ALL. F

Decreto Rettore Università di Roma "La Sapienza" n. 2659/2018 del 09/11/2018

SUSANNA LEVANTESI
Curriculum Vitae

Part I – General Information

Full Name	Susanna Levantesi
Spoken Languages	Italian; other languages: English.

Part II – Education

Type	Year	Institution	Notes (Degree, Experience,…)
PhD	2004	Faculty of Statistics, Sapienza University of Rome	PhD in Actuarial Science
University graduation	1999	Faculty of Statistics, Sapienza University of Rome	Degree in Actuarial Science and Statistics

Part III – Academic appointments

IIIA – Academic position and career

Start	End	Institution	Position
2008	present	Department of Statistics (Sapienza University of Rome)	Assistant Professor
2005	2008	Faculty of Statistics, Sapienza University of Rome	Research Fellow
2007	2007	Max Planck Institute for Demographic Research, Rostock, Germany	Visiting fellow
2002	2002	City University, London, UK	Postgraduate occasional actuarial science: full time student

03/08 /2017	03/08/ 2023	National Scientific Qualification (ASN) for the position of Associate Professor	Scientific sector: SECS-S/06 – 13/D4

IIIB – Duty Appointments

Start	End	Institution	Position
2012	present	Department of Statistics (Sapienza University of Rome)	Member of the Committee for the Quality Assurance of the CAD Statistical, actuarial and financial sciences
2015	present	Sapienza University of Rome	Member of the Audit Group of Sapienza University of Rome

2017	present	Department of Statistics (Sapienza University of Rome)	President of the Committee for Test TOLC-E
2013	2016	Department of Statistics (Sapienza University of Rome)	Member of the Committee for Orientation and Tutoring Service
2013	2016	Department of Statistics (Sapienza University of Rome)	Member of the Committee for the Classrooms' management
2010	2012	Department of Statistics (Sapienza University of Rome)	Member of the Committee for Research
2010	2011	Department of Statistics (Sapienza University of Rome)	Member of the Committee for Seminars
2009	2010	Department of Statistics (Sapienza University of Rome)	Support activities for the completion of study plans for the Degree program in Actuarial and financial sciences
2009	2012	Department of Statistics (Sapienza University of Rome)	Erasmus leader for the Degree program in Actuarial and financial sciences
2010	2010	Department of Statistics (Sapienza University of Rome)	Member for the access examination for the Ph.D. program in Actuarial Science (XXVI cycle)

IIIC – Other Appointments

Start	End	Institution	Position
2017	Present	Department of Statistics (Sapienza University of Rome)	Coordinator of the Ph.D. program in Actuarial Science within the "School of Statistical Sciences"
2012	Present	Department of Statistics (Sapienza University of Rome)	Member of the Scientific Board of the PhD Program "School of Statistical Sciences"
2010	2011	Faculty of Statistics (Sapienza University of Rome)	Member of the Scientific Board of the PhD Program "Actuarial Science"

Part IV – Teaching experience

IVA - Academic teaching in Undergraduate and Postgraduate Degree Courses

Year	Institution	Lecture/Course
2014-2015 - present	Department of Statistics, Sapienza University of Rome	Laboratory of Actuarial Science (3 CFU), Postgraduate degree in Actuarial Science
2008-2009 - present	Department of Statistics, Sapienza University of Rome	Balance sheet of insurance companies (6 CFU), Postgraduate degree in Actuarial Science
2014-2015 - 2017-2018	Faculty of Economics, "Luiss Guido Carli" University	Advanced Financial Mathematics (Supplementary contract), Bachelor degree in Economics
2010-2011	Faculty of Economics, "Luiss Guido Carli" University	Mathematic finance (Supplementary contract), Bachelor degree in Economics
2005-2006 - 2009-2010	Faculty of Economics, University of Sannio	Actuarial Models for Health Insurance, Postgraduate degree in Actuarial Science
2004-2005 - 2009-2010	Faculty of Economics, University of Sannio	Life Insurance, Postgraduate degree in Actuarial Science
2004-2005	Faculty of Economics, University of Sannio	Risk Theory, Postgraduate degree in Actuarial Science

