

Contents

1	Hyperbolic Secant Distributions	1
1.1	Preliminary Functions	1
1.2	Definition	3
1.3	Properties	4
1.4	Parameter Estimation	10
	References	12
2	The GSH Distribution Family and Skew Versions	15
2.1	Perk's Distribution Family	15
2.2	Properties of the GSH Family	17
2.3	Introducing Skewness by Splitting the Scale Parameter	18
2.4	Introducing Skewness by Means of the Esscher Transformation	20
2.5	Vaughan's Skew Extension	23
	References	24
3	The NEF-GHS or Meixner Distribution Family	27
3.1	GHS Distribution: Definition and History	27
3.2	GHS Distribution: Properties	29
3.3	Introducing Skewness by Means of the Esscher Transformation	31
	References	35
4	The BHS Distribution Family	37
4.1	Introducing Skewness and Kurtosis via Order Statistics	37
4.2	BHS Distribution: Definition	39
4.3	BHS Distribution: Properties	40
4.4	EGB2 Distribution	42
	References	43

5	The SHS and SASHS Distribution Family	45
5.1	Variable Transformations Based on the Sinus Hyperbolic Function	45
5.2	Definition of the SHS and SASHS Distribution Family	47
5.3	Basic Properties of the SHS and SASHS Distribution Families	50
	References	53
6	Application to Finance	55
6.1	Excursion: Moment-Ratio Plots	55
6.2	Return Series Under Consideration	57
6.3	Fitting Generalized Hyperbolic Secant Distribution: Unconditional Case	59
6.4	Fitting Generalized Hyperbolic Secant Distribution: Conditional Case	65
	References	69
	Appendix A: R-Code: Fitting a BHS Distribution	71

Generalized Hyperbolic Secant Distributions
With Applications to Finance

Fischer, M.

2014, VIII, 72 p. 17 illus., 4 illus. in color., Softcover

ISBN: 978-3-642-45137-9