

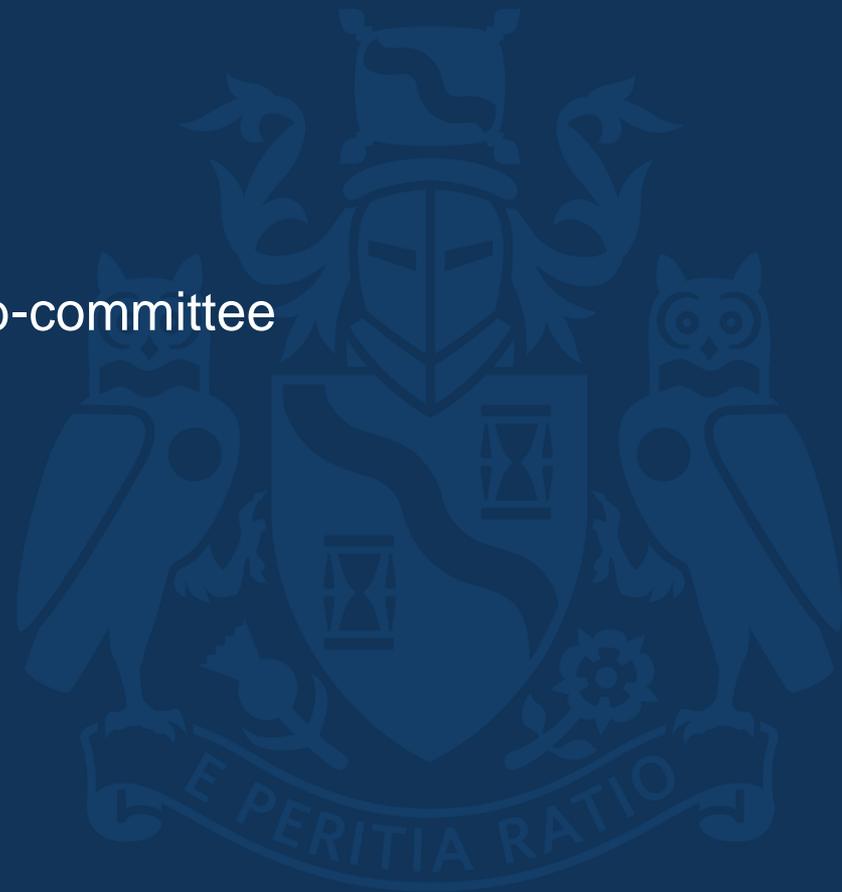


Institute  
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# Research Options

GI Research & Thought Leadership sub-committee

Chair: Jo Lo



# Contents

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





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# 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

# Potential Roadmap

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





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# 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

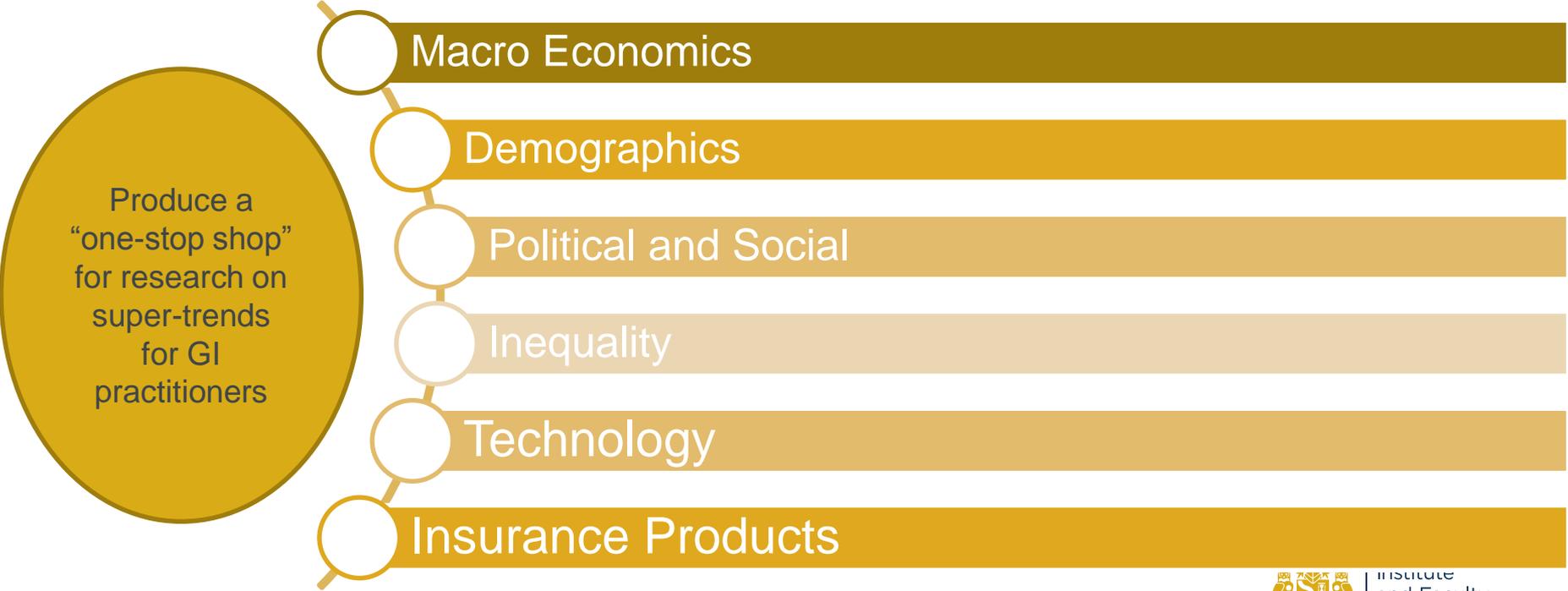
- Allow actuaries to look forward and identify trends in the future outlook rather than only trends based on historical data
- Find the implications that super trends may have on actuarial assumptions, risk taking and product development
- Provides interesting input into risk assessment, underwriting/investment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



