



Quantile

Quantitative Teaching and Learning in Geography

Name: Matt Foote
Place of work: Mitsui Sumitomo, London
Position: Catastrophe and Exposure Manager
Job Description:
 I work on the quantification of catastrophic and extreme risk for insurance.

How do you make use of Quantitative Methods in your everyday work?

Quantitative Methods (QM) are essential and critical to everything we do. As a financial institution, which has to understand the level of risk it faces on a daily basis, it's a highly quantitative environment. We call upon a number of very robust catastrophe modelling platforms developed to support the industry in this. As models they need to be treated with the correct levels of respect but also with an understanding of their limitations and scope to assess the insurance risk that we are exposed to.



One of the big challenges of course is we're talking about extreme events and by definition those are very infrequent. As such there are very few real world data points that can be used to assess low frequency, high impact events such as earthquakes, hurricanes and floods. Every event is a learning experience for the industry and we re-calibrate our models against them. From this we ascertain how we can best apply the models to given events to learn more, be more prepared for the future and for different events that might occur. We communicate that risk information and intelligence to key stakeholders throughout the organisation in a way that can influence the decision making process. This is actually a very challenging issue given the uncertainties that underlie the types of processes and events we're concerned with.

Do other people rely on your Quantitative Methods skills?

Other departments within our organisation rely on our skills in QM. We sit in a very interconnected team of analysts, underwriters, capital modellers, managers and ultimately our regulators and other partners. We have to rely on our colleagues and our clients to provide us with data as the input and on our modelling partners. We need to rely on the information they are providing us, and ultimately we are a core part of the analytical process that drives decision making through the syndicate, and through the business with our actuarial colleagues, our underwriting colleagues, with our managers and our risk management teams.

This is mainly through the monitoring of changes in the distribution of exposures, relative levels of expected risk and the potential impact on capital.

Workplace studies

www.quantile.info

Royal Geographical Society
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On a daily basis this allows us to provide not only the data but the analytical intelligence to assist in making those decisions throughout the Mitsui group at different levels.

Do you have any examples of how you've used and analysed data?

Events such as Super storm Sandy are good examples of how we make use of data. We capture information from our clients, those we insure, that reflects the location and types of risks that they, and we, are exposed to, the conditions of policy limits and attachments and other factors that can affect our overall exposure from a loss to those types of assets. We collect all that information regularly. What we then do is use that information in models and other analytical toolsets, for instance geographical information systems (GIS), to gain an initial understanding of the potential impact to our portfolio once an event has been reported. We try to put some indication together, at a reasonably early stage, at least for internal use, to gain an understanding of the relative sensitivity or impact of the event, and the relevance to the business. We then report as much as we can as information comes in over time. Decisions can be made for the business based upon this information. After some time also we will probably revisit

the modelling that we applied to look at re-calibrating some of the particular parameters of that event against our experience.

How do you maintain and develop your skills in Quantitative Methods?

Our QM skills are maintained through a mix of activities. The nature of the job itself means new challenges are thrown up everyday on the ways that we use data and information. We're very fortunate that we work in an industry that is very well served by trade bodies, as these provide a large resource of new information, and new techniques and importantly they understand the requirement for those techniques in many areas, particularly things like the identification and quantification of emerging risks. Equally there are routes which enable us to gain a better understanding of certain aspects relevant to our particular use of data and modelling, for instance the catastrophe models that we run. We have training courses which provide an ability to keep up to speed with developments in many of these areas.



“We need to understand the quantitative nature of our risk, particularly because it’s the metric that allows mutual understanding of the levels of risk that we’re facing, and the assessment of risk against probability.”



Aftermath of Super storm Sandy in New Jersey (Source: U. S. Fish and Wildlife Service)

What advice would you give to graduates who are interested in joining the risk insurance industry?

