Os informamos de que el seminario de investigación del día martes 13 de diciembre será un seminario compartido entre la Facultad de CCEE y Turismo y el Departamento de Economía. Será impartido por parte del Profesor Pietro Millossovich. Os rogamos que os registréis previamente en el enlace facilitado más abajo y puntualidad. La información del seminario y ponente es la siguiente:

Pietro Millossovich (Bayes Business School (formerly Cass))

- **Título de la presentación:** "A Simulation Based Approach to Evaluate Future Annuities and Longevity Metrics "
- **Ponente**: Pietro Millossovich
- **Autores**: Millossovich, A.R.; Bacinello and F. Vivian
- **Fecha**: martes 13 de diciembre, 2022
- **Hora**: 14:15 - 15:15 horas
- **Dónde**: Aula 2.7 de la Facultad de Ciencias Económicas, Empresariales y Turismo, en Alcalá de Henares
- **Link sesión**: enlace para registrarse
- **Calendario seminarios**: https://economicasempresarialesyturismo.uah.es/investigacion/seminarios-investigacion.asp

Abstract: The uncertainty in mortality improvements recorded over the last century and a half has fostered a large literature on mortality forecasting, starting with the pioneering work of Lee and Carter (1992). Many models have been proposed in the attempt to catch the fine structure of dynamic evolution of mortality. Some of these models are now standard tools for actuaries, demographers, and policy makers. A further stream of research, beginning with Li and Lee (2005), has considered the joint modelling of mortality for groups of related populations, in order to benefit from the presence of common features. Regardless of the approach chosen, a metric frequently calculated is the (distribution of) life expectancy at some future date. Pension and life actuaries are similarly interested in the future value of life annuities, while demographers may consider other measures such as the lifespan disparity. While the calculation of these quantities is straightforward if a period approach is considered, it becomes more challenging if a cohort perspective is used – allowing for a full consideration of future mortality improvements -, as it involves conditional expectations for which closed form expressions are only available in some special cases. In order to avoid the computationally cumbersome nested simulation method, Dowd et al. (2010, 2011) have suggested an approach based on a Taylor expansion that, however, requires multiple simulation sets. Following Boyer and Stentoft (2013, 2017), we show how the simulation of these conditional expectations can be efficiently tackled using a single set of simulations followed by a regression (aka Least Square Monte Carlo) against a set of appropriate basis functions. The method is shown to be extremely accurate and versatile in the case of future annuity values, and applications to guaranteed annuity options and pension buy out are presented. In the case of longevity metrics, it is shown, considering future life expectancy and lifespan disparity for Italian males and females, the extent of the misrepresentation resulting from independent forecasts as opposed to a what implied by a more sound multipopulation model.

Bio: Pietro Millossovich is a Reader in Actuarial Science at the Faculty of Actuarial Science and Insurance, Bayes Business School (formerly Cass), City University, London since January 2012. Previously, he has been a Lecturer at the University of Trieste, Italy. Pietro Millossovich holds a BSc in Statistics and Actuarial Science from the University of Trieste, a D.E.A. (Master) in Probability and Finance from the University of Paris VI and a PhD in Mathematics Applied to Decisions in Economics and Finance from the University of Trieste. Pietro also currently holds a position at the University of Trieste.