

Table of Contents

Appendix A.....	2
Appendix B.....	5
Appendix C.....	11
Appendix D.....	17
Appendix E.....	23

Appendix A

Appendix A displays the used data within the different models. The bond and CDS data used within the Hull and White model is given by following Bloomberg Tickers:

Table 1 Selected bond indices with maturity of one to three years for the Hull and White model

BB-Ticker_ 1Y	BB-Ticker_ 2Y	BB-Ticker_ 3Y	Country
GBGT1YR Index	GBGB2YR Index	GBGB3YR Index	Belgium
GDBR1 Index	GDBR2 Index	GDBR3 Index	Germany
GFIN12M Index	GFIN2YR Index	GFIN3YR Index	Finland
GFRN1 Index	GFRN2 Index	GFRN3 Index	France
-	GIGB2YR Index	GIGB3YR Index	Ireland
-	GBTP2YR Index	GBTP3YR Index	Italy
GTNLG1Y Govt	GTNLG2Y Govt	GTNLG3Y Govt	Netherlands
-	GSPT2YR Index	GSPT3YR Index	Portugal
-	GSPG2YR Index	GSPG3YR Index	Spain
GSGB1YR Index	GSGB2YR Index	GSGB3YR Index	Sweden
GUKG1 Index	GUKG2 Index	GUKG3 Index	United Kingdom

Table 2 Selected bond indices with maturity of four to six years for the Hull and White model

BB-Ticker_ 4Y	BB-Ticker_ 5Y	BB-Ticker_ 6Y	Country
GBGB4YR Index	GBGB5YR Index	GBGB6YR Index	Belgium
GDBR4 Index	GDBR5 Index	GDBR6 Index	Germany
GFIN4YR Index	GFIN5YR Index	GFIN6YR Index	Finland
GFRN4 Index	GFRN5 Index	GFRN6 Index	France
GIGB4YR Index	GIGB5YR Index	GIGB6YR Index	Ireland
GBTP4YR Index	GBTP5YR Index	GBTP6YR Index	Italy
GTNLG4Y Govt	GTNLG5Y Govt	GTNLG6Y Govt	Netherlands
GSPT4YR Index	GSPT5YR Index	GSPT6YR Index	Portugal
GSPG4YR Index	GSPG5YR Index	GSPG6YR Index	Spain
GSGB4YR Index	GSGB5YR Index	GSGB6YR Index	Sweden
GUKG4 Index	GUKG5 Index	GUKG6 Index	United Kingdom

For the model of Fontana and Scheicher following data is used in addition:

Table 3 Selected indices for the debt factor for the Fontana and Scheicher model

BB-Ticker	Country
EUQDGBE Index	Belgium
EUQDGDE Index	Germany
EUQDGFI Index	Finland
EUQDGFR Index	France
EUQDGIE Index	Ireland
EUQDGIT Index	Italy
EUQDGNL Index	Netherlands
EUQDGPT Index	Portugal
EUQDGES Index	Spain
EUQDGSE Index	Sweden
EUQDGUK Index	United Kingdom

Table 4 Selected volatility indices for the Fontana and Scheicher model

BB-Ticker	Country
BEL20 Index	Belgium
HEX25 Index	Finland
CAC Index	France
ISEQ20R Index	Ireland
FTSEMIB Index	Italy
AEX Index	Netherlands
PSI20 Index	Portugal
IBEX Index	Spain
OMX Index	Sweden
UKX Index	United Kingdom

Table 5 Selected CDS indices for the Hull and White model

BB-Ticker	Start Date	Country
CDGNBELG Index	10/31/08	Belgium
CDGNGERM Index	10/31/08	Germany
CDGNFINL Index	10/31/08	Finland
CDGNFRAN Index	10/31/08	France
CDGNIREL Index	10/31/08	Ireland
CDGNITAL Index	10/31/08	Italy
CDGNNETH Index	10/31/08	Netherlands
CDGNPORT Index	04/10/09	Portugal
CDGNSPAI Index	10/31/08	Spain
CDGNSWDN Index	10/31/08	Sweden
CDGNUK Index	10/31/08	United Kingdom

