FEATURE

A preliminary analysis of the differences between AWE and the AEI

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SUMMARY

This article presents the preliminary results of the AEI/AWE reconciliation project, a project which seeks to reconcile the movements in the two main measures of short-term earnings growth – the Average Earnings Index (AEI) and Average Weekly Earnings (AWE).

The article sets out the background to the project, describes the two measures and explains the main differences between them. It then presents the preliminary results of the reconciliation project. Each of the main methodological differences between the two measures is shown to contribute significantly to the differences between the two series. The article concludes by discussing which of the two measures might be better and then summarises the work that is in hand to move AWE to National Statistic status.

This article presents the preliminary results of an ongoing project on the reconciliation of the two main measures of short-term earnings growth – the current National Statistic, the Average Earnings Index (AEI) and the experimental series Average Weekly Earnings (AWE). This work will be of interest to users as it should help to improve understanding of the reasons for the differences between the two series as well as provide guidance on which of the two measures is the more appropriate to use.

The article is an updated version of the one under the same title released on the National Statistics website on 25 July 2007. It has been updated to incorporate two months' additional data in the analysis; the opportunity has also been taken to update some of the text. The work is, however, still ongoing. It is currently being reviewed and updated, with the aim of:

- providing further quality assurance
- extending the period of the analysis
- incorporating additional factors or providing further breakdowns of the existing factors
- assessing how sensitive the results are to the order in which the reconciliation is conducted

For this reason, it is important to treat the data accompanying this article as provisional and subject to change as the project progresses.

Background

There are two main measures of short-term earnings growth, the AEI and AWE. The AEI is the current National Statistic, published each month in the integrated Labour Market First Release. AWE is an experimental series published on the web one week after the AEI. It is important to emphasise that there are conceptual differences between the AEI and AWE – they are measuring different things. AWE was developed to meet one of the recommendations of the Turnbull-King review:

> 'The Office for National Statistics (ONS) should investigate the production of an index which reflects more closely movements in true average earnings.'

This recommendation arose from the fact that the AEI is not an index of true average earnings in the sense that it is calculated using fixed employment weights when aggregating the average wage for each industry. In contrast, in AWE, the weights are recalculated each month, allowing the measure to capture the changing industrial structure of employment.

Both the AEI and AWE use the same data source, the Monthly Wages and Salaries Survey (MWSS). The AEI is a measure of the growth in average earnings, derived by calculating the growth in the weighted average pay for businesses responding to the survey in successive months (the

'matched' sample). AWE, on the other hand, is a measure of the level of average earnings, derived by separately weighting the earnings and employment data for the sampled businesses in each month and then calculating the ratio. The growth in AWE can, of course, be calculated and compared with the growth in the AEI. The two formulae for the growths are presented in the Appendix in **Figure A1** and **Figure A2**.

AWE was launched as an experimental series in August 2005. An accompanying article (see www.statistics.gov.uk/cci/article.asp?id=1182) sets out the background to its development and describes the main differences (both conceptual and methodological) between AWE and the AEI. The article also describes the further work needed to move AWE to National Statistic status. In particular, although the estimation method used for total earnings and total employment in AWE is described in the article as better than that used in the AEI, it was recognised that further development work was needed in a number of areas, including on imputation and the treatment of outliers.

Table A1 in the Appendix describes the main differences between the two series. As a preliminary to the later discussion on the results of the reconciliation project, it is useful to say a little more about some of these differences:

- *weighting* – this is the conceptual difference described above. AWE uses industry employment weights relating to the reference month, whereas the AEI uses industry employment weights fixed at the previous July. This means that changes in the relative sizes of industries from month to month, changing the composition of employment between industries, can affect the AWE growth rate but they do not affect the AEI. Thus, for example, if the proportion of employees in retail (a low-paid sector) increases, then AWE growth will fall, even if there is no change in pay rates. The AEI, however, will not be affected
- e*stimation* – the two series are based on different types of estimator: the AEI is based on matched pairs, only using those businesses that have responded to successive months, while AWE uses all the data returned each month and 'grosses up' using a standard ratio estimator based on information on the Inter-Departmental Business Register (IDBR). Also, the estimation formulae are different and will give rise to a difference between the two series even when all the other differences – including the conceptual differences – are removed. In other contexts (for example, the RPI/CPI reconciliation), this type of difference is often described as a formula effect. The differences between the two formulae can be seen by examining Figures A1 and A2 – the AEI is effectively a 'number raised' estimator via the grossing factor g while AWE uses the employment data on the IDBR
- *imputation* – the term 'imputation' is often used to denote the process for estimating for non-response. There is very little imputation in the AEI – the unmatched part of the sample (and the non-sampled part of the population) is implicitly estimated for using the information in the matched sample. In AWE, the unmatched part of the sample is directly used where there is a response, and imputed for where there is not a response by carrying forward previous information for the businesses in question. This increases the effective sample size used in AWE
- *outliers* – in general, a business will be treated as an 'outlier' if it is very different (that is, behaves in a different way) to other businesses in the same industry and/or size-band. Businesses which are outliers are given a reduced weight in the estimation. The outlier procedures used in the AEI and AWE are different – the AEI procedures are based on the impact on growth while the AWE procedures are based on levels. In general, the current 'gates' used in the two series mean that the AEI tends to treat more businesses as outliers than AWE. The AEI also tends to treat more of the data as atypical – if a contributor is an outlier in the AEI, all its data are treated as atypical while AWE uses separate procedures for regular pay and bonuses
- *small businesses* – businesses with fewer than 20 employees are not covered in the MWSS, the survey underpinning both the AEI and AWE. Small businesses are estimated for in AWE by making use of the data for larger businesses and the information from the Annual Survey of Hours and Earnings (ASHE). In contrast, smaller businesses are excluded from the calculation of the average pay in the AEI, although they are included in the industry weights.

Figure 1
Comparison of whole economy AEI and AWE, including bonuses and arrears

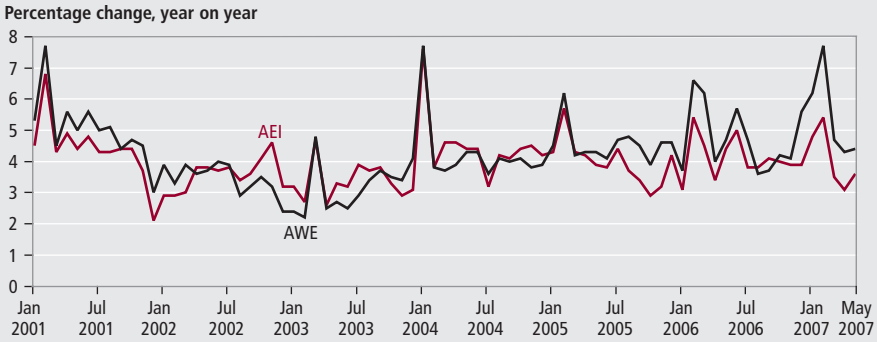
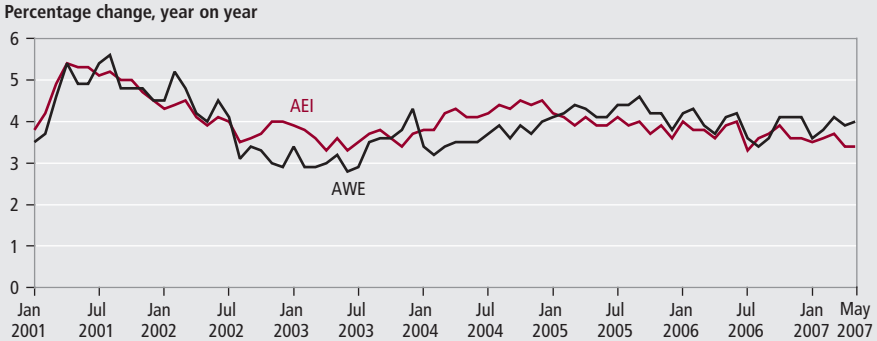


Figure 2
Comparison of whole economy AEI and AWE, excluding bonuses and arrears



These differences – both conceptual and methodological – lead to differences between the two series. **Figure 1** and **Figure 2** compare 12-month growth rates for both series for the period January 2001 to May 2007 – for both the including and excluding bonuses and arrears series (note that the data here – and indeed all the data presented in the article – are not seasonally adjusted).

It is worth noting that, for each series, successive 12-month growth rates tend to be similar because they share a period of common inflation during the intervening 11 months. As a consequence, the expectation is to see relatively long periods during which AWE growth rates are consistently greater or less than those for the AEI. It is therefore more sensible to consider those periods of consistent differences as a whole rather than paying excessive attention to individual months. On this basis, analysis of the charts may be condensed to consideration of three main periods (as opposed to 77 individual months):

- January 2001 to September 2002 – AWE growth rates are usually greater than or similar to those for the AEI
- October 2002 to December 2004 – AWE growth rates are usually less than or similar to those for the AEI
- January 2005 to May 2007 – AWE growth rates are usually greater than or similar to those for the AEI

Looking at Figure 1, AWE growth is seen to be higher than AEI growth through much of 2005 and early 2006, with quite notable differences emerging in the most recent months. Differences in Figure 2 tend to be smaller, although here, too, AWE growth is currently stronger than the AEI.

