

eNews from GAD

Actuarial analysis from the public sector

Issue 19, April 2015



Welcome to eNews – GAD's regular newsletter. Actuaries are practised at exercising judgment in areas where there are imperfect data. And our professional standards oblige us to communicate data limitations to clients and explain their implications for decision-making. Nevertheless, the emergence of avoidable data imperfections can be frustrating, especially where there are major policy implications. In this issue, Chris Daniels considers the importance of data quality in the context of long-term financial commitments, such as pensions. In particular, what data quality is, the potential ramifications of deficiencies and how actuaries can make a valuable contribution to identifying, resolving and managing these issues.

Also in this issue, Matt Gurden considers the position of government when it acts as a guarantor in respect of financial commitments of other organisations, such as privatised companies. A systematic approach is a valuable tool in managing the risks involved, and we look at how the techniques GAD employs on behalf of its clients can be useful to decision makers. Similar approaches are applicable to other contingent liabilities.

I hope that you enjoy this issue; previous issues of eNews are available on our website www.gov.uk/gad.



MARTIN CLARKE, GOVERNMENT ACTUARY

NEWS FROM GAD

The Aqua Book & One Year On Review

A [report](#) has been published by HM Treasury on progress from the 2013 Macpherson review of quality assurance of government models that inform policy. The report focuses on progress against the eight key recommendations of the 2013 review, and references GAD services in quality assurance. [Guidance](#) on providing quality analysis has also been published.

2015 National Insurance Fund Uprating report

GAD has published the Government Actuary's [annual report](#) on the Great Britain National Insurance Fund. This report discusses the potential effect on the Fund of the up-rating of contributory benefits and changes to National Insurance contribution rates and thresholds. The report focuses on 2015-16, but also considers the projected position of the Fund over the next five financial years.

DEVELOPMENTS

Budget 2015

On 18 March the Chancellor of the Exchequer, George Osborne, presented his [2015 Budget](#), setting out the government's plans for the economy and public finances. Please see GAD's [Technical Bulletin](#) for an overview of some of the measures announced.

Governance of public service schemes

TPR has [published](#) its [draft code of practice](#) and [regulatory strategy](#) on the governance and administration of public service schemes. The code has been laid before Parliament and the Northern Ireland Assembly and is due to come into force on 1 April 2015. TPR also consulted on its draft [compliance and enforcement policy](#) and launched an e-learning programme, [the Public Service toolkit](#), for those involved in running public service pension schemes.

New State Pension regulations

New [regulations](#), which come into force on 6 April 2016, set out some of the detailed rules relating to the introduction of the new State Pension, provided for under the [Pensions Act 2014](#).

Guidance guarantee

Following the Budget 2014 announcement of a 'guidance guarantee' at retirement from April 2015 (see GAD's [Technical Bulletin](#)), the government has announced that The Pensions Advisory Service will deliver guidance [by phone](#) and Citizens Advice [face-to-face](#). A January [update](#) sets out further details, since when the government has launched the [Pension Wise](#) website and phone line. The Financial Conduct Authority has also [published](#) rules to further protect consumers which require consumers to be given appropriate risk warnings. The Pensions Regulator (tPR) has [published](#) a draft essential guide providing complementary guidance for trust-based schemes.

Consultation on care costs and appeals

The Department of Health (DH) has [consulted](#) on draft regulations and guidance to implement the cap on care costs legislated for by the [Care Act 2014](#) (see [factsheets](#)). The consultation also included policy proposals for a new appeals system for care and support. [Consultation](#) closed on 30 March.

DATA MANAGEMENT: HOW CAN YOU HAVE QUALITY AT THE SAME TIME AS QUANTITY?

Many organisations hold large data sets, organised volumes of quantitative and qualitative information. Where these data sets describe financial obligations, entitlements or other commitments, the quality of this data (its relevance, accuracy and completeness), is a critical concern for stakeholders. GAD is often reliant on the quality of large data sets when advising its clients and, as Chris Daniels explains below, may be able to assist clients and data owners with data quality management.



Chris Daniels

Data quality: What, why and who

Computing technology makes acquiring, storing and using large data sets a regular feature of the modern world. Where organisations including government and public sector bodies hold and use data it is important that the data, the systems used to store it, and the processes used to manipulate it, are of sufficient quality to be fit for the purpose for which the data is held. Using data which is inaccurate, incomplete or simply out of date raises the risk of error and potentially financial or even reputational loss.

However, errors are not always straightforward to find and issues may not emerge until long after the data has been used to inform decisions. Large data sets may be stored across multiple systems and there may be many different stakeholders including those with overall responsibility, those responsible for storing and making the data available, and users. Management of data quality is therefore an important concern and can involve many different groups.

