

Article

Impact of reweighting on Labour Force Survey key indicators, UK: 2020

Indicative estimates of the LFS reweighting methodology on key indicators for January to March 2020 to October to December 2020.

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1 . Other pages in this release

[Impact of reweighting on Labour Force Survey key indicators, UK countries: 2020](#)

2 . Main points

- As part of continuing work to improve Labour Force Survey estimates (which have been affected by changes to survey operation caused by the coronavirus (COVID-19) pandemic), [weighting methodology](#), improving the UK, EU and non-EU born population estimates, will be implemented from 15 July 2021, for periods from January to March 2020.
- The impact on headline measures of rates is relatively small but there is a larger impact on estimates of levels and changes in levels.
- Indicative estimates suggest UK unemployment and economic inactivity rates are higher by up to 0.1 and 0.2 percentage points respectively compared with current estimates, and employment rates are lower by up to 0.3 percentage points by the end of 2020.

3 . Overview of Labour Force Survey reweighting

Generally, all first interviews in the Labour Force Survey (LFS) are conducted face to face. At the start of the coronavirus (COVID-19) pandemic, all face-to-face interviewing was suspended, switching to telephone-only interviewing.

The immediate impact of this was a significant fall in the response rate for the survey. We therefore increased the number of people selected to help maintain a large enough pool of responses. However, over time it became clear that the move to telephone-only interviewing had introduced an increased non-response bias to the survey.

In October 2020, as an initial step to mitigate this, we introduced housing tenure-based weights into the survey as detailed in the article [Coronavirus and its impact on the Labour Force Survey](#).

While the introduction of these weights constituted a significant improvement, it was acknowledged that further improvement work was required. In particular, it has been noted that the increase in non-response from those with a non-UK country of birth or nationality has caused challenges.

In January 2021, we reported on [Understanding the impact of Covid-19 on UK employment](#) and in March we published an article looking at [Coronavirus and the impact on payroll employment](#). In May, an article was published regarding [Labour Force Survey weighting methodology](#), giving details of further improvements planned, making use of information from the HM Revenue and Customs (HMRC) Real Time Information (RTI) system to provide estimated population weights, with the intention to apply this in labour market publications from July 2021.

This article presents indicative impacts of using the new population weights and methodology for some of the main labour market series, for periods from January to March 2020, up to the end of 2020. On 15 July 2021, we will be publishing data on the new basis for March to May 2021, with final revisions for earlier periods.

4 . Methodology

Prior to this change in methodology, Labour Force Survey (LFS) responses were weighted to population projections based on mid-year population estimates that used assumptions that predate the coronavirus (COVID-19) pandemic. Evidence from HM Revenue and Customs (HMRC) Real Time Information (RTI) suggests that the population may not have moved in line with those projections, particularly with regards to non-UK born people.

In addition, a change to the non-response bias means that we appear to have a poorer response from some subsets of the population, in particular those with a non-UK country of birth. This resulted in a lower proportion of responses coming from those with a non-UK country of birth and as such, falling estimates for numbers of these people in the population. At the same time, because of weighting responses that used previous total UK population projections, this fall meant that we then had a large rise in our estimates of people with a UK country of birth.

