

Information paper

Quality and Methodology Information

General details

Title of output:	Occupational Pension Schemes Survey
Abbreviated title:	OPSS
Designation:	National Statistics
Geographic coverage:	United Kingdom
Date of last SQR or QMI*:	April 2014
Contact details:	OPSS@ons.gsi.gov.uk

Executive summary

The Occupational Pension Schemes Survey (OPSS) is an annual survey of occupational pension schemes, and is run by the Office for National Statistics. The results are published in a statistical bulletin and a series of short stories. Until the transfer to ONS in 2006, OPSS was run by the Government Actuary's Department (GAD). OPSS collects information from occupational pension schemes about scheme membership, benefits and contributions; it includes sections on very small schemes (schemes with 2 to 11 members) and those that are winding up. OPSS covers both private and public sector occupational pension schemes registered in the United Kingdom. Results from OPSS provide a detailed view of the nature of occupational pension provision in the UK. OPSS does not cover all workplace pensions as it currently excludes contract based arrangements known as group personal pensions (GPPs). A questionnaire for GPP providers has, however, been developed and will be incorporated into the survey subject to the findings of a 2015 pilot exercise.

OPSS is conducted using online and paper questionnaires that are sent to the administrators of occupational pension schemes. When the data are returned they are passed through a series of validation checks before the results are analysed. Weighting, estimation and data collection methods are discussed in the How the output is created section. A disclosure control process is followed to ensure the published figures do not breach confidentiality rules. The statistical bulletin is published on the web using an internal content management system that is checked and approved by the line management chain.

This document contains the following sections:

- Output quality
- About the output
- How the output is created
- Validation and quality assurance
- Concepts and definitions
- Other information, relating to quality trade-offs and user needs
- Sources for further information or advice

Output quality

This document provides a range of information that describes the quality of the output and details any points that should be noted when using the output.

* Quality and Methodology Information' (QMI) replaced 'Summary Quality Reports' (SQR) from 04/11

ONS has developed [Guidelines for Measuring Statistical Quality](#); these are based upon the 5 European Statistical System (ESS) quality dimensions. This document addresses these quality dimensions and other important quality characteristics, which are:

- Relevance
- Timeliness and punctuality
- Coherence and comparability
- Accuracy
- Output quality trade-offs
- Assessment of user needs and perceptions
- Accessibility and clarity

More information is provided about these quality dimensions in the sections below.

About the output

Relevance

(The degree to which the statistical outputs meet users' needs.)

The OPSS questionnaires are reviewed each year to accommodate any changes to pension legislation and to ensure content and coverage are appropriate to user needs. Meetings are held between ONS and users to discuss any questionnaire changes before they take place.

The survey outputs are used by government departments (the Department for Work and Pensions (DWP), HM Revenue & Customs (HMRC)), regulatory bodies (The Pensions Regulator), trade unions, trade associations and industry bodies (the Association of British Insurers, the National Association of Pension Funds), charities and research institutes (the Institute of Fiscal Studies).

One of the main outputs of the survey is estimated membership of occupational pension schemes. Estimates of active membership date back to 1953. The OPSS also provides robust estimates of employer and employee contribution rates.

It should be noted that while the survey comprehensively covers occupational (trust based) pension schemes, it does not cover all workplace pension arrangements as it currently excludes information on group personal pensions (GPPs, see [glossary](#)). A survey of GPPs will be incorporated into the annual process pending the findings of a 2015 pilot exercise

Although the survey is primarily designed to measure membership, estimates of scheme numbers are also available for the private sector. It is important to note that estimates, for very small schemes in particular, continue to be subject to considerable uncertainty. Information is not available on the numbers of public sector schemes as the register used for sampling only holds "administrative units", not schemes. For more information about scheme number estimates see the Output quality trade-offs section.

For further information on how the OPSS data are used, see the Other information - Assessment of user needs and perceptions section.

Timeliness and punctuality

(Timeliness refers to the lapse of time between publication and the period to which the data refer. Punctuality refers to the gap between planned and actual publication dates.)

The [statistical bulletin](#) is published annually and consistently meets the scheduled publication date. The output is published 18 months after the period to which the data refer. The reference date for the survey is either 6 April or the date of the last set of trustees' report and accounts. The survey fieldwork occurs between September and December with validation continuing into the Spring and the results are published in September/October. For more information about the timeliness of OPSS see the Output quality trade-offs section. The timetable for publication of short stories (which would always be released after the statistical bulletin) is intentionally flexible so that analyses can be produced if users highlight a particular topic. These are pre-announced on the [UK National Statistics Publication Hub](#) at least 4 weeks in advance.