Appendix B

Implementing the Fontana and Scheicher model for the first sample period 2010-2012 following analysis and residuals are obtained for CDS spreads:

Table 6 Analysis and residuals for CDS spreads from 2010-2012 applying Fontana and Scheicher

LMBelgium_CDS10 Analysis of Variance Table						LMBelgium_CDS10 Residuals:					
Response: CDSSpreadBelgium10						Min 1Q Median 3Q Max -11438.0 -2144.2 51.4 2393.8 11209.5					
	Df	Sum Sq	Mean Sq	F value	Pr(>F)	Coefficients:					
RiskFreeRate10	1	7.5168e+09	7.5168e+09	279.7589	< 2.2e-16 ***		Estimate	Std. Error	t value	Pr(> t)	
RiskAppetite10	1	3.6914e+07	3.6914e+07	1.3739	0.2430	(Intercept)	-802449.99	83444.72	-9.617	< 2e-16 ***	
CorpCDSPremium10	1	1.0605e+10	1.0605e+10	394.6970	< 2.2e-16 ***	RiskFreeRate10	13043.27	1655.30	7.880	6.18e-13 ***	
DebtBelgium10	1	1.3982e+09	1.3982e+09	52.0379	2.507e-11 ***	RiskAppetite10	-725.68	143.81	-5.046	1.29e-06 ***	
AnnVolBelgium10	1	4.2550e+09	4.2550e+09	158.3628	< 2.2e-16 ***	CorpCDSPremium10	99.33	37.37	2.658	0.00871 **	
BidAsk10	1	5.0771e+07	5.0771e+07	1.8896	0.1713	DebtBelgium10	-613.93	343.44	-1.788	0.07587 .	
Residuals	150	4.0303e+09	2.6869e+07			AnnVolBelgium10	2933.97	236.61	12.400	< 2e-16 ***	
---						BidAsk10	987.59	718.44	1.375	0.17130	
Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1											
LMFinland_CDS10 Analysis of Variance Table						LMFinland_CDS10 Residuals:					
Response: CDSSpreadFinland10						Min 1Q Median 3Q Max -11587.6 -3865.8 178.7 3449.5 13235.5					
	Df	Sum Sq	Mean Sq	F value	Pr(>F)	Coefficients:					
RiskFreeRate10	1	8.4879e+09	8.4879e+09	335.3519	< 2e-16 ***		Estimate	Std. Error	t value	Pr(> t)	
RiskAppetite10	1	4.7946e+07	4.7946e+07	1.8943	0.17077	(Intercept)	-276815.33	30561.84	-9.058	6.66e-16 ***	
CorpCDSPremium10	1	5.5666e+10	5.5666e+10	2199.3328	< 2e-16 ***	RiskFreeRate10	8749.60	1651.89	5.297	4.13e-07 ***	
DebtFinland10	1	1.2617e+10	1.2617e+10	498.4960	< 2e-16 ***	RiskAppetite10	-817.81	141.03	-5.799	3.81e-08 ***	
AnnVolFinland10	1	9.0428e+09	9.0428e+09	357.2725	< 2e-16 ***	CorpCDSPremium10	70.87	36.12	1.962	0.0516 .	
BidAsk10	1	1.1369e+08	1.1369e+08	4.4917	0.03571 *	DebtFinland10	287.59	458.23	0.628	0.5312	
Residuals	150	3.7966e+09	2.5311e+07			AnnVolFinland10	512.59	27.18	18.861	< 2e-16 ***	
---						BidAsk10	1461.39	689.54	2.119	0.0357 *	
Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1											
LMFrance_CDS10 Analysis of Variance Table						LMFrance_CDS10 Residuals:					
Response: CDSSpreadFrance10						Min 1Q Median 3Q Max -6889 -2027 -448 1533 10249					
	Df	Sum Sq	Mean Sq	F value	Pr(>F)	Coefficients:					
RiskFreeRate10	1	7.4673e+07	7.4673e+07	6.8320	0.009866 **		Estimate	Std. Error	t value	Pr(> t)	
RiskAppetite10	1	4.8791e+08	4.8791e+08	44.6404	4.347e-10 ***	(Intercept)	622192.86	46988.91	13.241	< 2e-16 ***	
