

# Longitudinal Educational Outcomes (LEO) from Modern Apprenticeships: 2016/17: Scotland

(Experimental Statistics: data being developed)



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## Advanced Learning and Skills Analysis

This experimental statistics release presents employment and earnings outcomes for completers of Modern Apprenticeships (MA) five years after completion. This publication is the first of its kind, in Scotland, to use the Longitudinal Education Outcomes (LEO) dataset to track the earnings of those who complete MAs.

### Longitudinal Educational Outcomes (LEO): Median total earnings five years after completion

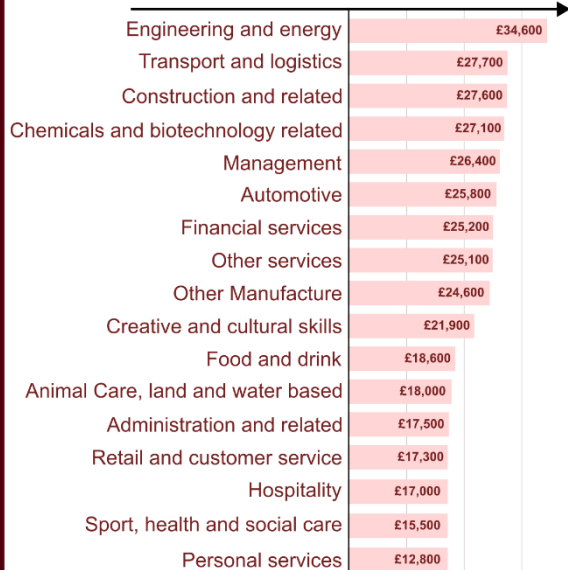


**Completers:**  
2011/12 Tax year  
**Earnings:**  
2016/17 Tax year

The **median total earnings** of successful completers of Modern Apprenticeships (MA) was **£21,000** five years after completion

#### Occupation

Individuals completing MAs in **Engineering and energy** had the **highest** earnings with **£34,600**



Individuals completing MAs in **Personal services** had the **lowest** earnings with **£12,800**

#### Sex



Males earned more than females across **all** occupational groupings



The earnings difference varied across occupational groupings from **£300** to **£9,700**

#### Age

Individuals aged 25+ earned **£4,600** more than those aged 16-19 (age at start of MA)

**16-19** £19,400

**25+** £24,000

#### SIMD



**£18,700**

**£23,200**

Individuals from the 20% least deprived areas earned **£4,500** more than those from the 20% most deprived areas

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Source: Longitudinal Educational Outcomes from Modern Apprenticeships: 2016/17: Scotland



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Experimental Statistics: data being developed

Experimental Statistics are new official statistics that are undergoing evaluation.

These statistics are being published as experimental statistics in order to involve users and stakeholders in their development and as a means to further improve the use of the data in future.

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## Introduction to the Modern Apprenticeships LEO release

Modern Apprenticeships (MAs) provide individuals with the opportunity to secure industry-recognised qualifications at a range of levels while in employment. MAs could be a new team member or an existing employee seeking to increase their capability. MAs also provide a way for businesses to train employees to industry-recognised standards.

This experimental release describes MAs in terms of their SVQ level, as this aligns with how MAs were reported on up until 2018/19. In line with Scottish Government direction, SDS now report on MA statistics by SCQF rather than SVQ level. As this release uses both a completer cohort (2011/12) and tax year (2016/17) that pre-dated this change, it was deemed appropriate to publish on SVQ level to reflect this.

This release covers the median total earnings of those who successfully completed a MA in 2011/12, and are recorded as being in sustained employment in the 2016/17 tax year. Total earnings represent the sum of the annualised PAYE earnings and raw self-assessment earnings. If an individual has earnings only through either PAYE or self-assessment, then their total earnings will be equal to their PAYE or self-assessment earnings

The median earnings presented in this release should not be used as a way to rank occupational groupings or draw any conclusions about earnings gaps, due to the limitations of the LEO data.

- Earnings can vary greatly across different regions of the UK and Scotland. The PAYE and self-assessment systems do not collect information on the location of an individual's employment; meaning we cannot account for any regional variations.
- The PAYE and self-assessment systems do not collect information on the number of hours worked, therefore we cannot make distinctions between part time and full time earnings. As a result gender comparisons should be treated with caution as we know in general more females work part-time compared to males, and this will also apply to certain occupational groupings where there is a higher proportion of part-time workers.

