



Graduate Labour Market Statistics: Methodology Note

Introduction

1. *Graduate Labour Market Statistics* (hereafter referred to as *GLMS*) was first published by the Department for Business, Innovation and Skills (BIS) in December 2014, on a quarterly and annual basis. Responsibility for English Higher Education policy, and hence this publication, transferred to the Department for Education (DfE) in Summer 2016.
2. The *GLMS* publication uses the Labour Force Survey (LFS) data to look at the labour market outcomes of graduates and postgraduates, and compares them with those of non-graduates. The annual version of the *GLMS* publication provides a more detailed focus on the employment and earnings outcomes of graduates by their specific characteristics as well. Due to the devolution of Higher Education policy, only individuals domiciled within England are considered.
3. This document provides guidance for users regarding the generation and interpretation of figures in the *GLMS* publication.

Definitions and Coverage

Graduates, Postgraduates and Non-Graduates

4. *Graduate* – defined as individuals whose highest qualification is an undergraduate degree at Bachelors level. This category also includes those classified as graduates who are currently enrolled in education courses, including studying towards a Master's or PhD.
5. *Postgraduate* – defined as individuals whose highest qualification is any degree higher than an undergraduate degree, such as a Master's or PhD. This category also includes those who have attained a Postgraduate Certificate in Education, as well as those in the category "other postgraduate degrees or professional qualifications".

6. *Non-Graduate* – defined as individuals whose highest qualifications are at a lower level than an undergraduate degree (National Qualification Framework (NQF¹) Level 5 or below). This includes individuals with Foundation Degrees, Apprenticeships, A-Levels or GCSEs as their highest qualification, as well as people with lower or no qualifications. It also includes non-graduates who are enrolled on education courses, such as A-level qualified individuals who are at studying at university. For a list of qualifications included in each definition please see Annex A.
7. Individuals whose highest qualification is at NQF Level 6, 7 or 8 but the qualification is not classed as a degree are not considered as part of this analysis.
8. The definitions have been used to provide information on the outcomes of those that complete a degree, compared to those that do not, to inform Higher Education policy.
9. It should be noted that the definitions of *graduates* and *non-graduates* in Graduate Labour Market Statistics differ from those used in certain other publications which focus on graduate outcomes, such as the Office of National Statistics' (ONS) "Graduates in the Labour Market 2013", which defines graduates as those whose highest qualifications are NQF Level 4 or higher. The statistics in this release are not directly comparable with those publications due to the differences in definitions.

Population

10. Outcomes are presented for two different age groups: the Working Age Population and the Young Population.
11. *Working Age Population* – all individuals domiciled in England aged 16-64.
12. *Young Population* – all individuals domiciled in England aged 21-30.
13. *GLMS* provides a breakdown of outcomes for a 'young' sub-population. This is to reflect the fact that the large majority (89%)² of those studying an undergraduate degree are under the age of 30, and that new entrants to the labour market are likely to have a limited amount of work experience. Analysis of this sub-group allows comparisons between similarly-aged graduates and non-graduates.

¹ <https://www.gov.uk/what-different-qualification-levels-mean/compare-different-qualification-levels>

² See Table 6: <https://www.hesa.ac.uk/data-and-analysis/sfr250/figure-6#>

Employment

14. *Employed* – individuals that had at least one hour of paid employment in the reference week. This includes individuals that worked both full time and part time.
15. *High Skilled Employment* – a job categorised within the Standard Occupation Classification (SOC) codes 1-3. SOC 1-3 includes managers, directors and senior official; professional occupations and associate professional and technical occupations. For more information on SOC please see the ONS website.³
16. *Medium/Low Skilled Employment* – a job categorised within the Standard Occupation Classification (SOC) codes 4-9. SOC 4-9 includes administrative and secretarial occupations; skilled trades' occupations; caring, leisure and other service occupations; sales and customer service occupations; process, plant and machine operatives and elementary occupations.
17. *Unemployed* – individuals that were not in employment during the reference week and were actively seeking work.
18. *Inactive* – also known as the *economically inactive*, these are individuals that were not employed and did not seek work over the reference period or were seeking work over the reference period, but unavailable to start work.
19. *Employment Rate* – the proportion of the total specified population who are employed. The total population will vary based on whether we are focusing on the working age population (16-64 year olds) or the young population (21-30 year olds). For example the employment rate for the working age population would be:

$$\frac{\text{Employed in the working age population (16-64)}}{\text{Total working age population (employed, unemployed and inactive)(16-64)}} \times 100$$