At the time of the launch of AWE, comparisons were only available up to April 2005. The differences between the series including bonuses and arrears were, in general, lower then and analysis at the time suggested that the conceptual differences between the two provided a good explanation for the differences, or most of the differences. However, during the latter half of 2005 and the first half of 2006, the differences grew in significance and the conceptual differences often moved in a different direction, so that after putting the two series on the same conceptual basis, the differences were even higher than suggested by the original data.

The growing concern over the size of the real differences between the two series provides the background to the need for the reconciliation project. The project has also been seen as an important part of the work needed in order to move AWE to National Statistic status.

The conceptual difference between AWE and the AEI

As noted above, there is an important conceptual difference between AWE and the AEI. They are measuring different things. Changes in AWE reflect changes in wage rates as well as changes in the composition of employment, both within and between industries. The AEI, because it uses fixed industry employment weights, does not capture changes in the composition of employment between industries.

However, one of the features of AWE is the ability to decompose the growth rates into two separate series, one measuring the pure earnings effect, the other measuring the effect of changing employment. The two decomposed series have been available since the launch of AWE and are published each month at the same time.

Figure 3 and **Figure 4** compare the AEI and AWE with the decomposed AWE series measuring the pure earnings effect. The differences between the AEI and AWE during much of 2002 and 2003 are seen to be partly or largely explained by the composition effect. During this period, decomposed AWE is seen to be growing at a stronger rate than AWE and closer to the AEI. This means that during this period the employment estimates from AWE are generally increasing in lower-paid industries such as retail and education and decreasing in higher-paid industries such as financial intermediation.

More recently, the graphs show that the composition effect tends to add to the size of the differences between the two series since early 2005. During this period, decomposed AWE continues to grow more strongly than AWE but the AEI is actually growing less strongly than AWE.

The reconciliation project

The aim of the reconciliation project is to quantify the contribution of each of the main differences between the AEI and AWE. There are a number of possible

Figure 3
Comparison of whole economy AEI, AWE and AWE decomposed, including bonuses and arrears

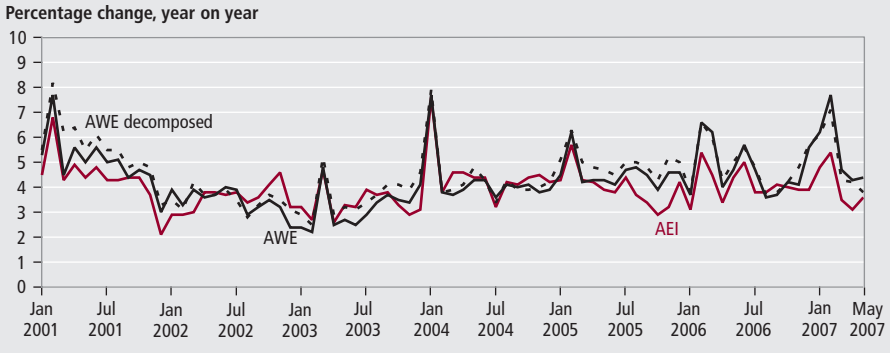
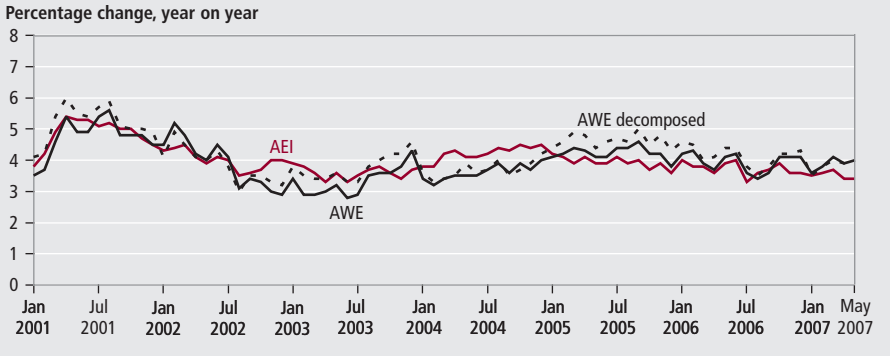


Figure 4
Comparison of whole economy AEI, AWE and AWE decomposed, excluding bonuses and arrears



approaches, but the most sensible seemed to be a staged approach, either starting with AWE and moving in stages towards the AEI or starting with the AEI and moving towards AWE. This ensures that the separate factors are quantified independently, although it is recognised that the sizes of the effects may be sensitive to the order in which they are considered.