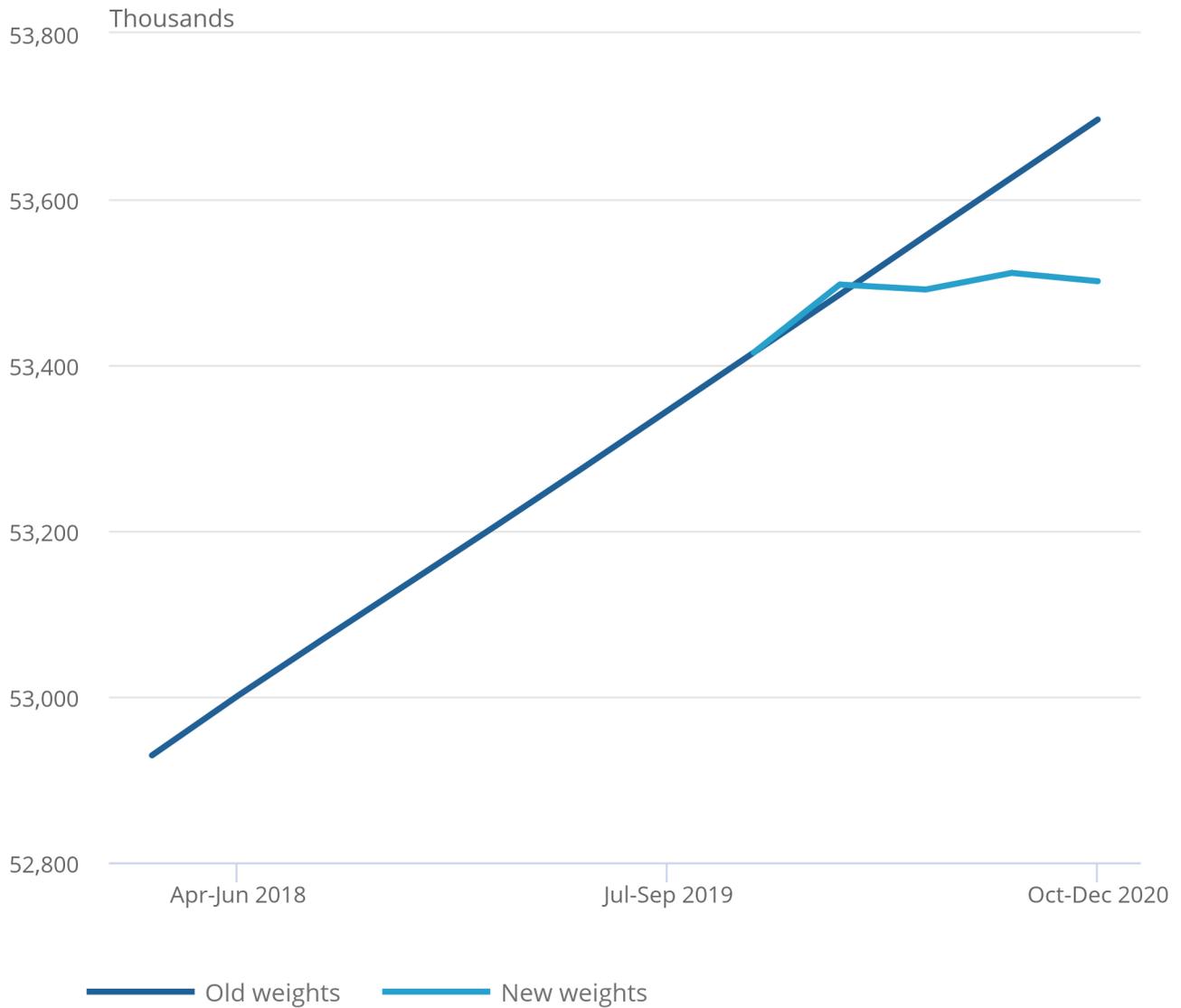
To counter this, the new methodology uses new modelled population totals for UK, EU and non-EU country of birth as its weighting control totals. The new population totals that are used in LFS weighting are obtained by applying a year-on-year growth rate by country of birth (UK, EU, non-EU) and area to the 2019 LFS estimates by country of birth and area. The growth rates for the EU and non-EU subpopulations are obtained by applying a model, based on change in year-on-year growth rates in HMRC RTI total payrolled employees by nationality and area. For the UK-born subpopulation, provisional estimates of year-on-year natural change are used.

