

Earnings statistics from the Annual Survey of Hours and Earnings and HMRC Pay As You Earn Real Time Information

Theme: Labour Market

1 Introduction

Economic and Labour Market Statistics (ELMS) branch publishes earnings estimates from the Annual Survey of Hours and Earnings (ASHE) and from Pay As You Earn Real Time Information (PAYE RTI) which is supplied by HMRC.

This short paper details the definitional differences between the two measures and the strengths and weaknesses of each.

Table 1 provides a comparison of the ASHE and PAYE RTI data sources, summarising their main characteristics including reporting periods, definitions and coverage.

Section 2 discusses the main differences between the two sources, and is followed by a comparison of their results in Section 3.

Further information is available on the NISRA and ONS websites.

Annual Survey of Hours and Earnings:

- [Annual Survey of Hours and Earnings | Northern Ireland Statistics and Research Agency \(nisra.gov.uk\)](https://www.nisra.gov.uk/annual-survey-of-hours-and-earnings)
- [Employee earnings in the UK - Office for National Statistics \(ons.gov.uk\)](https://www.ons.gov.uk/employee-earnings-in-the-uk)

Pay As You Earn Real Time Information:

- [Labour Market Overview | Northern Ireland Statistics and Research Agency \(nisra.gov.uk\)](https://www.nisra.gov.uk/labour-market-overview)
- [Earnings and employment from Pay As You Earn Real Time Information, UK - Office for National Statistics \(ons.gov.uk\)](https://www.ons.gov.uk/earnings-and-employment-from-pay-as-you-earn-real-time-information)
- [New methods for monthly earnings and employment estimates from Pay As You Earn Real Time Information \(PAYE RTI\) data - Office for National Statistics \(ons.gov.uk\)](https://www.ons.gov.uk/new-methods-for-monthly-earnings-and-employment-estimates-from-pay-as-you-earn-real-time-information)

Table 1: At a glance - ASHE and PAYE RTI data sources explained

	ASHE	PAYE RTI
Source	A sample comprising approximately 1% of all employees in NI who were covered by PAYE schemes.	HMRC's PAYE RTI system, which covers anyone who had a paid employee job during the reference period.
Timeliness	Published annually in October. There is a six month time lag between reference date and publication date.	Flash estimates are published monthly around two weeks after the end of the reference period.
Reference period	The reference date is in April each year.	A monthly average of daily estimates.
Outputs	Weekly pay, hourly pay, annual pay, paid hours.	Monthly pay.
Inclusions	<ul style="list-style-type: none"> - Bonuses and incentive pay (relating to pay period only) - Overtime - Shift premium pay - Other pay (such as car or on-call allowance) 	All income from PAYE including: <ul style="list-style-type: none"> - Bonuses - Overtime - Shift premium - Allowances - Arrears - Employees on trainee or junior rates of pay - Employees whose earnings were affected by absence - Payrolled redundancy payments - Payrolled signing-on fees - Payrolled expenses
Exclusions	<ul style="list-style-type: none"> - Those not on adult rates of pay - Employees whose earnings in the pay period were affected by absence (e.g. because of sickness). - Self-employed - HM Armed Forces - Government-supported trainees paid via PAYE - Company directors who do not receive a salary - Employees working offshore (e.g. oil rig workers) - Under 16 year olds 	<ul style="list-style-type: none"> - Self-employed - Earnings for members of schemes where no employee earns above the Lower Earning Limit for National Insurance or has another job.
Full-time/part-time breakdown	Differentiates between full-time and part-time employee jobs.	Collects banded information on hours worked, but does not differentiate between full-time and part-time workers.
Statistical output	Mean and median.	Mean and median.
Location	Home and work address.	Home address.
Furlough	Includes furloughed employees.	Includes furloughed employees.

2 Main differences

ASHE is a UK wide survey that provides data on hourly, weekly and annual earnings. Breakdowns of the ASHE data are available by gender, work patterns, industry and occupation, including public versus private sector pay comparisons. Only monthly earnings are available from PAYE RTI, with geographical, age and industry breakdowns published every 3 months.

While ASHE outputs are generally published in October, around six months after the survey date, the initial PAYE RTI data, known as flash estimates, are published about two weeks after the end of the reference period.

ASHE is based on a 1% sample of employees from HMRC PAYE records, taken in January of the same year. This sample is further updated in April to take account of new entrants to the labour market, and those who have changed jobs since January. Although the ASHE data relate to employees, it is their employers who complete the survey. The PAYE RTI data are lifted directly from HMRC's PAYE RTI system and include everyone who had paid employment during the reference period, rather than a sample of people.

The headline statistic published for ASHE is median gross weekly pay for full-time employee jobs. This relates to employees on adult rates of pay and whose pay was unaffected by absence in the reference period; RTI do not apply such filtering. Data are, however, also published for all employees (full- and part-time combined), and this is the ASHE measure most comparable with RTI.