The reconciliation started with AWE and moved in stages towards the AEI. In the first stage, the two samples were put on the same basis by reproducing AWE using only the data for the matched contributors used in the AEI. A comparison of this alternative version of AWE with real AWE then shows the combined effect of the additional sample used in AWE and the adjustment for smaller businesses. These two parts were separately quantified at a later stage by recalculating AWE excluding this adjustment.

In the second stage of the analysis, AWE outlier procedures in the alternative version of AWE were replaced with the AEI procedures. A comparison of these two series – one using AWE outliers and the other AEI outliers – then shows the contribution of the effect of different outlier procedures.

The third main stage involved comparing the series using AEI outliers with the AEI. Differences between these two series show the impact of the formula effect, as well as any residual differences that might be present because of unidentified differences or errors or omissions in the identified differences. Note that the residual will include any remaining differences with the smaller businesses – the effect of including them in the industry weights in the AEI. It will also implicitly include a component due to composition effects.

The results of the analysis are presented in the Appendix in **Table A2** and **Table A3**, the first covering the including bonuses and arrears comparison, the second the excluding bonuses and arrears comparison. The results are also presented graphically in **Figure A3** and **Figure A4** – Figure A3 shows the differences alone while Figure A4 also shows the AEI and AWE on the same scale. Tables A2 and A3 present AWE and AEI growth rates in the first and final columns. Between them are columns showing the contributions of all the factors discussed above to the stage-by-stage transformation from AWE to the AEI. The penultimate column contains the cumulative effect of these contributions (that is, AEI growth rates less AWE growth rates). Note that the composition effect has been presented at the start of the comparison and the residual component mentioned above has been adjusted accordingly. The composition effect presented here is the effect published each month in the supplementary tables accompanying AWE; this may be something of an approximation in this context as the effect implicitly left in the residual above is not quite the same thing. This approximation will be addressed in the next update of the work.

The results show for this particular time period (January 2005 to May 2007) that when moving from AWE to the AEI:

- overall there is generally a reduction in growth (because the AEI is lower than AWE)
- as noted earlier, the employment decomposition effect is generally positive
- each of the methodological differences – the matched pairs effect, outliers, small businesses and the formula and residual – can contribute significantly to the differences
- in general, removing the additional sample from AWE tends to reduce growth (as shown in the heading titled 'matched pairs')
- the outlier effect (replacing the AWE system with the AEI system) generally causes an increase for the series excluding bonuses, but is more mixed for the series including bonuses (and as one would expect the size of the effect for the latter is more marked, particularly for January and February 2007)
- the effect of excluding small businesses from AWE has a more mixed effect, although the size of this is relatively small especially for the series excluding bonuses
- the remaining difference (the formula effect and any residual) generally tends to reduce growth

It should be emphasised that this is a relatively short time period to interpret. Although there are 29 months, runs in the data would be expected because growth rates in successive months are highly correlated. Further, the differences in statistical terms could be viewed as modest – for example, when judged against the confidence intervals for the AEI which are ± 0.7 per cent for annual growth rates excluding bonuses and arrears and ± 2.3 per cent for the rates including bonuses and arrears.

Which is better – the AEI or AWE?

The reconciliation project shows that much of the difference between the AEI and AWE is explained by differences in estimation methods. An obvious question to ask is which of the two measures is using the better estimation method for growth rates.

One way of answering this question is to compare direct measures of the accuracy of the AEI and AWE. Measures of sampling variability for the AEI are published in the monthly Labour Market First Release. For recent periods, the magnitude of the confidence intervals for 12-month growth rates are ± 0.7 per cent for the series excluding bonuses and arrears and ± 2.3 per cent for the series including bonuses and arrears. Unfortunately, measures of sampling variability are not yet available for AWE. However, it is worth noting that the observed differences between AEI and AWE growth rates are within the range of sampling variability anticipated for the AEI.

Another way of assessing the relative quality of the two series is to compare them against the earnings data used in the National Accounts, which are based on HM Revenue & Customs data for historical periods (the AEI data are currently used for more recent periods). The results of this comparison are inconclusive and further work is needed here.

