

Advanced Methods for Loss Given Default Estimation

Inauguraldissertation
zur
Erlangung des Doktorgrades
der
Wirtschafts- und Sozialwissenschaftlichen Fakultät
der
Universität zu Köln

2015

vorgelegt
von

Dipl.-Wirt.-Math. Eugen Töws

Contents

List of Abbreviations	xi
List of Figures	xiii
List of Tables	xiv
1 Introduction	1
2 Loss given default for leasing: Parametric and nonparametric estimations	9
2.1 Literature review	11
2.2 Dataset	14
2.3 Methods	19
2.3.1 Finite mixture models and classification	20
2.3.2 Regression and model trees	22
2.3.3 Out-of-sample testing	25
2.4 Results	26
2.4.1 In-sample results	27
2.4.2 Out-of-sample results	29
2.4.3 Validation and interpretation	36
2.5 Conclusion	41
3 The impact of debtor recovery on loss given default	43
3.1 Dataset	46
3.2 Methods	52
3.2.1 Tree algorithms	53
3.2.2 Regression model	56
3.2.3 Model testing	56
3.3 Results	58
3.3.1 Recovery classification	59
3.3.2 Loss given default estimation	61
3.3.3 Validation and robustness	64

3.4	Conclusion	67
4	Loss given default-adjusted workout processes for leases	71
4.1	Dataset	76
4.2	Methods	83
4.2.1	Direct estimation	84
4.2.2	Loss given default decomposition	86
4.2.3	Loss given default classification	88
4.2.4	Validation techniques	89
4.2.5	Performance measurements	93
4.3	Results	94
4.3.1	In-sample validation	95
4.3.2	Out-of-sample validation	96
4.3.3	Out-of-time validation	98
4.3.4	Further estimation and classification	100
4.3.5	Interpretation	103
4.4	Conclusion	107
5	Summary and conclusion	109
	Bibliography	111