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# The Art of Credit Derivatives

*Demystifying the Black Swan*

JOÃO GARCIA  
SERGE GOOSSENS

The Art of Credit Derivatives:  
Demystifying the Black Swan

**João Garcia and Serge Goossens**



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Confucius

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João Garcia  
Serge Goossens

## Preface

*Technology has no respect for tradition.*

Peter Lee

Some people say that this book has been written during unusual market conditions. Securitization activity was designed to bring liquidity for the collateral in the portfolio. Investing in securitization instruments is a diversification and it reduces idiosyncratic risk. Combined with credit derivatives, securitization led to increased leverage in financial institutions. The high leverage levels affected liquidity, bringing the financial system to the brink of collapse.

*Innovation* plays a crucial role in society and leverage allows economic activity to be speeded up. However, all leveraged positions need to be carefully managed, as can be seen by the dramatic events that followed the summer of 2007. Standardized credit indices are the instruments to foster the securitization business model, playing a central role in the pricing discovery. Transparency in the pricing algorithms and the underlying parameters is key to the activity.

Our main objective in this book is to present the framework to manage this leverage. Many quantitative analysts and market practitioners have contributed to the development of the toolkit for credit derivatives described here. Despite their enormous contribution, many of them have faced hard times during the dramatic market correction that began in 2007. The quotes at the beginning of each chapter have been selected to honour their work.

Nowadays, the metaphor of the black swan is sometimes used to describe the credit crunch. It is the fruit of the imagination of Taleb (2007). The underlying idea is that the credit crunch was highly improbable and constituted an extreme event. However, highly improbable under the Gaussian distribution does not mean unlikely under other distributions. Moreover, improbable does not mean undetectable. Physicists doing quantitative trading in the foreign exchange and equity markets have been using ideas inspired by the work of Mandelbrot for quite some time. We did so in September 2002 for credit portfolio management and in March 2007 for CPDOs.

Instead of assuming that a process is Brownian motion-driven, one should first get an in-depth understanding of the underlying dynamics. In this book, we show that the ones who had a sufficiently long memory have seen that the alleged *black* swan is in fact *white*. Seek and ye shall find!

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## List of Tables

4.1	2008 CDS auction results	26
5.1	Branch probabilities in the 3D tree	34
5.2	Risk-free discount factors	36
5.3	CDS quotes used to determine the default probability	36
5.4	Cumulative default probability curve	36
5.5	ATM and OTM CSO prices	36
6.1	CVA upfront fee for a notional of $10^4$ as a function of the strike $K$ and the spread $s$ of the NCC for a 10-year contract, assuming the default times of the NCC and the RE are independent	43
6.2	Probability of joint default and CVA upfront fee for a notional of $10^4$ as a function of the correlation factor $\rho$ using the Monte Carlo method	43
6.3	Impact of correlation on counterparty risky CDS	44
6.4	Sensitivity analysis of CDS with counterparty risk	45
7.1	Regulatory cost of capital	53
7.2	Return on regulatory capital	53
8.1	Credit derivatives by products	57
10.1	Regression of Lévy delta on Gaussian delta for the 5-year maturity tranches	75
10.2	Regression of Lévy delta on Gaussian delta for the 7-year maturity tranches	75
10.3	Regression of Lévy delta on Gaussian delta for the 10-year maturity tranches	76
12.1	Gaussian copula base correlation mapping for CDX.NA.IG on 1 April 2008	93
12.2	Lévy base correlation mapping for CDX.NA.IG on 1 April 2008	93
13.1	Five-year loss correlations as a function of the asset correlation $\rho_a$	101
13.2	One-year loss correlations as a function of the asset correlation $\rho_a$	101
13.3	Loss correlations as a function of the maturity for $\rho_a = 10\%$	102
13.4	Five-year loss correlations as a function of the overlap $\Omega$ for $\rho_a = 10\%$	102
13.5	Unit variance Gamma versus standard normal distribution	103
13.6	Five-year loss correlations as a function of the parameter $a$ for $\rho_a = 10\%$	103
13.7	Five-year loss Spearman correlations as a function of the parameter $a$ for $\rho_a = 10\%$	103
13.8	Five-year loss correlations as a function of the systemic default intensity $\lambda_s$	104
13.9	Five-year loss Spearman correlations as a function of the systemic default intensity $\lambda_s$	105
14.1	Tranches in a typical cash flow CDO	108



