

Contents

List of Figures	XIII
List of Tables	XV
List of Abbreviations	XIX
List of Symbols	XXIII
1 Introduction	1
2 Description of distributions and preferences	7
2.1 Statistical description of distributions	7
2.1.1 Statistical moments	8
2.1.2 A discussion of skewness measures	11
2.1.3 Statistical properties of financial assets	12
2.1.4 Stochastic dominance	14
2.2 Utility theoretic foundations	18
2.2.1 Expected Utility Theory	18
2.2.2 Original Prospect Theory	24
2.2.3 Cumulative Prospect Theory	28
2.2.4 Parameterization of Cumulative Prospect Theory	32
3 Third-order risk preferences	37
3.1 Preferences for skewness	37
3.1.1 Skewness preferences in EUT and CPT	37
3.1.2 Skewness preferences in portfolio theory and asset pricing	44
3.1.3 Skewness seeking in individual decision making	49

3.1.4	Experimental evidence for skewness preferences	52
3.2	Preferences for prudence	55
3.2.1	Prudence preferences within Expected Utility Theory	56
3.2.2	Prudence preferences beyond Expected Utility Theory	62
3.2.3	Empirical evidence for prudence preferences	64
3.2.4	Experimental evidence for prudence preferences	66
4	Experimental design and procedure	71
4.1	Experiments as empirical method of research	71
4.2	Implementation of the research project	73
4.3	Stage Skewness	75
4.4	Stage Prudence	77
4.5	Stage Certainty Equivalents	82
4.5.1	Response mode	86
4.5.2	Mechanism	88
4.5.3	Incentive compatibility	91
4.6	Experimental procedure	94
4.7	Recruiting of subjects	97
5	Experimental results	99
5.1	Description of experimental sessions and subject pool	99
5.2	Third-order risk preferences	101
5.2.1	Preliminary results	102
5.2.2	Analysis of preference for skewness	106
5.2.2.1	Subgroups	106
5.2.2.2	Impact of the degree of skewness	108
5.2.2.3	Binary choice model	109
5.2.2.4	Impact of decision time	117
5.2.3	Analysis of prudent behavior	120
5.2.3.1	Subgroups	120

5.2.3.2	Impact of degree of skewness of the zero-mean risk . . .	121
5.2.3.3	Binary choice models	123
5.2.3.4	Impact of decision time	127
5.3	Stage Certainty Equivalents	129
5.3.1	Maximum likelihood approach to estimate risk parameters	130
5.3.2	Estimation of risk preferences within EUT	131
5.3.3	Estimation of risk preferences within CPT	133
5.4	Within subject analysis	140
5.4.1	Third-order risk preferences and EUT	140
5.4.2	Third-order risk preferences and CPT	142
6	Conclusion	151
A	Appendix	163
A.1	Statistical properties of asset classes	163
A.2	Divergence of stochastic dominance and statistical moments	164
A.3	Illustrative Probability Weighting Function in original prospect theory . .	164
A.4	HARA utility functions: derivatives and properties	165
A.5	Over-/Underweighting following the different parameterizations of the Prob- ability Weighting Functions	167
A.6	Statistical properties of binary lotteries	168
A.7	Example of an increase in downside risk	170
A.8	Exemplary utility functions of prudent and non-prudent individuals . . .	171
A.9	Characteristics of aggregated ES lotteries	173
A.10	Individual order of stages	174
A.11	Instructions (Original version)	175
A.12	Socio-economic questionnaire (Original version)	180
A.13	Individual remuneration paid to subjects	182
A.14	Socio-economic characteristics of the subject pool	183
A.15	Comparison of experimental sessions with preceding test session	186

A.16 Kolmogorov-Smirnov tests for random decision processes	189
A.17 Right-skewed/prudent choices per lottery	191
A.18 Logistic model for right-skewed choices	192
A.19 Average Marginal Effects on right-skewed choices	193
A.20 Logistic model regressions for prudent choices	194
A.21 Average Marginal Effects on prudent choices	195
A.22 Individual EUT parameters based on power utility function	196
A.23 Individual CPT parameters based on TK (1992)	197
A.24 Individual CPT parameters based on Prelec (1998)	199
A.25 CPT valuation of lotteries in Skewness stage	201
A.26 CPT valuation of lotteries in Prudence stage	202
A.27 Actual and implied choices by individual CPT parameters	203
A.28 Actual and implied choices by individual CPT parameters per subject . .	204