For more details on related releases, the [UK National Statistics Publication Hub](#) is available online and provides 12 months' advanced notice of regular release dates. If there are any changes to the pre-announced release schedule, public attention will be drawn to the change and the reasons for the change will be explained fully at the same time, as set out in the [Code of Practice for Official Statistics](#).

How the output is created

The statistical bulletin highlights the headline figures of membership and contribution rates. Previous to 2012, a more detailed annual report was published alongside the bulletin that provided an analysis of the nature of occupational pension provision in the UK. Publication of the annual report was ceased following a user consultation. [Previous publications](#) are available (from 2006 to 2011) on the ONS website, alongside the 2000, 2004 and 2005 survey reports produced by the Government Actuary's Department. A series of [short stories](#) are now produced to complement the statistical bulletin.

Data collection

OPSS is conducted annually using online and paper questionnaires. Paper questionnaires are sent to the occupational pension schemes selected, with a link to a facility that enables respondents to complete their questionnaires online. Different questionnaires are sent according to the nature, benefit structure and size of the scheme. Where schemes have more than 1 section, a separate questionnaire is issued for each section, usually with a maximum of 4 questionnaires per scheme.

There are 8 different OPSS questionnaires:

- i) Private sector defined benefit single section
- ii) Private sector defined contribution single section
- iii) Private sector defined benefit multi section
- iv) Private sector defined contribution multi section
- v) Public sector defined benefit single section
- vi) Public sector defined benefit multi section
- vii) 11 or fewer members
- viii) Winding up

In 2014, 56% of all responses were received via the online questionnaires with electronic responses more common among the schemes with more than 100 members.

Sampling frame

The pension scheme register, maintained by [the Pensions Regulator](#), is used as the sampling frame. It covers all occupational pension schemes in the UK with 2 or more members. There are approximately 46,500 schemes in the population.

Sample size

The sample consists of approximately 1,600 occupational pension schemes, of which 1,400 are in the private sector and 200 in the public sector. Response rates are included in the Validation - Accuracy section.

Sample design

A stratified random sample is taken from the pension scheme register with scheme membership and sector (public/private) used as stratification variables. Scheme membership refers to total membership - that is, active members, pensioner members and those with deferred entitlements. Six strata are created for each sector by dividing the population of occupational pension schemes into size bands A-F. Around 82% of schemes are very small with fewer than 12 members; however, the bulk of scheme membership is concentrated in a much smaller number of very large schemes.

In creating the stratified sample to measure variables associated with membership, a higher sampling fraction is used for the largest schemes. Pension schemes with more than 5,000 members are always included in the sample and stratified random sampling is used for schemes with fewer than 5,000 members. The 6 size bands are shown in Table 1.

Table 1: Total membership by size band categorisation

Size band	Members
A	10,000 +
B	5,000 - 9,999
C	1,000 - 4,999
D	100 - 999
E	12 - 99
F	2 - 11

For the public sector, the Pension Scheme Register has a list of “administrative units” rather than a list of schemes. These units may be schemes, sections or other administrative units. For example, there are many entries for the Local Government Pension Scheme as this is administered at a local level. This means that although the survey reports membership for the public sector, it is not possible to report on the number of schemes in the public sector.

The proportions sampled from each size band are shown in Table 2.

Table 2: The universe of schemes and the sample selected: by size and sector, 2014 (UK, numbers)

	Total on register	Proportion sampled	Total in sample
Private sector			
10,000+	263	100.0	263
5,000 to 9,999	197	100.0	197
1,000 to 4,999	934	22.5	210
100 to 999	3,083	8.5	262
12 to 99	3,392	2.0	68
2 to 11	38,168	1.0	384
Totals	46,021		1,384
Public sector			
10,000+	115	100.0	115
5,000 to 9,999	21	100.0	21
1,000 to 4,999	75	40.0	30
100 to 999	54	33.3	18
12 to 99	37	33.3	12
2 to 11	32	33.3	11
Totals	334		207

1. For the private sector, numbers refer to numbers of schemes. For the public sector, numbers refer to administrative units.

In general, almost all respondents are able to complete the questionnaire fully; the most frequent exceptions are the questions on the status of the scheme at different dates and the number of exits from the scheme.

Each year, once the sample has been selected, a cleaning exercise is carried out to confirm schemes' details (for those newly selected to the survey), prior to the forms being sent out. During this exercise, schemes are asked to confirm their benefit structure (defined benefit or defined contribution), the size band appropriate to their scheme, their contact details and their status.

