Government Actuary's Department

eNews from GAD

Supporting effective decision-making and robust reporting

Issue 27, March 2017

Welcome to eNews – GAD's regular newsletter. Actuaries are professional advisers who help clients understand and manage their financial arrangements and risks. At GAD we help organisations across the UK public sector make decisions about their financial obligations and responsibilities.

Managing risks, including financial risk, is also a critical element of large scale infrastructure projects and in many cases can only be successfully achieved through collaboration between experts. The Institute and Faculty of Actuaries and Institution of Civil Engineers have a long-running joint initiative on risk management which has recently published a new paper on issues to consider at the outset of such projects. Philip Jacob explores the context around this new publication.

The risks all organisations, public and private, face continuously change including those posed by technological development. John Plevin looks at these cyber risks and the potential for insurance to provide a useful tool in addressing them.

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

MARTIN CLARKE, GOVERNMENT ACTUARY

NEWS FROM GAD

Measuring price inflation

From this month an index called CPIH, which includes owner occupiers housing costs, is due to replace CPI as the headline measure of UK inflation. Although this is unlikely to have an immediate impact on the inflation indices used, in future CPIH (or other indices) may grow in prominence and use. GAD have explored the differences in indices and possible consequences of the changes in a comment paper on our website.

GAD response to fiscal risk paper

The Office for Budget Responsibility are due to publish a fiscal risks report for the first time this year. Their discussion paper presents some thorough and clear analysis on the background to the report. GAD has provided some comments and thoughts in response based on our experience and actuarial expertise.

Parliamentary Pension Schemes seminar

GAD will be holding a Parliamentary Pension Schemes seminar on Monday 3 April 2017 for secretariats and trustees. This event will be an opportunity for attendees to share knowledge and learn about current thinking. The sessions will include challenges and opportunities in relation to the forthcoming actuarial valuations, the complexities of the new cost capping arrangements and investment issues.

GAD contribute to report on disaster risk insurance

As part of GAD's work with the Department of International Development, we contributed quantitative analysis on insurance premium subsidies. This has been included as an example in the vivideconomics, Surminski Consulting, and Callund Consulting report for Evidence on Demand: Final Report: Understanding the role of publicly funded premium subsidies in disaster risk insurance in developing countries.

DEVELOPMENTS

Defined Benefit (DB) pension schemes

In December 2016, the Work and Pensions Select Committee published the findings of its inquiry into DB pension schemes. In February 2017, DWP published a Green Paper, consulting on the security and sustainability of DB pension schemes, please see GAD's Technical Bulletin for a succinct summary. The consultation closes on 14 May.

Income drawdown pension tables

HMRC has updated the drawdown tables and guidance for calculating the maximum income from capped drawdown pension funds, extending the tables for yields from 2% to 0%. There are now only two tables, one for adults (rather than one for males and one for females) and one for those aged under 23. The extended tables apply from 1 July 2017.

Personal injury discount rate (Ogden)

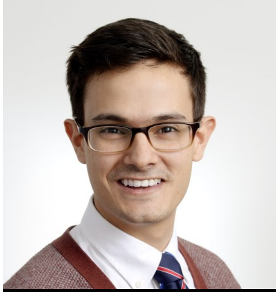
The Lord Chancellor has announced a reduction in the real discount rate used by courts in personal injury cases to convert expected future losses into lump sum compensation. From 20 March 2017, the rate will reduce from 2.5% to -0.75% a year (real). The reduction reflects changes in market conditions. A consultation will be launched before Easter to consider options for reform - considering the methodology used to set the rate, the frequency of reviews and responsibility for setting the rate.

Public Sector Transfer Club

Cabinet Office has published an updated Club Memorandum, with revised factors taking effect from 1 March 2017. The factors have been revised to allow for updated financial and demographic assumptions. The tables no longer include any factors for GMP or National Insurance modification adjustments.

RISK MANAGEMENT IN MAJOR INFRASTRUCTURE PROJECTS

Many large-scale projects aim to improve our infrastructure. These programmes help us get from A to B by keeping our transport networks up-to-date, make sure the lights stay on through the construction of new power stations, and achieve many other things besides. Projects of this scale are fraught with risk, and the understanding, quantification and management of that risk is central to their delivery on time and on budget. The Institute and Faculty of Actuaries (IFoA) and the Institution of Civil Engineers (ICE) have recently jointly published a leaflet considering the early stage issues with importance for overall project success.