IVB - Academic teaching in I and II level Master

Year	Institution	Lecture/Course
2016-2017 - present	Department of Statistics, Sapienza University of Rome	II level Master in "Big Data. Metodi statistici per la Società della Conoscenza". Course "Forecasting models in insurance and health".
2017-2018	Faculty of Economics, "Luiss Guido Carli" University and Mefop	II level Master in "Economia, Finanza e Investitori Istituzionali" (EFGII). Lecture "Longevity risk: assesment and management".
2016-2017	Faculty of Economics, "Luiss Guido Carli" University and Mefop	I level Master in "The new discipline of the Public Administration of subsidiaries and pension institutions". Lecture "Longevity risk management".
2013-2014	Faculty of Economics, University of Tuscia and Mefop	II level Master in "Public and private welfare of supplementary pension schemes". Lecture "Longevity risk".
2008-2009	Faculty of Economics, University of Tuscia and Mefop	II level Master in "Economics and Law for supplementary pension schemes". Lecture "Long Term Care benefits in pension funds".
2005-2006 - 2009-2010	Department of Economics, Sapienza University of Rome	II level Master in "Analyst in Risk Management for insurance" (ARMA). Course: "Mathematical models for health insurance".

IVC - Academic teaching/seminars in PhD Schools and Research Centers

Year	Institution	Lecture/Course
2016-2017	Department of Statistics, Sapienza University of Rome	Ph.D Program "School of Statistical Sciences". Course "Longevity risk".
2013-2014	Department of Statistics, Sapienza University of Rome	Ph.D Program "School of Statistical Sciences". Seminar "Mortality models for basis risk in longevity and mortality linked securities".
2011-2012	Department of Statistics, Sapienza University of Rome	Ph.D Program "Actuarial Science". Seminar "Actuarial models for health insurance".
2008-2009	Department of Statistics, Sapienza University of Rome	Ph.D Program "Actuarial Science". Seminar "Longevity risk".

IVD - Academic teaching abroad in Universities or Research Centers

Year	Institution	Lecture/Course
2018	Eastern Africa Statistical Training Center (EASTC), University of Dar-Es-Salaam, Tanzania	Course on "Prevalence, statistical indicators and analysis of risk factors for violence against women" – Summer School on "Statistics for the Study of Gender Equality. Methods and Tools to study Violence against Women" (14 hours)

2017	Eastern Africa Statistical Training Center (EASTC), University of Dar-Es-Salaam, Tanzania	Course on "Actuarial mathematics and mortality modeling" – Mission AICS (Italian Agency for Cooperation and Development) AFRICA SUB-SAHARIANA concerning the "Strenghtening of the Statistical Area for AFRISTAT (Observatoire Economique et Statistique d'Afrique Subsaharienne) & EASTC (30 hours)

Part V - Society memberships, Awards and Honors

Year	Title
2011 - present	Member of the Working Group on the "Mortality of pensioners and annuitants in Italy", founded by the Professional Association of Italian Actuaries and the National Association of the Insurance Companies.
2011	Expert on the validation of data on long-term care of the elderly appointed by the Committee for Statistical Information (CoGIS), the Prime Minister's Office.
2009 - present	Member of the Italian Institute of Actuaries
2001 - present	Member of Professional Association of Italian Actuaries
2001 - present	Member of A.M.A.S.E.S. (Associazione per la Matematica Applicata per le Scienze Economiche e Sociali) (Association for the applications of mathematics to economic and social sciences)
2017	Grant for research activity (Law 240/10, art. 29), Sapienza University of Rome
2014	Grant for research activity (Law 240/10, art. 29), Sapienza University of Rome
2000-2003	MIUR Scholarship for Ph.D. program in Actuarial Science (XVI course), Faculty of Statistics, Sapienza University of Rome.

Part VI - Funding Information

VIA - Grants as Principal Investigator

Year	Title	Program	Grant value
2018	Analisi delle serie storiche e dell'andamento tendenziale del rischio di invalidità previdenziale	Research project funded by ANIA (National Association of Insurance Companies)	4.500 euro
2017	Fund for basic research activities (FFABR)	Miur	3.000 euro
2017	Funding for visiting professors (prof. Enrico Biffis)	Sapienza Visiting Professor Program	5.000 euro

VIB - Grants as Investigator

Year	Title	Program	Grant value
2016	Un modello Risk-Based per la valutazione del rischio di Medical Malpractice	Progetto di Ateneo	3.000 euro

2013	Quantitative models for estimating probability distributions in long-term care and critical illness insurance	Research project funded by ANIA (National Association of Insurance Companies)	15.000 euro
2012	Actuarial support to the development of a risk-based pricing model for Medical Malpractice	Research project funded by AIBA (Italian Insurance Brokers' Association	12.000 euro
2011	Markovian processes: numerical methods and actuarial and financial applications	Progetto di Ateneo	15.000 euro
2008	Longevity risk and longevity-linked securities	Progetto di Ateneo	7.500 euro
2008	Risk assessment models for the insurance and social security solvency	PRIN 2007	Approx. 100.000 euro
2006	Biometric risks in life insurance: measurement, management and effects on the insurance solvency	MURST 60%	11.500 euro
2005	Financial sustainability of public health and pension expenditure: a contribution to the creation of possible adjustments	MURST 60%	Approx. 7.500 euro