14.2	Tranche notes of the CDO structure	111
14.3	Fees to be paid during the lifetime of the CDO	111
14.4	Hedge fees to be paid during the lifetime of the CDO. All the contracts are payers. The instrument in the first line is a swap and the remainder are caps	111
14.5	Ratios used for the OC ratio tests	112
14.6	Ratios used for the IC ratio tests	112
14.7	Collateral characteristics	113
14.8	Distribution of bonds in the pool (all the bonds are fixed rate)	113
14.9	Stress factors used for the default probabilities and for the recovery rates for each target rating	117
14.10	Yield curve	117
14.11	Impact of changes in the discount curve on the rating and EL for the different tranches	117
14.12	Impact of changing the recovery rate assumptions	117
14.13	Impact of the diversity score on the rating for the case of flat yield curve and RR at 50%	118
14.14	Impact of variations in the collateral pool	118
14.15	Impact of downgrading the collateral by one notch	118
14.16	Impact of variations in the WAL of the collateral	119
15.1	Log-return correlation of iTraxx and CDX	125
15.2	Effect of rebalancing on MVG gap risk	128
15.3	Effect of rebalancing BM gap risk	128
15.4	Effect of short positions on the CPPI strategy under MVG	129
15.5	Effect of leverage factor under MVG	129
15.6	Cash-in probabilities for the CPDO model	130
17.1	ABS characteristics for different assumptions of prepayment and with recovery rate assumed zero ( $R = 0$ )	144
17.2	ABS characteristics for different assumptions of prepayment and with recovery rate set at 40% ( $R = 40\%$ )	144
17.3	Expected loss for the different tranches of a CDO of ABSs for different amortization profiles (bullet and CPR) and different recovery rates assumptions: 0%, 40%, 50%, 60%, 70% and the rating agency recovery rate	146
17.4	Expected loss for the different tranches of a CDO of ABSs for different amortization profiles (linear and quadratic) and different recovery rates assumptions: 0%, 40%, 50%, 60%, 70% and the rating agency recovery rate	147
18.1	Delinquencies in ABX.HE pools (in %)	156
18.2	ABX.HE 07-2 constituent ratings by Moody's and S&P	156
18.3	Rating downgrades in CMBX.NA	158
19.1	Typical spreads (in bp in summer 2007) versus ratings for different instruments	165
19.2	Prices of TABX-HE 07-1 06-2 BBB- and TABX-HE 07-2 07-1 BBB- tranches	166
19.3	Typical rating of subprime ABS and of a CDO capital structure	169
22.1	Outstanding notionals for CDSs, including single names, multinames and tranches	188
22.2	Distribution of outstanding CDS notionals	188
22.3	US market securities	190

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22.4	US economic data	191
22.5	Estimated leverage ratio of American financial institutions	191
22.6	New passenger vehicle registrations by manufacturer	192
23.1	Asset correlations derived from default data	199
23.2	Asset correlations derived from asset data	199
23.3	Typical country correlations extracted from index equity returns	200
23.4	Statistics on intra and inter industry asset value-like correlation	203
23.5	AAA attachment points for TABX.HE BBB and BBB- using a rating agency methodology before (old) and after (new) the credit crunch for different values of the recovery rate	204
23.6	Impact on the credit VaR at different quantiles when going from a growth to a recession scenario	211
23.7	Fake positions are used to build an interpolation table for the evaluation of the portfolio-dependent risk weighted assets	212