As this is the first release of these data, we carried out quality assurance to ensure the outputs were broadly comparable to similar data sources and that any results were fit for purpose and robust. For this quality assurance we looked at comparable figures from:

- English LEO data for MAs
- Annual Population Survey data
- Apprenticeship Pay Survey data
- Scottish LEO data for Higher Education Institutions (HEIs)

Further information about the data quality is available in the Methodology section of this release.

## Sex and Occupational Grouping

Table 1 shows median total earnings by occupational grouping and sex. The median total earnings of individuals who completed MAs in 2011/12 was £21,000 five years after completion. Males earned more than females across each occupational groupings. The smallest gap for occupational groupings was in 'Financial Services' and 'Creative and Cultural Skills', where males earned £300 more than females. The largest gap was seen in 'Other Services', where males earned £9,700 more.

Overall, females who completed MAs earned £16,000 five years after completion, £9,800 less than males, who earned £25,800. The overall difference in earnings between sexes can partially be explained by the number of males and females in certain occupational groupings. More males in 2011/12 completed MAs in occupational groupings with higher median earnings such as 'Construction and Related', and more females completed MAs in occupational groupings with lower median earnings such as 'Sport, Health and Social Care'. However, males still earn more than females across each occupational groupings.

Further information on what frameworks are contained within each occupational grouping is available in the Glossary section of this release.

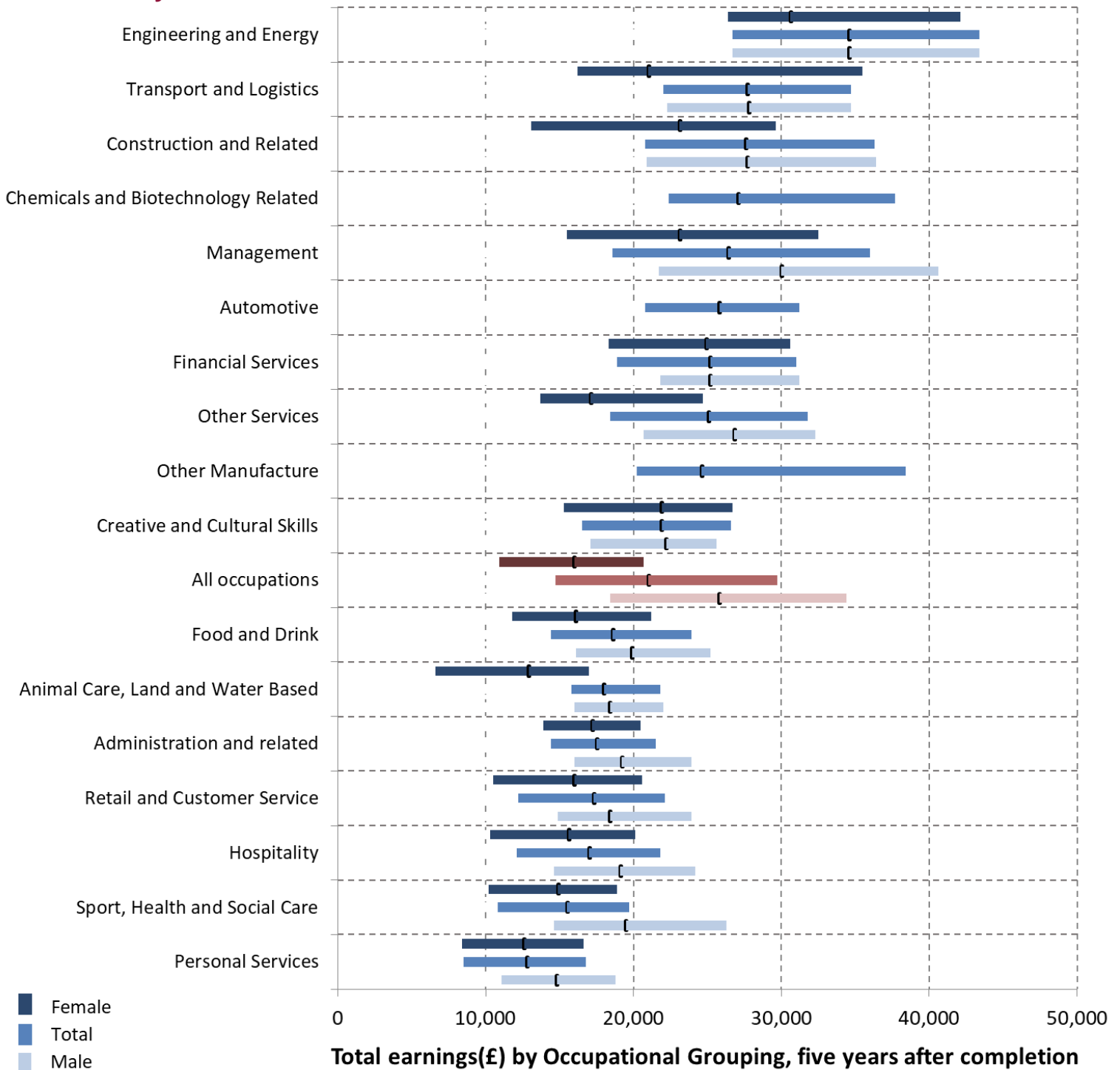
**Table 1: Total earnings for 2011/12 MA completers by sex and occupational grouping: 2016/17 tax year**

