

Article

# Impact of reweighting on Labour Force Survey key indicators: 2022

Indicative estimates of the Labour Force Survey (LFS) reweighting methodology on key indicators for the UK and countries of the UK, between January to March 2020 and October to December 2021.

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# 1 . Main points

- Reweighted Labour Force Survey (LFS) estimates will be published on 14 June 2022 for periods from January to March 2020, using updated Pay As You Earn (PAYE) Real Time Information (RTI) data.
- The impact on UK headline measures of rates is very small, but there is a slightly larger impact on estimates of levels and changes in levels; all UK changes are, though, within usual sampling variability.
- Indicative estimates suggest that, compared with current estimates, UK unemployment rates are largely unchanged; UK employment rates are slightly lower, by up to 0.1 percentage points, and UK economic inactivity rates are slightly higher, by up to 0.1 percentage points.
- The revisions for Northern Ireland are larger, because of the introduction of the Northern Ireland non-response bias adjustment.

## 2 . 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, therefore we switched to telephone-only interviewing so the survey could continue. This, however, led to several impacts that we have managed. The immediate impact 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.

Over time it became clear that the move to telephone-only interviewing had introduced an increased non-response bias to the survey. We therefore took further action in October 2020, when we introduced housing tenure-based weights into the survey. This is detailed in our [Coronavirus and its impact on the Labour Force Survey](#) article.

While the introduction of these weights constituted a significant improvement, further improvement work was needed. In particular, to mitigate the increase in non-response from those with a non-UK country of birth or nationality. In July 2021, we used HM Revenue and Customs (HMRC) Real Time Information (RTI) data to [improve the population weights used in the estimation of the labour market](#).

In March 2022, we published [updated RTI payrolled employees by NUTS1 region and nationality](#), which will be used in the upcoming reweighting exercise. We will also address two issues that came from the previous reweighting exercise.

This first issue is that when calculating three-month averages for the Pay As You Earn (PAYE) Real Time Information (RTI), the preceding three-month average was used in error. For example, for the October to December 2021 period, the RTI data used were for September to November 2021. This led to a slight overestimation of the non-UK population by approximately 0.5%. The impact on LFS economic activity estimates at national level was mostly below 0.1%, and the impact on rates was less than 0.02 percentage points. All of these impacts were within the sampling error for these estimates.

The second issue is that the estimates for Northern Ireland did not have the non-response bias adjustment applied. This was because of the availability of detailed geographic information at the time of processing. The impact on UK headline rate estimates were expected to be less than 0.1 percentage points.

In addition, we have been able to quality assure the estimates from the latest reweighting exercise against preliminary data, still undergoing processing, from the 2021 Census to provide reassurance in the results.

This article provides an indicative impact of applying the new weights on key indicators for January to March 2020 to October to December 2021. On 14 June 2022, we will be incorporating the new weights into the labour market release and revising data back to January to March 2020.

### 3 . Impact of reweighting

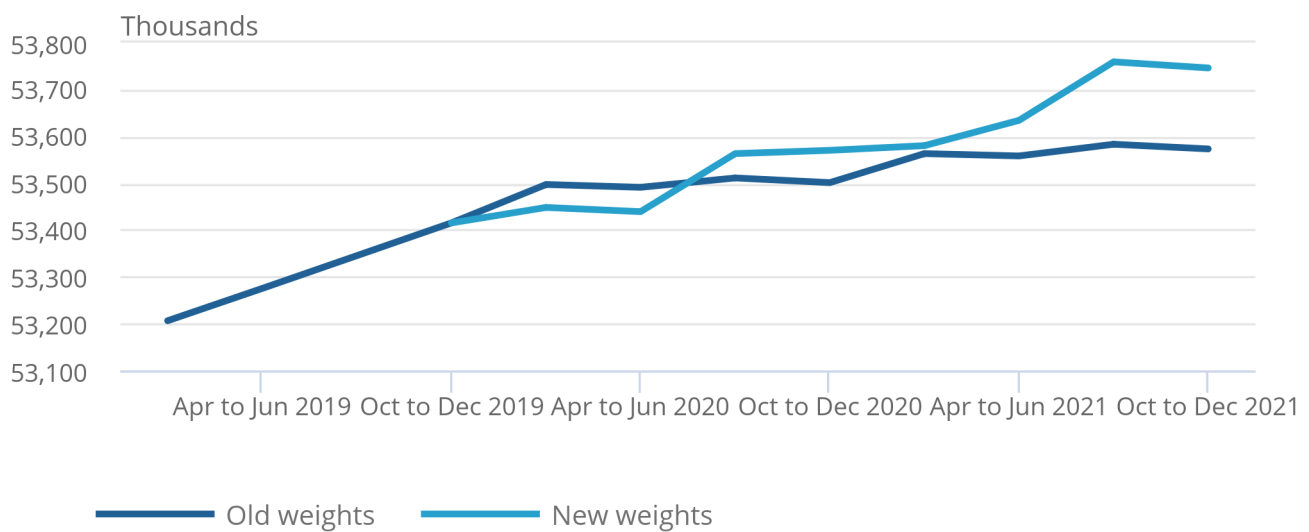
Figures 1 and 2 show the new UK weighting populations that have been used to reweight the Labour Force Survey (LFS).

