



# eNews from GAD

Actuarial analysis from the public sector

Issue 22, December 2015



**Welcome to eNews** – GAD's regular newsletter. A key component of GAD's strategy and values is working as trusted partners with our clients to understand their business needs and develop solutions that add value for them. One of the ways we do this in practice is by our staff working onsite with our clients on a regular basis. In this issue, we look at why our clients were keen to do this and some examples of what the outcomes have been for a number of them.

At the end of October ONS published its most recent national population projections for the UK. Actuaries have a deep understanding of demographic analysis and the release of new data is of major interest to us. These detailed statistics have significant implications for the UK public sector which Joanne Meusz examines in our second article.

Another example of how we act to partner with our clients and other organisations is by facilitating events on topics where we all have experience and expertise to share. We look at what happened at two recent breakfast events: the Long-Term Modelling Seminar and the Contingent Liabilities Symposium.

I hope that you enjoy this issue and would like to take this opportunity to wish you a very happy Christmas and New Year holiday. As always, previous issues of eNews are available on our website [www.gov.uk/gad](http://www.gov.uk/gad).

MARTIN CLARKE, GOVERNMENT ACTUARY

## NEWS FROM GAD

### Tim Gardner appointed as Chief Operating Officer

Tim was previously Finance Director at the Foreign and Commonwealth Office, before moving on to set up two relatively large shared services for Departments with an overseas presence. Here in GAD Tim will lead our change programme finding even smarter ways to deliver great innovative solutions to our clients. In the short term he will focus on setting up the new Actuarial Services team, centralising as much as possible of the repeatable calculation and modelling activities into one team to further improve the quality of offer, whilst reducing the cost of this support to clients.

The key contacts for clients within GAD will be unchanged but will be able to devote more time to providing expert support, helping clients to realise opportunities and pre-empt potential challenges.

### First Certified Actuarial Analyst qualifies at GAD

We are pleased to announce that Michael Tagg has taken another step on his career at GAD by fully qualifying as the **first Certified Actuarial Analyst (CAA)** under the UK professions' rules. CAA is a new membership qualification offered by the Institute and Faculty of Actuaries (IFoA) for those working in a technical actuarial support role. We wish Mike the very best in his future career at GAD.

## DEVELOPMENTS

### Spending Review and Autumn Statement

The November 2015 [Spending Review and Autumn Statement](#) confirmed a weekly starting rate for the new Single Tier state pension of £155.65 from April 2016, announced a six month delay in the next two increases in automatic enrolment minimum contribution rates (to align with the start of the tax year), and confirmed that the [response](#) to this summer's consultation on pension taxation will be made at Budget 2016. The Government also published [criteria](#) for pooling Local Government Pension Scheme assets into up to six British Wealth Funds.

### Governance & administration in public pensions

The Pensions Regulator has [published a report](#) summarising the findings of a voluntary survey of public service pension schemes carried out between July and September 2015. The survey assessed what schemes are doing to meet the requirements on governance and administration, as set out in tPR's [Code of Practice](#). See also our recently issued [note](#) on risks and governance for public service pension schemes.

### ONS population projections

The Office for National Statistics has [published](#) the 2014-based UK population projections. Under the principal projections, the [population](#) is projected to increase by 9.7 million over the next 25 years to 74.3 million. The average (median) age is projected to rise from 40.0 in mid-2014 to 42.9 by mid-2039. Whilst the pace at which [mortality](#) rates are assumed to improve in the long term is unchanged compared to the 2012-based projections, life expectancies have fallen slightly. This is a result of heavier assumed mortality rates in the short term and other minor methodological changes.

### Pension reform priorities

In October the Government [announced](#) it will delay the implementation of Defined Ambition, Collective Benefits and Automatic Transfers, given the other pension reforms currently underway. It intends to revisit these policies once the market has had time to adjust to other reforms such as the new State Pension, automatic enrolment and the increased pension flexibilities.