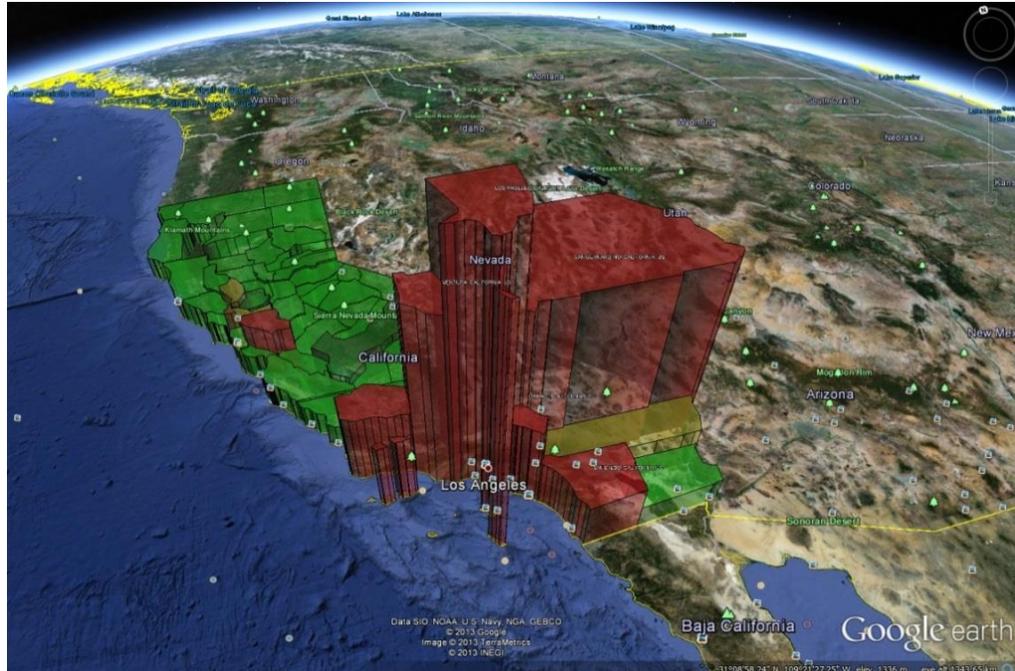
My advice would be to start thinking about this as a career path before you’ve finished your studies. There are plenty of opportunities in this industry, it’s growing, for example in the area of Catastrophe Bonds. For people who’ve got the capability there are internships, and projects that can be looked at across so many areas.

One of the things that is very good about insurance risk management is that it’s not a narrow field – it’s almost the mirror image of geography as a discipline because there are so many areas that you can get involved in once you’re in the industry including marine cargo, aviation, jewellery, fine art, blood stock or property. It has such a broad range of business areas and it impacts on everything, at every scale of people’s lives. It is an ideal field in which for geographers to have a career.

Equally it’s not just about the traditional London insurance market with other areas, including micro insurance and emerging markets, just as important, so there is plenty for people who are geographically minded to be able to get involved in. So my first piece of advice is start early, understand what this industry can do, because it’s not that clear until you’ve seen it. My second piece of advice would be to make sure you are able to show that you can communicate things effectively, that what you do can be explained clearly, concisely, and that you understand, and can show that you understand, the provenance and quality of the information that you’re using when communicating complex issues.

Why should geographers be interested in the risk insurance industry?

It’s literally a geographer’s dream; in it you have an industry that really values the qualities of a geographer. Equally it makes use of other skills and disciplines and a key advantage of the geographer is the ability to interact with



Risk imagery used by Mitsui (Source: AgencyPort)

“Start before you’ve finished”

those across other walks of professional life. I work with risk engineers, computational specialists, actuaries, mathematicians, underwriters from different disciplines, but ultimately what we do collectively is to tackle a *geographical* problem. We have to understand the quantification of complex risk, based on the patterns of space and time, and be able then to communicate that to people who are non-experts but who need to understand what they should do about it. It’s also multi-scalar and to a geographer, that is a very interesting area to work in, as you are continually being challenged about the different scales and approaches and how to interpret things at different levels.

To find out more about where Quantitative Methods can take you, visit the following:

Quantile website:
www.quantile.info

RGS-IBG website:
www.rgs.org

Royal Geographical Society with IBG
www.rgs.org