**Figure 1: The new LFS weighting population has slightly increased from July to September 2020 onwards**

Population used in the weighting of the LFS, UK (aged 16 years and over), not seasonally adjusted, between January to March 2019 and October to December 2021

Figure 1: The new LFS weighting population has slightly increased from July to September 2020 onwards

Population used in the weighting of the LFS, UK (aged 16 years and over), not seasonally adjusted, between January to March 2019 and October to December 2021



Source: Office for National Statistics – Labour Force Survey

Notes:

1. Oct to Dec 2019 has not been reweighted; "new weights" are included here purely for graphing purposes.

**Figure 2: Using the latest RTI nationality data slightly increases the non-UK-born levels**

UK, EU and non-EU-born components of LFS UK population weights (aged 16 years and over), not seasonally adjusted, between January to March 2019 and October to December 2021

Notes:

1. Oct to Dec 2019 has not been reweighted; "new weights" are included here purely for graphing purposes.

## Download the data

[.xlsx](#)

Applying the latest estimates of natural growth in the UK-born population, initially decreased the population aged 16 years and over, compared with the figures used in the current published LFS figures. Towards the latter part of 2021, this became a small upward revision.

The latest Real Time Information (RTI) nationality estimates suggest that the non-UK-born population aged 16 years and over, for both EU and non-EU-born, are higher than currently used in weighting the LFS.

Combining these two effects initially gives us a lower weighting population in early 2020, but a higher overall population since.

Figure 3 shows the indicative revisions to the main labour market series when applying the new weights. The impact on headline measures of rates is very small.

### **Figure 3: The impact of reweighting on headline measures of rates is very small**

**Revisions to the UK employment, unemployment and economic inactivity rates, seasonally adjusted, between January to March 2019 and October to December 2021**

**Source: Office for National Statistics – Labour Force Survey**

Indicative estimates suggest the reweighted UK employment rate is, generally, slightly lower than current published estimates. Estimates suggest they have decreased by up to 0.1 percentage points between January to March 2020 and October to December 2021. Compared with current estimates, UK unemployment rates are largely unchanged. Finally, indicative estimates suggest the UK economic inactivity rate may be up to 0.1 percentage points higher.