Occupational grouping of Framework	Median total earnings 2011/12 cohort (£)		
	Female	Male	Total
Engineering and Energy	30,600	34,600	34,600
Transport and Logistics	21,000	27,800	27,700
Construction and Related	23,100	27,700	27,600
Chemicals and Biotechnology Related	x	x	27,100
Management	23,100	30,000	26,400
Automotive	x	x	25,800
Financial Services	24,900	25,200	25,200
Other Services	17,100	26,800	25,100
Other Manufacture	x	x	24,600
Creative and Cultural Skills	21,900	22,200	21,900
<b>All occupations</b>	<b>16,000</b>	<b>25,800</b>	<b>21,000</b>
Food and Drink	16,100	19,900	18,600
Animal Care, Land and Water Based	12,900	18,400	18,000
Administration and related	17,200	19,200	17,500
Retail and Customer Service	16,000	18,400	17,300
Hospitality	15,600	19,100	17,000
Sport, Health and Social Care	14,900	19,500	15,500
Personal Services	12,600	14,800	12,800

Note: Hours worked are not taken into account.

'x' denotes that data have been suppressed to prevent disclosure.

**Figure 1: Total earnings for 2011/12 MA completers by occupational grouping and sex (lower quartile, median and upper quartile): 2016/17 tax year**



Note: Hours worked are not taken into account.  
Suppressed data not included

## Sex

Table 2 shows median total earnings by sex and SVQ level. Males completing an MA at SVQ level 2 earned £3,700 more than females, with males earning £18,900 compared to £15,200 for females. The gap in earnings is larger for those completing an MA at SVQ level 3 or 4, with males earning £10,900 more than females.

Males completing at MA at SVQ level 2 earned £2,100 more than females completing an MA at SVQ level 3 or 4.

**Table 2: Total earnings for 2011/12 MA completers by sex and SVQ level: 2016/17 tax year**

Sex	Median total earnings 2011/12 cohort (£)		
	SVQ Level 2	SVQ Levels 3 or 4	Total
Female	15,200	16,800	16,000
Male	18,900	27,700	25,800

Note: Hours worked are not taken into account.

## Age

Table 3 shows the median total earnings for completers of MAs five years after completion split by age and SVQ level. Individuals aged 16-19 had lowest earnings of £19,400. The highest earnings were seen for individuals aged 25+, with earnings of £24,000.

This pattern is consistent with the age breakdown across SVQ levels. Those aged 16-19 had the lowest earnings across all SVQ levels, whereas those aged 25+ had the highest earnings.

**Table 3: Total earnings for 2011/12 MA completers by age at start and SVQ level: 2016/17 tax year**

Age at Start of MA	Median total earnings 2011/12 cohort (£)		
	SVQ Level 2	SVQ Levels 3 or 4	Total
16-19 years	16,400	22,400	19,400
20-24 years	17,400	23,200	21,500
25+ years	18,100	26,400	24,000

Note: Hours worked are not taken into account.