Compared to the employment rate for the young population:

$$\frac{\text{Employed in the young population (21-30)}}{\text{Total young population (employed, unemployed and inactive)(21-30)}} \times 100$$

20. *High Skilled Employment Rate* – the proportion of the total specified population who report being in high skilled employment. The total population will vary based on whether we are focusing on the working age population (16-64 year olds) or

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<https://www.ons.gov.uk/methodology/classificationsandstandards/standardoccupationalclassifications/oc/soc2010>

the young population (21-30 year olds). The high skill employment rate for the working age population is as follows;

$$\frac{\text{High skilled employed in the working age population (16-64)}}{\text{Total working age population (employed,unemployed and inactive)(16-64)}} \times 100$$

21. The high skill employment rate presented in the *GLMS* is not the proportion of those employed that are in a high skilled job; it is the proportion of all graduates that are in a high skilled job. For example, a High Skilled Employment Rate for working age graduates of 70%, would mean that 7 out of 10 of all graduates aged 16-64 were in a high skilled job.
22. *Unemployment Rate* – the proportion of the specified economically active population (i.e. in work or unemployed) who are unemployed. This excludes individuals who are economically inactive. Unemployment is defined under the International Labour Organization (ILO) measure, which assesses the number of jobless people who want to work, are available to work and are actively seeking work. This is consistent with the ONS definition of unemployment. The unemployment rate for the working age population is as follows;

$$\frac{\text{Unemployed in the working age population (16-64)}}{\text{Economically active (employed and unemployed)in the working age population (16-64)}} \times 100$$

23. *Inactivity Rate* – the proportion of the total specified population who report being economically inactive in the labour market. The total population will vary based on whether we are focusing on the working age population (16-64 year olds) or the young population (21-30 year olds). The inactivity rate for the working age population is as follows;

$$\frac{\text{Economically inactive in the working age population (16-64)}}{\text{Total working age population (employed,unemployed and inactive)(16-64)}} \times 100$$

Salaries

24. Populations are specified as above. Median salaries are calculated as the annual equivalent of the *median* gross weekly earnings of individuals who are in full-time employment, including overtime pay. Individuals working on a part-time basis are not included in the earnings analysis. Median salaries are given in nominal terms, so do not account for inflation. They are rounded to the nearest £500, in line with statistics from the Destinations of Leavers from Higher Education surveys⁴.

⁴ https://www.hesa.ac.uk/index.php?option=com_content&view=article&id=1899&Itemid=239#salary

Coverage

25. *GLMS* only covers individuals English domiciled⁵ as authority over Higher Education has been devolved to Scotland, Wales and Northern Ireland.

Data

26. *GLMS* is produced using data from the UK quarterly Labour Force Survey (LFS) - a survey of households living at private addresses in the UK. Its purpose is to provide information on the UK labour market which can then be used to develop, manage, evaluate and report on labour market policies. For more information on the methodology and quality of the LFS data please refer to the ONS website.⁶
27. As the results presented in these publications are based on survey data, they represent estimates. Therefore, any findings should be interpreted with caution as they may not necessarily be statistically significant.
28. *Weighting*: The LFS collects information on a sample of the population. To enable us to make inferences from this sample to the entire eligible population we must apply weights to the sample data. This entails assigning each responding or imputed case a weight, which can be thought of as the number of people in the population which that case represents. These weights are calculated such that they sum to a set of known population totals, and the weights of an entire dataset will sum to the eligible population of the UK. For further information on LFS weighting, please refer to the ONS User Guidance for the LFS.
29. Labour Force Survey (LFS) datasets are routinely reweighted in line with population estimates. In 2018 a new weighting variable was introduced, PWT18, to LFS datasets from July-September 2011 onwards. The reweighting project completed by the Office for National Statistics has resulted in the following revisions:
- a. The 2018 weighting has been applied to the 2018 *GLMS* publication
 - b. The results for the years 2006 up to and including April-June 2011 have been calculated using the 2014 LFS weights.