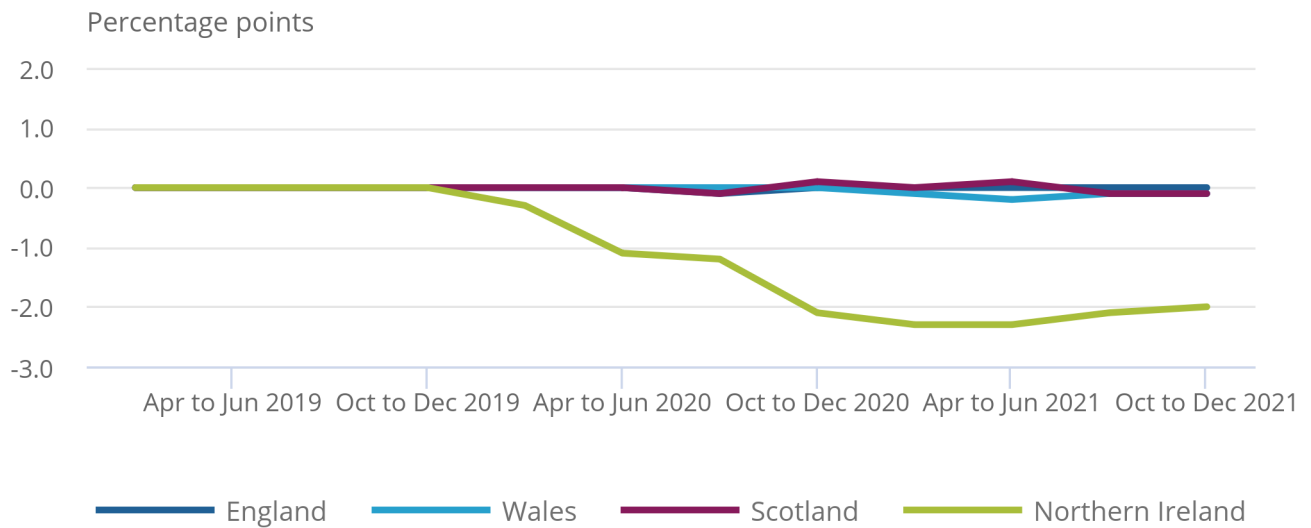
Figures 4, 5 and 6 show the indicative impact of the new LFS weights on the employment, unemployment and economic inactivity rates for the countries of the UK. There has been very little change in the employment, unemployment and economic inactivity rate estimates for England, Wales and Scotland. The larger revisions for Northern Ireland are because of the introduction of the Northern Ireland non-response bias adjustment. Previously, this was not possible as the required data were not available. Indicative estimates suggest that the Northern Ireland employment rate is up to 2.3 percentage points lower. However, the Northern Ireland unemployment rate is up to 0.7 percentage points higher and the economic inactivity rate is up to 2.0 percentage points higher.

**Figure 4: The new weight decreases the employment rate for Northern Ireland, while there is little change in the rate for England, Wales and Scotland**

Revisions to the employment rate (aged 16 to 64 years) by country, seasonally adjusted, between January to March 2019 and October to December 2021

Figure 4: The new weight decreases the employment rate for Northern Ireland, while there is little change in the rate for England, Wales and Scotland

Revisions to the employment rate (aged 16 to 64 years) by country, seasonally adjusted, between January to March 2019 and October to December 2021



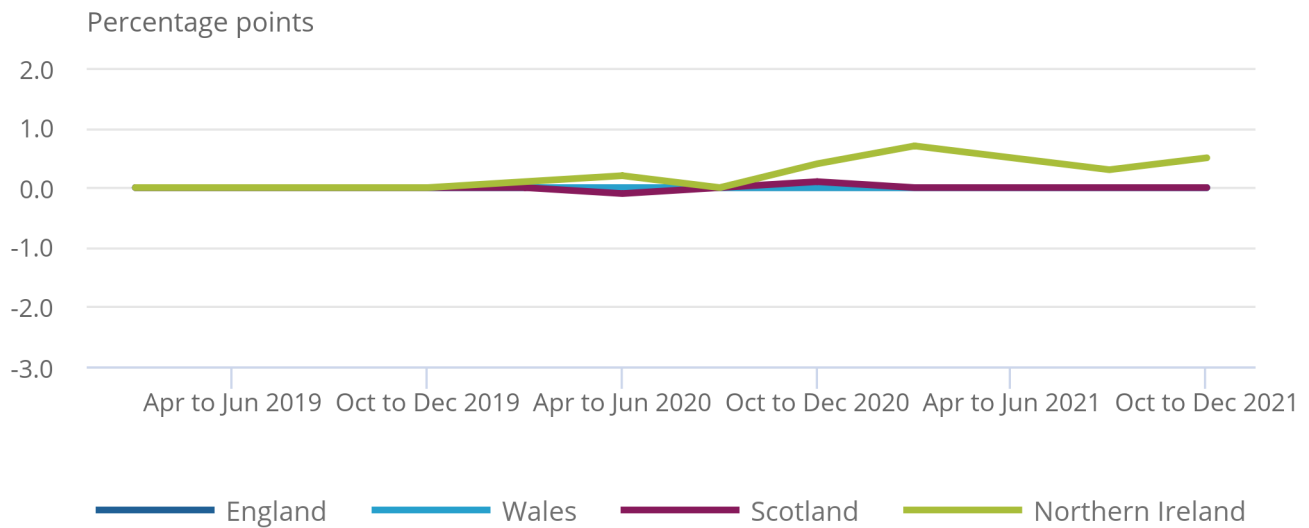
Source: Office for National Statistics – Labour Force Survey