Outliers

Within the survey there is currently no treatment of outliers. However, any extreme values are verified with respondents at the validation stage.

Imputation

There is currently no imputation used within the survey and non-responders and schemes not sampled are both estimated as detailed below.

Weighting and estimation

Weights are calculated in two ways:

a) Membership weights

Weights are calculated at a stratum (size band) level and for public and private schemes separately, using auxiliary information on total scheme membership from the pension scheme register. While this membership is similar to the total membership collected by OPSS, the 2 differ because of a delay in the reporting of membership to the Pensions Regulator.

The sampling fraction (for each stratum) is the number of schemes in the sample divided by the number of schemes in the universe. The membership response rate (for each stratum) is the membership of the schemes which responded divided by the total scheme membership of those selected from the pension scheme register.

The weights for each stratum are calculated by taking the inverse of the sampling fraction and dividing by the membership response rate. Further weights are applied for specific analyses to take account of non response to specific questions (item non-response).

b) Scheme numbers

This methodology attempts to correct for the identification of “out-of-scope” schemes at different stages of survey processing. Examples of out-of-scope schemes are schemes with fewer than two members, or schemes that have finished the winding up process. Scheme number weights are calculated in 2 stages. The first stage involves the detection of out-of-scope schemes. When the sample is selected, an exercise is carried out to verify key variables and those schemes found to be out-of-scope are not sent a questionnaire. After this first stage of identification it is possible to estimate the number of in-scope schemes in the population for each stratum.

The second stage also involves the detection of out-of-scope schemes and this takes place when the questionnaires are returned to ONS. To estimate the final number of in-scope schemes, the estimates from the first stage are multiplied by the proportion of in-scope schemes found in the responding sample. This is again done by each stratum. The final weights are then calculated by dividing the final number of in-scope schemes by the number of in-scope schemes that were found in the responding sample for the given stratum.

Further details of the scheme numbers methodology are given in the [methodological article](#).

Statistical disclosure

[Statistical disclosure control methodology](#) is applied to the OPSS data. This ensures that data attributable to individual respondents are not disclosed in any publication or dataset. The [Code of Practice for Official Statistics](#), specifically principle five: confidentiality sets out how to protect data from being disclosed. This principle includes a guarantee to survey respondents that “official statistics do not reveal the identity of an individual or Organisation or any private information relating to them”.

Validation and quality assurance

Accuracy

(The degree of closeness between an estimate and the true value.)

Non-sampling error

There is the potential for non-sampling error which cannot be easily quantified. For example, undetected deficiencies may occur in the survey register and errors may be made by the respondents when completing the survey questionnaires.

Questionnaires are usually despatched to schemes 5 months after the end of the reference year. Two written reminders are subsequently sent to non-responding groups and are followed by telephone response, chasing groups to try to minimise non-response and thereby any non-response bias. There is also the possibility of using the legal powers of the Statistics of Trade Act to force response, although the ONS prefers to work together with respondents to collect the necessary information.

Returned information is run through a series of validation checks to identify any errors. These include tests to ensure that all required questions are completed, that the responses to individual questions are consistent within the questionnaire as a whole, and that the returned data are consistent with historical data from the scheme. Data that fail the validation checks are queried with respondents to confirm or correct the original data.

Sampling error

Sample surveys are used rather than censuses because the census process is too lengthy and costly to be viable. Standard errors illustrate the spread of results, which would be expected from estimates derived from successive samples selected by chance from the same population using the same sample specification. While each sample is designed to produce the “best” estimate of the true population value, different equal-sized samples covering the population would generally produce varying population estimates.

Response rates are published each year in the statistical bulletin. The overall response rate in 2014 was 88%. The response rate from private sector schemes in both 2013 and 2014 was 87%, however, this masks variation between schemes of different sizes. Response rates were highest within the largest schemes. For the public sector, responses were received from 91% of administrative units.