With no direct comparison of accuracy available, the methodological differences relating to each of the stages in the reconciliation tables are considered instead:

- *matched pairs* – the AEI uses a matched pairs sample in order to avoid the additional variability caused by having different businesses in the samples for different months, although this reduces the sample size and may lead to bias if there are systematic differences between the included and excluded businesses. AWE has a larger sample size in each month but this may be offset by the month-to-month volatility caused by changes to the sample of businesses. The accuracy of growth rates also depends on the accuracy of the imputation method used in AWE, which could be biased as it simply carries forward the previous pay for up to five months
- *outliers* – the picture here favours the AEI. The AEI method directly addresses outliers in terms of growth, thus ensuring more stable estimated growth rates. Conversely, the AWE

method is based on levels, not growth. It is clear that the existing AWE method needs to be improved, as experience has shown that the results can be susceptible to large revisions following late returns to the survey (AWE for December 2006 were revised upwards significantly during the January 2007 round as the result of a late return leading to one contributor changing its outlier status). It is possible that the AWE method needs some modification to make it less volatile

- *small businesses* – in principle, AWE should be more accurate as it allows for differences between smaller and larger businesses in the level of average earnings. The AEI merely assumes that growth rates for smaller businesses are the same as those for large businesses. As with the AWE imputation method, however, this advantage depends on the accuracy of the method used and there is little evidence on which to base any conclusions
- *formula* – in principle, AWE uses a more accurate estimator for levels of average earnings and, for earnings levels, should be better than the AEI, but this advantage may be less important for growth rates.

The imputation and outlier procedures are currently being reviewed as part of the work needed to move AWE to National Statistic status. This work may throw more light on the quality of the existing methods used in both AWE and the AEI.

Moving AWE to National Statistic status

The article accompanying the launch of AWE as an experimental series set out five main areas where additional work or development was needed in order to move the series to National Statistic status:

- *seasonal adjustment* – a seasonally adjusted AWE series has since been developed and is released every month alongside AWE
- *outliers* – the use of the Winsorisation technique is currently being examined
- *sampling variation* – estimates of sampling variability are currently being developed
- *imputation* – work on imputing regular pay has been completed; work on imputing bonuses is underway
- *re-engineering of the IDBR* – at the time of the article it was felt that AWE might remain experimental until the re-engineering of the IDBR was completed

Given sufficient progress in the first four areas above and given the other development work that is in hand – for example, the reconciliation with the AEI and the work that has been done on AWE revisions – there does not seem to be a good reason to allow the delays in re-engineering to unduly delay the move of AWE to National Statistic status.

The article also noted the planned development work concerning the needs of the National Accounts. Although not discussed in the current article, this work is also in hand.

Next steps

The analysis presented in this article is currently being quality assured. It is also being extended, by increasing the timescale of the analysis, by adding to the detail (adding additional factors) and by assessing the sensitivity of the results. Extending the analysis may raise issues with the work that has been done. ONS plans to update this article by the end of 2007; in the meantime, the analysis should be regarded as highly provisional.

Care also needs to be taken in drawing any conclusions at this stage about the relative quality of the two outputs. As noted above, AWE may be superior because of its greater effective sample size and its more standard methodology, but there may be issues with the precise imputation method being used, and recent experience with the outlier methodology suggests that it may not be sufficiently robust. AWE is still an experimental series and further work is needed before it can be considered a reliable measure of earnings growth.

The need to review the imputation and outlier procedures was noted in the article accompanying the launch of AWE as an experimental series. This work has to a certain extent been delayed while work was devoted to the reconciliation project. It will now progress alongside the further work on reconciliation with a view to moving AWE to National Statistic status by March 2008.

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APPENDIX

Figure A1
AEI formula for growth from month t-1 to t

$$\Delta_t = \frac{R^t}{R^{t-1}} = \frac{\sum_h \sum_g w^t_{hg} R^t_{hg}}{\sum_h \sum_g w^t_{hg} R^{t-1}_{hg}}$$

where

$$R^t_{hg} = \frac{\sum_{i \in S'_{hgt}} y^t_{hgi}}{\sum_{i \in S'_{hgt}} x^t_{hgi}}; \quad R^{t-1}_{hg} = \frac{\sum_{i \in S'_{hgt}} y^{t-1}_{hgi}}{\sum_{i \in S'_{hgt}} x^{t-1}_{hgi}}$$

$$w^t_{hg} = \frac{z^T_h}{Z^T} \times \frac{g^t_{hg} \sum_{i \in S'_{hgt}} x^t_{hgi}}{\sum_g \left(g^t_{hg} \sum_{i \in S'_{hgt}} x^t_{hgi} \right)}$$

$$g^t_{hg} = \frac{N^T_{hg}}{n^t_{hg}}$$

and where

h = industry (two-digit SIC, public/private)

g = size-band (20–99, 100–499, 500–999, 1,000+)