The effect of the change in weighting is generally negligible (usually 0.1 percentage points or zero).

30. *GLMS* only provides simple outcome measures based on survey data and do not control for the differences in characteristics between graduates, postgraduates

⁵ "English domiciled" means that their permanent home is in England.

⁶ <http://www.ons.gov.uk/ons/guide-method/method-quality/specific/labour-market/labour-market-statistics/index.html>

and non-graduates. This means that the outcomes reported may not be wholly attributable to the fact that an individual holds a particular qualification, but instead could reflect other factors, such as their wider skills, experience, or natural ability. That is, other factors such as regional variations, parental background, gender, innate ability or ethnicity may also have an impact on employment and earnings outcomes that we do not measure in this analysis.

31. For more detailed econometric analysis of the earnings and employment differentials between graduates and non-graduates, see research published by the DfE on the relative⁷ and absolute⁸ returns to undergraduate degrees, and previous BIS research on the impact of university degrees on the lifecycle of earnings⁹.
32. The complete R code used in the 2018 GLMS publication, to derive the figures or their roots from the LFS, is included as a separate document that accompanies the publication on the gov.uk website.
33. The SPSS syntax, used in the publications in 2016 and before, to derive the figures or their roots from the LFS is included as a worksheet in the accompanying Excel workbooks available on the gov.uk website.

Conversion of quarterly data for the annual publication

34. All rates in the *GLMS* (employment rates, high skilled employment rates, unemployment rates and inactivity rates) are calculated for each quarter of LFS data individually and then the mean average taken to generate an annual rate, thus accounting for seasonality over the year. Respondents are interviewed for five successive waves at three-monthly intervals and 20% of the sample is replaced every quarter (see Figure 1 below). They provide the data required to calculate the above rates in every quarter for five waves; this method makes sure that there is no double counting of respondents.
35. Respondents only provide earnings data in waves 1 and 5 of the survey compared to other key indicators such as employment that are reported for all waves. The respondent coloured green and circled in Figure 1 below is the same individual sampled. The respondent gives their salary in Q1 2014 and then also

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https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/714517/The_relative_labour_market-returns_to_different_degrees.pdf

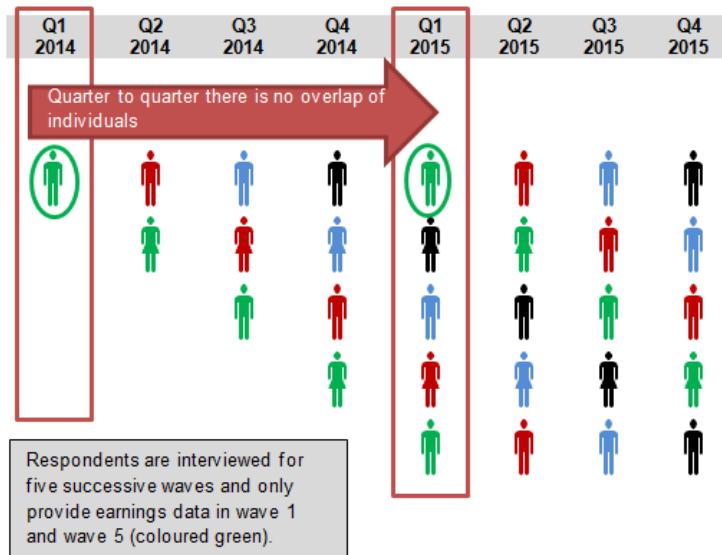
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https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/759278/The_impact_of_undergraduate_degrees_on_early-career_earnings.pdf

⁹ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/229498/bis-13-899-the-impact-of-university-degrees-on-the-lifecycle-of-earnings-further-analysis.pdf

gives their salary in Q1 2015, regardless of whether it has changed or not but not in the three quarters in between.