## PARTNERSHIPS: NEW WAYS OF WORKING TOGETHER

A change is taking place in the way that Government departments access GAD advice and explore whether GAD would be able to help in new areas. Alongside the traditional written, telephone and email communications, 14 Government departments now have actuarial advice available to them 'on tap' via a regular GAD onsite presence. For the likes of the Home Office, Department for Transport, HM Treasury (HMT) and Department for Work and Pensions (DWP) this has resulted in greater partnership, increased efficiencies and faster decision making.

So why did these departments decide to bring GAD onsite? What do they get out of this new type of relationship? And how does it work in practice? Here, GAD clients and their onsite actuaries share their perspective.



Dave Johnston

### Home Office

**Dave Johnston** has been working onsite for 1½ years at the Home Office with Angela Chadha who is Head of Police Pensions Analysis & Reform.

**Angela:** 'I joined the Home Office as Head of the Police Pensions policy team in April 2014 at a critical point in delivering the 2015 Police Pension Scheme. This was a complex project with some significant challenges including tight timescales and difficult stakeholder relationships. Amongst my biggest challenges were my own inexperience of the world of pensions and the loss of long standing expertise in my team. This is where GAD has been fantastic in providing the technical support that we really needed.'

'Dave has become an important and much valued part of my team... GAD is a much valued partner.'

'It's been particularly helpful to have Dave, our GAD advisor, working onsite with us for one day a week. Dave has become an important and much valued part of my team. This has made it easy to resolve technical queries quickly and ensure that we have timely actuarial advice throughout the development of policy. Dave attends my fortnightly team meetings, where he has a regular 'teach in' spot on a particular pensions issue to assist us in understanding the detail. He's been really great in translating technical complexity into a language that we as policy makers can understand and apply in our work. GAD is a much valued partner for the Home Office Police Pensions Policy team.'



Photograph: Tobias Walter

### Department for Transport

**Sarah Brough** has been working onsite for nearly three years at the Department for Transport with Sue Waring who is the Railways Pension Policy lead. The arrangements have given GAD an insight into how the Department works and its priorities.

**Sue:** 'For me the benefit has been to have an actuary available on a weekly basis to discuss policy issues face-to-face rather than over the phone. It's easier to talk through technical issues in particular in this way. Railways franchising policy draws in a number of colleagues from our Legal and Commercial divisions and I have been arranging meetings on days when Sarah is onsite so we can discuss issues together rather than for me to act as a post-box or to try to find diary slots. New pensions issues emerge on a frequent basis and it's good to have Sarah here to tackle things straight away rather than for me to have to write an email. It's very efficient.'

'It's easier to talk through technical issues face-to-face.'

## PARTNERSHIPS: NEW WAYS OF WORKING TOGETHER (continued)



Ian Rogers



Cora Ciechanowicz



Mark Shaw

### HM Treasury

**Ian Rogers** worked onsite with HMT's Insurance and Financial Regulators team for two years with Frank Carson, Deputy Director. For Ian this arrangement was about working more effectively together.

Ian handed over to Cora Ciechanowicz with effect from October this year and Cora continues to build on Ian's work.

**Ian:** 'My focus was on helping HMT colleagues by offering fresh insights. I was also able to offer support on making sense of the impact of regulatory changes such as Solvency II, and arrange briefings on insurance principles, accounting and regulation.'

'Where there is value in engaging GAD more formally for a piece of work, the regular contact from being onsite makes this process much easier. For example, ongoing discussions about terrorism risk resulted in being asked to provide a comprehensive review of the Government's guarantee to Pool Re (see our previous [eNews article](#)) to inform HMT's negotiations on the charge for this guarantee.'

'Particularly helpful to have  
an immediate source of  
expert advice.'

**Frank:** 'I have found it particularly helpful to have an immediate source of expert advice, and our ability to commission more detailed actuarial assessments on matters such as estimating the value of Government's contingent insurance liabilities has been invaluable.'

