Research Options

GI Research & Thought Leadership sub-committee
Chair: Jo Lo
Contents

• Claims Inflation
• Super Trends
• Insurance Risk Dependencies
• Learning From Others
• Public Data
Claims Inflation

Rare opportunity to address an issue faced by actuaries in all fields and across industries
### Objective

- Create a set of parameters for scenario and sensitivity tests to understand **uncertainty** from claims inflation
- Advise on methods for applying such test parameters through common actuarial methodology
- Identify drivers of inflation and ways to monitor these

### Value

- Enable actuaries and regulators to validate use of inflation assumptions
- Aid the understanding of uncertainty thereby allowing the application of sensible scenario and stress tests – ensure actuaries not caught out by historically stable inflationary environment
- Knowledge of inflationary drivers can be used as leading indicators to be used for business planning purposes and within forward looking predictions

### Nature of Research

- Analysis and case studies of past claims inflation rates or general inflationary environments
- Deriving rigorous methodology to define stresses and to have them pass through typical actuarial methods
- Brainstorming drivers and analysing what leading indicators could be predictive
Prior
- Review and analysis of previous work completed in investigating inflation methodologies, drivers and applications thereof
- Analysis on historically accepted inflation statistics, sources and applications thereof
- Analysis of historical trends and case study of historical stresses

Current
- Uses of inflation in industry across Capital, Reserving, Pricing and Business Planning
- Stress testing of assumptions currently being utilised

Inflation
- Definition of claims inflation in all it’s potential uses, frequency, severity, step change – legislation, ENIDs
- Amalgamation of generally accepted inflation measures used outside of insurance and applications within insurance

Technical
- Correct application of inflation test parameters and dealing with uncertainty within all actuarial fields by class, channel and policy type
- Incorporation of technical base line into actuarial learning modules

Drivers
- Identify of drivers behind inflation by region and peril
- Stress testing of movement by individual drivers and application of inherent uncertainty in certain drivers

Future
- Independent monitoring of inflation drivers
Super Trends

Find the implications that super trends may have on actuarial assumptions, risk taking and product development
Objective

• Provide a “one-stop shop” for GI practitioners to find research into super trends
• Would cover topics that practitioner community voiced interest in – IoT, Cryptocurrencies, Opioids, Robotics, Food Security, UN SDGs, Infrastructure Trends / vulnerability, etc.
• Would not include super trends of actuarial methods / technology / actuarial profession

Value

• Allow actuaries to look forward and identify trends in the future outlook rather than only trends based on historical data
• Find the implications that super trends may have on actuarial assumptions, risk taking and product development
• Provides interesting input into risk assessment, underwriting/investment strategy, pricing and even reserving

Nature of Research

• Possible channels for research could be:
  • Working Parties (WPs)
  • Member Information Groups (MIGs)
  • Effective liaison with subject matter experts (SMEs)
• Would work with other WPs and MIGs in IFoA (e.g. resource & environment practice area, risk practice area, data MIG, etc.)
• Quick turnaround times required as information could go quickly out of date
Research Options: Super Trends

Potential Roadmap

- Macro Economics
- Demographics
- Political and Social
- Inequality
- Technology
- Insurance Products

Produce a “one-stop shop” for research on super-trends for GI practitioners

23 September 2019
Insurance Risk Dependencies

Undertake market wide data collection to produce a dataset suitable for modelling dependencies for capital models
Research Options: Insurance Risk Dependencies

Objective

• Undertake market wide data collection to produce a dataset suitable for modelling dependencies for capital models

Value

• Provide a credible data-set which can be used to support the derivation (and validation) of insurance risk dependencies for use in the capital model
• Aid in the understanding of insurance risk dependencies across the insurance market
• Ensure assumptions not based solely on limited data available within own company
• Enhance the confidence in and therefore use of capital model outputs

Nature of Research

• Investigate whether IFoA research could provide a source of dependency data (similar to work the PPO WP has done)
• Best approach and which dependencies to include still to be decided
• Key considerations and obstacles to overcome include dealing with commercially sensitive information, artificial distortions in results and impact of correlations between companies
Review
• Review work done to date, any previous attempts and associated limitations

Define
• Define realistic objectives

Buy-in
• Get buy-in from large number of participants

Data
• Decide on data types required (includes expert views), desired characteristics include:
  • Appropriate for modeling desired dependencies
  • Doesn’t give away confidential information
  • Relatively low effort to produce