**Figure 5: The new weight increases the unemployment rate for Northern Ireland, while there is little change in the rate for England, Wales and Scotland**

Revisions to the unemployment rate (aged 16 years and over) by country, seasonally adjusted, between January to March 2019 and October to December 2021

Figure 5: The new weight increases the unemployment rate for Northern Ireland, while there is little change in the rate for England, Wales and Scotland

Revisions to the unemployment rate (aged 16 years and over) by country, seasonally adjusted, between January to March 2019 and October to December 2021



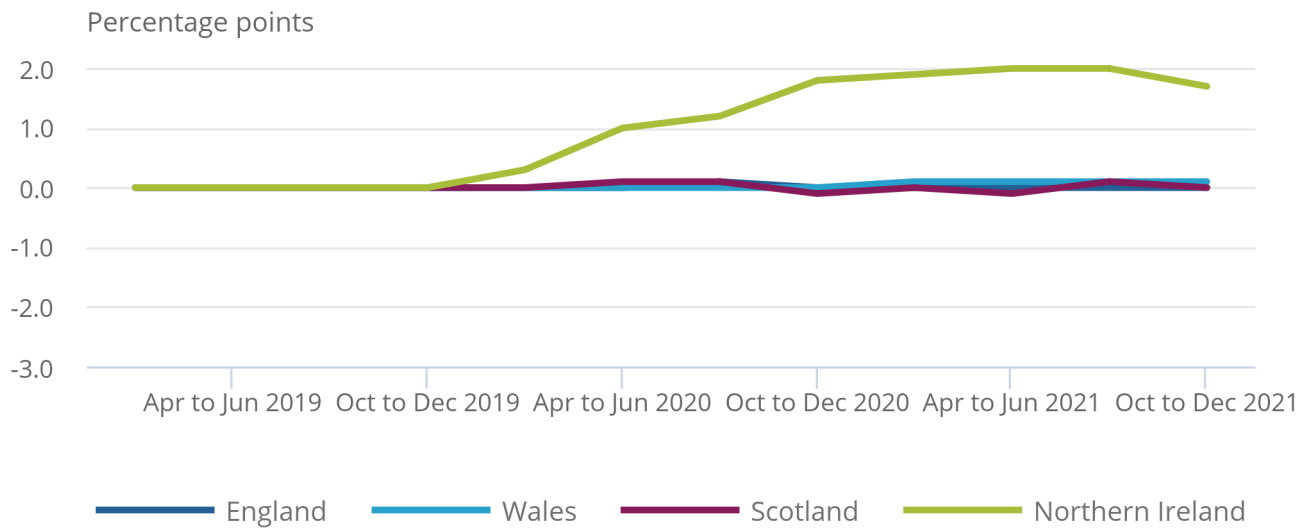
Source: Office for National Statistics – Labour Force Survey

**Figure 6: The new weight increases the economic inactivity rate for Northern Ireland, while there is little change in the rate for England, Wales and Scotland**

Revisions to the economic inactivity rate (aged 16 to 64 years) by country, seasonally adjusted, between January to March 2019 and October to December 2021

Figure 6: The new weight increases the economic inactivity rate for Northern Ireland, while there is little change in the rate for England, Wales and Scotland

Revisions to the economic inactivity rate (aged 16 to 64 years) by country, seasonally adjusted, between January to March 2019 and October to December 2021



Source: Office for National Statistics – Labour Force Survey

While impacts on rates for the UK, England, Wales and Scotland are very small, the indicative impacts on levels are a little larger. Table 1 gives an indication of the impact on the estimates of the levels for the UK and each of the countries, in the three-month period October to December 2021.