### Department for Work and Pensions

For GAD, there is the opportunity to learn and improve on what we do for clients. One of our key values is partnering with our clients to understand their business needs and develop solutions that add value for them.

**Mark Shaw** has been onsite at the DWP Private Pensions policy team since February, working there two days a week.

**Mark:** 'The main benefit for me of being onsite is simply being face-to-face with the policy makers and analysts. In the time I have been there I have helped on collective benefits, single-tier pension issues, GMP equalisation, quality tests for auto-enrolment and secondary annuity market issues. I doubt that would have happened if I were not onsite, or at least not to the same extent. It definitely helps that I am there when the policy makers and analysts are talking – it gives me an immediate understanding of their challenges.'

'When I mentioned I was writing this article to my new DWP colleagues, I also asked what they thought about my presence onsite. Their answer was they thought it was extremely helpful.'

'It definitely helps that I am  
there when the policy-makers  
and analysts are talking.'

### How does it work in practice?

Our actuaries usually work a day a week in their client's office but anything less or more frequent can be arranged too. Using remote working, we stay in touch with GAD work via a wi-fi connection and we're also available for onsite client work too. This means our clients are only invoiced for the time we spend on their work, not for the time we spend onsite. If you would like to have an informal conversation about the value of engaging GAD onsite to see if it could be useful for you, please get in touch with your GAD advisor.

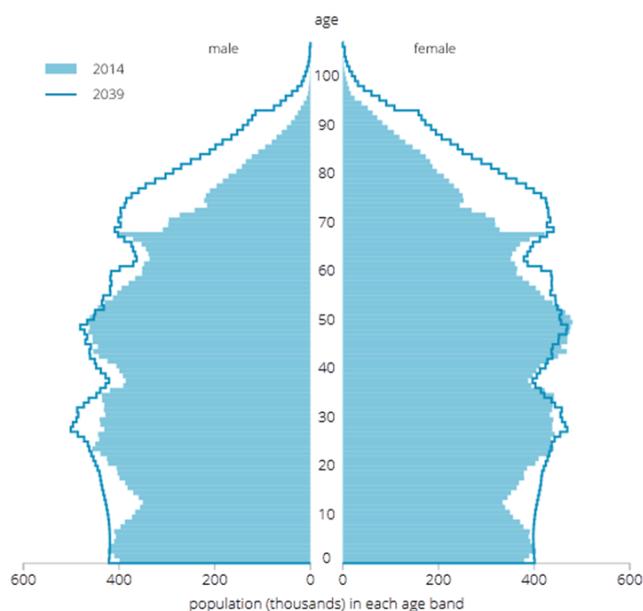
## WHAT DO THE LATEST ONS PROJECTIONS MEAN FOR THE UK PUBLIC SECTOR?

The Office for National Statistics (ONS) released its latest (2014-based) national population projections for the UK on 29 October. The projections were met with the usual headlines about population explosion and an aging population. Digging a little deeper, what potential challenges do the projections highlight for the public sector?



Joanne Meusz

The national population projections illustrate how the size and age-sex structure of the population may develop in the future. ONS produce a principal projection based on assumptions of future fertility, mortality and migration. To illustrate the uncertainty surrounding the projections, ONS also produce a number of variant projections. These variant projections are based on alternative, but realistic assumptions. ONS do not attempt to predict the impact that future Government policies, changing economic circumstances or other factors might have on demographic behaviour, therefore the projections are not forecasts.



The population pyramid above illustrates the estimated size and structure of the population in 2014 and as projected in 2039. Each bar shows the number of individuals alive in 2014 at each age. The line shows the projected numbers at each age in 2039. In 2014, we can see the post-war baby boomers in their late sixties and the 1960's baby boomers around age 50. There are fewer people at the ages in between, reflecting a lower number of births in the interim years.