Table 3: Private sector response rate: by scheme size, 2012 to 2014 (UK, numbers)

	Total sample	Responding sample	Response rate (%)		
			2012	2013	2014
10,000+	263	243	93	89	92
5,000 to 9,999	197	177	93	92	90
1,000 to 4,999	210	189	91	88	90
100 to 999	262	236	92	92	90
12 to 99	68	58	84	88	85
2 to 11	384	306	83	80	80
Total	1,384	1,209	89	87	87

1. The “responding sample” and “total sample” columns include a few schemes who informed us that they were ineligible.

Table 4: Public sector response rate: by administrative unit size, 2012 to 2014 (UK, numbers)

	Total sample	Responding sample	Response rate (%)		
			2012	2013	2014
10,000+	115	106	100	95	92
5,000 to 9,999	21	18	95	95	86
1,000 to 4,999	30	28	100	93	93
100 to 999	18	18	100	95	100
12 to 99	12	11	100	77	92
2 to 11	11	7	73	82	64
Total	207	188	98	93	90

1. Numbers refer to administrative units

2 The "responding sample" and "total sample" columns include a few schemes who informed us that they were ineligible.

Estimates of scheme numbers were withdrawn in 2008 because of an unusual pattern in the proposed final output. These estimates were re-introduced in 2010, making use of a new methodology. Estimates from 2007 onwards were produced on the new basis. The methodology for weighting estimates of scheme numbers was improved, but the problem of sampling variability which produced a set of unusual results in 2008 was not fully resolved.

Despite further efforts by ONS to improve these estimates, most notably by increasing the number of private sector forms sent to schemes with between 2 and 11 members, the sample size remains smaller than that required to produce reliable estimates for scheme numbers. It is important to note, therefore, that the estimates of numbers of very small schemes in particular continue to be subject to considerable uncertainty.

Calculation of standard errors

The standard error measures the precision of a sample. In statistics, a sample mean deviates from the unobserved actual mean of a population; this deviation is measured by the standard error. The smaller the standard error, the more precise the sample mean will be. Estimates for standard errors are released in a table alongside the statistical bulletin.

Coherence and comparability

(Coherence is the degree to which data that are derived from different sources or methods, but refer to the same topic, are similar. Comparability is the degree to which data can be compared over time and domain for example, geographic level.)

Coherence

One of the other main data sources produced by ONS on pensions is the Annual Survey of Hours and Earnings (ASHE). Estimates from ASHE include the proportions of employees currently contributing to a workplace pension by type of pension. The figures also show estimates of number of jobs from which the proportions are derived - although these figures are for indicative purposes only. A broad comparison between the active membership from OPSS and the number of employees (approximately equivalent to the number of jobs) contributing to a pension is therefore possible - if the ASHE analysis is restricted to the occupational types of pension only. OPSS does not cover group personal (or stakeholder/self invested personal) pensions. Differences between the 2 sources are caused by differing survey methodology and differences in the time of reporting but mainly because respondents to OPSS are schemes, respondents to ASHE are employers. The ASHE weighting methodology is also optimised for estimating pay data rather than pensions data.

Reports are also available from the Pensions Regulator covering different aspects of occupational pension scheme data - the Purple Book covers defined benefit schemes, the Green Book covers defined contribution schemes.

Comparability

Some of the time series from OPSS are available back to 1953 - although given methodological changes over time, direct comparisons should be made with caution. Estimates for active and pensioner membership have been collected from 1953 with preserved pension entitlements from 1983. The survey has only been conducted on an annual basis since 2004 (although the 2005 survey only covered the private sector).

Since ONS took over the OPSS survey in 2006 some changes have been made to improve the methodology of the survey. During work on the 2007 survey some adjustments were made to the 2006 and 2007 survey results, which means that caution should be exercised when comparing results from 2006 onwards with previous years. This was partly to do with adjustments relating to late returns for the 2006 survey, and partly to do with a review of the estimation methods applied to the survey.

Each year the OPSS questionnaires are reviewed and questions may be added, removed or amended as necessary to meet user needs and improve the questionnaire and resulting data quality. This means that the data collected may vary over time, although consistency is aimed for wherever possible. The surveys have become more consistent year on year since the first ONS survey as this approach has been different to the GAD surveys which each considered different issues in detail.

In the 2008 survey, questions were added that asked schemes to provide details of the total numbers of pensioner members and members with preserved pensions. Before 2008 these totals were derived by summing their constituent components. Where any components were missing, the total of the available components was used. The approach used since 2008 has led to an improvement in the estimation of total membership figures. It may be responsible for part of the increase in numbers of pensions in payment and preserved pension entitlements between 2007 and 2008.

Experience from previous surveys has frequently led to improvements to some questions and changes to others which were no longer appropriate because of changes to pension schemes or pensions legislation. For example, as part of the 2010 survey, the questionnaires were redeveloped to capture cases where schemes (or sections) had groups of members with differing contribution or accrual rates. Respondents were asked to record each rate and estimate the proportion of active members contributing, or accruing benefits, at each rate. Weighted-average contribution rates across all schemes were calculated based on the estimates for numbers of active members contributing at each rate. The changes to the questionnaire in 2010 described above mean that comparisons between 2010 and earlier years should be treated with caution.