## List of Figures

3.1	Generating default times using a Gaussian copula	17
6.1	Counterparty default index	46
7.1	Typical CDO structure	50
8.1	Standardized credit indices corporates: iTraxx and CDX and the tranches	58
9.1	Implied compound correlation	66
9.2	Gaussian copula base correlation	67
9.3	Compound correlation can hit 0% for mezzanine tranches	68
9.4	Base correlation can hit 100% for senior tranches	69
9.5	Gaussian BC curves recovery rates	69
9.6	Lévy BC curves recovery rates	70
10.1	iTraxx Europe Main on-the-run 5-year spreads	72
10.2	iTraxx Europe Main 5y Gaussian and Lévy Base Correlation for 12–22 tranche	72
10.3	Gaussian copula base correlation	73
10.4	Lévy base correlation	73
10.5	iTraxx Europe Main 5-year delta for 0–3 tranche Gaussian and Lévy model	74
11.1	Base correlation concept	78
11.2	Gaussian copula base correlation history	79
11.3	Distribution of the expected loss over the tranches as a percentage of the total expected loss (5-year iTraxx)	79
11.4	Construction of the bounds on the base expected loss on 1 April 2008	81
11.5	Gaussian copula base expected loss. The dash/dotted lines show the upper and lower bounds. The solid line shows the monotonic cubic spline interpolation and the dashed line shows the shape preserving cubic interpolation	83
11.6	Lévy base expected loss. The dash/dotted lines show the upper and lower bounds. The solid line shows the monotonic cubic spline interpolation and the dashed line shows the shape preserving cubic interpolation	84
11.7	Gaussian copula base correlation. The dash/dotted lines show curves implied from the upper and lower sounds on base expected loss. The solid lines show the curve for monotonic cubic spline interpolation and the dashed line shows the shape preserving cubic interpolation	85

11.8	Lévy base correlation. The dash/dotted lines show curves implied from the upper and lower bounds on base expected loss. The solid line shows the curve for monotonic cubic spline interpolation and the dashed line shows the shape preserving cubic interpolation	86
11.9	Gaussian copula base correlation on 1 April 2008. The dash/dotted lines show curves implied from the upper and lower bounds on base expected loss. The solid line shows the curve for monotonic cubic spline interpolation	87
11.10	Lévy base correlation on 1 April 2008. The dash/dotted lines show curves implied from the upper and lower bounds on base expected loss. The solid line shows the curve for monotonic cubic spline interpolation	87
12.1	Correlation mapping and the pricing of bespoke portfolios	90
12.2	Correlations under the Gaussian copula base correlation methodology	94
12.3	Correlations under the Lévy base correlation methodology	95
12.4	Expected loss	95
12.5	Gaussian base correlation expected loss mapping	96
12.6	Lévy base correlation expected loss mapping	96
14.1	Typical waterfall structure	114
14.2	Typical waterfall structure	115
15.1	Calibration on swaptions	126
15.2	Correlated VG spread paths	127
15.3	CPPI performance in the MVG model	127
15.4	CPDO portfolio value evolution and cash-out event	130
15.5	Cash-in time distribution for $\beta = 1.00$	131
15.6	Cash-in time distribution for $\beta = 0.75$	131
17.1	Variation of the outstanding notionals in time for the different amortization profiles	141
17.2	Expected loss with respect to recovery rate assumptions for the different amortization profiles	142
17.3	Fair spreads with respect to recovery rate assumptions for the different amortization profiles	143
17.4	Risky durations with respect to recovery rate assumptions for different amortization profiles	143
17.5	Default intensities	144
18.1	ABX.HE and TABX.HE BBB- standardized credit indices for the US home equity subprime MBS market	151
18.2	TABX.HE BBB and BBB- attachment and detachment points	152
18.3	Amortization	153
18.4	ABX.HE.BBB- prices	155
18.5	ABX.HE.AAA prices	155
18.6	CMBX.NA BB and BBB- 1-1 spreads	157
18.7	CMBX.NA BBB- 1-1 and BB 2-1 spreads in 2007	157
18.8	CMBX.NA AAA spreads	158
19.1	Survival probability versus prepayment for a fixed bond price	162
19.2	Expected loss versus prepayment for a fixed bond price	162
19.3	Macauley Duration versus prepayment for a fixed bond price	163
19.4	TABX.HE.BBB- 06-2 07-1 prices of tranches	164
19.5	TABX.HE.BBB- 07-1 07-2 prices of tranches	165