Figure 1: New weighting methodology lowers the LFS population over the pandemic

Population used in the weighting of the LFS, UK (aged 16 years and over), between January to March 2018 and October to December 2020

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Population used in the weighting of the LFS, UK (aged 16 years and over), between January to March 2018 and October to December 2020



Source: Office for National Statistics – Labour Force Survey

Figure 2: New weighting methodology revises UK-born population down, while non-UK born components are revised up

UK, EU and non-EU born components of LFS UK population weights (aged 16 years and over), between January to March 2018 and October to December 2020

[Download the data](#)

As a result, the pattern of the data time series of the 2020 and 2021 population estimates is broadly similar to the 2019 pattern – the HMRC RTI-based growth rates do not change it substantially.

HMRC RTI data by nationality are currently only available until December 2020. For quarters that include a month after December 2020, the modelled population growth rates of October to December 2020 are used.

This means that estimates of the size of the UK and non-UK born populations are being used as inputs into the survey, whereas under normal operation they would be outputs.

5 . Impact of reweighting on key indicators

Figures 3, 4 and 5 show the main labour market series giving the indicative impact of applying the new weights. The full range of labour market outputs taking this into account will become available over the coming months as part of our normal release schedule, starting with the release on 15 July 2021.

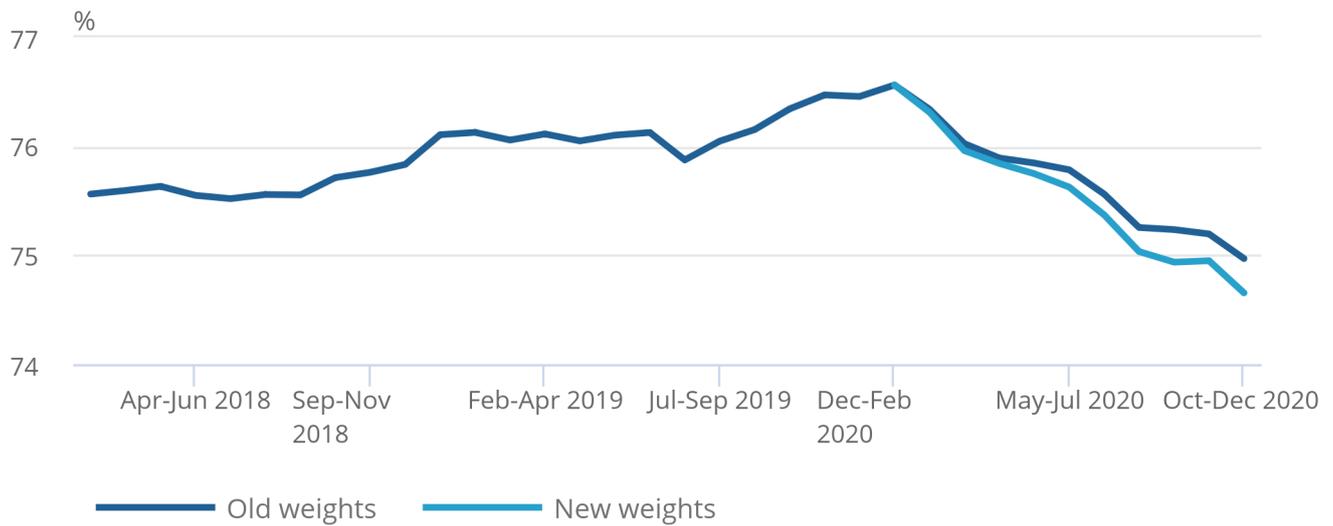
We have said previously that these improvements would be likely to have a larger impact on the estimates of levels and therefore changes in levels over the course of the coronavirus (COVID-19) pandemic. Estimates of rates were considered more robust and likely to be less impacted. This is indeed the case.

