



### Article of the month:

#### Factor investing: Crisis factor

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*Carlo Svaluto Moreolo (www.ipe.com)*

What are the prospects for factor-based portfolios after the recent market crash?

#### Key points

- Equity factors behaved mostly as expected during the first quarter of 2020
- Managers are cautiously optimistic about the value factor
- There is no consensus on whether factor-timing works
- Controlling unrewarded risks is seen as a priority

Factor investing is said to be a strategy for long-term investors. It follows that any consideration of how factor portfolios behave in response to discrete events is irrelevant, as investors should focus on long-term performance.

But the recent stock market crash, that saw some of the main market indices fall by more than 20% during the first quarter of the year, was no ordinary market event. In a sense, it is precisely the kind of event from which factor-based investors aim to protect themselves. [Read More](#)

### Actuarial Models

#### Asymmetry in mortality volatility and its implications on index-based longevity hedging

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*Kenneth Q. Zhou and Johnny Siu-Hang Li (Annals of Actuarial Science)*

Mortality volatility is crucially important to many aspects of index-based longevity hedging, including instrument pricing, hedge calibration and hedge performance evaluation. This paper sets out to develop a deeper understanding of mortality volatility and its implications on index-based longevity hedging. First, we study the potential asymmetry in mortality volatility by considering a wide range of generalised autoregressive conditional heteroskedasticity (GARCH)-type models that permit the volatility of mortality improvement to respond differently to positive and negative mortality shocks. We then investigate how the asymmetry of mortality volatility may impact index-based longevity hedging solutions by developing an extended longevity Greeks framework, which encompasses longevity Greeks for a wider range of GARCH-type models, an improved version of longevity vega, and a new longevity Greek known as “dynamic Delta”. Our theoretical work is complemented by two real-data illustrations, the results of which suggest that the effectiveness of an index-based longevity hedge could be significantly impaired if the asymmetry in mortality volatility is not taken into account when the hedge is calibrated. [Read More](#)

## **An investigation into the impact of deprivation on demographic inequalities in adults**

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***Les Mayhew, Gillian Harper and Andrés M. Villegas (Annals of Actuarial Science)***

This research investigates the impact of deprivation on demographic inequalities in England and Wales among adults. Using demographic measures including the modal age at death, life expectancy, lifespan variation and mortality, it shows a negative correlation with deprivation as measured by the 2015 Index of Multiple Deprivation. Although it finds that life expectancy is increasing overall and the gap between men and women is lessening, improvements are slower paced in more deprived areas such that the gap between rich and poor is slowly worsening over time. Men are more adversely impacted by deprivation than women with the gap in period life expectancy at age 30 in 2015 between the top and bottom 1% of deprived neighbourhoods at 10.9 years for men and 8.4 years for women. Between 2001 and 2015 inequalities in male mortality rates at age 44 were 4.4 times greater in the most deprived 10% of neighbourhoods than those in the 10% least deprived and were much higher than in intervening deciles. The worst deprivation is concentrated in specific areas. For example, in 22 out of 326 English districts, 25% or more of neighbourhoods are in the most deprived 10% and in 5 districts it is 40% or above. [Read More](#)

### **Investments**

#### **Ahead of the Curve: The mega-cap conundrum**

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***Edward Rackham (www.ipe.com)***

Last year was challenging for quantitative equity strategies with a large proportion of them underperforming their benchmark on a rolling one-year basis. There has, therefore, been a great deal of interest in understanding the shortcomings of quantitative portfolios over the same calendar year.

- In 2019 investors displayed a clear preference for the largest cap assets
- Long-only quant equity strategies as they tend to be underweight the largest names

The struggles faced by quants in 2019 were related not just to the efficacy of quantitative signals but the ability of systematic strategies to access these signals over that period – an issue exacerbated by the outperformance of large-cap stocks over smaller names. To further understand the difficulties faced by quants in 2019 it is informative to consider recent returns to common quantitative strategies. The compounded active performance of five simulated portfolios from the end of 2003 to the end of 2019 is given in the figure. [Read More](#)

#### **Ahead of the curve: Can the system win in EMs?**

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***Jordan Brooks, Scott Richardson, Zhikai Xu (www.ipe.com)***

Emerging market (EM) fixed income has grown over the past two decades. EM bonds are issued by EM-domiciled corporate, sovereign and quasi-sovereign entities and can be issued in local and 'hard' (typically dollar) currency. JP Morgan's global EM indices, which capture the investible section of EM markets, have increased from about \$350bn in 2002 to nearly \$2.5trn by the end of 2018.