The RTI figures relate to pay per person, while the ASHE data measure pay per job. For those employees with several jobs, their earnings from each job are summed for the purpose of RTI data, whereas they will be reported more than once in the ASHE dataset for each of their jobs.

In order to get a clearer understanding of how similar the outputs from the two measures are, they are plotted together in the chart below.

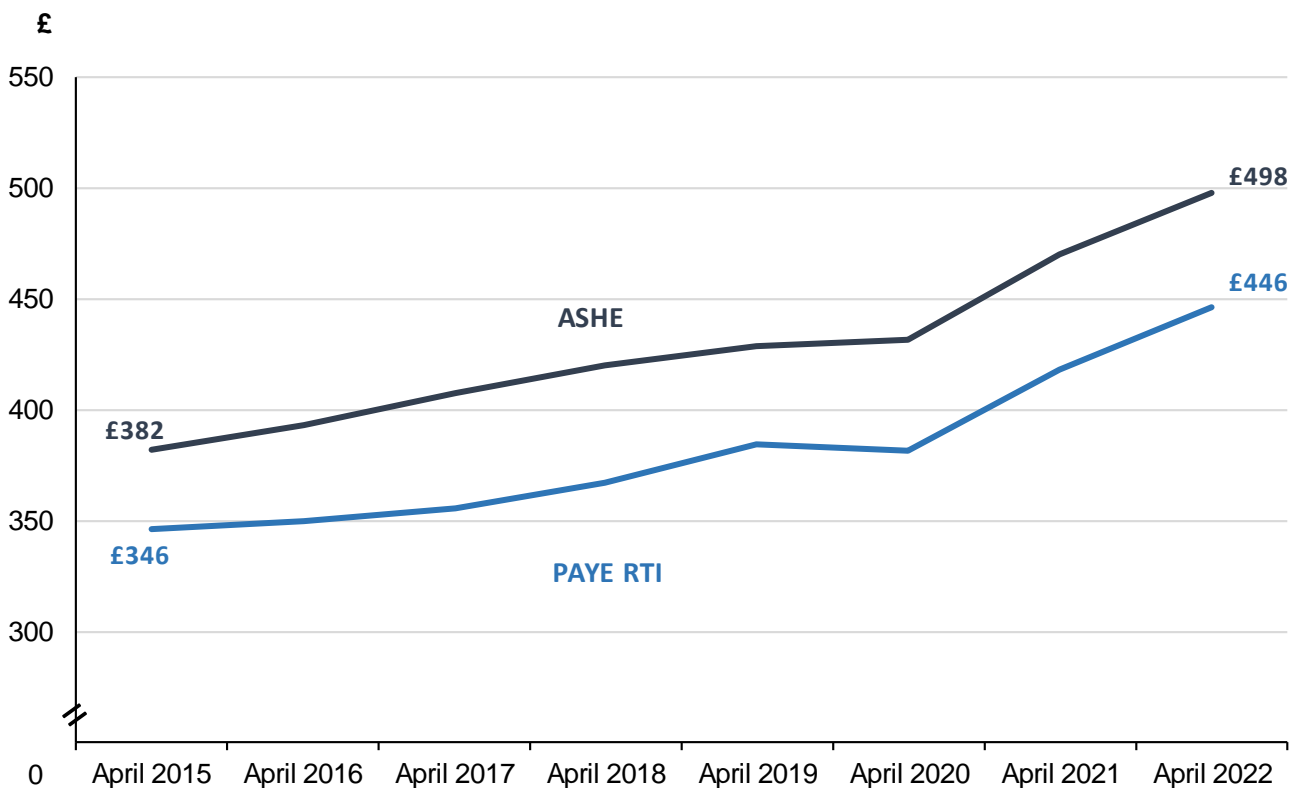
Please note that, as ASHE uses a reference period within April each year, the most comparable RTI figure is the (non-seasonally adjusted) median earnings for April of each year. The PAYE RTI data have been converted from the published monthly figure to a weekly value.

3 Results

Figure 1 shows a very similar trend between median weekly pay in Northern Ireland from ASHE and PAYE RTI. Between 2015 and 2019 there was relatively steady growth in both series, followed by a plateau between 2019 and 2020, which coincides with the introduction of furlough. Strong growth, at a very similar rate, was then observed over the next two years to April 2022.

As the chart indicates, earnings for all employees in NI from ASHE are consistently higher than earnings from PAYE RTI. In 2022, weekly earnings from ASHE were around £50 higher than weekly earnings from PAYE RTI (£498 compared to £446). This may be as a result of the filters applied to ASHE, which exclude those workers whose pay is affected by absence, and those not on adult pay rates, from the final results.

Figure 1: Median Weekly Earnings of all employees in NI from ASHE and PAYE RTI, non-seasonally adjusted, April 2015 to April 2022



Note: there was a methodological change during the series in 2021.

Non-zero axis