Part VII – Research Activities

Keywords	Brief Description
Solvency capital requirements	The Solvency II directive (2009/138/EC) is a European Union (EU) directive concerning the EU insurance regulation. It primarily concerns the calculation of the solvency capital requirement (SCR), i.e. the amount of capital that the insurance companies must hold to reduce the risk of insolvency. As regard to solvency capital for longevity risk, there are distortions and inconsistencies caused by the invariance of the longevity shock compared to the age and time assumed by the regulatory model. The aim of the research is to introduce a temporal structure of the time mortality volatility which is included as a driver of longevity shock, by modelling a rolling window affine stochastic model. The longevity shock is then calculated as a function of mortality rate time volatility evolution and time, better reflecting the risk profile of a specific undertaker.
Longevity risk and longevity market	Longevity risk is an important risk factor for life insurance companies, that can be managed by longevity-linked securities. The market of longevity-linked securities is at present far from being complete and does not allow finding a unique pricing measure. The goal of the research is to propose a method to estimate the maximum market price of longevity risk depending on the risk margin implicit within the calculation of the technical provisions as defined by Solvency II. The maximum prices determined for the basic derivatives (such as survivor forward) can be used to price other more complex longevity-linked securities.
Critical illness	The pricing of critical illness insurance requires specific and detailed insurance data on healthy and ill lives. However, where the critical illness insurance market

insurance	is small or national commercial insurance data needed for premium estimates are unavailable, national health statistics can be a viable starting point for insurance ratemaking purposes, even if such statistics cover the general population, are aggregate and reported at irregular intervals. The aim of the research is to develop a parametric critical illness insurance pricing model structured on a multiple state continuous and time-inhomogeneous Markov chain based on national statistics.
Long term care insurance	Long term care (LTC) insurance has reached a global relevance due to the increased number of elderly in the world, which generate a higher demand for LTC services. The goal of the research is twofold. Firstly, it concerns the development of a model for LTC annuities risk assessment in a Markovian multi-state framework. A stochastic projection model is necessary in order to represent the future evolution of mortality and disability transition intensities. Secondly, the research aims at investigating the application of natural hedging strategies for LTC insurers by diversifying both longevity and disability risks. Two approaches are analysed: one built on a multivariate duration, the other on the Conditional Value-at-Risk minimization of the unexpected loss.
Notional Defined Contribution pension system	Since the mid 1990s a certain number of European countries (among them Italy) implemented a Notional Defined Contribution (NDC) pension system. Such a system is based on pay-as-you-go (PAYG) funding, while the pension is a function of the individual lifelong contribution. Despite many appealing features, the NDC system presents some drawbacks: it is vulnerable to demographic and economic shocks compromising the financial sustainability in the long run and it could fail to guarantee adequate pension benefits to pensioners. The aim of the research is to introduce inside the NDC architecture an automatic balance mechanism (ABM) that maximizes the social adequacy under financial sustainability constraint, working on three parameters: pensions indexation, notional rate and contribution rate.

Part VIII – Summary of Scientific Achievements

Product type	Number	Data Base	Start	End
Articles	13	MIUR-Cineca	2002	2018
Book chapters [scientific]	8	MIUR-Cineca	2008	2018
Monographs	3	MIUR-Cineca	2005	2018
Conference proceedings	5	MIUR-Cineca	2008	2018
Total products (2002-2018)	29	MIUR-Cineca	2008	2018

Part IX– Selected Publications

1. D'Amato, V., Coppola, M., Levantesi, Susanna. (2018). An option pricing approach for measuring Solvency Capital Requirements in Insurance Industry. Physica A: Statistical Mechanics and its Applications, 509: 717-728. ISSN: 0378-4371. doi: 10.1016/j.physa.2018.05.113 (Journal article)
2. Baione, F., Levantesi, Susanna. (2018). Pricing Critical Illness insurance from prevalence rates: Gompertz versus Weibull. North American Actuarial Journal, 22(2): 270-288. ISSN: 1092-0277. Doi: 10.1080/10920277.2017.1397524 (Journal article, class A)