# Potential Roadmap





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# Insurance Risk Dependencies

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

### 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

# Potential Roadmap

### 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





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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:



Examples:

<p><b>Institute of Business Forecasting &amp; Planning</b></p>	<p>Business Planning and ORSA</p>
<p><b>SMS</b> Statistical Modelling Society</p>	<p>Capital modelling</p>
<p><b>ID</b> Inspiring business</p>	<p>Communicating risks and providing assurance</p>

Your ideas please!!





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## 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

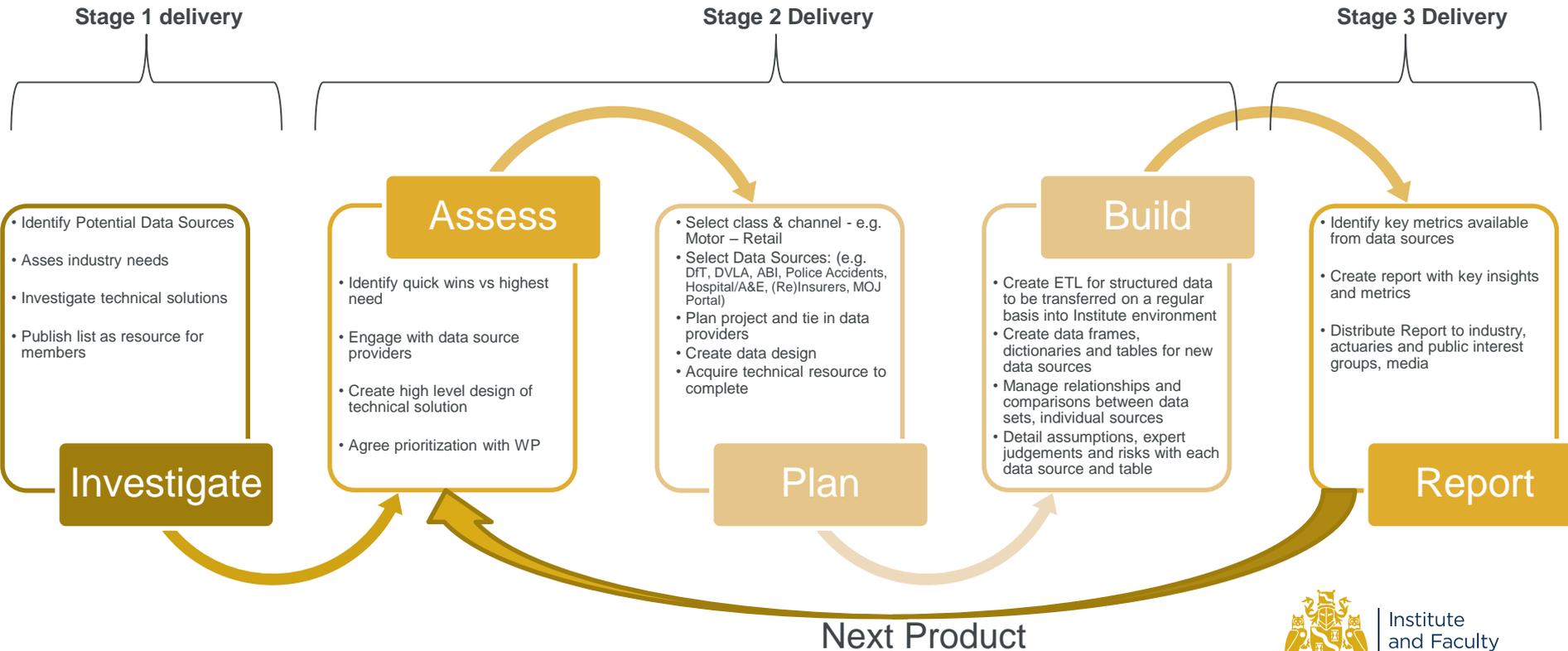
- Used by actuaries and industry as first point of call for data gathering on any product or in any area of the business
- Similar to publication of life tables or output of PPO and Asbestos working parties where lofA data is ubiquitous
- Potentially leading to the profession acting as custodians of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



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

## Investigate

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

## Assess

- 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

## Plan

- 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

## Build

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

## Report

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](mailto: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](mailto: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

