

## **Guide to the Schedule to the Order (“the Schedule”)**

The purpose of this guide is to give a practical explanation of the workings of Part 3 of the Model Schedule.

By way of background it is helpful to understand the issue of time lag between data collection and application.

It is usual for RPI-linked periodical payments, like pensions and many State benefits, to be increased each year by the growth in prices over the previous 12 months.

In the absence of a crystal ball to tell us what will actually happen over the next 12 months, this is considered the most appropriate approach, as the recent past is probably the best guide to the future.

Furthermore, RPI-linked periodical payments have a further three month delay, in that if the payments are to be increased in the December of any year, the RPI figures for the twelve months to the previous September are used.

This is consistent with the application of the RPI to Index Linked Government Stocks. The following is taken from the UK Debt Management Office website ([http://www.dmo.gov.uk/index.aspx?page=Gilts/About\\_Gilts](http://www.dmo.gov.uk/index.aspx?page=Gilts/About_Gilts)):

### **Three-month lag index-linked gilts**

New index-linked gilts issued from September 2005 employ the three-month indexation lag structure first used in the Canadian Real Return Bond market and not the eight-month lag methodology used for index-linked gilts issued before that date. In addition to the lag being shorter, with this design the indexation is applied in a significantly different way. The new design of index-linked gilts also trade on a real clean price basis. As a result, the effect of inflation is stripped out of the price of the new gilts for trading purposes, although it is included when such trades are settled.

### **Indexation methodology**

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The reference RPI for the first calendar day of any month is the RPI for the month three months earlier (e.g. the reference RPI for 1 June is the RPI for March). The reference RPI for any other day in a month is calculated by linear interpolation between the reference RPI applicable to the first calendar day of the month in which the day falls and the reference RPI applicable to the first calendar day of the month immediately following. Interpolated values should be rounded to the nearest 5th decimal place.

### **Eight-month lag index-linked gilts**

To calculate the inflation adjustment two RPI figures are required - that applicable to the gilt when it was originally issued and that relating to the current interest payment. In each case the RPI figures used are those applicable eight months before the relevant dates (e.g. for a November dividend date the RPI from the previous March is used). This “indexation lag” is required so that the size of each forthcoming interest payment is known at the start of the coupon period, thereby allowing the accrued interest to be calculated.

It is important to note that the vast majority of ILGS in circulation work to an eight-month lag and this remains acceptable in terms of practical application.

The ASHE data is collected in April each year. The ‘first release’ figures are issued in October of the same year, with ‘revised’ figures being issued in the October of the following year. It is understood that this length of time is required by the Office for National Statistics (ONS) in order to maximise the accuracy of the data series.

Therefore, if one were to apply the series ‘revised’ figures published each year to the periodical payments the data would be, at best, over 18 months out of date. Indeed, if the periodical payments were to be paid in December (as proposed) then the data would have a 20-month lag.

The workings of the Schedule reduce the time lag to eight months from data collection to payment.

Whilst it may be preferable in an ideal world for this to be reduced further, to increase accuracy, it is considered acceptable in a practical environment (as such an approach is for RPI-linked periodical payments).

This is achieved by the periodical payments being escalated on the basis of the first release figures issued by the ONS in the October each year.

In the event that the revised figure, when published the following year, is different from the first release figure, the Schedule allows for any correction.

As any adjustment will be relatively minor and is unbiased, it is considered unnecessary to apply interest to such an adjustment.

As a result, the time delay is significantly reduced.

This is why there is a formula for the first escalation and a separate formula for every year thereafter (until reclassification).

For ease of reference the following table sets out the recent ASHE 6115 data for the relevant percentiles. It is hoped that such a table for all percentiles will be published by the ONS and replicated in legal journals, such as Facts and Figures:

	<u>70th Centile</u>	<u>75th Centile</u>	<u>80th Centile</u>	<u>90th Centile</u>
2005				
First Release	£8.03	£8.47	£8.95	£10.30
Revised	£8.03	£8.47	£8.96	£10.30
2006 (2005 methodology)				
First Release	£8.27	£8.67	£9.14	£10.58
Revised	£8.28	£8.69	£9.16	£10.58
2006 (2007 methodology)				
Revised	£8.33	£8.71	£9.25	£10.67
2007				
First Release	£8.79	£9.21	£9.79	£11.36
Revised				

The revised figures for 2007, together with the first release for 2008, are to be published in or around October 2008.