3. Levantesi, Susanna, Menzietti, M. (2018). Natural hedging in Long Term Care insurance. Astin Bulletin, 48(1): 233-274. ISSN: 0515-0361. doi: 10.1017/asb.2017.29 (Journal article, class A)
4. Levantesi, Susanna, Menzietti, M. (2017) Maximum Market Price of Longevity Risk under Solvency Regimes: The Case of Solvency II. Risks, 5 (2), 29: 1-21. ISSN: 2227-9091. doi: 10.3390/risks5020029 (Journal article)
5. D'Amato, V., Coppola, M., Levantesi, Susanna, Menzietti, M., Russolillo, M. (2017). A longevity basis risk analysis in a joint FDM framework. The Journal of Risk Finance, 18 (1): 55-75. ISSN: 1526-5943 (Journal article)
6. Levantesi, Susanna, Menzietti, M. (2016). Allungamento della vita media e rischio assicurativo. Collana: Scienze Assicurative. Book Series: Insurance Sciences, 2: 1-92. Napoli: Edizioni Scientifiche Italiane. ISBN: 978-88-495-3147-3 (Monograph)
7. Baione, F., Conforti, C., Levantesi, Susanna, Menzietti, M., Tripodi, A. (2016). Stima di basi tecniche per assicurazioni LTC, malattie gravi e invalidità. In: De Angelis P. Di Falco L. Assicurazioni sulla salute: caratteristiche, modelli attuariali e basi tecniche, Cap. IV, p. 123-196, Il Mulino, ISBN: 978-88-15-26084-0 (Book chapter)
8. Baione, F., Levantesi, Susanna. (2014). A health insurance pricing model based on prevalence rates: application to critical illness insurance. Insurance: Mathematics and Economics, 58: 174-184. ISSN: 0167-6687 (Journal article, class A)
9. Levantesi S. (2013). Solvency capital requirements for longevity risk under different stochastic mortality models. Advances and Applications in Statistics, 33 (2): 137-160. ISSN: 0972-3617 (Journal article)
10. Levantesi, Susanna, Menzietti, M. (2012). Managing longevity and disability risks in life annuities with Long Term Care. Insurance: Mathematics and Economics, 50: 391-401. ISSN: 0167-6687 (Journal article, class A)

Part X - Other activities

XA - Organizing Chair / Program Committee Member

- UNISActuarial School 2018. Member of the organizing committee. Paestum (SA), 17-21/09/2018
- European Conference on Operational Research 2018. Organizing Chair of the stream "Risk Management in Insurance". Valencia, 8-11/07/2018

XB - Editorial Memberships

- Guest editor of Annals of Operations Research under the Special Issue "Recent Developments in Financial Modeling and Risk Management", 2018.

XC – Reviewing Activity

- Communications in Statistics-Theory and Methods
- Genus;
- Insurance: Mathematics and Economics;
- Journal of Applied Statistics;
- Mathematical and Statistical Methods for Actuarial Sciences and Finance;
- Risks;
- Scandinavian Actuarial Journal.

XD – Conference presentations, workshops and seminars (last 10 years)

- UNISActuarial School, Paestum (SA) 2018. Contributed session. Paper: "Application of Application of machine learning to mortality modeling" (co-authors V. Pizzorusso), 17-21/09/2018
- European Conference on Operational Research, Valencia 2018. Contributed session. Paper: "Adjustment mechanisms for notional defined contribution pension systems" (co-authors P. Devolder, M. Menzietti), 8-11/07/2018
- Reisurance Group of America (RGA). Invited speaker, panel discussion on Long Term Care and private insurance. State of art and opportunities. Rome, 5-12-2017.
- IME 2017 – 21st International Congress on Insurance Mathematics and Economics, Vienna. Contributed session. Paper: "Optimal product mix in Long Term Care insurance" (co-author: M. Menzietti, 3-5/07/2017
- INPS. The annuitants' mortality in Italy. Roma. Invited speaker. Talk: "Forecasting scenarios of pensioners' survival". 13/12/2016
- Workshop Assoprevidenza, The new ANIA technical bases for Long Term Care: a starting point for hedging evolution. Roma. Invited speaker. Talk: "The new ANIA technical bases for Long Term Care Insurance", 17/11/2016
- 12th National conference of statistics. Rome. Laboratory Numeracy. Invited Speaker. Talk: "Big Data in insurance and health", 23/06/2016
- Mathematical and Statistical Methods for Actuarial Sciences and Finance (MAF) 2016. Paris. Contributed session. Paper: "Natural hedging in Long Term Care insurance" (co-author M. Menzietti), 30/03-01/04/2016
- Dynamics of Social and Economic Systems (DYSES). Seville. Contributed session. Paper: "Immunization strategy for hedging disability and longevity risk in Long Term Care insurance" (co-author M. Menzietti), 16-18/09/2014
- Mathematical and Statistical Methods for Actuarial Sciences and Finance (MAF), Vietri sul mare (SA). Contributed session. Paper: "A maximum price of longevity risk in the Solvency II framework" (co-author M. Menzietti), 22-24/04/2014
- Le Séminaire du laboratoire SAF, Institut de Sciences Financière et d'Assurances (ISFA) Universitè Lyon 1, France. Invited speaker. Talk: "Managing longevity and disability risks in life annuities with Long Term Care", 11/11/2013
- IME 2013 - 17th International Congress on Insurance Mathematics and Economics, Copenhagen. Contributed session. Paper: "Longevity risk hedging and basis risk" (co-authors: M. Coppola, V. D'Amato, M. Menzietti, M. Russolillo), 1-3/07/2013
- MAF 2012 - Mathematical and Statistical Methods for Actuarial Sciences and Finance, Ravello. Contributed session. Paper: "Measuring and Hedging the basis risk by Functional Data Models" (co-authors: M. Coppola, V. D'Amato, M. Menzietti, M. Russolillo), 10-12/04/2012
- INPS. Pension actuaries' day. Rome. Invited speaker. Talk: "Mortality projection models", 2/12/2011
- 21th International AFIR Colloquium. Contributed session. Paper: "Pricing S-forwards via the Risk Margin under Solvency II" (co-authors: M. Menzietti and T. Torri), 19-22/06/2011