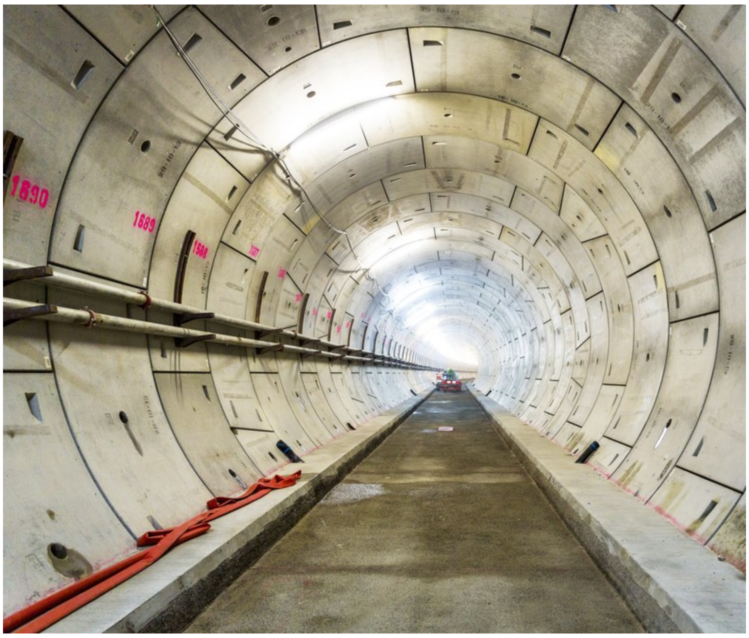

Philip Jacob

Public bodies need to be particularly careful that a high-quality risk management framework is in place as resources are often scarce and value-for-money is extremely important.

A multidisciplinary undertaking

Risk management is a multidisciplinary endeavour and is most effective when a wide range of individuals bring their experience and perspectives to the table. As actuaries we naturally think of risk in an analytical and often quantitative way. Through many decades of experience actuaries have developed an extensive toolbox for dealing with risk in all its forms.

The long-standing collaboration between the IFoA and ICE brings together this actuarial toolbox with the practical engineering experience of civil engineers. Together the two professions have developed a robust framework for managing project risk called *Risk Analysis and Management for Projects* (RAMP) which is currently in its third edition.


New rail tunnel, under construction for the London Crossrail Project.

The RAMP framework provides guidance at each stage of a project's lifecycle."

The RAMP framework provides guidance at each stage of a project's lifecycle. Implementing it can help project sponsors to spot risks and opportunities at an early stage, to compare and contrast the implications of different project scenarios, or to identify efficient ways of mitigating and managing risk.

The Crossrail project, widely recognised as having a strong risk management system, has implemented RAMP and is on target to deliver a major publically-funded infrastructure project on time and on budget.

"This leaflet emphasises the importance of early exploration of … objectives, requirements, and … concerns"

A new publication

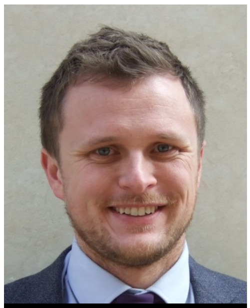
The new risk management publication released in January by the IFoA and ICE is entitled *Major Infrastructure Projects: Key Front-end Issues*. This leaflet deals with the many issues that arise in the earliest stages of a project and emphasises the importance of early exploration of the project's objectives, requirements and stakeholder concerns. *Major Infrastructure Projects: Key Front-end Issues* and RAMP provide useful tools for any major project, and are designed to form part of a comprehensive risk management system.

Summary

Risk management in major projects is fundamental to achieving successful outcomes and realising real benefits. The large-scale nature of many of the projects we are involved in make this of particular concern to those of us in the public sector. At GAD we believe that a cross-disciplinary approach is key to achieving the best outcomes for the public. If you are involved in a major public project we would be happy to discuss risk management approaches with you.

INSURANCE AGAINST CYBER RISKS IN THE UK PUBLIC SECTOR

In 2016 the UK government announced that two thirds of large UK businesses were hit by a cyberattack or breach in the previous year. In general these were small in terms of financial impact however they can be significant. For example, in 2015, hackers manipulated the control systems of a steel mill in Germany, causing 'massive' physical damage. UK organisations increasingly need to manage these cyber risks. In this article we consider the implications for the UK public sector and recent GAD work in this area.



John Plevin

Why does the UK public sector need to consider cyber risks?