## Scottish Index of Multiple Deprivation (SIMD)

Table 4 shows the median total earnings for completers of MAs five years after completion split by SIMD quintiles and SVQ level. Individuals from the 20% most deprived areas (Q1) had the lowest earnings of £18,700.

The highest earnings were seen for individuals from the 20% least deprived areas (Q5), with earnings of £23,200. The largest difference between adjacent quintiles is seen in Q1 and Q2, where individuals from Q2 earned £1,500 more than those from Q1. The smallest difference was between Q4 and Q5, where individuals from Q5 earned £300 more than those from Q4.

Individuals from Q1 consistently have the lowest earnings across all SVQ levels, whereas those from Q5 have the highest. The gap between adjacent quintiles is still the largest between Q1 and Q2 for those completing an MA of SVQ level 3 or 4, however for those completing an MA of SVQ level 2 the gap is largest between Q4 and Q5.

Further information on SIMD quintiles is available in the 'Data Quality' section of this release.

**Table 4: Total earnings for 2011/12 MA completers by SIMD and SVQ level: 2016/17 tax year**

SIMD Quintile	Median total earnings 2011/12 cohort (£)		
	SVQ Level 2	SVQ Levels 3 or 4	Total
Q1 - 20% most deprived	16,200	21,100	18,700
Q2	16,500	22,800	20,200
Q3	17,100	24,200	21,500
Q4	17,200	25,500	22,900
Q5 - 20% least deprived	18,000	26,200	23,200

Note: Only includes Scottish domiciled completers of MAs in Scotland: 2011/12, as SIMD is not available for non-Scottish domiciled completers. Hours worked are not taken into account.

## Methodology

### Background methodology:

Detailed information will be made available in a Methodology document alongside this release: <https://www2.gov.scot/Topics/Statistics/Browse/Lifelong-learning>

Additional detailed information on the LEO data is available in the Department for Education releases: <https://www.gov.uk/government/collections/statistics-higher-education-graduate-employment-and-earnings>

Further detailed information on Modern Apprenticeships in Scotland is available on the Skills Development Scotland website:

<https://www.skillsdevelopmentscotland.co.uk/what-we-do/apprenticeships/modern-apprenticeships/>

### Suppression and rounding:

In line with disclosure control rules, information based on fewer than 11 individuals has been suppressed. This aligns with our previous releases of LEO data. All earnings to the nearest £100.

### Skills Development Scotland (SDS) data collection:

SDS collect data on MA leavers from the Financial and Information Processing System (FIPS) and Corporate Training System (CTS). All data is entered and maintained by organisations contracted with Skills Development Scotland to deliver Modern Apprenticeships.

Data integrity checks are made by SDS on an ongoing basis. Final checks are completed prior to production of reports.

### Data Quality:

Users should be aware of limitations around the data included in this publication;

#### Disability:

A review in 2015/16 established that, in relation to equalities data, there are specific challenges around the collection and comparison of disability rates and the self-disclosure of this information. As a result, it was suspected that there was an under reporting of disability disclosure within MA statistics. Due to this data issue, disability has not been included in this release.

SDS's current disability disclosure question was first asked in 2016/17. This reporting mechanism, alongside other proactive interventions undertaken by SDS with partners to increase participation and disclosure, is likely to have contributed to the increase in disability declaration from 2016/17. With improved self-declaration, it is anticipated disability breakdowns will be included in future releases.



### Ethnicity:

Analysis of the ethnicity data showed that there was a large number of unknowns in the data, such that “Not known” made up one of the largest ethnic groupings for completers in 2011/12. On reviewing this with SDS, it was decided that the data collected on ethnicity was not robust enough to publish on. Data will continue to be monitored with the aim of publishing ethnicity breakdowns in future releases.

### Mode:

The employment data covers those with records submitted through the Pay As You Earn (PAYE) system and the Self-Assessed system. Neither systems collect information on the number of hours worked; therefore, whether an individual is working full-time or part-time cannot be ascertained. We are exploring the opportunity to link the LEO data to the Annual Survey of Hours and Earnings (ASHE), which will allow for a subset of the LEO data to contain information on full-time and part-time work patterns.