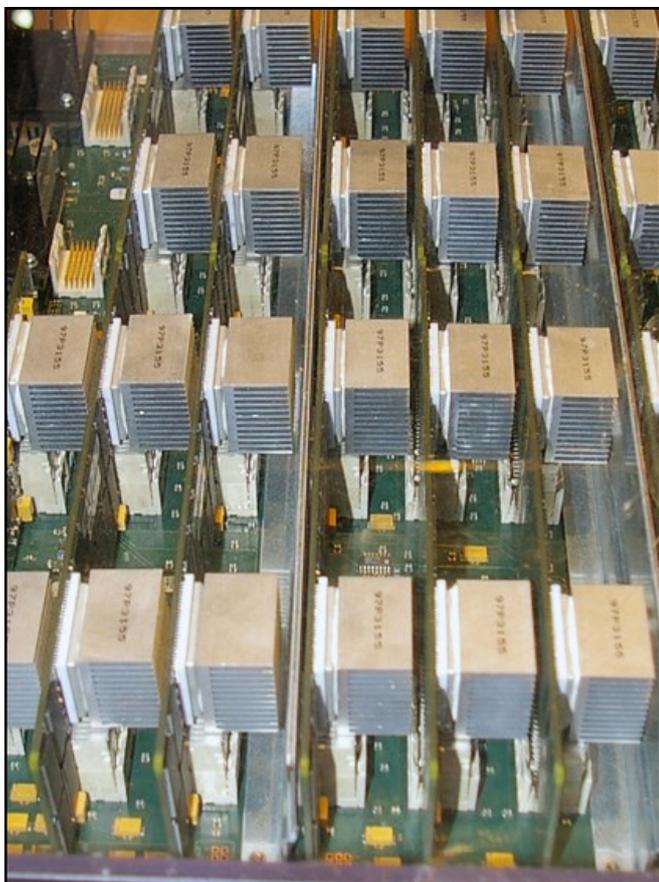
As actuaries we provide our clients with advice based not only on our knowledge and understanding but also on numerical and statistical analysis. In this latter respect we are reliant on data in much of our work. For example, relying on data on individuals where we are seeking to attribute a value to a future entitlement of some sort or more general economic data which we use to model future outcomes (always remembering of course the past is not necessarily a guide to the future). Where our clients have responsibility for some of the data we use, we can often provide helpful input on data quality, especially where we may have a different perspective on the data from other users.

‘Errors are not always straightforward to find and issues may not emerge until long after ... decisions.’

An example: Pension scheme data

This is best explained with an example of the data we work with in providing advice to our public service pension scheme clients: the data held about scheme members and their pension entitlements. Many of the principles discussed are however generally applicable to other sets of data in different contexts. We have primarily considered centrally administered schemes in this article; slightly different issues may apply to schemes that are locally administered.

As actuaries, we are not the primary user of pension scheme data. The primary user is the administrator who, on behalf of the scheme manager (or trustees), is tasked with delivering the right benefit payments to the right beneficiaries at the right time. This is clearly an important job and one expected to come under increasing scrutiny in the public sector under the new governance structures and the extended oversight of the Pensions Regulator introduced in recent UK public service pension scheme legislation.



DATA MANAGEMENT: HOW CAN YOU HAVE QUALITY AT THE SAME TIME AS QUANTITY? (continued)

Administrators must maintain data and systems in the face of continuing changes and challenge. For example, the introduction of new scheme benefit structures in April 2015 for many schemes and the ever present importance of data security (as some of the data stored is confidential). HM Treasury recently reiterated the importance of pension scheme data quality and the role the new governance framework is expected to play (including actions HM Treasury may take) to ensure schemes maintain high quality data. An [exchange](#) between the Director General of Public Spending and Finance and the Government Actuary in November 2014 highlighted some concerns and expectations.

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by close well planned
co-operation between GAD
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administrators.’**

As pension scheme actuaries our data requirements are substantially lighter and less comprehensive than those of administrators. We only need enough information to estimate future benefit payments which depend upon a range of factors, for example: length of service, pay progression, longevity, and state of health. Therefore we work with a subset of the full pension scheme data which allows us to determine current entitlements and the pattern of recent events affecting payments (the latter is important to inform assumptions about the future). Information needed only for member communications and making payments is not required. For our work it is critical that the data records are both complete and correct, and that the data subset we receive is extracted completely and correctly from those records. This extraction process is not always straightforward. Success is often achieved by close well planned co-operation between GAD and the scheme and administrators, allowing sufficient time for each stage: agreeing the data required, testing and checking, implementation and resolution of problems.

An advantage of working with a subset of the full data (particularly for the very large public service schemes) is that interrogation and manipulation of the subset can be considerably easier and cheaper than would be possible using the full dataset. This can allow GAD to provide insight and assistance that can be of value to the owners of the data (scheme managers or trustees) and administrators.