While systematic strategies have been commonplace in equities and more prevalent in some fixed income markets, emerging market hard currency debt markets have so far been a frontier. [Read More](#)

## Fixed Income & Credit: Credit at a crossroads

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**Carlo Svaluto Moreolo** ([www.ipe.com](http://www.ipe.com))

How will weak lending standards hurt credit investors in a global slowdown?

### Key points

- Lending standards have become weaker across credit markets
- The ratio of stressed credit has risen in the US and Europe
- In a downturn, recovery rates may be below historical levels
- Investors may see a dispersion between returns from credit portfolios

After over a decade of spectacular growth, credit markets may be facing one of their most difficult years since the 2008 global financial crisis. Issuance of high-yield bonds, leveraged loans and private debt could grind to a halt, amid fears around the economic impact of the COVID-19 pandemic and pressure on the oil price.

In early March, liquidity in the credit markets was drying up as markets panicked at the spread of COVID-19 in Europe. The real test for illiquid credit portfolios will be a global economic slowdown.

Interest rates were already at historically low levels and central banks have reacted to market turbulence by reducing them further. Governments are planning stimulus packages. However, strong demand for the illiquid credit by yield-starved investors in recent years has caused a decline in lending standards. Loan terms strongly favour borrowers, leaving lenders exposed to potential losses on bad credits if economic growth decelerates. [Read More](#)

### Trending topics

#### **Better With Age - Predicting mortality for post-level term insurance**

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**Martin Snow and Adam Haber** (*The Actuary Magazine*)

Actuaries have a long and storied history of providing the joint mathematical and business foundation for the insurance industry. Yet, advanced predictive analytics techniques with machine learning (ML) and artificial intelligence (AI) have not made it into the standard toolkit of the typical actuary. Insurers and actuaries could reap major strategic benefits if they were to significantly increase their use of these advanced predictive techniques. In this article, we focus on mortality and lapse studies as one example. [Read more](#)

#### **Riding the ERM Wave - A brief history of ERM modeling and what's coming next**

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**Rich Lauria** (*The Actuary Magazine*)

It may be hard to believe, but enterprise risk management (ERM) has become mainstream. ERM processes exist today at essentially every major insurer operating in well-established insurance markets. Regulators across the globe have some type of own risk and solvency assessment (ORSA) requirement, facilitated by the International Association of Insurance Supervisors' adoption of Insurance Core Principle 16. Evaluating insurer ERM is now embedded into the rating criteria of each major credit rating agency.

The actuarial profession has made significant contributions to the advancement of many key components of the ERM process, including risk identification, assessment and decision-making. However, its main achievements, arguably, have been in the area of risk quantification. As I reviewed all of the ERM modeling practices I have utilized over the course of my career, I was

struck by their ambition and comprehensiveness, as well as the challenge in making them transparent and intuitive to key stakeholders. [Read more](#)

## AIML: Cut Through the Noise - Machine learning and artificial intelligence are a leap forward for life and annuity actuarial modeling

*Dave Czernicki, Peter Carlson, Jean-Philippe Larochelle and Jonathan Degange (The Actuary Magazine)*

Artificial intelligence (AI) and machine learning (ML)—collectively referred to as AIML—have been hot topics lately. And for good reason: These technologies are bringing significant advances that are reshaping the world as we know it. From driverless cars to detecting cancer, AIML already has presented tremendous breakthrough opportunities to myriad industries, and the adoption and expansion of business applications are only expected to accelerate. In the financial services sector, FinTech firms have developed concepts leveraging AIML such as chatbots, automated document processing and deep hedging (hedging strategy informed by ML algorithms). Banking and insurance companies increasingly are injecting funds into these efforts.

Actuaries are taking notice. The Society of Actuaries (SOA) made predictive analytics a component of its strategy,<sup>1</sup> extended the candidate’s curriculum and launched a related Actuarial Innovation & Technology Strategic Research<sup>2</sup> initiative. Andrew D. Rallis, FSA, MAAA, president of the SOA, established AIML as an area of focus in his presidential luncheon speech at the 2019 SOA Annual Meeting & Exhibit.

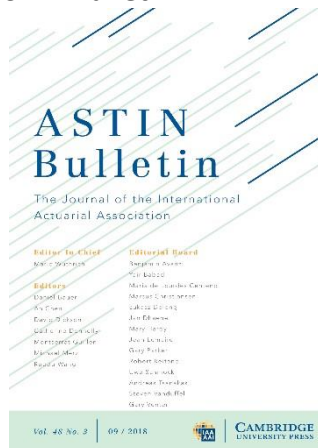
AIML likely will disrupt our work like other technologies have, with an ever-increasing pace of change. Just as we can’t fathom what our work would have looked like without technologies we now take for granted—such as distributed processing, first principles models or even basic data storage capabilities—AIML soon will be a common component of the actuarial toolkit. [Read More](#)

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