### Location of Work:

Earnings can vary greatly across different regions of the UK and Scotland. The PAYE and self-assessment systems do not collect information on the location of an individual’s employment; meaning we cannot account for any regional variations. We are exploring two options to address this:

- To use the latest home address collected by DWP through their Customer Information System (CIS), which is updated whenever an individual notifies a change of address.
- To link LEO data to the Inter-Departmental Business Register (IDBR), which will allow for a subset of the LEO data to contain information on region and sector of employment.

### Career Path:

Different MAs will lead to different career paths, with some careers requiring additional training from their employer after completion of their MA. Some individuals may change career entirely, and the occupation they are in five years after completing their MA may not reflect the occupational grouping of the completed MA.

### Completion of Modern Apprenticeships:

This release focuses on individuals who have successfully completed their MA. Those who have withdrawn early or not completed their MA are excluded from this release, in line with similar published data for higher education outcomes.

#### Time period:

The time period for which employment and earnings data is reported in this publication is five years year after completion. This refers to the full tax year five years after completion. So, for those who completed their MA in the 2011/12 tax year, employment and earnings outcomes relate to the 2016/17 tax year. As MAs are aligned to tax year rather than an academic year, this differs from the time period covered in our LEO release for graduates from universities.

#### Employment outcomes:

Outcomes are presented for completers that have been successfully matched to the Department for Work and Pensions' Customer Information System (CIS). In this publication these individuals are referred to as matched. Matched individuals are only included if they are in sustained employment. Individuals are considered to be in sustained employment if they were employed for at least one day for five out of six months between October and March of the tax year in question or if they had a self-employment record in that tax year.

#### Annualised earnings:

Earnings figures are only reported for those classified as being in sustained employment and where we have valid earnings record from the P14. A P14 is a tax return for an individual employee and must be completed by their employer. Earnings from self-assessment are not included in a P14.

For each individual, the earnings reported for them on the HMRC P14 data for a given tax year are divided by the number of days recorded in employment across that same tax year. The number of days recorded is the total number of days that an individual was employed and not the number of days they have worked, meaning working patterns cannot be determined. This provides an average daily wage that is then multiplied by the number of days in the tax year to calculate their annualised earnings.

This calculation has been used to maintain consistency with our previous LEO statistical releases and provides MAs with an indication of earnings they might receive once in sustained employment.

The annualised earnings calculated are slightly higher than the raw earnings reported in the tax year. This is because the earnings of those who did not work for the entire tax year will be higher when annualised. The difference between the annualised and raw figures decreases as time elapses after completion. Median annualised earnings five years after completion are around £300 higher than the median raw earnings.

All earnings presented are nominal. They represent the cash amount an individual was paid and are not adjusted for inflation (the general increase in the price of goods and services).

## Total earnings:

Earnings in this release are presented as total earnings, which is the sum of the annualised PAYE earnings and raw self-assessment earnings. If an individual has earnings only through either PAYE or self-assessment, then their total earnings will be equal to their PAYE or self-assessment earnings. Total earnings figures are only reported for those in sustained employment through the PAYE or Self-Assessed systems.

## Self-assessment earnings (SA):

Self-assessment earnings only include profits from partnership enterprises and profit from sole-trader enterprises. As the self-assessment data does not include any information on the number of days worked for a tax year, we make the assumption that the recorded earnings through self-assessment relate to the full tax year. This means that unlike the PAYE earnings, the SA earnings are not annualised.

## Scottish Index of Multiple Deprivation (SIMD):

The SIMD ranks small areas (data zones) in Scotland from most deprived to least deprived. The SIMD overall rank is calculated from the individual ranks of seven domains: Income, Employment, Health, Education/skills, Housing, Geographic access, and Crime. The quintiles represent 5 equal-sized groups of the SIMD ranks, with quintile 1 representing the 20% most deprived areas, and quintile 5 representing the 20% least deprived areas.

We have used SIMD 2009 as this was the index that was available during the 2011/12 tax year, when the MAs that this publication focuses on completed their training.

Further detailed information is available in the SIMD publication:

<https://www.gov.scot/publications/scottish-index-multiple-deprivation-2016/>

## Age:

The age of an individual at the start of their MA is used in this release as this aligns with how SDS publish by age and funding bands in their statistical releases.