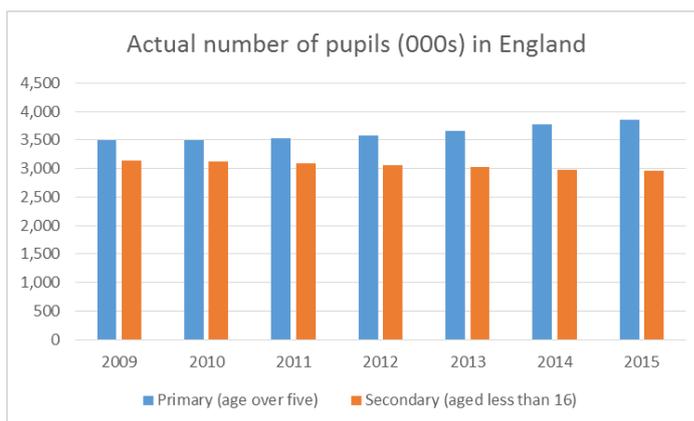
<sup>1</sup> National pupil projections: trend in pupil numbers – July 2015  
Based on the ONS 2012-based population projections.

These peaks and troughs are echoed at younger ages with a bulge in the number of people in their early twenties through to their mid-thirties and contractions in the population size around ages 37 and 12. From 2002 until 2013 there was an increasing number of births resulting in another bulge at corresponding ages. These echo, in part, a higher/lower number of women born in the previous generation resulting in more/fewer births as they reached child-bearing age.

Looking at the projected population in 2039 we can see a general increase in population at most ages, but also that the peaks and troughs have shifted upwards as current cohorts have aged.

### Demand for UK public services

The evolving age structure of the population results in changing pressures on public services. Taking education as an example, the number of school places required is broadly equal to the number of school age children at any time. The Department for Education (DfE) uses the ONS population projections to produce National Pupil Projections<sup>1</sup>. The graph below illustrates some recent data on which DfE's analysis is based.



This graph illustrates that:

- The number of secondary school pupils (aged 11 to 16) has been falling over recent years, reflecting the decreasing number of births in the 1990s.
- The number of primary school pupils (aged 5 to 11) has been rising over the same period, reflecting the increases in the number of births since 2002.

## WHAT DO THE LATEST ONS PROJECTIONS MEAN FOR THE UK PUBLIC SECTOR? (continued)

It follows that the demand for primary school places will translate into demand for secondary school places as these pupils age. The DfE pupil projections anticipate that by 2024 there will be greater demand for secondary school places than in 2014 and the demand for primary school places will have levelled off. In the short-term projections are fairly straightforward, particularly for secondary school pupils, as these children have already been born. There is, of course, greater uncertainty further into the future. Net migration can have an impact and these trends may also vary at a local level.



### Public workforce implications

A significant constraint on the provision of public services is whether a suitably qualified and experienced workforce is available. Over the next ten years, the 1960's baby boomers will reach ages where they can take early retirement. To the extent that this demographic is reflected in the various public sector workforces, it may lead to a fall in the number of (experienced) workers. As the normal retirement age for many members of public sector pension schemes has risen and is now in line with State Pension Age, it will be interesting to see the effect this has on the ages at which public sector workers choose to retire.

**‘The evolving age structure of the population results in changing pressures on public services.’**

Predicting the number of public sector workers leaving and entering the workforce can be difficult. GAD faces a similar challenge when valuing the various public sector pension schemes. We make assumptions about the number of staff (active pension scheme members) retiring or leaving service and the number of new entrants. These assumptions are informed by analysing past scheme experience.

Many of the challenges faced by the public sector vary across the country. The national population projections are also used as a base for the sub-national population projections and household projections, which are widely used for resource allocation and planning.

The ONS population projections provide a common framework for national planning, allowing users to work on consistent assumptions. In addition to DfE's pupil projections, the population projections are used in models across Government departments, including:

- The Office for Budget Responsibility's long-term fiscal projections
- Department for Work and Pension's analysis on benefits and pensions
- As a base for the sub-national population projections and household projections, which are widely used for resource allocation and planning.

