

Contents

Members of the Thesis Committee	iii
Committee Approvals	v
Acknowledgements	xiii
Summary	xv
Contents	1
List of Figures	3
List of Tables	5
1 Introduction	7
2 On the Characteristics of Reporting ADL Limitations and Formal LTC Usage across Europe	11
2.1 Introduction	12
2.2 LTC policies across Europe and research hypotheses	13
2.2.1 Landscape of the LTC systems in Europe	13
2.2.2 Research hypotheses	15
2.3 Dataset and descriptive statistics	19
2.3.1 Description of the SHARE dataset	19
2.3.2 Descriptive statistics	20
2.4 Econometric models and results	24
2.4.1 Model framework	24
2.4.2 Results and discussion	27
2.4.3 Validation of conjectures and discussion	33
2.5 Conclusion	35
Bibliography	36
Appendix	44
3 Drivers of Old-Age Dependence and Long-Term Care Usage in Switzerland: a Structural Equation Model Approach	47
3.1 Introduction	48
3.2 Development of research hypotheses	48
3.3 Swiss Health Survey data and descriptive statistics	51
3.3.1 SHS dataset	51

3.3.2	Descriptive statistics	53
3.4	Model setup, results and discussion	57
3.4.1	Structural Equation Model	57
3.4.2	Results and discussion	60
3.5	Concluding remarks	64
	Bibliography	64
4	The Impact of Catastrophe Events on Insurance Companies' Market Valuation: an Event Study Analysis	69
4.1	Introduction	70
4.2	Event study methodology and statistical tests	72
4.2.1	Parametric tests	75
4.2.2	Nonparametric tests	77
4.2.3	Cumulative abnormal returns testing	79
4.2.4	Cross-sectional regression analysis	80
4.3	Database of events, companies and market values	81
4.3.1	Events and model parameters	81
4.3.2	Companies and indices	82
4.4	Reference case: event study of 9/11 terrorist attacks	84
4.5	Application to other events	91
4.5.1	Hurricanes event study	91
4.5.2	Earthquakes event study	97
4.5.3	Storms event study	100
4.5.4	Airline crashes event study	100
4.6	Summary and concluding remarks	102
	Bibliography	103
5	A Note on Stochastic Programming for the Asset Allocation in Swiss Pension Funds	107
5.1	Introduction	108
5.2	Model framework	109
5.2.1	Stochastic programming for pension funds	109
5.2.2	Reference case	111
5.2.3	Underlying economic models	113
5.2.4	Scenario tree generation	114
5.3	Numerical illustrations	116
5.3.1	Parameters of the reference case	116
5.3.2	Convergence analysis of the reference case	118
5.3.3	Sensitivity analyses	120
5.3.4	Comparison with Monte Carlo simulation	128
5.4	Concluding remarks	129
	Bibliography	130
5.A	Appendix: Scenario tree generation techniques	133
5.B	Appendix: Example of a stochastic problem	135
5.C	Appendix: Investment proportions for different planning horizons	137
5.D	Appendix: Implementation details and software choice	137