Collect/Produce
• Collect, collate and produce data set, ideas include:
  • Good vs bad year
  • Ranking of years
  • Measured correlations
  • Correlations with external drivers
  • Expert judgement survey

Research Options: Insurance Risk Dependencies

Potential Roadmap

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Learning from Other Professions

“By looking at only one place, you miss everything in all the other places! Look everywhere to see everything!” — Mehmet Murat Ildan
Objective

• A reference source for GI practitioners looking to learn from and engage with other professions
• Engage with other professions on topics that practitioner community voices an interest in – e.g. communicating risks, providing assurance, data ethics, forecasting and making predictions, visualisation, strategy and prioritisation

Value

• Are they worried about things we should be too?
• Is their approach better?
• Collaboration Potential
• Opportunities in wider fields?
• Benefit from their suggestions

Nature of Research

• Possible channels for research could be:
  • External Conference participation
  • Working Parties (WPs)
  • Universities
  • Joint Task Forces (Collaborations with other professions)
  • Briefing notes for GI practitioners
  • Case studies
Potential Roadmap

A reference source for GI practitioners looking to learn from and engage with other professions

How it could look:

- Prioritise & Choose
- Engage & Connect
- Review & Reform
- Communicate & Publish
- Joint Task Force

Examples:

- Business Planning and ORSA
- Capital modelling
- Communicating risks and providing assurance

Your ideas please!!
Public Data

An exercise to collate and centralise data sources for use by Actuaries across GI
Objective

- List, describe and evaluate all data sources useful to the GI industry
- Creation, Collation and Centralisation of data sets and hosted by the institute
- Reporting of KPIs and useful trends

Value

- Used by actuaries and industry as first point of call for data gathering on any product or in any area of the business
- Similar to publication of life tables or output of PPO and Asbestos working parties where IofA data is ubiquitous
- Potentially leading to the profession acting as custodians of data sets for the industry
- Increases the institute profile as thought leaders of reporting on complex data sets

Nature of Research

- Working party drawn from across the industry to act as a decision making and prioritisation forum
- Technical data and IT work to be carried out by academic or institute paid internship
- Hosted in a way so that paid up members and working parties can access data
- Working party to sign off regular industry reports
Potential Roadmap

Research Options: Public Data

Stage 1 delivery

Investigate
- Identify Potential Data Sources
- Assess industry needs
- Investigate technical solutions
- Publish list as resource for members

Assess
- Identify quick wins vs highest need
- Engage with data source providers
- Create high level design of technical solution
- Agree prioritization with WP

Plan
- Select class & channel - e.g. Motor – Retail
- Select Data Sources: (e.g. DfT, DVLA, ABI, Police Accidents, Hospital/A&E, (Re)Insurers, MOJ Portal)
- Plan project and tie in data providers
- Create data design
- Acquire technical resource to complete

Build
- Create ETL for structured data to be transferred on a regular basis into Institute environment
- Create data frames, dictionaries and tables for new data sources
- Manage relationships and comparisons between data sets, individual sources
- Detail assumptions, expert judgements and risks with each data source and table

Stage 2 Delivery

Stage 3 Delivery

Report
- Identify key metrics available from data sources
- Create report with key insights and metrics
- Distribute Report to industry, actuaries and public interest groups, media

Next Product

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Commissioning Research – Open Discussion

• Claims Inflation
  – Sensitivity & stress testing; drivers & leading indicators

• Super Trends
  – Collaboration; distil research outputs for GI; futurist

• Insurance Risk Dependencies
  – Parameters; market survey

• Learning from Others
  – Engineers; sales / weather forecasters; diagnostics; model testing

• Public Data
  – Data source commentary; data hosting

• Have we the right questions?
• How will the research benefit whom?
• How do these questions sit in the wider research community?
• How should we go about answering them?
• How would you help?

• Get in touch: girtl@actuaries.org.uk
• Register your interest: link to poll
• General Information: GIRTL website
Your Engagement is Crucial!

- Please continue to keep in touch
  - Ideas; recommendations
  - Offers of help
  - Fill in interest poll

- Next Steps
  - Prioritisation
  - Potential further consultations / forums
  - Establishment of appropriate groups

- Tell others!
  - GIRTL page on IFoA website for slides and polling of interest

- Who we are (girtl@actuaries.org.uk)
  - Adhiraj Maitra (deputy chair)
  - Cherry Chan
  - Christian Bird
  - Chris Smerald
  - Dimitris Papachristou
  - Jo Lo (chair)
  - Laura Hobern
  - Martin White
  - Tom Day
  - Yuming Mei
  - Zvi Ebert

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