S'_{hgt} = matched pairs sample for industry h and size-band g (returned for *t and t-1*)

y^t_{hgi} = wages and salaries data for firm i (industry h, size-band g, from MWSS form)

x^t_{hgi} = employee data for firm i (industry h, size-band g, from MWSS form)

z^T_h = IDBR employment for industry h at time T (previous July)

Z^T = total IDBR employment for time T (previous July)

n^t_{hg} = number of firms responding to MWSS in industry h and size-band g

N^T_{hg} = number of firms on IDBR in industry h and size-band g at time T (previous July)

Figure A2
AWE formula for growth from month t-1 to t

$$\Delta_t = \frac{R^t}{R^{t-1}}$$

where

$$R^t = \frac{\sum_{h \in H} \left\{ z^t_{h0} A^T_{h0} + \sum_g \left(\frac{1}{f}\right)_{hgt} \sum_{i \in S_{hgt}} x^t_{hgi} \right\} R^t_h}{\sum_{h \in H} \left\{ z^t_{h0} + \sum_g \left(\frac{1}{f}\right)_{hgt} \sum_{i \in S_{hgt}} x^t_{hgi} \right\}}$$

$$R^t_h = \frac{\sum_g \left(\frac{1}{f}\right)_{hgt} \sum_{i \in S_{hgt}} y^t_{hgi}}{\sum_g \left(\frac{1}{f}\right)_{hgt} \sum_{i \in S_{hgt}} x^t_{hgi}}$$

$$\left(\frac{1}{f}\right)_{hgt} = \frac{\sum_{i=1}^{N^t_{hg}} z^t_{hgi}}{\sum_{i \in S_{hgt}} z^t_{hgi}}$$

and where

h = industry (two-digit SIC, public/private)

g = size-band (20–99, 100–499, 500–999, 1000+)

A^T_{h0} = factor for under earnings for firms with fewer than 20 employees (from ASHE in previous year)

S_{hgt} = returns for industry h and size-band g (including imputations)

y^t_{hgi} = wages and salaries data for firm i (industry h, size-band g, from MWSS form)

x^t_{hgi} = employee data for firm i (industry h, size-band g, from MWSS form)

z^t_{h0} = IDBR employment for firms with fewer than 20 employees in industry h

z^t_{hgi} = IDBR employment for firm i (industry h, size-band g)

N^t_{hg} = number of firms on IDBR in industry h and size-band g

Table A1
Differences between the AEI and AWE

	AEI	AWE
What it measures	Monthly change in average earnings, per job	Average weekly wage, per job
Source of data	Monthly Wages and Salaries Survey	Monthly Wages and Salaries Survey
Weighting	Each company represents a number of similar companies, based on employment. This number is updated annually	Each company represents a number of similar companies, based on employment. This number is updated monthly
Estimation	Matched-pairs estimator, calculates monthly change in earnings per employee	Ratio estimator, grossed to the ONS business register
Imputation	No automatic rules – some manual imputation	Previous pay carried forward from a maximum of five months ago
Outliers	Based on growth – if total pay is an outlier, all the data (both the regular pay and the bonus) are treated as atypical	Based on levels – separate procedures for regular pay and bonuses
Firms with fewer than 20 employees	Included in the industry employment weights but average earnings Growth is assumed to move in line with the larger businesses	Included in the industry employment weights with estimates of average earnings adjusted using factors derived from the Annual Survey of Hours and Earnings
Sample size (number used)	About 8,500 (7,500) companies	About 8,500 (8,000) companies

Table A2
Reconciliation of the differences between the AWE and AEI, including bonuses and arrears