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19.6	Gaussian and Lévy base correlation curves for the bottom up calibration, assuming prepayment speeds as given in remittance reports and default intensities implied from bond prices	166
19.7	Gaussian and Lévy base correlation curves for the top down calibration, assuming lower prepayment speeds and higher default intensities	167
20.1	Price implied basis	174
20.2	Price implied basis with an assumed recovery rate of $R = 0$	175
22.1	The impact of 10 houses on the economy	184
22.2	The impact of 1000 houses on the economy	185
22.3	The impact of 1 delinquency in 100	186
22.4	The impact of several delinquencies in a portfolio of MBSs	186
22.5	The dynamic of correlation	187
22.6	Concentration versus diversification: the issue of systemic risk	189
23.1	Linking economic capital, VaR and expected loss	197
23.2	Impact of correlation on the tail of the loss distribution	198
23.3	The process used in the industry to reduce regulatory/economic capital via securitization while investing on those instruments	201
23.4	Subordination determines the rating of a tranche	201
23.5	Spreads from rating implies liquidity assumption	202
23.6	Using rating and the liquid indices to evaluate a new deal	202
23.7	Drill down approach for CDO squared	203
23.8	Scenario analysis	211
23.9	Stress tests: important parameters (Garcia, 2006)	213
23.10	Stress tests and scenario analysis (Garcia, 2006)	214

# Contents

<b>About the Authors</b>	<b>ix</b>
<b>Acknowledgements</b>	<b>xi</b>
<b>Preface</b>	<b>xiii</b>
<b>List of Tables</b>	<b>xv</b>
<b>List of Figures</b>	<b>xix</b>
<b>1 Introduction</b>	<b>1</b>
<b>PART I MODELING FRAMEWORK</b>	<b>5</b>
<b>2 Default Models</b>	<b>7</b>
2.1 Introduction	7
2.2 Default	7
2.3 Default Models	8
<b>3 Modeling Dependence with Copulas</b>	<b>13</b>
3.1 Introduction	13
3.2 Copula	13
3.3 Using Copulas in Practice and Factor Analysis	15
<b>PART II SINGLE NAME CORPORATE CREDIT DERIVATIVES</b>	<b>19</b>
<b>4 Credit Default Swaps</b>	<b>21</b>
4.1 Introduction	21
4.2 Credit Default Swap: A Description	22
4.3 Modeling CDSs	23
4.4 Calibrating the Survival Probability	24
4.5 2008 Auction Results	26
4.6 The Big Bang Protocol	27

<b>5</b>	<b>Pricing Credit Spread Options: A 2-factor HW-BK Algorithm</b>	<b>29</b>
5.1	Introduction	29
5.2	The Credit Event Process	30
5.3	Credit Spread Options	30
5.4	Hull–White and Black–Karazinsky Models	32
5.5	Results	35
5.6	Conclusion	37
<b>6</b>	<b>Counterparty Risk and Credit Valuation Adjustment</b>	<b>39</b>
6.1	Introduction	39
6.2	Valuation of the CVA	40
6.3	Monte Carlo Simulation for CVA on CDS	41
6.4	Semi-analytic Correlation Model	42
6.5	Numerical Results	43
6.6	CDS with Counterparty Risk	43
6.7	Counterparty Risk Mitigation	45
6.8	Conclusions	46
<b>PART III</b>	<b>MULTINAME CORPORATE CREDIT DERIVATIVES</b>	<b>47</b>
<b>7</b>	<b>Collateralized Debt Obligations</b>	<b>49</b>
7.1	Introduction	49
7.2	A Brief Overview of CDOs	50
7.3	Cash versus Synthetic CDOs	51
7.4	Synthetic CDOs and Leverage	52
7.5	Concentration, Correlation and Diversification	54
<b>8</b>	<b>Standardized Credit Indices</b>	<b>55</b>
8.1	Introduction	55
8.2	Credit Default Swap Indices	55
8.3	Standardization	56
8.4	iTraxx, CDX and their Tranches	58
8.5	Theoretical Fair Spread of Indices	58
<b>9</b>	<b>Pricing Synthetic CDO Tranches</b>	<b>61</b>
9.1	Introduction	61
9.2	Generic 1-Factor Model	61
9.3	Implied Compound and Base Correlation	66
<b>10</b>	<b>Historical Study of Lévy Base Correlation</b>	<b>71</b>
10.1	Introduction	71
10.2	Historical Study	71
10.3	Base Correlation	71
10.4	Hedge Parameters	75
10.5	Conclusions	76