The measure to be applied to uprate the periodical payments is the relevant percentile of ASHE 6115, the occupational classification 6115, namely 'care assistants and home carers' of the Annual Survey of Hours and Earnings (ASHE). For the purposes of the examples contained in this guide I have assumed that the relevant percentile is the 75th percentile.

All of the information required to undertake the calculations in the Schedule is published by the ONS. Currently, this information can be found using the following hyperlink:

[www.statistics.gov.uk/StatBase/Product.asp?vlnk=13101&Pos=&ColRank=1&Rank=208](http://www.statistics.gov.uk/StatBase/Product.asp?vlnk=13101&Pos=&ColRank=1&Rank=208)

This brings up the following page:

**national STATISTICS** UK Snapshot Neighbourhood Economy Census About ONS Jobs 10 November 2007

home |

**Browse by theme** Annual Survey of Hours and Earnings (ASHE) **Product**

Select Theme

**Download Plugin**

- Adobe Acrobat Reader
- Office Microsoft Excel viewer
- Navidata

The Annual Survey of Hours and Earnings (ASHE) provides information about the levels, distribution and make-up of earnings and hours paid for employees within industries, occupations and regions.

The ASHE was developed to replace the New Earnings Survey (NES) in 2004. This included improvements to the coverage of employees, imputation for item non-response and the weighting of earnings estimates.

The ASHE tables contain UK data on earnings for employees by sex and full-time/part-time workers. Further breakdowns include by region, occupation, industry, region by occupation and age-groups. These breakdowns are available for the following variables: gross weekly pay, weekly pay excluding overtime, basic pay including other pay, overtime pay, gross hourly pay, hourly pay excluding overti...

**► View more information about this product. NS ✓**

Office for National Statistics (ONS), Annual, On-line edition, Contact: +44 (0)1633 819024

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- **ASHE Results 2007** (Web link)
- **ASHE Results 2006 (methodology consistent with 2007)** (Web link)
- **ASHE Results 2006 (methodology consistent with 2005)** (Web link)
- **ASHE Results 2005** (Web link)
- **ASHE Results 2004** (Web link)
- **ASHE Results 2004 - excluding supplementary information** (Web link)
- **Article: Changes to pensions statistics in the ASHE** (Web link)
- **Article: ASHE Methodology - Measurement of Basic and Other pay** (Web link)
- **Article: The new Annual Survey of Hours and Earnings questionnaire** (Web link)
- **Article: Methodology for ASHE 2004** (Web link)
- **Article: ASHE: An analysis of historical data 1998-2003** (Web link)
- **Patterns of pay** (Web link)
- **ASHE: Pensions Analysis** (Web link)
- **Low pay estimates** (Web link)
- **New Earnings Survey** (Web link)
- **ASHE Results 2003** (Web link)
- **ASHE Results 2002** (Web link)
- **ASHE Results 2001** (Web link)
- **ASHE Results 2000** (Web link)
- **ASHE Results 1999** (Web link)
- **ASHE Results 1998** (Web link)
- **ASHE Results 1997** (Web link)
- **Frequently Asked Questions** (133Kb - Pdf)

## Applying ASHE 6115

It is helpful to find the relevant percentile of ASHE 6115 using existing data. The data is published annually, usually in October of each year.

Each year the ONS publishes a “First Release” figures for the data collected in the April of that year and “Revised” figures for the data collected in the April in the previous year.