CorpCDSPremium10	1	2.6715e+10	2.6715e+10	2444.2252	< 2.2e-16 ***	RiskFreeRate10	-401.16	1098.79	-0.365	0.7156	
DebtFrance10	1	2.2655e+09	2.2655e+09	207.2800	< 2.2e-16 ***	RiskAppetite10	-298.68	90.43	-3.303	0.0012 **	
AnnVolFrance10	1	3.8672e+09	3.8672e+09	353.8223	< 2.2e-16 ***	CorpCDSPremium10	151.55	24.51	6.182	5.70e-09 ***	
BidAsk10	1	6.4777e+06	6.4777e+06	0.5927	0.442602	DebtFrance10	-1613.17	278.48	-5.793	3.93e-08 ***	
Residuals	150	1.6395e+09	1.0930e+07			AnnVolFrance10	-2250.79	119.57	-18.824	< 2e-16 ***	
---						BidAsk10	-338.19	439.29	-0.770	0.4426	
Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1											
LMireland_CDS10 Analysis of Variance Table						LMireland_CDS10 Residuals:					
Response: CDSSpreadIreland10						Min 1Q Median 3Q Max -13792.5 -5040.8 -406.2 4711.9 18147.1					
	Df	Sum Sq	Mean Sq	F value	Pr(>F)	Coefficients:					
RiskFreeRate10	1	7.1597e+09	7.1597e+09	176.6032	< 2.2e-16 ***		Estimate	Std. Error	t value	Pr(> t)	
RiskAppetite10	1	1.9291e+07	1.9291e+07	0.4758	0.491380	(Intercept)	57283.554	4575.066	12.521	< 2e-16 ***	
CorpCDSPremium10	1	4.7060e+10	4.7060e+10	1160.7935	< 2.2e-16 ***	RiskFreeRate10	11008.606	1650.502	6.670	4.62e-10 ***	
DebtIreland10	1	1.7881e+10	1.7881e+10	441.0475	< 2.2e-16 ***	RiskAppetite10	-550.920	183.187	-3.007	0.00309 **	
AnnVolIreland10	1	2.2387e+08	2.2387e+08	5.5220	0.020081 *	CorpCDSPremium10	31.251	43.796	0.714	0.47661	
BidAsk10	1	2.7847e+08	2.7847e+08	6.8687	0.009675 **	DebtIreland10	-1207.458	59.153	-20.413	< 2e-16 ***	
Residuals	150	6.0812e+09	4.0541e+07			AnnVolIreland10	-9.761	4.856	-2.010	0.04623 *	
---						BidAsk10	2182.067	832.589	2.621	0.00967 **	
Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1											
LMItaly_CDS10 Analysis of Variance Table						LMItaly_CDS10 Residuals:					
Response: CDSSpreadItaly10						Min 1Q Median 3Q Max -22945 -10370 -1383 8895 30789					
	Df	Sum Sq	Mean Sq	F value	Pr(>F)	Coefficients:					
RiskFreeRate10	1	3.4102e+09	3.4102e+09	22.2288	5.485e-06 ***		Estimate	Std. Error	t value	Pr(> t)	
RiskAppetite10	1	6.2225e+09	6.2225e+09	40.5601	2.206e-09 ***	(Intercept)	270524.807	160906.556	1.681	0.09479 .	
CorpCDSPremium10	1	3.9425e+10	3.9425e+10	256.9853	< 2.2e-16 ***	RiskFreeRate10	-7246.359	5425.685	-1.336	0.18371	
DebtItaly10	1	1.8953e+10	1.8953e+10	123.5393	< 2.2e-16 ***	RiskAppetite10	102.655	342.889	0.299	0.76506	
AnnVolItaly10	1	5.1901e+09	5.1901e+09	33.8305	3.503e-08 ***	CorpCDSPremium10	-156.515	80.075	-1.955	0.05249 .	
BidAsk10	1	1.2417e+09	1.2417e+09	8.0939	0.005063 **	DebtItaly10	1430.706	1093.218	1.309	0.19263	
Residuals	150	2.3012e+10	1.5341e+08			AnnVolItaly10	-48.028	7.441	-6.454	1.42e-09 ***	
---						BidAsk10	-4959.387	1743.206	-2.845	0.00506 **	
Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1											