Percentage change, year on year

			Breakdown of differences						
			Definitional	Methodological					
		AWE	Employment composition	Matched pairs	Outliers	Small businesses	Formula and residual	Total (AEI - AWE)	AEI
2005	Jan	*4.49*	*0.56*	*0.26*	*–0.86*	*0.10*	*–0.22*	*–0.16*	*4.34*
	Feb	*6.23*	*0.02*	*–0.43*	*–0.05*	*0.26*	*–0.33*	*–0.52*	*5.71*
	Mar	*4.32*	*0.63*	*–0.71*	*0.03*	*0.06*	*–0.00*	*0.01*	*4.33*
	Apr	*4.28*	*0.53*	*–0.34*	*–0.16*	*0.18*	*–0.26*	*–0.05*	*4.24*
	May	*4.44*	*0.34*	*–0.25*	*–0.39*	*0.31*	*–0.60*	*–0.59*	*3.85*
	Jun	*4.14*	*0.34*	*–0.16*	*–0.39*	*0.01*	*–0.19*	*–0.38*	*3.76*
	Jul	*4.69*	*0.32*	*0.02*	*–0.22*	*0.06*	*–0.46*	*–0.27*	*4.42*
	Aug	*4.75*	*0.23*	*–0.49*	*–0.61*	*0.09*	*–0.27*	*–1.06*	*3.69*
	Sep	*4.49*	*0.32*	*–0.75*	*–0.24*	*0.07*	*–0.45*	*–1.05*	*3.44*
	Oct	*3.91*	*0.39*	*–0.86*	*–0.27*	*0.07*	*–0.31*	*–0.98*	*2.93*
	Nov	*4.59*	*0.54*	*–0.47*	*–0.55*	*0.05*	*–0.93*	*–1.37*	*3.22*
	Dec	*4.63*	*0.33*	*–0.09*	*–0.13*	*0.13*	*–0.62*	*–0.39*	*4.24*
2006	Jan	*3.65*	*0.14*	*–0.98*	*0.53*	*0.14*	*–0.35*	*–0.52*	*3.13*
	Feb	*6.63*	*–0.04*	*–0.26*	*–0.82*	*0.40*	*–0.51*	*–1.23*	*5.41*
	Mar	*6.18*	*–0.16*	*–0.42*	*–0.43*	*0.39*	*–1.05*	*–1.67*	*4.51*
	Apr	*4.02*	*0.27*	*–0.36*	*0.06*	*–0.02*	*–0.54*	*–0.58*	*3.44*
	May	*4.65*	*0.29*	*–0.27*	*0.04*	*–0.01*	*–0.30*	*–0.25*	*4.40*
	Jun	*5.67*	*–0.05*	*–0.64*	*0.01*	*0.11*	*–0.11*	*–0.68*	*4.98*
	Jul	*4.71*	*0.11*	*–0.40*	*–0.19*	*–0.01*	*–0.38*	*–0.86*	*3.84*
	Aug	*3.59*	*0.11*	*0.14*	*0.14*	*–0.01*	*–0.21*	*0.17*	*3.76*
	Sep	*3.73*	*0.07*	*0.31*	*0.21*	*–0.03*	*–0.19*	*0.37*	*4.11*
	Oct	*4.24*	*0.00*	*0.33*	*–0.10*	*–0.04*	*–0.42*	*–0.22*	*4.02*
	Nov	*4.08*	*0.73*	*0.10*	*0.01*	*–0.07*	*–0.97*	*–0.19*	*3.89*
	Dec	*5.64*	*0.07*	*–1.50*	*0.07*	*–0.05*	*–0.32*	*–1.73*	*3.90*
2007	Jan	*6.17*	*–0.08*	*0.49*	*–1.12*	*0.53*	*–1.15*	*–1.33*	*4.84*
	Feb	*7.66*	*–0.55*	*–0.36*	*–1.31*	*0.37*	*–0.36*	*–2.21*	*5.45*
	Mar	*4.73*	*–0.39*	*–0.13*	*–0.31*	*0.13*	*–0.57*	*–1.28*	*3.45*
	Apr	*4.29*	*–0.05*	*0.13*	*–0.20*	*–0.04*	*–0.98*	*–1.14*	*3.15*
	May	*4.35*	*–0.50*	*–0.52*	*0.45*	*0.11*	*–0.32*	*–0.78*	*3.57*

Table A3

Reconciliation of the differences between the AWE and AEI, excluding bonuses and arrears