Public sector organisations, like commercial enterprises and individuals, face an increasing variety and intensity of cyber risks. These range from loss or theft of personal data (which may lead to financial, political and reputational costs) to theft of digital assets or actual damage to people or property. Any organisation which deals with personal or sensitive information, financial transactions, or digitally-operated physical systems could be affected. In practical terms this means that almost all public and private organisations are exposed to threat.

Government is also concerned with the risk to UK plc as a whole. In particular, if significant or widespread cyberattacks were launched against the UK, this might have a substantial impact on UK taxpayers. It is feasible and of concern that damage to buildings, systems and infrastructure could have a large negative influence on incomes, public safety and quality of life. For example, a scenario where energy or transport infrastructure were undermined could bring large parts of the economy to a standstill.

What is cyber insurance?

Historically, property, business interruption, and liability insurance have covered losses due to physical damage or disruption as a result of physical 'real world' events. As technology becomes more advanced, companies and individuals are looking to insurers to cover losses caused by digital means. This is also exacerbated by the advent of the 'internet of things': the trend for an increasing range of everyday objects to be embedded with technology enabling them to collect and exchange data.

Cyber insurance covers 'the losses relating to damage to, or loss of information from, IT systems and networks' (ABI definition). The risks which may be covered include:

- loss or damage to digital assets such as data or software
- business interruption due to 'denial of service attacks' or other network failures
- a breach of data leading to a loss of intellectual property or customers
- theft of digital assets or money
- physical damage due to a malicious party hacking into a system which controls a physical process (such as industrial machinery)
- public liability due to a release of sensitive personal information

"…if significant or widespread cyberattacks were launched against the UK, this might have a substantial impact on UK taxpayers"

(Continued overleaf)

INSURANCE AGAINST CYBER RISKS IN THE UK PUBLIC SECTOR (continued)

GAD's involvement

Pool Re is an organisation which provides reinsurance to the UK insurance market in respect of terrorist attacks on property. Because of the potentially catastrophic nature of terrorist attacks, the commercial insurance markets do not have the capacity to cover the very worst events. In the event of a very serious event (or run of events), Her Majesty's Government will provide funds to Pool Re to pay for losses that Pool Re is unable to pay.

At the moment, cyberterrorism is excluded from the cover provided by Pool Re. In 2016 HMT commissioned GAD to advise on the relative merits of removing this restriction, how this might affect the likelihood of the government guarantee being called upon, and the required capital under such a scenario. We considered:

- Can the insurance markets insure this risk without government support?
- Is a very large cyberattack possible or likely to occur?
- What would the potential cost to government be of extending Pool Re to cover cyberterrorism?
- What other factors should HMT and Pool Re consider as part of the decision-making process?

Challenges facing the public sector, private sector and insurance industry

As the cyber insurance industry grows, there are a number of challenges facing insurers, insured individuals and organisations, and the public sector, in understanding and mitigating the risks involved:

Lack of information – Insurers need information to decide how much to charge for insurance, whilst other organisations need information to understand how much risk they face and where they are vulnerable. Cyberattacks are a relatively recent phenomenon and so there is not much historical information available.

"in 2016 … two thirds of large UK businesses were hit by a cyber-attack or breach in the previous year"

Further, because such attacks may be very sensitive, organisations may not report all incidents, making the pool of information smaller still.

Evolving risk – The techniques and targets involved in such cyberattacks are constantly developing, meaning that the risk posed in 5 years' time will look very little like the risk posed 5 years ago. This exacerbates the problem of insufficient information by making older information less relevant. It also makes defending against and mitigating the impact of such attacks difficult.

Lack of understanding and engagement – Organisations are not always aware of the extent of the risks that they face. Where decision makers do not realise the potential impact of a cyberattack, they may not take appropriate action to prevent such attacks, nor purchase sufficient insurance.

The key to addressing these issues is the effective distribution of information. If interested parties share information effectively, it will allow insurers to deliver appropriate products; encourage engagement in cyber risk management ; and enable the public and private sector to effectively prevent and manage cyber risks.

Summary

GAD actuaries can provide support to UK public sector organisations in managing the financial impacts of a wide range of risks including cyber risk. This includes using our actuarial expertise to advise on the relevance and suitability of insurance arrangements as part of a balanced financial risk management strategy. If you are interested in discussing these issues please get in touch with us.

GAD contacts

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For details of our management team and office address please visit:
https://www.gov.uk/gad#people