- 14th Applied Stochastic Models and Data Analysis Conference (ASMDA). Rome. Contributed session. Paper: "Pricing Basic Survivor Swaps" (co-authors M. Menzietti, T. Torri), 7-10/06/2011
- AdEPP (Associazione degli Enti Previdenziali Privati) Research Center. Rome. Seminar: "La valutazione del rischio di non autosufficienza nelle assicurazioni Long Term Care", 14/04/2011.
- MEFOP, Technical seminar "Longevity risk and the implications for pension funds investors", Rome. Invited speaker. Talk: "Longevity risk: representation, evaluation and management", 10/11/2010
- Italian Institute of Actuaries, Rome. Invited speaker. Seminar: "Long Term Care insurance: analysis and risk evaluation", 19/10/2010
- Dynamics of Social and Economic Systems (DYSES). Benevento. Contributed session. Paper: "Managing Longevity and Disability Risks in Life Annuities with Long Term Care" (co-author M. Menzietti), 20-25/09/2010
- Workshop PRIN 2007: Models for insurance risk assessment, Tropea (CS). Papers: "On longevity risk securitization and solvency capital requirements in life annuities" (co-authors: M. Menzietti, T. Torri); "Managing longevity and disability risks in long term care insurance" (co-author M. Menzietti), 18-20/09/2010
- MAF 2010 - Mathematical and Statistical Methods for Actuarial Science and Finance, Ravello. Contributed session. Paper: "On longevity risk securitization and solvency requirements in life annuities" (co-author M. Menzietti), 7-9/04/2010
- SFB-Workshop: Demographic Risk - Humboldt-Universität zu Berlin and Allianz SE, Berlin. Contributed session. Paper: "Solvency Capital Requirements Under Different Stochastic Mortality Models" (co-author T. Torri), 16-17/12/2009
- International Abrapp (Brazilian Pension Funds Association) Seminar, Rome. Invited speaker. Talk: "Longevity Risk during the Decumulation Phase and Strategies to Manage it", 16/06/2009
- XVIII International AFIR Colloquium. Rome. Contributed session. Paper: "Longevity Bond Pricing Models: an Application to the Italian Annuity Market and Pension Schemes" (co-authors: M. Menzietti, T. Torri), 30/09-03/10/2008
- MTISD Congress, Lecce. Contributed session. Papers: "Longevity Bonds: an Application to the Italian Annuity Market" (co-authors: M. Menzietti, T. Torri); "Longevity Risk and Reinsurance Strategies for Enhanced Pensions" (co-author M. Menzietti), 18-20/09/2008
- XXXII AMASES Congress, Trento. Contributed session. Paper: "Securitization of longevity risk in the Italian annuity market" (co-author T. Torri), 01-04/09/2008
- X Italian-Spanish Congress of Financial and Actuarial Mathematics, Cagliari. Contributed session. Paper: "Setting the hedge of longevity risk for annuity providers through securitization" (co-author T. Torri), 23-25/06/2008
- MAF 2008 - Mathematical and Statistical Methods for Actuarial Science and Finance, Venezia. Contributed session. Paper: "Managing Demographic Risk in Enhanced Pension" (co-author M. Menzietti), 26-28/03/2008

Roma, 6 dicembre 2018

FIRMA