Table 1: Indicative impact on employment, unemployment and economic inactivity levels  
UK and countries of the UK, seasonally adjusted, October to December 2021

		<b>Employment 16 years and over (thousands)</b>	<b>Unemployment 16 years and over (thousands)</b>	<b>Economic inactivity 16 to 64 years (thousands)</b>
<b>UK</b>	<b>Old weight</b>	32,485	1,374	8,764
	<b>New weight</b>	32,561	1,381	8,816
	<b>Difference</b>	76	7	52
<b>England</b>	<b>Old weight</b>	27,510	1,192	7,235
	<b>New weight</b>	27,596	1,194	7,260
	<b>Difference</b>	86	2	25
<b>Wales</b>	<b>Old weight</b>	1,475	47	438
	<b>New weight</b>	1,479	47	441
	<b>Difference</b>	4	0	3
<b>Scotland</b>	<b>Old weight</b>	2,646	112	773
	<b>New weight</b>	2,653	112	777
	<b>Difference</b>	7	0	4
<b>Northern Ireland</b>	<b>Old weight</b>	855	24	317
	<b>New weight</b>	833	28	337
	<b>Difference</b>	-22	4	20

Source: Office for National Statistics – Labour Force Survey

## 4 . Future developments

We plan to incorporate the new weights into our labour market outputs and the Labour Force Survey (LFS) and Annual Population Survey (APS) datasets (to include data from March 2020 using the latest [Real Time Information \(RTI\) data](#) and quality assured by preliminary census data) in the following way:



- on 14 June 2022, the monthly Labour Market release will include the normal monthly datasets, the quarterly datasets for labour market status by country of birth and nationality ([A12](#) and [EMP06](#)) and the [Public sector employment tables](#) using the reweighted LFS person datasets
- on 19 July 2022, the LFS two-quarter longitudinal dataset outputs will include our [Labour Force Survey Flows estimates](#)
- on 16 August 2022, reweighted APS regional tables (including latest data for April 2021 to March 2022) and the remaining LFS quarterly tables will be produced
- on 13 September 2022, the workforce jobs estimates will take on the reweighted LFS data
- on 29 September 2022, the Working and workless households in the UK bulletin will use the reweighted LFS household datasets
- on 20 October 2022, the Workless households for regions across the UK bulletin will use the APS reweighted household datasets
- on 26 October 2022, the Children living in long-term workless households in the UK bulletin will use the reweighted LFS household datasets

On 14 June 2022, labour market status by country of birth and nationality will be published using the reweighted LFS datasets, in our [Employment, unemployment and economic inactivity by nationality and country of birth dataset](#). The quality assurance using preliminary census results give confidence in the LFS and APS estimates for the UK, EU and non-EU. However, there remains uncertainty in the detailed country breakdowns as the RTI data are not available at this more granular level. Therefore, the data will be suppressed going forward in the publication tables.

Future LFS and APS reweighting exercises and a review of detailed country breakdowns will be considered alongside our [labour market transformation plans](#).

## 5 . Related links

### [Coronavirus and its impact on the Labour Force Survey](#)

Article | Released 13 October 2020

The impact of changes made to the Labour Force Survey (LFS) in response to the coronavirus (COVID-19) pandemic, and the methods used to adjust the data.

### [Labour Force Survey weighting methodology](#)

Article | Released 17 May 2021

New population weights using Pay As You Earn (PAYE) Real Time Information (RTI) data to allow for changes to LFS collection methods, and changes to population movements in 2020. To be applied to LFS results from July 2021.

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

Article | Released 8 July 2021

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

### [A02 SA: Employment, unemployment and economic inactivity for people aged 16 and over and aged from 16 to 64 \(seasonally adjusted\)](#)

Dataset | Released 17 May 2022

Labour Force Survey summary. This table shows the headline employment, unemployment and inactivity series (seasonally adjusted).

### [A11: Labour Force Survey sampling variability](#)

Dataset | Released 17 May 2022

Labour Force Survey Sampling Variability (95% confidence intervals).