The 2007 data can be found by following this hyperlink:

[www.statistics.gov.uk/StatBase/Product.asp?vlnk=15050](http://www.statistics.gov.uk/StatBase/Product.asp?vlnk=15050)

This brings up the following page:

The screenshot shows the National Statistics website interface. At the top, there is a navigation bar with links for 'UK Snapshot', 'Neighbourhood', 'Economy', 'Census', 'About ONS', and 'Jobs'. The date '10 November 2007' is displayed on the right. Below the navigation bar, there is a search box and a 'Search' button. The main content area is titled 'Annual Survey of Hours and Earnings (ASHE) - 2007 Results' and 'Product'. It provides information about the levels, distribution, and make-up of earnings and hours paid for employees within industries, occupations, and regions. The page also mentions that the ASHE was developed to replace the New Earnings Survey (NES) in 2004 and includes improvements to the coverage of employees, imputation for item non-response, and the weighting of earnings estimates. A list of download links is provided, including '2007 Annual Survey of Hours and Earnings First Release (Pdf)', 'Table 1: All employees (93Kb - Pdf)', 'Table 2: Occupation (93Kb - Pdf)', 'Table 4: Industry (93Kb - Pdf)', 'Table 6: Age (72Kb - Pdf)', 'Table 7: Place of work by Local Authority (93Kb - Pdf)', 'Table 8: Place of residence by Local Authority (26Kb - Pdf)', 'Table 9: Place of work by parliamentary constituency (96Kb - Pdf)', 'Table 13: Public private sector (93Kb - Pdf)', 'Table 14: Occupation - 4 digit SOC (94Kb - Pdf)', 'Changes to ASHE in 2007 (104Kb - Pdf)', 'ASHE Publication Schedule (136Kb - Pdf)', '2007 ASHE questionnaire (48Kb - Pdf)', and 'Annual Survey of Hours and Earnings (ASHE) (Web link)'. The page also includes a contact number for the Office for National Statistics (ONS) and a 'View more information about this product' link.

One can see that this is the 2007 Annual Survey of Hours and Earnings **First Release**.

One can see that Table 14 is entitled “Occupation – 4 digit SOC”.

Clicking on this link brings up the following:

**2007 Annual Survey of Hours and Earnings (ASHE)  
Analysis by Occupation (4 digit SOC)**

Each table listed below links to an Excel file. The first of each pair contains the earnings estimate for each pay variable and the second contains the corresponding estimates of standard error.

- Table 14.1a: Weekly pay: Gross
- Table 14.1b: Weekly pay: Gross – Coefficient of variation
  
- Table 14.2a: Weekly pay: Excluding overtime
- Table 14.2b: Weekly pay: Excluding overtime – Coefficient of variation
  
- Table 14.3a: Basic pay: Including other pay
- Table 14.3b: Basic pay: Including other pay – Coefficient of variation
  
- Table 14.4a: Overtime pay
- Table 14.4b: Overtime pay – Coefficient of variation
  
- Table 14.5a: Hourly pay: Gross
- Table 14.5b: Hourly pay: Gross – Coefficient of variation
  
- Table 14.6a: Hourly pay: Excluding overtime
- Table 14.6b: Hourly pay: Excluding overtime – Coefficient of variation
  
- Table 14.7a: Annual pay: Gross
- Table 14.7b: Annual pay: Gross – Coefficient of variation
  
- Table 14.8a: Annual pay: Incentive
- Table 14.8b: Annual pay: Incentive – Coefficient of variation
  
- Table 14.9a: Paid hours worked: Total
- Table 14.9b: Paid hours worked: Total – Coefficient of variation
  
- Table 14.10a: Paid hours worked: Basic
- Table 14.10b: Paid hours worked: Basic – Coefficient of variation
  
- Table 14.11a: Paid hours worked: Overtime
- Table 14.11b: Paid hours worked: Overtime – Coefficient of variation

The required table is “Table 14.5a: Hourly pay: Gross”. Please make sure that you are looking at the “All” tab (rather than either “Male” or “Female” etc.). These tabs are shown at the bottom of the page. The “All” tab is the default tab.