---

<b>11</b>	<b>Base Expected Loss and Base Correlation Smile</b>	<b>77</b>
11.1	Introduction	77
11.2	Base Correlation and Expected Loss: Intuition	78
11.3	Base Correlation and Interpolation	80
11.4	Base Expected Loss	80
11.5	Interpolation	82
11.6	Numerical Results	83
11.7	Conclusions	88
<b>12</b>	<b>Base Correlation Mapping</b>	<b>89</b>
12.1	Introduction	89
12.2	Correlation Mapping for Bespoke Portfolios	90
12.3	Numerical Results	92
12.4	Final Comments	97
<b>13</b>	<b>Correlation from Collateral to Tranches</b>	<b>99</b>
13.1	Introduction	99
13.2	Generic 1-Factor Model	99
13.3	Monte Carlo Simulation and Importance Sampling	100
13.4	Gaussian Copula Tranche Loss Correlations	101
13.5	Lévy Copula Tranche Loss Correlations	102
13.6	Marshall-Olkin Copula Tranche Loss Correlations	104
13.7	Conclusions	105
<b>14</b>	<b>Cash Flow CDOs</b>	<b>107</b>
14.1	Introduction	107
14.2	The Waterfall of a Cash Flow CDO	107
14.3	BET Methodology	108
14.4	Results	110
14.5	AIG and BET	119
14.6	Conclusions	120
<b>15</b>	<b>Structured Credit Products: CPPI and CPDO</b>	<b>123</b>
15.1	Introduction	123
15.2	Multivariate VG Modeling	123
15.3	Swaptions on Credit Indices	124
15.4	Model Calibration	125
15.5	CPPI	126
15.6	CPDO	129
15.7	Conclusion	132



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<b>PART IV ASSET BACKED SECURITIES</b>	<b>133</b>
<b>16 ABCDS and PAUG</b>	<b>135</b>
16.1 Introduction	135
16.2 ABCDSs versus Corporate CDSs	135
16.3 ABCDS Pay As You Go: PAUG	137
16.4 Conclusion	138
<b>17 One Credit Event Models for CDOs of ABS</b>	<b>139</b>
17.1 Introduction	139
17.2 ABS Bond and ABCDS	139
17.3 Single Name Sensitivity	141
17.4 Multifactor Correlation Model	145
17.5 Monte Carlo Simulation	145
17.6 Results	146
17.7 Conclusions	148
<b>18 More Standardized Credit Indices: ABX, TABX, CMBX, LCDX, LevX</b>	<b>149</b>
18.1 Introduction	149
18.2 ABX and TABX	149
18.3 LevX and LCDX	153
18.4 CMBX and ECMBX	154
18.5 Indices as Indicators	154
<b>19 1-factor Models for the ABS Correlation Market Pricing TABX Tranches</b>	<b>159</b>
19.1 Introduction	159
19.2 Generic 1-factor Model	159
19.3 Amortizing Bond and CDS	160
19.4 A Simple Model for Amortization and Prepayment	161
19.5 ABX.HE Credit Index	163
19.6 Prepayment and Model Calibration	165
19.7 Pricing Model Implications	168
19.8 Conclusions	169
<b>20 Bond Price Implied Spreads</b>	<b>171</b>
20.1 Introduction	171
20.2 Bond Price Implied Spreads	171
20.3 Numerical Results	174
<b>PART V DYNAMIC CREDIT PORTFOLIO MANAGEMENT</b>	<b>177</b>
<b>21 Long Memory Processes and Benoit Mandelbrot</b>	<b>179</b>
21.1 Introduction	179
21.2 Econophysics, Fat Tails and Brownian Motion	179
21.3 Long-term Memory and the Nile River	181
21.4 Capital Asset Pricing Model	181