THE ROLE OF GOVERNMENT ACTUARIES
IN SUPPORT OF THE DEVELOPMENT OF
PUBLIC POLICY

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What can actuaries do?

Actuaries are

- professionals with expertise in quantitative techniques
- acknowledged experts in the analysis and modelling of situations involving financial risk and contingent events
- able to provide realistic solutions to complex problems with a long term forward look
THE ROLE OF ACTUARIES

Actuarial skills

- mathematics and statistics
- demography
- economics
- finance and investment
- modelling
- risk analysis and management
- long-term perspective
- professional ethos and standards
THE ROLE OF ACTUARIES

Major fields of actuarial work

- life insurance
- general insurance
- pensions
- social security
- investment
- banking
- health care financing
- corporate finance
- expert witness
- personal financial advice
- education and research
- government service
THE ROLE OF ACTUARIES IN GOVERNMENT

Roles for actuaries in government work

- regulation and supervision of insurance companies
- regulation and supervision of private pension funds
- financing of social security
- social security reform and pension legislation
- financing of public sector pension plans
- demographic projections
- financing of health care
- consumer credit
- management of other long term financial risks
Regulation of insurance companies

- regulation of insurance needs significant actuarial input
- design of legislation and solvency and reserving standards
- preparing practice standards and guidance
- authorisation of new companies and lines of business
- review of reinsurance programmes
- product approval and price regulation (where relevant)
- transfers of business
Supervision and monitoring of insurance companies

> monitoring companies’ annual statements
> analysis of financial strength of companies…
> …for both life and non-life insurance companies
> dialogue with company actuaries
> review of internal models
> on-site company visits
ACTUARIES IN REGULATION

Regulation of private pension plans (defined benefit)

- legislation for private pension plans
- setting funding standards for defined benefit plans
- accounting for pension liabilities
- transferability and preservation of accrued rights
- splitting of pension rights on divorce
- disclosure requirements
Regulation of private pension plans (defined contribution)

- legislation for private pension plans
- control of charges/commissions
- provision for guarantees
- fiscal cost of government funded guarantees
- disclosure requirements
- targeting benefit levels
- annuitisation requirements
Supervision and monitoring of private pension plans

- monitoring of funding position
- recovery plans
- preventive measures
- pension implications of mergers and takeovers
- operation of guarantee fund
- rescuing and winding up pension funds
Understanding the finances of social security

- slow build-up of promises
- strong cash-flows may be misleading
- demographic change has a long-term impact
- major component of public expenditure
- public and private provision may interact
Actuarial roles in social security schemes

- demographic projections
- estimates of future benefit outgo
- estimates of future contribution income
- long-term projections of financial balance
- short/medium term estimates of cash-flow
- development of financing/funding strategies
- periodic actuarial reviews
Report on Actuarial Review

- purpose of report
- data sources - comment on inadequacies
- broad description of methodology
- assumptions (with reasoning)
- projections of income and expenditure
- contributions necessary to maintain balance
- sensitivity and risk analysis
Role of actuary in social security reform

- analysis of costs of existing arrangements
- advice on design of alternative structures
- modelling the transition (for scheme and economy)
- modelling impact on public expenditure/borrowing
- modelling impact on individuals
- design and regulation of complementary schemes
- modelling impact on investment markets
International Social Security Association

> governance and investment guidelines
> “An actuary should be appointed… to carry out periodic actuarial reviews of the scheme.”
> “The actuary should be free from political interference.”

International Actuarial Association

> guidelines for social security actuaries
Public Sector Pensions

- advice to public sector pension plans
- valuation of assets and liabilities
- making cash flow projections to assist in financial strategies, especially for PAYGO plans
- stochastic asset-liability modelling to identify the best investment strategy for funded plans
- modelling for manpower planning
- advising on terms for individual members, especially high level appointments/departures
Public Sector Pension Policy

- advice to Ministry of Finance on future cash flows of pay-as-you-go public sector pension plans
- design of new schemes and support for negotiations with unions
- advice on transfer values (individual and group)
- pension aspects of public/private partnerships and privatisations
ACTUARIES IN HEALTH CARE FINANCING

Financing of health care

- modelling future expenditure
- design of insurance based systems
- community rating
- allocation of resources in national health
- cost-benefit analysis of treatments
- financial appraisal of major capital projects
- risk analysis and management
- financing of long term care for the elderly
What is the Government Actuary’s Department of the UK?