One scrolls down, looking under the “Code” column until one can see 6115 as shown below:

Table 14.5a Hourly pay - Gross (£) - For all employee jobs <sup>a</sup> : United Kingdom, 2007																
Description	Code	Number of jobs <sup>b</sup> (thousand)	Median	Annual percentage change	Mean	Annual percentage change	Percentiles									
							10	20	25	30	40	60	70	75	80	90
Personal service occupations	6	1,998	7.54	3.6	8.23	3.8	5.64	6.15	6.37	6.56	7.03	8.13	8.82	9.21	9.72	11.23
Caring personal service occupations	61	1,610	7.58	4.1	8.12	4.5	5.70	6.22	6.41	6.61	7.08	8.13	8.80	9.15	9.62	11.00
Healthcare And Related Personal Services	611	966	7.84	5.1	8.32	5.4	5.80	6.37	6.58	6.82	7.34	8.37	9.01	9.43	9.96	11.39
Nursing auxiliaries and assistants	6111	226	8.24	6.3	8.62	6.3	6.41	7.05	7.26	7.44	7.81	8.70	9.23	9.51	9.87	10.82
Ambulance staff (excluding paramedics)	6112	17	9.70	-3.2	10.73	3.1	6.98	7.72	8.04	8.33	9.01	10.76	12.61	12.79	13.18	x
Dental nurses	6113	31	8.08	5.8	8.12	4.0	6.25	6.71	7.00	7.15	7.59	8.34	8.86	9.00	9.30	x
Houseparents and residential wardens	6114	36	9.02	3.2	9.58	1.5	6.11	6.83	7.27	7.51	8.05	10.05	10.82	11.00	11.55	x
Care assistants and home carers	6115	656	7.53	5.3	8.07	5.6	5.66	6.14	6.36	6.55	7.02	8.11	8.79	9.21	9.79	11.36
Childcare And Related Personal Services	612	609	7.19	2.7	7.78	3.1	5.59	6.02	6.24	6.41	6.75	7.72	8.35	8.82	9.19	10.30
Nursery nurses	6121	132	7.14	2.9	7.69	4.2	5.35	5.65	5.80	5.96	6.39	8.25	8.98	9.36	9.81	10.64
Childminders and related occupations	6122	19	7.50	4.4	7.98	5.4	5.50	5.85	6.00	6.10	7.01	8.00	8.54	8.62	9.09	x
Playgroup leaders/assistants	6123	45	6.41	6.8	6.94	3.3	5.35	5.50	5.60	5.70	6.05	6.69	7.07	7.40	7.70	x
Educational assistants	6124	414	7.30	2.3	7.86	2.4	5.88	6.28	6.42	6.57	6.91	7.75	8.29	8.71	9.03	10.19
Animal Care Services	613	35	6.89	1.9	7.68	3.9	5.35	5.73	6.00	6.14	6.39	7.65	8.33	8.77	9.26	x

One can clearly see on the right hand side of the screen the “Percentiles” (noting that the 50<sup>th</sup> percentile is the median which is in a column to the left of the other percentiles).

Assuming the relevant percentile to be the 75<sup>th</sup> percentile, the wage level for the 2007 First Release for ASHE 6115 is £9.21.

The following year, these 2007 “First Release” figures will have been removed and replaced by “Revised” figures.

This is what the 2005 page looked like in November 2006:

- Download/View entire documents for free here** (Left click to View or right click to Download)
- ▶ **30/11/2005 - Corrected: 2005 Annual Survey of Hours and Earnings First Release** (Pdf)
  - ▶ **30/11/2005 - Correction Notice: 2005 Annual Survey of Hours and Earnings** (Web link)
  - ▶ **30/11/2005 - Superseded: 2005 Annual Survey of Hours and Earnings First Release** (Pdf)
  - ▶ **Table 1: All employees (Revised)** (73Kb - Pdf)
  - ▶ **Table 2: Occupation (Revised)** (73Kb - Pdf)
  - ▶ **Table 3: Government Office Region by occupation (Revised)** (73Kb - Pdf)
  - ▶ **Table 4: Industry (Revised)** (73Kb - Pdf)
  - ▶ **Table 5: Government Office Region by industry (Revised)** (77Kb - Pdf)
  - ▶ **Table 6: Age (Revised)** (73Kb - Pdf)
  - ▶ **Table 7: Place of work by Local Authority (Revised)** (73Kb - Pdf)
  - ▶ **Table 8: Place of residence by Local Authority (Revised)** (25Kb - Pdf)
  - ▶ **Table 9: Place of work by parliamentary constituency (Revised)** (76Kb - Pdf)
  - ▶ **Table 10: Place of Residency by Parliamentary Constituency (Revised)** (72Kb - Pdf)
  - ▶ **Table 11: Travel to Work Area - Work Based (Revised)** (71Kb - Pdf)
  - ▶ **Table 12: Travel to Work Area - Residency Based (Revised)** (71Kb - Pdf)
  - ▶ **Table 13: Public private sector (Revised)** (73Kb - Pdf)
  - ▶ **Table 14: Occupation - 4 digit SOC (Revised)** (74Kb - Pdf)
  - ▶ **Table 15: Work Region Occupation (4 digit SOC)** (49Kb - Pdf)
  - ▶ **Table 16: Industry - 4 digit SIC (Revised)** (28Kb - Pdf)
  - ▶ **Table 17: Work Training Enterprise Council - Work Based (Revised)** (24Kb - Pdf)
  - ▶ **Table 18: Work Training Enterprise Council - Residency Based (Revised)** (25Kb - Pdf)
  - ▶ **Table 20: Age by occupation (2 digit) (Revised)** (25Kb - Pdf)
  - ▶ **Table 21: Age by industry (Revised)** (24Kb - Pdf)
  - ▶ **ASHE Publication Schedule** (68Kb - Pdf)
  - ▶ **Annual Survey of Hours and Earnings (ASHE)** (Web link)
  - ▶ **ASHE: Pensions Analysis** (Web link)
  - ▶ **ASHE questionnaire used in 2005** (43Kb - Pdf)

In November 2008 it is expected that the 2007 page will be similar. The process of obtaining the figures is the same as above (that is, Table 14, Table 14.5a).

Assuming an annual payment of £10,000.00 and the first years’ escalation calculation was to be undertaken prior to payment on 15<sup>th</sup> December 2007, then the following is an example of the calculation to be undertaken, as set out in the Schedule at paragraph 3:

$$PP = C \times \frac{NP}{A}$$

The elements of this calculation are defined as follows:

$$C = \text{£}10,000.00$$

$$NP = \text{£}9.21$$

$$A = \text{£}8.71$$

The periodical payment to be paid in 2007 would then be:

$$PP = \text{£}10,000.00 \times \frac{\text{£}9.21}{\text{£}8.71} = \text{£}10,574.05$$

The calculation for every year thereafter until a reclassification, to be undertaken in November of each following year, is set out in the Schedule at paragraph 4 as follows:

$$PP = C \times \frac{NP + (NF - OP)}{A}$$

Assuming an annual payment of £10,000.00 and the second years' escalation calculation was to be undertaken prior to payment on 15<sup>th</sup> December 2008 and assuming that the "First Release" hourly gross wage rate for 2008 ASHE 6115 (75) is, say, £9.67 and the "Revised" hourly gross wage rate for 2007 ASHE 6115 (75) is, say, £9.22, then in addition to the definitions set out above:

$$NF = £9.22$$

$$OP = £9.21$$

The periodical payment to be paid in 2008 would then be:

$$PP = £10,000.00 \times \frac{£9.67 + (£9.22 - £9.21)}{£8.71} = £11,113.66$$

### **Reclassification of or Discontinuity in ASHE 6115**

Reclassification is likely to occur once every ten years. Discontinuity in ASHE 6115 may occur in the event that the ONS changes the ASHE methodology which results in discontinuity of results.

Reclassification has yet to happen under ASHE 6115.

Discontinuity due to methodological change did occur in 2007 and affected the results for 2006.

The Schedule deals with these two issues in the same, three-stage, manner. In what follows the working of paragraphs 5 to 8 of the Schedule are illustrated by reference to the above discontinuity.

In order to make this illustration possible it is assumed that the opening base figure was set in 2005 with the first payment to be made in April 2007. The base figure in this example is £8.47, being the "revised" hourly gross wage rate for the 75<sup>th</sup> percentile of ASHE SOC 6115 for 2005.