### Implications for GAD

At GAD the population projections are an important factor in many areas of our work. For example, as part of the review of State Pension Age, the Government Actuary will shortly be required to report on life expectancies and future improvements in them implied by the projections. We also use the projections to set mortality assumptions for our routine pension scheme valuation work and regularly use the projections in ad-hoc project and modelling work.

The ONS population projections are an invaluable resource for GAD and across the public sector. If you would like to get in touch to discuss issues relating to the projections, please contact your usual GAD advisor.

## GAD EVENTS: BRINGING TOGETHER CLIENTS AND PARTNERS

As well as sharing our knowledge and expertise with our clients through formal client and advisor relationships, GAD looks to create opportunities for our clients and partners to come together where there are common fields of interest to exchange ideas and experiences. Two recent events that GAD facilitated were the Long-Term Modelling Seminar and the Contingent Liabilities Symposium. Both were chaired by Colin Wilson, Deputy Government Actuary.



Ian Rogers

### Long-Term Modelling Seminar

The seminar was hosted on Thursday 22 October at DECC with James Rees from DWP, Jim Smith from DECC and Teresa Delgado from the Office for Budget Responsibility (OBR) delivering thought-provoking presentations, providing for a lively discussion of a range of issues relating to long-term modelling. This event brought together staff undertaking long-term modelling from across 16 different Government departments.

James drew on his experience in DWP's Pensim2 Model development team to highlight a number of sources of uncertainty in long-term projections. These included the inherent uncertainty in a simplified model of a complex system and uncertainty around the assumptions used within the model. James also drew attention to the challenges of communicating uncertainty to those using the projections for policy analysis.

Jim provided an overview of the range of different modelling approaches adopted within DECC, noting the importance of consistency of approach with the purpose of the objectives as well as the need for pragmatism. Jim also highlighted the value of expert knowledge in developing models as well as the importance of disclosing the assumptions underlying projections.

Teresa's presentation provided insight into the long-term modelling undertaken by the OBR and the interaction of the OBR projections with those produced by other Government departments as well as the challenge and scrutiny exercised by the OBR. Teresa emphasised the considerable uncertainty associated with long-term projections but demonstrated the valuable role they play in highlighting where interventions are required.

The seminar provided an excellent forum for discussing the challenges associated with long-term modelling, including the impact of behavioural effects, the variability required for sensitivity and scenario testing and dealing with political uncertainty.

### Contingent Liabilities Symposium

This GAD symposium was held on Tuesday 1 December and attracted more than 60 attendees from a range of Government departments. The event started with an insightful presentation from HM Treasury (HMT) covering their approach to contingent liabilities. An introduction was given by Matt Richmond and Tanya de Jager from HMT to the modelling work that HMT does to understand the Government's contingent liabilities, as well as the impact that contingent liabilities have on public spending decisions.

Callum Saunders from the National Audit Office (NAO) continued by laying out in detail the evolving landscape of contingent liabilities for the Government, highlighting particular examples from the NAO's audit work.

After this was an illuminating talk from GAD's Ian Rogers who covered our role in quantifying the 'unquantifiable'. This illustrated how actuaries can help to overcome the challenges when valuing contingent liabilities with a case study on GAD's involvement in the reforms of the Government's guarantee to Pool Re in respect of terrorism insurance.

After the presentations we moved onto a panel discussion, with Philippa Todd (OBR), Matt Richmond (HMT), Richard Copeman (NAO) and Ian Rogers (GAD). Many questions were asked, demonstrating the wide-ranging interest in the area of contingent liabilities across Government.

#### Future possibilities

GAD hopes to facilitate future sessions, combining insightful presentation with time made available for discussion. If you would like to find out more or suggest future topics, please contact [ian.rogers@gad.gov.uk](mailto:ian.rogers@gad.gov.uk).

## GAD contacts

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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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