Figure 3: New weighting methodology lowers the LFS employment rate over the pandemic

UK employment rate (aged 16 to 64 years), seasonally adjusted, between January to March 2018 and October to December 2020

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UK employment rate (aged 16 to 64 years), seasonally adjusted, between January to March 2018 and October to December 2020



Source: Office for National Statistics - Labour Force Survey

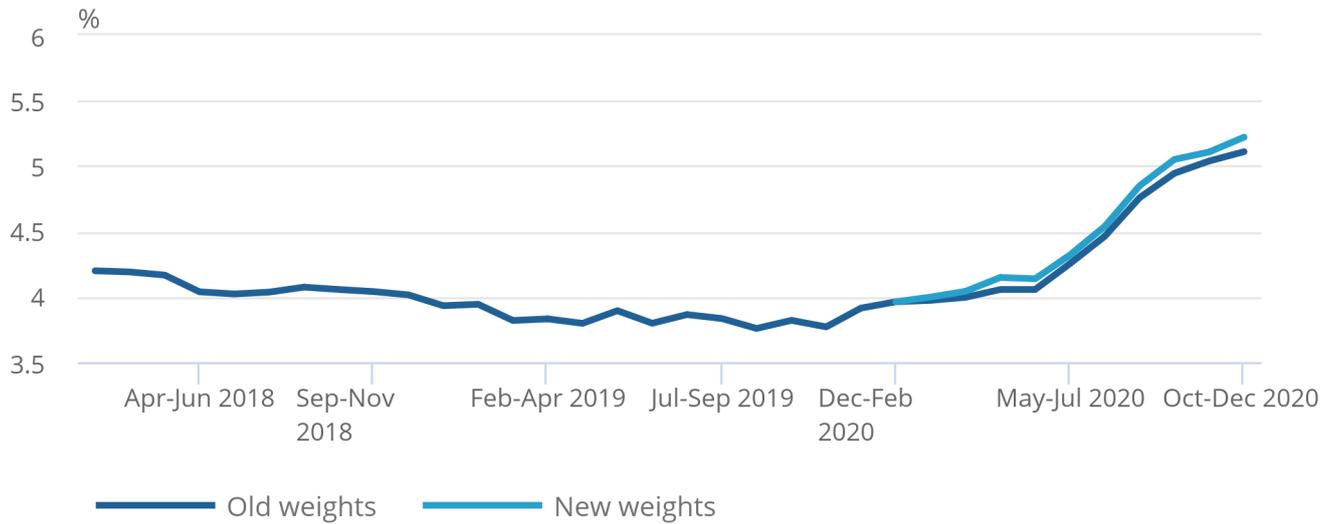
Indicative estimates suggest the employment rate has followed a similar pattern but has fallen around 0.3 percentage points more by the end of 2020 than previous estimates indicated.

Figure 4: New weighting methodology slightly raises the LFS unemployment rate over the pandemic

UK unemployment rate (aged 16 years and over), seasonally adjusted, between January to March 2018 and October to December 2020

Figure 4: New weighting methodology slightly raises the LFS unemployment rate over the pandemic

UK unemployment rate (aged 16 years and over), seasonally adjusted, between January to March 2018 and October to December 2020



Source: Office for National Statistics - Labour Force Survey

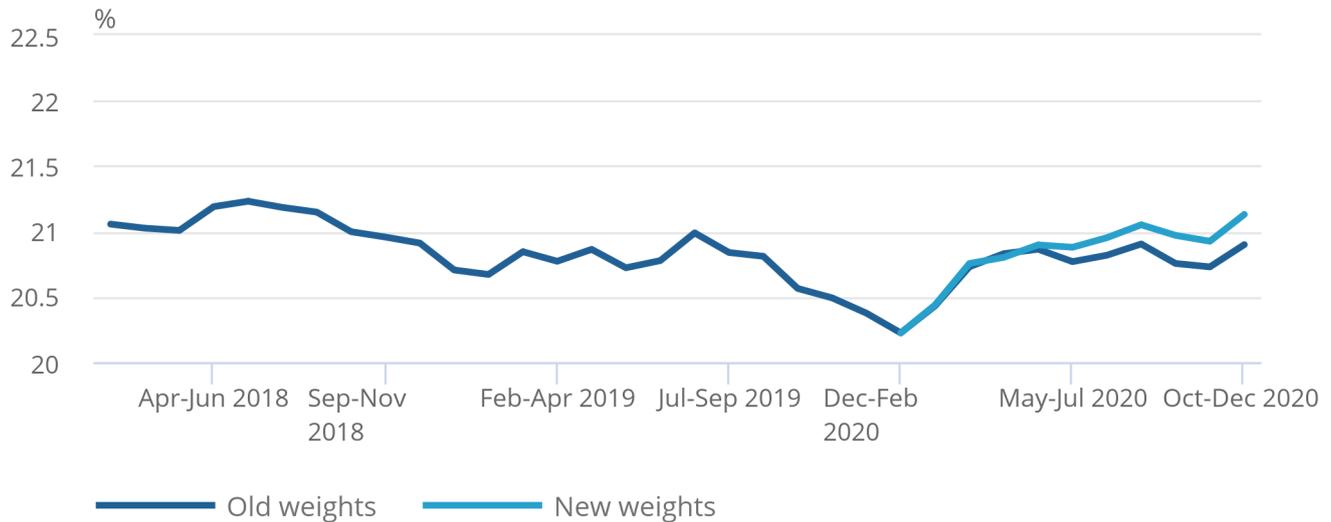
Indicative estimates suggest the impact on the unemployment rate is smaller, increasing about 0.1 percentage points more by the end of 2020.

