



Article of the month:

Benchmarking Loss Given Default Discount Rates

Harald Scheule, Stephan Jortzik (Risk.net)

This paper provides a theoretical and empirical analysis of alternative discount rate concepts for computing loss given default (LGD) rates using historical bank workout data. It benchmarks five discount rate concepts for workout recovery cashflows in order to derive observed LGDs in terms of economic robustness and empirical implications: contract rate at origination, loan-weighted average cost of capital, return on equity (ROE), market return on defaulted debt and market equilibrium return. The paper develops guiding principles for LGD discount rates and argues that the weighted average cost of capital and market equilibrium return dominate the popular contract rate method. The empirical analysis of data provided by Global Credit Data (GCD) shows that declining risk-free rates are in part offset by increasing market risk premiums. Common empirical discount rates lie between the risk-free rate and the ROE. The variation in empirical LGDs is moderate for the various discount rate approaches. Further, a simple correction technique for resolution bias is developed and increases observed LGDs for all periods, particularly recent periods. [Read More](#)

Financial Risk

The long-term effect of Covid-19 on market risk capital

Louie Woodall (Risk.net)

The feral markets that accompanied the start of the coronavirus pandemic may be a thing of the past, but they continue to affect banks' capital charges – and will do so for some time to come. Trading book capital requirements are set using a series of risk indicators, one of which is stressed value-at-risk (SVAR). A bank measures this by calculating how much its current portfolio would fall in value if subjected to a 12-month period of historic stress. [Read More](#)

Actuarial Models

Actuarial Systems Evolution

Tom Peplow (The Actuary Magazine)

In this article, I provide a software engineer's perspective on keeping pace with both the actuarial and software industries. Software engineering is a young industry compared to actuarial science, although the two lines of work share a common mathematical and scientific foundation.

One of the first users of the term "software engineer" was Margaret Hamilton, who worked at NASA on the Apollo space program. There is a beautiful story of how she re-engineered the software for guidance computers. Her daughter caused a system crash while playing in the simulator, which made Margaret rethink asynchronous messaging processing. This change resulted in the astronauts landing safely on the moon, as the computer was not overwhelmed by erroneous input and could focus on the task at hand.

The reason I share this story is because software engineers and actuarial scientists have learned a great deal from each other. Margaret's daughter prompted her to ask, "What if that did happen?"—a question that actuaries strive to answer. Software engineering needed to grow up fast. It did, and as a result, it solved problems that benefit the way actuaries work today. [Read More](#)

Focused on Solutions

Andy Smith (The Actuary Magazine)

The biggest problem with maintaining a good model is that it is an awful lot of work. Within an actuarial model life cycle, there are several common challenges that seem to come up again and again. These challenges can be grouped into four buckets:

- Calculation management
- Data management
- Execution
- Results

But, as the saying goes, anything that is worth doing at all is worth doing well. So, this article will provide an introduction and short overview of a few modern technical solutions to help with common problems that arise in each of these four areas. [Read More](#)

Mortality forecasting using a Lexis-based state-space model

Patrik Andersson, Mathias Lindholm (Annals of Actuarial Science)

A new method of forecasting mortality is introduced. The method is based on the continuous-time dynamics of the Lexis diagram, which given weak assumptions implies that the death count data are Poisson distributed. The underlying mortality rates are modelled with a hidden Markov model (HMM) which enables a fully likelihood-based inference. Likelihood inference is done by particle filter methods, which avoids approximating assumptions and also suggests natural model validation measures. The proposed model class contains as special cases many previous models with the important difference that the HMM methods make it possible to estimate the model efficiently. Another difference is that the population and latent variable variability can be explicitly modelled and estimated. Numerical examples show that the model performs well and that inefficient estimation methods can severely affect forecasts. [Read More](#)

Trending topics

A long sunset on a fragile model

Liam Kennedy (IPE)

The ECB's move in September 2019 to lower rates and restart corporate bond purchases was a clear red warning signal to defined benefit pension funds and other liability-driven investors. It indicated structurally lower rates, no immediate prospect of respite on liability valuations through higher rates, and depressed long-term asset price returns in light of sluggish economies. The COVID-19 pandemic may have prompted a bigger and bolder EU recovery plan than most observers expected, and the issuance of €750bn of high-quality EU debt will doubtless be snapped up by pension funds and insurers happy for the yield pickup these instruments are likely to provide over German Bunds and other government bonds. [Read More](#)

Small caps: All is not lost

Joseph Mariathasan (IPE)

Some small-cap companies have not only survived effects of the pandemic but are even thriving

Key points

- Although many smaller companies have suffered as a result of the COVID-19 pandemic, some have thrived
- The gap between large caps and small caps is at historically high levels
- Many companies in the hotel sector are trading at valuations that assume a vaccine will not be developed
- Small-cap investors hope to be able to take advantage of a 'new normal' post-COVID-19

The COVID-19 pandemic's impact on the global economy is evident to all. What has been perhaps surprising is how stock markets managed to bounce back from the crash so quickly.

But markets, particularly the US, have been driven by large-cap tech stocks to such an extent that small caps appear to have been left behind. That may be justified to some extent since small caps are generally single-product companies, often catering to a purely national market. The impact of the pandemic has clearly been disastrous for many such companies.

But each company has had a different experience. The sheer number of small caps means that, amid the economic havoc wreaked by the COVID-19 virus, there are still small-cap winners to be found. [Read More](#)

Actuarial Professional Development Through an Evolutionary Lens

Mike Boot, Matthew Clark and Kelly Featherstone (The Actuary Magazine)

Many leadership and management programs make use of analysis tools known as the "five whys" and the "five hows." Developed as part of Toyota's just-in-time (JIT) system in the 1950s, the five whys methodology involves asking the question "why?" five times in a row to get to the root cause of a problem. While asking "why?" five times can help find the cause of any problem, the five hows help uncover all of the details involved in the solution to that problem. This article focuses on the five hows of professional development (PD) at the Society of Actuaries (SOA). Specifically, we examine how the SOA provides, determines, delivers, oversees and evolves PD content to best meet the needs of its members. [Read More](#)

Data, Innovation and Opportunity

Tom Peplow, Corey Grigg (The Actuary Magazine)

In the Spring 2020 issue of The Actuary, data was the theme running through many of the articles. In his editorial, Martin Snow, FSA, MAAA, spoke of the new frontier of artificial intelligence (AI) and machine learning (ML), and the challenges of overcoming the inertia with existing processes occupying valuable time and resources. Over the years, the actuarial profession has adapted well to embrace technology and thrive. Our current environment is no different, and new techniques

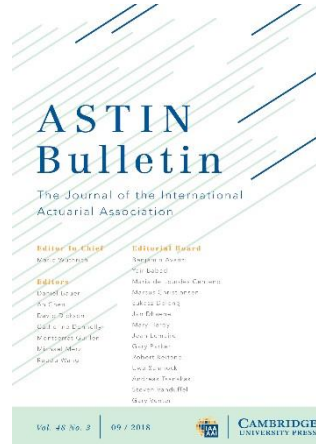
should not be viewed as a risk but as an opportunity. However, the question is: How do we move on this opportunity? [Read More](#)

Resources (click upon image to access)

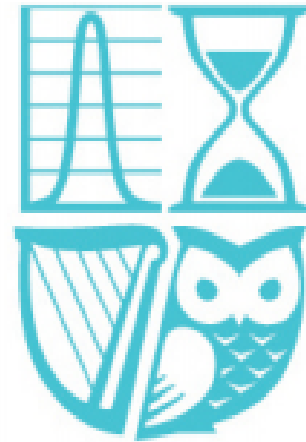
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