Percentage change, year on year

			Breakdown of differences						
			Definitional	Methodological					
		AWE	Employment composition	Matched pairs	Outliers	Small businesses	Formula and residual	Total (AEI - AWE)	AEI
2005	Jan	4.11	0.28	0.07	0.03	0.07	–0.36	0.09	4.19
	Feb	4.23	0.39	–0.14	0.02	0.04	–0.44	–0.13	4.10
	Mar	4.45	0.43	–0.59	0.18	0.13	–0.67	–0.53	3.91
	Apr	4.31	0.47	–0.32	0.08	0.16	–0.57	–0.17	4.14
	May	4.27	0.31	–0.28	0.01	0.23	–0.64	–0.37	3.90
	Jun	4.15	0.40	–0.40	0.12	0.01	–0.38	–0.25	3.90
	Jul	4.40	0.26	–0.38	0.27	0.13	–0.54	–0.26	4.14
	Aug	4.37	0.26	–0.62	0.27	0.07	–0.41	–0.44	3.93
	Sep	4.60	0.33	–0.70	0.20	0.07	–0.55	–0.65	3.96
	Oct	4.20	0.28	–0.77	0.23	0.10	–0.34	–0.50	3.70
	Nov	4.25	0.54	–0.50	0.19	0.08	–0.68	–0.37	3.88
	Dec	3.76	0.49	–0.32	0.30	0.19	–0.78	–0.12	3.64
2006	Jan	4.22	0.33	–0.60	0.25	0.12	–0.36	–0.25	3.97
	Feb	4.28	0.25	–0.52	0.33	0.15	–0.66	–0.45	3.82
	Mar	3.93	0.06	–0.28	0.14	0.08	–0.18	–0.18	3.75
	Apr	3.66	0.40	–0.26	0.23	0.02	–0.41	–0.02	3.64
	May	4.07	0.30	–0.18	0.09	–0.07	–0.32	–0.19	3.88
	Jun	4.25	0.17	–0.44	0.14	0.01	–0.09	–0.22	4.03
	Jul	3.59	0.25	–0.40	0.08	–0.03	–0.19	–0.31	3.28
	Aug	3.38	0.16	0.05	–0.01	–0.00	–0.01	0.19	3.57
	Sep	3.58	0.17	–0.04	0.07	–0.01	–0.03	0.16	3.74
	Oct	4.08	0.09	0.04	0.01	–0.03	–0.28	–0.17	3.91
	Nov	4.06	0.17	–0.24	–0.04	–0.09	–0.23	–0.43	3.63
	Dec	4.13	0.12	–0.28	–0.03	–0.10	–0.26	–0.54	3.59
2007	Jan	3.62	–0.10	–0.11	0.14	0.18	–0.21	–0.10	3.52
	Feb	3.85	–0.02	–0.57	0.18	0.08	0.08	–0.26	3.59
	Mar	4.14	–0.09	–0.54	0.18	0.09	–0.08	–0.43	3.70
	Apr	3.93	–0.05	–0.44	0.22	0.07	–0.38	–0.58	3.35
	May	4.04	–0.26	–0.86	0.32	0.06	0.10	–0.64	3.40

Figure A3
Reconciliation of the differences between the AEI and AWE

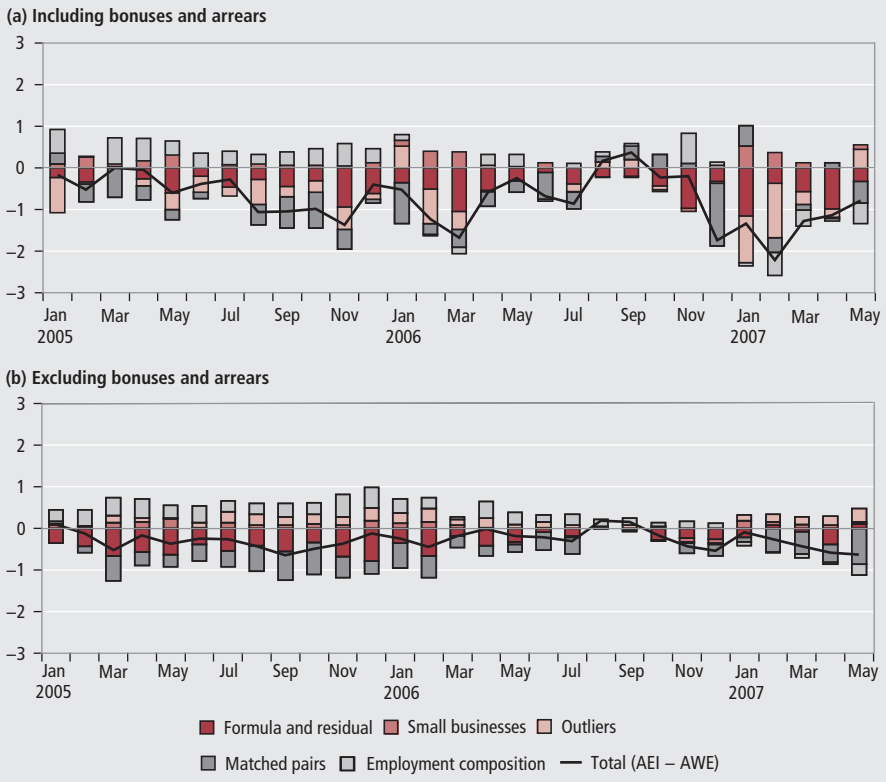

Figure A4
AEI, AWE and reconciliation of the differences between the two