Figure 5: New weighting methodology increases the LFS economic inactivity rate over the pandemic

UK economic inactivity rate (aged 16 to 64 years), seasonally adjusted, between January to March 2018 and October to December 2020

Figure 5: New weighting methodology increases the LFS economic inactivity rate over the pandemic

UK economic inactivity rate (aged 16 to 64 years), seasonally adjusted, between January to March 2018 and October to December 2020



Source: Office for National Statistics - Labour Force Survey

Finally, indicative estimates suggest the increase in the economic inactivity rate may be around 0.2 percentage points higher by the end of 2020.

While impacts on rates are small, the indicative impacts on levels are larger. Table 1 gives an indication of the impact on the estimates of levels for each quarter of 2020. With the reduced modelled UK population total, the fall in employment from October to December 2019 to October to December 2020 is now cumulatively around 250,000 larger.

Table 1: Indicative impact on employment, unemployment and economic inactivity levels, UK, seasonally adjusted

	Employment 16 and over (thousands)	Unemployment 16 and over (thousands)	Economic Inactivity 16 to 64 (thousands)
Oct to Dec 2019	32,934	1,290	8,478
Old weight	33,005	1,365	8,457
Jan to Mar 2020	New weight 33,012	1,374	8,462
Difference	7	9	5
Old weight	32,671	1,381	8,641
Apr to Jun 2020	New weight 32,605	1,407	8,645
Difference	-66	26	4
Old weight	32,507	1,624	8,662
Jul to Sep 2020	New weight 32,350	1,648	8,704
Difference	-157	24	42
Old weight	32,393	1,744	8,664
Oct to Dec 2020	New weight 32,149	1,771	8,728
Difference	-244	27	64

Source: Office for National Statistics - Labour Force Survey

6 . Future developments

On 15 July 2021, we will publish the normal tables that are released monthly as part of the labour market release, using the new and improved population and methodology basis. In addition, we will publish tables covering labour market status by [country of birth](#), [nationality](#), [ethnicity](#) and [disability](#). These tables will include estimates of levels, which had been suspended awaiting reweighting.

On 17 August, we will update the remaining Labour Force Survey (LFS) tables in the labour market release that are normally published on a quarterly basis, including figures relating to industry, socio-economic classification, earnings and labour market flows.

Following these releases, we intend to update our outputs that make use of the Annual Population Survey and household versions of our datasets in the subsequent months. We will then subsequently update our [population of the UK by country of birth and nationality](#) output, which is dependent on these data.

The new estimates, in particular regarding the size of the levels and changes, constitute an improvement in the LFS estimates compared with those previously published. However, the population figures involved are still based on partial information and may be further refined when more data become available.

7 . Related links

[Employment in the UK](#)

Bulletin | Released 15 June 2021

Estimates of employment, unemployment and economic inactivity for the UK.