In 2010, some of the largest public sector schemes in the sample which were previously providing information only at scheme level, not for each of their sections separately, were asked to provide section level information. Before 2010, the members of closed sections of these schemes would have appeared in the "open" category if the scheme status as a whole was open. In 2010, such membership is classified in the "closed" category. From the 2011 survey onwards, all public sector schemes in the sample were asked to return information for each of their sections. Changes in the definition of public and private sectors also mean that estimates differ prior to 2000, as some organisations such as the Post Office and the BBC were reclassified at this stage.

Concepts and Definitions

(Concepts and definitions describe the legislation governing the output, and a description of the classifications used in the output.)

Survey data are collected under the statutory powers of the UK Statistics of Trade Act 1947.

OPSS is one of a very limited number of National Statistics surveys of pension schemes. "Pensions" is a sub group of the [National Statistics Harmonisation Programme](#) and OPSS is represented on this group. The possible creation and use of harmonised standards on pensions will therefore be kept under review.

Other information

Output quality trade-offs

(Trade-offs are the extent to which different dimensions of quality are balanced against each other.)

As discussed in previous sections, the focus of the survey is upon provision of membership estimates. Scheme numbers estimates would benefit from a larger sample of very small schemes. However, unless additional resources are allocated to the survey so that the sample size could be increased, this would be to the detriment of the quality of the membership estimates. ONS does not consider this to be a priority in terms of resource allocation at a time of tight budgets.

In terms of timing, although there appears to be a long gap between the reference date of April and the publication of estimates (around 18 months later), it is not feasible to reduce this gap significantly without impacting upon the data quality. Many schemes do not receive reports from their actuaries or advisors until near the end of the calendar year. Bringing forward the fieldwork may result in schemes responding with data from earlier years where that is the only information they have.

Assessment of user needs and perceptions

(The processes for finding out about uses and users, and their views on the statistical products.)

The surveys were originally devised by GAD but have been developed and questions have been re-designed/added by ONS in consultation with DWP, HMRC and the Pensions Regulator. Meetings are held at least twice a year to discuss the quality of the outputs and any problems with the questions. Users from the Pension Statistics Advisory Group (PSAG), which includes stakeholders from academia, private sector and other government departments, are contacted regularly to discuss any developments with OPSS, gain feedback and answer queries about the outputs. Any queries that are asked by users of OPSS are monitored in order to understand how the statistics are being used and whether the outputs are useful in aiding policy decisions and pension reform strategies. Contact details for the survey statistician and a request for user feedback are included in the statistical bulletin.

A [consultation on the future of OPSS](#), considering the improvements that could be made to OPSS, was carried out between April 2011 and June 2011. Five issues were outlined and users were asked to give their views on the areas for review. A summary of responses has been published outlining users' feedback on the ONS website.

OPSS was assessed by the UK Statistics Authority to ensure it was meeting the needs of its users and not placing any unnecessary burden on respondents. This involved consulting with the users and respondents to find out their opinions as well as reviewing all aspects of the survey. The [Assessment Report on Pensions](#) was published on the 28 October 2010. In response to the assessment two documents were produced looking at the users and uses of OPSS statistics. Further details are provided in the [How Pension statistics are used](#) and [Meeting the needs of pension statistics users](#) documents.

A further [consultation](#) considering the presentation of statistics from OPSS was carried out between December 2012 and January 2013 resulting in the annual report being replaced by a series of short stories.

Sources for further information or advice

Accessibility and clarity

(Accessibility is the ease with which users are able to access the data, also reflecting the format in which the data are available and the availability of supporting information. Clarity refers to the quality and sufficiency of the release details, illustrations and accompanying advice.)

ONS's recommended format for accessible content is a combination of HTML webpages for narrative, charts and graphs, with data being provided in usable formats such as CSV and Excel. The ONS website also offers users the option to download the narrative in PDF format. In some instances other software may be used, or may be available on request. For further information please refer to the contact details at the beginning of this document.

For information regarding conditions of access to data, please refer to the links below:

- [Terms and conditions \(for data on the website\)](#)
- [Copyright and reuse of published data](#)
- [Pre-release access \(including conditions of access\)](#)

- [Accessibility](#)

In addition to this Quality and Methodology Information, Basic Quality Information relevant to each release is available in the background notes of the [Statistical Bulletin](#).

Useful links

[ONS website](#)