Figure 1: Labour Force Survey earnings data collection



36. Given that salary data is only collected in one quarter of each given year there is no risk of double counting the salary data of respondents when generating an annual nominal median salary. Therefore all median salary calculations in the *GLMS* give the median of all salary data collected for the specified population over the four quarters of data, thus accounting for seasonality over the year. Although the LFS has a slightly larger sample size in Q2, meaning that marginally more weight is placed on salary data in this quarter when calculating the annual nominal median salary, the benefit of a much larger sample size outweighs this small discrepancy. The method used here avoids calculating the figure for each quarter and then taking a mean average of them (the method used for calculating the above rates), but given the differences in how salary data is collected in the LFS (explained above) this would be a less statistically robust method.

Graduate breakdown definitions

37. The annual *GLMS* publication provides a more detailed focus on the employment and earnings outcomes of graduates by their specific characteristics. The breakdowns included are age group, gender, ethnicity, disability status, degree class, subject group, occupation and industry.
38. *Age groups* – 21-30 year olds; 31-40 year olds; 41-50 year olds; 51-60 year olds.
39. *Gender* – Male; Female.

40. *Ethnicity* – White; Asian; Black; Other. Asian is defined in the Labour Force Survey (LFS) as Asian or Asian British. Black is defined in the LFS as Black, African, Caribbean or Black British. Other combines four groups within the LFS; Mixed or Multiple ethnic groups, Chinese, Arab or Other ethnic group. Other has been combined together as at the disaggregated level the sample sizes were insufficient for robust analysis. The ‘Other’ ethnicity category includes graduates from a wide range of ethnic backgrounds. This category has been included for completeness within the data; however there is likely to be a high level of variation between graduates in this group and caution should be exercised when making comparisons with this group.
41. *Disability status* – Disabled; Not Disabled. This breakdown is based on the legal definition found in the Equality Act (2010) which defines a disability as “*a physical or mental impairment which has a substantial and long-term adverse effect on your ability to carry out normal day-to-day activities*”.
42. *Degree class* – First; Upper second (2:1); Lower second (2:2); Third.
43. *Subject Group* – Science, Technology, Engineering and Mathematics (STEM); Law, Economics and Management (LEM); Other Social Sciences, Arts and Humanities. STEM includes: medicine and dentistry; medical related subjects; biological sciences; agricultural sciences; physical and environmental sciences; mathematical sciences and computing’ engineering’ technology; architecture. LEM includes: law; economics; business and financial studies. OSSAH includes: mass communication and documentation; linguistics (English, Celtic and ancient); European languages; Eastern, Asiatic, African, American and Australasian languages and literature; humanities; arts; education. All of these subcategories are given as they are defined in the Labour Force Survey user guide.
44. *Occupation* – Managers, directors and senior officials (SOC 1); Professional occupations (SOC 2); Associate professional and technical occupations (SOC 3); Medium skilled employment (SOC 4-6); Low skilled employment (SOC 7-9).
45. *Sector* – Manufacturing; Construction; Distribution, hotels and restaurants; Transport and communication; Banking and finance; Public administration, education and health. All of these subcategories are given as they are defined in the Labour Force Survey user guide. Agriculture, forestry and fishing, energy and water and other services were excluded from the analysis due to small sample sizes that meant robust findings were not possible.

Revisions Policy

46. There may be changes to the GLMS statistics produced should there be any changes to the Labour Force Survey questions or coverage, or changes in population weights as recommended by the ONS. Any changes to *GLMS* will be explained in an update to the Methodology Note.

Annex A

List of Qualifications within Each Category

Postgraduate

Master's Degree

PhD or Doctorate

Postgraduate Certificate in Education (PGCE)

Other Postgraduate Degree or Professional Qualification

Graduate

Bachelor's Degree, also referred to as first degrees

Non-Graduate

Examples:

- Foundation Degrees (NQF Level 5)
- Higher National Diploma (NQF Level 5)
- Higher National Certification (NQF Level 4)
- A-Levels (NQF Level 3)
- Advanced Apprenticeship (NQF Level 3)
- GCSEs (NQF Level 2)
- Intermediate Apprenticeship (NQF Level 2)
- National Vocational Qualification Levels 1 - 4 (NQF Levels 1 - 5)
- Foundation Diploma (NQF Level 1)
- GCSE at grades D – G (NQF Level 1)
- No Qualifications

Qualifications not considered in this analysis

Undergraduate degrees that are not at Bachelors level

Professional Diplomas, Certificates or Awards at Levels 6, 7 or 8