> separate UK government department
> established in 1919…
> …to advise on financing of social security
> reporting to the Minister of Finance (Chancellor)
> now broad-based actuarial consultancy providing services to many clients in the UK and internationally
> focussing primarily on public sector clients
What does GAD do?

> GAD offers a centralised actuarial consultancy service for public sector clients throughout the UK (and in a number of other countries)

> our skills and advice enable clients to:
  > formulate national policy
  > manage public sector finances
  > project the impact of population changes
  > monitor and supervise financial institutions
Main areas of GAD’s services

- financing and reform of social insurance
- pension policy, legislation and reform
- occupational pensions for the public sector
- regulation of private pension plans
- regulation of insurance companies
Population projections

- from 1954 to 2006 GAD was responsible for the national population projections
- role subsumed into new National Statistics Centre for Demography in January 2006
- GAD remains a centre of expertise on mortality matters
- GAD projections used for all official purposes
- current and past projections on GAD website*

*www.gad.gov.uk
Annual improvement in smoothed mortality rates – Males UK
Proportion of the UK population aged 65 and over, 1981-2074 under various projection assumptions
Uses of GAD population projections

- to act as control total for local area projections;
- as foundation of labour force projections; and
- as foundation of household projections
- for all national planning, e.g. water supplies, teacher training capacity
- for resource allocation and future plans
- for social security analysis and reports
Role of Government Actuary in social security in the UK

> five-yearly reviews of National Insurance Fund
> …with 60 year projections
> updated more frequently as necessary
> reports on annual uprating of benefit
> financial consequences of reform proposals and new draft legislation
> reports to Parliament are in the name of and are the personal responsibility of the Government Actuary
Annual uprating

- Minister makes proposals to Parliament
- Minister’s report accompanied by GA’s report
- assesses balance of income and outgo
  - over next few years
  - over medium term
- GA advises on whether supplementary grant from general revenue will be necessary
5 yearly Review

- GA’s report to Parliament on long-term projections of income and expenditure
- contributions necessary to maintain balance
- development of size of fund
- implications for individual entitlements
- sensitivity to most important factors
- impact of recently introduced changes
Benefit expenditure as % of GDP
(assuming 2% a year real earnings growth)
Pensions by year of award as % of earnings (at average earnings levels)
GAD’s professional independence

- pressures from government
- sometimes a desire to suppress information
- need for transparency in reform process
- disparate interests of different players
- potential conflicts with other forecasts
- GAD stands apart from political process
- GA’s right to determine scope of report
- …and to decide content and assumptions
Pension policy and regulation

Advice on

- social security and pensions policy
- the Pension Protection Fund (guarantee fund)
- legislation concerning private pension funds
- regulation of private pension funds
- taxation policy for pension funds
- policy and financing of public sector pension plans
The Pension Regulator

- GAD staff seconded to regulator
- others advise on particular projects
  - standard setting
  - codes of practice
  - individual cases
  - professional issues
- work with team managing potential high profile cases where early intervention in needed
Advice to public sector pension schemes

- teachers
- health service workers
- judges
- armed forces
- police
- Members of Parliament
- ...and many others
Advice to insurance regulators

> principal actuarial adviser to UK insurance regulator
> …from 1960 to 2001
> responsible for introduction of Appointed Actuary system
> main player in supervision of life companies
> adviser on reserving level of general insurance companies
> now separate actuarial team (30+) at FSA
> GAD advises regulators outside the UK
GOVERNMENT ACTUARIES

Alternative models

> Government Actuary’s Department
> employ actuaries in individual departments and regulators
> have a central actuarial unit in Ministry of Finance, Ministry of Social Security, or some other department
> actuarial unit in regulator – providing advice more widely
> use private sector actuarial firms for particular jobs
> try to get by without any actuarial advice!
GOVERNMENT ACTUARIES

Some other countries

- Canada – Office of the Chief Actuary
- Australia – Office of the Government Actuary
- USA – Chief Actuary, Social Insurance Administration
- …and actuaries in Insurance Commissioners’ offices
- Japan – Chief Actuary of the Ministry of Welfare
GOVERNMENT ACTUARIES

Advantages of having a GAD - 1

- ready availability of actuarial advice
- good value for money
- continuity and consistency of advice
- confidentiality
- reliability and defensibility
- absence of commercial conflicts of interest
Advantages of having a GAD - 2

- critical mass for recruiting actuaries
- professional environment – easier to maintain quality
- viable for remuneration and keeping staff
- readily available for government departments
- centre of expertise and excellence in actuarial work related to public policy
Government Actuary’s Department

expertise, experience and independence