#### **Stage 1 – Identifying the new centile**

In the year following reclassification or change in methodology, the ONS will publish two "Revised" data sets, one for the previously applied data set and one for the new data set.

In our example this was shown on the ASHE website in November 2007 (the full page is shown on page 1 of this Guide) as follows:

- ▶ ASHE Results 2006 (methodology consistent with 2007) (Web link)
- ▶ ASHE Results 2006 (methodology consistent with 2005) (Web link)

The starting point is the final “Revised” figure for the existing SOC or methodology (in this case ASHE Results 2006 (methodology consistent with 2005)):

Table 14.5a Hourly pay - Gross (£) - For all employee jobs <sup>a</sup> : United Kingdom, 2006																
Description	Code	Number of jobs <sup>b</sup> (thousand)	Annual percentage change	Annual percentage change	Percentiles											
					Median	Mean	10	20	25	30	40	60	70	75	80	90
Care assistants and home carers	6115	661	7.13	3.4	7.61	2.8	5.35	5.81	6.03	6.23	6.63	7.67	8.28	8.69	9.16	10.58

The revised wage rate for this SOC, ASHE 6115 (75) 2005 methodology, is £8.69. This is referred to as *AF* in paragraph 5.2.

Then one must identify that revised wage rate within the distribution of wage rates for the new SOC or new methodology (in this case ASHE Results 2006 (methodology consistent with 2007)):

Table 14.5a Hourly pay - Gross (£) - For all employee jobs <sup>a</sup> : United Kingdom, 2006																
Description	Code	Number of jobs <sup>b</sup> (thousand)	Annual percentage change	Annual percentage change	Percentiles											
					Median	Mean	10	20	25	30	40	60	70	75	80	90
Care assistants and home carers	6115	654	7.15		7.64		5.37	5.84	6.05	6.24	6.65	7.70	8.33	8.71	9.25	10.67

It is clear that the wage rate of £8.69 is closest to £8.71 (which is referred to as *AR* in paragraph 5.2) in the ASHE Results 2006 (methodology consistent with 2007), which means that, in this case, the new SOC remains ASHE 6115 (75) into the future.

### **Stage 2 – Calculating the new base figure**

The new base figure (which is referred to as *CR* in the Schedule) is calculated by applying the formula set out at paragraph 6 in the Schedule:

$$CR = C \times \frac{AF}{A}$$

The elements of this calculation are defined as follows:

$$C = \text{£}10,000.00$$

$$AF = \text{£}8.69$$

$$A = \text{£}8.47$$

Therefore, *CR* would be:

$$CR = \text{£}10,000.00 \times \frac{\text{£}8.69}{\text{£}8.47} = \text{£}10,259.74$$

### **Stage 3 – Calculating the periodical payment to be paid**

The formula in paragraph 7 of the Schedule is applied in order to calculate the first periodical payment to be paid following the discontinuity:

$$PPR = \left[ CR \times \frac{NPR}{AR} \right] + \left[ C \times \frac{AF - OPF}{A} \right]$$

The elements of this calculation are defined as follows:

$$CR = \text{£}10,259.74$$

$$NPR = \text{£}9.21$$

$$AR = \text{£}8.71$$

$$C = \text{£}10,000.00$$

$$AF = \text{£}8.69$$

$$OPF = \text{£}8.67$$

$$A = \text{£}8.47$$

Therefore, *PPR* would be:

$$\left[ \text{£}10,259.74 \times \frac{\text{£}9.21}{\text{£}8.71} \right] + \left[ \text{£}10,000.00 \times \frac{\text{£}8.69 - \text{£}8.67}{\text{£}8.47} \right] = \text{£}10,872.32$$

The calculation for every year thereafter until a further reclassification or discontinuity, to be undertaken in November of each following year, is set out in the Schedule at paragraph 8 as follows:

$$PPR = CR \times \frac{NPR + (NFR - OPR)}{AR}$$

This is the same formula as set out in paragraph 4 in the Schedule, but applying the new base figure and the new SOC.

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