## Background

The Small Business, Employment and Enterprise Act 2015 enabled the UK government, for the first time, to link higher education and tax data together to chart the transition of graduates from higher education into the workplace. The Department for Education (DfE) commissioned the Department for Work and Pensions (DWP) to link Higher Education Statistics Agency (HESA) records for the whole of the UK to the tax and benefits records.

Following our third release focusing on the employment and earnings of graduates from higher education at universities, we wanted to expand our LEO releases to also include those completing Modern Apprenticeships in Scotland.

This release presents employment and earnings outcomes for Modern Apprentices five years after completion. This publication is the first of its kind, in Scotland, to use the Longitudinal Education Outcomes (LEO) dataset to track the earnings of those who complete MAs, where there is a public funding contribution.

This publication looks at those who completed a Modern Apprenticeship (MA) in Scotland. Figures are presented only for those who successfully completed an MA and have not been split by full time or part time modes of study. On average, matching of over 95 per cent of each completer cohort to tax and/or benefit data has been achieved. This high match rate is most likely due to SDS collecting data on National Insurance Number (NINO). NINO is also included in DWP's Customer Information System (CIS).

The employment data covers those with records submitted through the Pay As You Earn (PAYE) system and records submitted through the self-assessment system. The core purpose of PAYE is to collect tax and its coverage reflects this. Up until April 2013, employers were not required to supply information to HMRC for individuals who earned below the Lower Earnings Limit (LEL) for National Insurance contributions, although for large employers these individuals were thought to be included due to the methods of data transfer. Since then, employers have been required to provide earnings information for all employees if even one employee of the company is paid above the LEL threshold. The self-assessment data captures the activity of individuals with income that is not taxed through PAYE, such as income from self-employment.

Self-assessed earnings are not published in isolation, rather they are included as part of a total earnings figure. See 'Total earnings' under Methodology for more information on this. All figures are based on UK tax, benefit and apprentice records only: activity of those who move abroad to work or study after completion is not reflected in the employment or further study figures. Instead, these individuals are categorised as 'activity not captured'.

## Glossary

**Tax year:** Runs from 6 April to 5 April the following year. For example the 2011/12 tax year ran from 6 April 2011 to 5 April 2012.

**Modern Apprenticeship (MA):** MAs provide individuals with the opportunity to secure industry-recognised qualifications at a range of qualification levels while in employment. MAs can be a new team member or an existing employee seeking to increase their capability. MAs also provide a way for businesses to train employees to industry-recognised standards.

**Occupational Grouping:** There are over 80 MA frameworks – from healthcare and financial services to construction and IT. Each framework is assigned to one of 17 Occupational Groupings. Historical frameworks included in this publication have been appropriately mapped to current Occupational Groupings for this release by SDS.

A list of occupational groupings is available on SDS's website:

<http://www.skillsdevelopmentscotland.co.uk/media/41680/sds-occupational-groupings-2019-20.pdf>

**Scottish Vocational Qualification (SVQ):** Scottish Vocational Qualifications (SVQs) are work-based qualifications produced by experts from industry, commerce and education set to the national standards for their sector.

The Scottish Credit and Qualifications Framework (SCQF) contains further information on how SVQ's map across SQA qualifications and SCQF levels:

<https://scqf.org.uk/interactive-framework/>

**Nominal earnings:** Nominal earnings represent the cash amount an individual was paid. They are not adjusted for inflation (the general increase in the price of goods and services).

**PAYE:** HMRC's system to collect Income Tax and National Insurance from employment. The LEO project uses information from the P45 to ascertain employment spell length and from the P14 (P60) to determine annual earnings.

**Self-assessment:** Self-assessment data captures the activity of individuals with income that is not taxed through PAYE, such as income from self-employment, savings and investments, property rental, and shares.

**Sustained annualised earnings:** The calculated average daily wage across the tax year grossed up to the equivalent annual figure.

**Total earnings:** The total of annualised PAYE earnings and raw self-assessed earnings.

## **Experimental Statistics: data being developed**

Experimental Statistics are new official statistics that are undergoing evaluation. These statistics are being published as experimental statistics in order to involve users and stakeholders in their development and as a means to further improve the use of the data in future.

As these are experimental statistics any feedback or comments on presentation and content would be most appreciated. Contact details below;

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### **Complaints and suggestions**

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