For example:

- We can identify data inconsistencies, both within a single dataset and between datasets provided over time. Whilst such issues may be associated with the extract process itself (which can be readily tested) it could also be indicative of some systemic issue with the underlying data which requires further investigation. Such ‘bulk’ processing of data also particularly lends itself to ready identification of obvious data errors (for example incorrect dates of birth, unrealistic levels of pay etc). Identification of these types of issues can help in planning rectification activity and ensuring efficient allocation of limited resources.
- We can identify trends in data. Trends may be of interest to administrators for work management purposes. They may also be of wider interest to scheme managers for example in workforce planning and pay modelling.
- We can readily summarise large datasets and present comparisons against audited material to offer reassurances to governance bodies. Such summaries and presentation can be tailored to meet particular concerns which may arise from time to time.
- Our ability to readily interrogate the dataset can help scheme managers respond to information requests in an era of ever increasing transparency.

Our own experience at GAD shows that the best advantage is derived from regular data exchange. Whilst four yearly data provision to fit with four yearly valuation cycles may appear cost effective, in practice moving to more frequent and even annual data extracts can be cheaper (in terms of GAD and administrator costs) as well as providing scope for better pay back in the areas outlined above.

Clearly data issues are not unique to pensions. Actuarial input may be a useful resource in managing data quality issues elsewhere, particularly where there are complex financial implications. If you are interested in the issues raised here and would like to discuss further, please contact your usual GAD adviser or our [enquiries team](#).

MANAGING THE UNCERTAINTY OF FINANCIAL GUARANTEES

Government departments expose taxpayers to potential losses when promising to take responsibility for another organisation's financial obligations, should they be unable to meet them. Poor management by the organisation, or unexpected events such as the global credit crunch in 2007-08, can mean the cost is higher than was expected and potentially at a time when it can least be afforded. Identifying the nature of the risks involved can enable departments to make better decisions when managing such guarantees.



Matt Gurden

Know the risks

For many departments, the financial guarantees they provide are the result of historic decisions. However, if they are to manage the guarantees and make decisions appropriately, they need an up-to-date understanding of the associated risks, including the likelihood, timing and size of any future financial support. There may also be opportunities to take actions that will alter the risk of future support being required, which could be overlooked if the guarantee is not being managed.

This is where the Government Actuary's Department (GAD) comes in. GAD uses a variety of tools and techniques to quantitatively assess the risks of these guarantees and inform the advice it gives to departments.

Quantitative assessments

Understanding the impact of different actions is a key part of effective decision making. Quantitative analysis provides a way of doing this systematically; it enables you to review information relating to the decision being taken, and your views of the environment (whether regulatory, economic or political) in which you are operating. Various techniques can be used to translate that information, and a proposed action, to generate insights into the likely outcome of the chosen decision. This could include:

- A 'best estimate' of the outcome based on a single set of information and assumptions judged to correspond to the most likely scenario, or estimates based on conservative or optimistic views of the future,
- The likelihood that an outcome will be at least as good (or as bad) as some pre-defined position, based on analysis of many different potential scenarios and assumptions.

Both of the above can provide valuable insights for decision makers. Together with qualitative assessments, quantitative analysis should enable decision makers to understand the implications of their decisions and therefore make better informed decisions.

Financial guarantees

The UK government provides financial guarantees including:

- **Infrastructure debt** Guarantee that repayments will be paid to the lenders to certain UK infrastructure projects
- **Pension benefits** Guarantee that the pension benefits due from certain pension schemes will be paid in full
- **Mortgage loans** Covers the first 20% of losses mortgage lenders could suffer on certain high loan to value mortgages
- **Terrorism insurance cover** Guarantees that qualifying terrorism insurance claims will be fully paid out

A recent example: Railways pensions

Quantitative methods were at the centre of the work done by GAD actuaries who recently worked closely with the Department for Transport (DfT). DfT provides guarantees to some railways pension arrangements following industry privatisation. The amount the department may need to pay in both the short and long term depends critically on investment returns, price inflation and future life expectancy.

The main lever the department can use to manage the risks from the guarantees, is to influence the investment strategy followed by the managers of these pension arrangements. Quantitative analysis enabled DfT to understand the best investment strategy to remove the risk of short term payments increasing by up to £100m, whilst also minimising the risk of unexpected payments in the long term of up to £1bn.

The successful completion of this project is expected to save the department £100m in future financial support.

If you are responsible for managing financial guarantees to other organisations GAD may be able to help. Please contact us to find out more.

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For details of our management team and office address please visit:

<https://www.gov.uk/government/organisations/government-actuaries-department#people>

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