of workers constitutes just under two thirds of those employed before the lockdown and is overrepresented in the bottom half of the earnings distribution, where only 28% of the employed could work from home or are considered essential. Our methods could be used to estimate the number of extra workers who could go back to work if the lockdown is further eased, and which types of workers would be affected by these changes.

References

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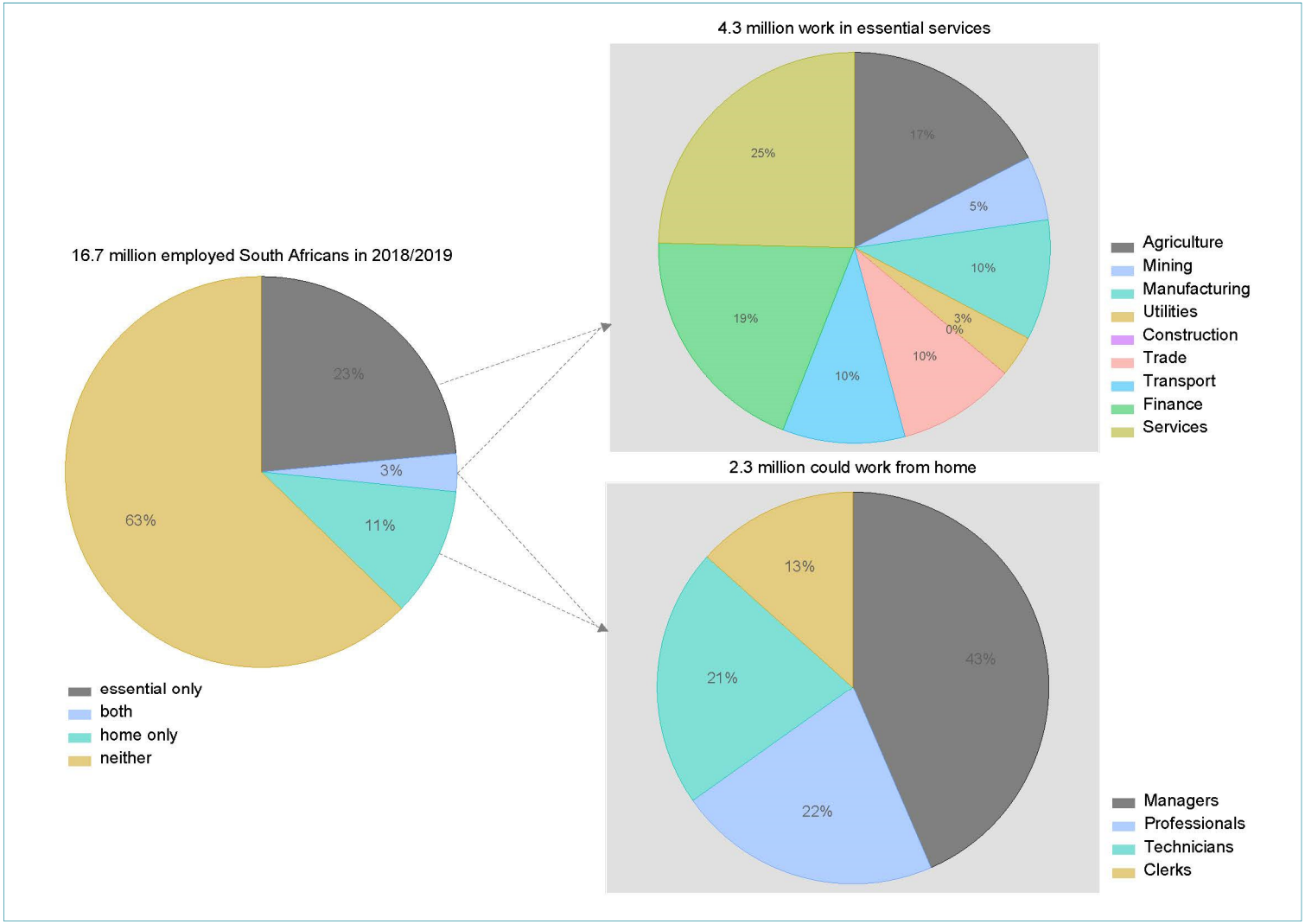
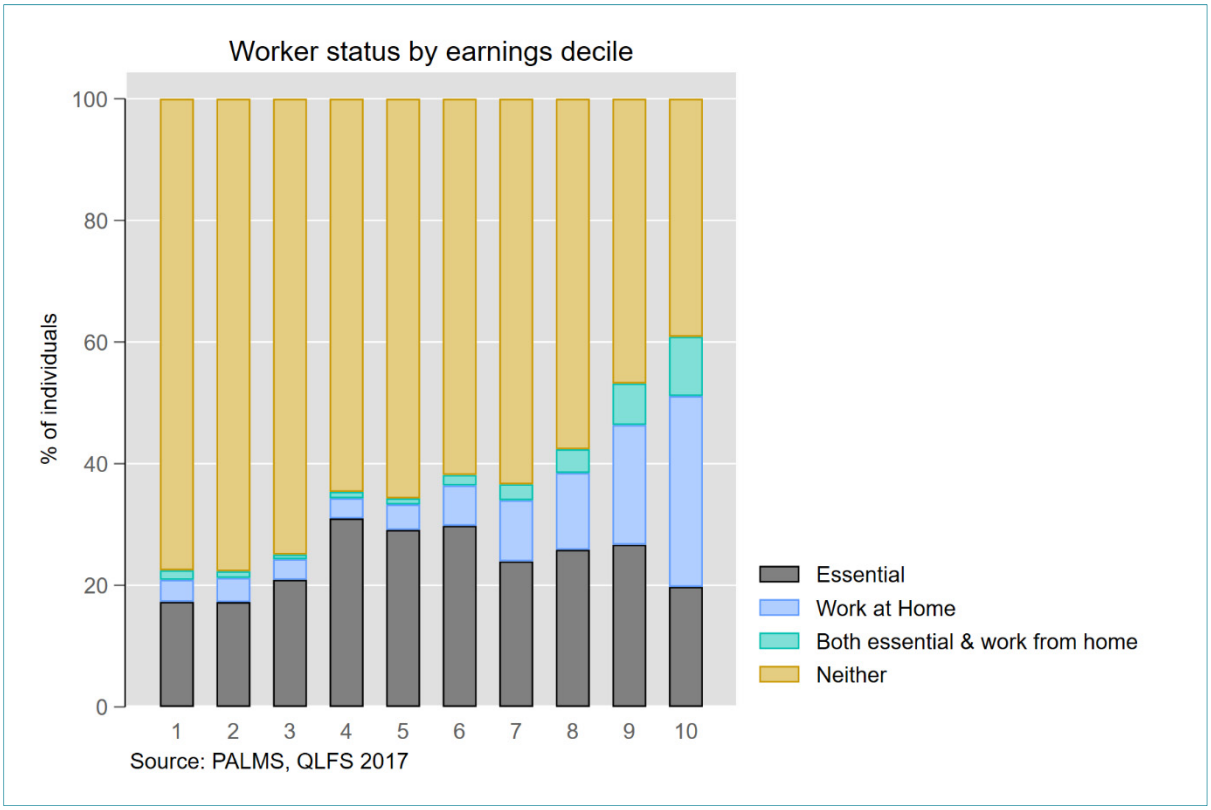
Hardy, W. (2016). Occupation classification crosswalks – from O*NET-SOC to ISCO. Institute for Structural Research (IBS), Warsaw, Poland. Available online: https://ibs.org.pl/en/resources/occupation-classifications-crosswalks-from-onet-soc-to-isco/

Figure 1: The breakdown of those working in essential services or potentially working from home in South Africa



Source: PALMS, QLFS 2018-2019

Figure 2: Worker Status by Earnings Decile



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DataFirst is a research data service dedicated to giving open access to data from South Africa and other African countries.

We promote high quality research by providing the essential Open Research Data infrastructure for discovering and accessing data and by developing skills among prospective users, particularly in South Africa.

We undertake research on the quality and usability of national data and encourage data usage and data sharing.

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