LMNetherlands_CDS10

Analysis of Variance Table

Response: CDSSpreadNetherlands10

	Df	Sum Sq	Mean Sq	F value	Pr(>F)
RiskFreeRate10	1	5.5427e+09	5.5427e+09	251.3857	< 2e-16 ***
RiskAppetite10	1	1.1294e+08	1.1294e+08	5.1224	0.02505 *
CorpCDSPremium10	1	4.2253e+10	4.2253e+10	1916.3671	< 2e-16 ***
DebtNetherlands10	1	1.8401e+10	1.8401e+10	834.5696	< 2e-16 ***
AnnVolaNetherlands10	1	6.5430e+07	6.5430e+07	2.9675	0.08701 .
BidAsk10	1	4.0177e+07	4.0177e+07	1.8222	0.17909
Residuals	150	3.3073e+09	2.2049e+07		

 Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

LMPortugal_CDS10

Analysis of Variance Table

Response: CDSSpreadPortugal10

	Df	Sum Sq	Mean Sq	F value	Pr(>F)
RiskFreeRate10	1	1.0189e+10	1.0189e+10	278.6035	<2e-16 ***
RiskAppetite10	1	2.9953e+05	2.9953e+05	0.0082	0.9280
CorpCDSPremium10	1	5.4349e+10	5.4349e+10	1486.0315	<2e-16 ***
DebtPortugal10	1	2.1262e+10	2.1262e+10	581.3652	<2e-16 ***
AnnVolPortugal10	1	6.0390e+07	6.0390e+07	1.6512	0.2008
BidAsk10	1	1.8506e+07	1.8506e+07	0.5060	0.4780
Residuals	150	5.4860e+09	3.6573e+07		

 Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

LMSpain_CDS10

Analysis of Variance Table

Response: CDSSpreadSpain10

	Df	Sum Sq	Mean Sq	F value	Pr(>F)
RiskFreeRate10	1	2.9742e+09	2.9742e+09	36.5596	1.126e-08 ***
RiskAppetite10	1	2.7562e+09	2.7562e+09	33.8802	3.430e-08 ***
CorpCDSPremium10	1	3.3101e+09	3.3101e+09	40.6886	2.095e-09 ***
DebtSpain10	1	4.0507e+09	4.0507e+09	49.7922	5.890e-11 ***
AnnVolSpain10	1	1.4271e+08	1.4271e+08	1.7542	0.1874
BidAsk10	1	1.7955e+07	1.7955e+07	0.2207	0.6392
Residuals	150	1.2203e+10	8.1352e+07		

 Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

LMSweden_CDS10

Analysis of Variance Table

Response: CDSSpreadSweden10

	Df	Sum Sq	Mean Sq	F value	Pr(>F)
RiskFreeRate10	1	8.1213e+09	8.1213e+09	102.6461	< 2e-16 ***
RiskAppetite10	1	1.3725e+08	1.3725e+08	1.7347	0.18982
CorpCDSPremium10	1	5.0142e+10	5.0142e+10	633.7477	< 2e-16 ***
DebtSweden10	1	1.2736e+10	1.2736e+10	160.9723	< 2e-16 ***
AnnVolSweden10	1	2.6849e+08	2.6849e+08	3.3935	0.06743 .
BidAsk10	1	6.2972e+05	6.2972e+05	0.0080	0.92903
Residuals	150	1.1868e+10	7.9120e+07		

 Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

LMUnitedKingdom_CDS10

Analysis of Variance Table

Response: CDSSpreadUnitedKingdom10

	Df	Sum Sq	Mean Sq	F value	Pr(>F)
RiskFreeRate10	1	1.5207e+10	1.5207e+10	820.0696	<2e-16 ***
RiskAppetite10	1	3.7384e+07	3.7384e+07	2.0160	0.1577
CorpCDSPremium10	1	2.2152e+10	2.2152e+10	1194.6521	<2e-16 ***
DebtUnitedKingdom10	1	4.7404e+09	4.7404e+09	255.6436	<2e-16 ***
AnnVolUnitedKingdom10	1	5.8538e+09	5.8538e+09	315.6869	<2e-16 ***
BidAsk10	1	2.9768e+07	2.9768e+07	1.6054	0.2071
Residuals	150	2.7815e+09	1.8543e+07		

 Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

LMNetherlands_CDS10

Residuals:

Min	1Q	Median	3Q	Max
-9741.3	-3245.0	-53.9	3571.0	17071.4

Coefficients:

	Estimate	Std. Error	t value	Pr(> t)
(Intercept)	504801.412	20118.397	25.092	< 2e-16 ***
RiskFreeRate10	-5866.981	1546.151	-3.795	0.000214 ***
RiskAppetite10	-289.614	133.991	-2.161	0.032248 *
CorpCDSPremium10	20.546	30.877	0.665	0.506794
DebtNetherlands10	-9440.120	345.926	-27.289	< 2e-16 ***
AnnVolaNetherlands10	-6.116	3.957	-1.545	0.124357
BidAsk10	827.516	613.028	1.350	0.179087

LMPortugal_CDS10

Residuals:

Min	1Q	Median	3Q	Max
-19526.6	-3155.0	-23.6	3492.7	16139.6

Coefficients:

	Estimate	Std. Error	t value	Pr(> t)
(Intercept)	152645.150	11250.568	13.568	< 2e-16 ***
RiskFreeRate10	7682.324	1857.970	4.135	5.89e-05 ***
RiskAppetite10	-591.504	159.282	-3.714	0.000288 ***
CorpCDSPremium10	87.396	43.431	2.012	0.045978 *
DebtPortugal10	-1861.409	90.251	-20.625	< 2e-16 ***
AnnVolPortugal10	-2.768	3.904	-0.709	0.479405
BidAsk10	633.873	891.108	0.711	0.477984

LMSpain_CDS10

Residuals:

Min	1Q	Median	3Q	Max
-15870	-5526	-1297	4326	32133

Coefficients:

	Estimate	Std. Error	t value	Pr(> t)
(Intercept)	27429.34	52071.18	0.527	0.5991
RiskFreeRate10	20259.34	3669.46	5.521	1.45e-07 ***
RiskAppetite10	-75.35	254.00	-0.297	0.7672
CorpCDSPremium10	-180.83	64.73	-2.793	0.0059 **
DebtSpain10	891.38	385.94	2.310	0.0223 *
AnnVolSpain10	-12.81	12.81	-1.000	0.3191
BidAsk10	597.84	1272.55	0.470	0.6392

LMSweden_CDS10

Residuals:

Min	1Q	Median	3Q	Max
-23408.4	-5516.3	-498.6	6305.7	17671.5

Coefficients:

	Estimate	Std. Error	t value	Pr(> t)
(Intercept)	-4.922e+05	3.907e+04	-12.596	< 2e-16 ***
RiskFreeRate10	3.993e+02	2.046e+03	19.519	< 2e-16 ***
RiskAppetite10	9.075e+02	2.261e+02	4.013	9.44e-05 ***
CorpCDSPremium10	-3.370e+02	4.775e+01	-7.058	5.85e-11 ***
DebtSweden10	1.093e+04	9.451e+02	11.564	< 2e-16 ***
AnnVolSweden10	-1.291e+01	7.006e+00	-1.842	0.0674 .
BidAsk10	-1.058e+02	1.186e+03	-0.089	0.9290

LMUnitedKingdom_CDS10

Residuals:

Min	1Q	Median	3Q	Max
-10195.7	-3245.0	736.8	3004.3	8443.1

Coefficients:

	Estimate	Std. Error	t value	Pr(> t)
(Intercept)	1.644e+07	9.628e+05	17.075	< 2e-16 ***
RiskFreeRate10	9.840e+03	1.342e+03	7.332	1.31e-11 ***
RiskAppetite10	-5.707e+02	1.174e+02	-4.863	2.89e-06 ***
CorpCDSPremium10	6.445e+01	3.053e+01	2.111	0.0365 *
DebtUnitedKingdom10	2.454e+03	2.996e+02	8.192	1.04e-13 ***
AnnVolUnitedKingdom10	-2.164e+04	1.276e+03	-16.954	< 2e-16 ***
BidAsk10	7.720e+02	6.093e+02	1.267	0.2071

 Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Hence the CDS models of the selected countries for the first sample period 2010-2012 are:

$$\begin{aligned} CDS\ spread_{BE} = & -802,449.99 + 13,043.27 * Risk\ free\ rate - 725.68 * Risk\ Appetite + 99.33 \\ & * Corporate\ CDS\ premium - 613.93 * Debt + 2,933.97 * Volatility \\ & + 987.59 * BidAsk\ spread \end{aligned} \quad (1)$$

$$\begin{aligned} CDS\ spread_{FI} = & -276,815.33 + 8,749.60 * Risk\ free\ rate - 817.81 * Risk\ Appetite + 70.87 \\ & * Corporate\ CDS\ premium - 287.59 * Debt + 512.59 * Volatility \\ & + 1,451.39 * BidAsk\ spread \end{aligned} \quad (2)$$

$$\begin{aligned} CDS\ spread_{FR} = & 622,192.86 - 401.16 * Risk\ free\ rate - 298.68 * Risk\ Appetite + 151.55 \\ & * Corporate\ CDS\ premium - 1,613.17 * Debt - 2,250.79 * Volatility \\ & - 338.19 * BidAsk\ spread \end{aligned} \quad (3)$$

$$\begin{aligned} CDS\ spread_{IE} = & 57,283.55 + 11,008.61 * Risk\ free\ rate - 550.92 * Risk\ Appetite + 31.25 \\ & * Corporate\ CDS\ premium - 1,207.46 * Debt - 9.76 * Volatility + 2,182.07 \\ & * BidAsk\ spread \end{aligned} \quad (4)$$

$$\begin{aligned} CDS\ spread_{IT} = & 270,524.81 - 7,246.36 * Risk\ free\ rate + 102.66 * Risk\ Appetite \\ & - 156.52 * Corporate\ CDS\ premium + 1,430.71 * Debt - 48.03 * Volatility \\ & - 4,959.39 * BidAsk\ spread \end{aligned} \quad (5)$$

$$\begin{aligned} CDS\ spread_{NL} = & 504,801.41 - 5,866.98 * Risk\ free\ rate - 289.61 * Risk\ Appetite + 20.55 \\ & * Corporate\ CDS\ premium - 9,440.12 * Debt - 6.11 * Volatility + 827.51 \\ & * BidAsk\ spread \end{aligned} \quad (6)$$

$$\begin{aligned} CDS\ spread_{PT} = & 152,645.15 + 7,682.32 * Risk\ free\ rate - 591.50 * Risk\ Appetite + 87.40 \\ & * Corporate\ CDS\ premium - 1,861.41 * Debt - 2.77 * Volatility + 633.87 \\ & * BidAsk\ spread \end{aligned} \quad (7)$$

$$\begin{aligned} CDS\ spread_{ES} = & 27,429.34 + 20,259.34 * Risk\ free\ rate - 75.35 * Risk\ Appetite - 180.83 \\ & * Corporate\ CDS\ premium + 891.38 * Debt - 12.81 * Volatility + 597.84 \\ & * BidAsk\ spread \end{aligned} \quad (8)$$

$$\begin{aligned} CDS\ spread_{SE} = & -492,200.00 + 39,930.00 * Risk\ free\ rate + 907.50 * Risk\ Appetite \\ & - 337.00 * Corporate\ CDS\ premium + 10,930.00 * Debt - 12.91 * Volatility \\ & - 105.80 * BidAsk\ spread \end{aligned} \quad (9)$$

$$\begin{aligned} CDS\ spread_{UK} = & 16,440,000.00 + 9,840.00 * Risk\ free\ rate - 570.70 * Risk\ Appetite + 64.45 \\ & * Corporate\ CDS\ premium + 2,454.00 * Debt - 21,640.00 * Volatility + 772 \\ & * BidAsk\ spread \end{aligned} \quad (10)$$

For the bond spreads following analysis and residuals for the first period have been obtained:

Table 7 Analysis and residuals for bond spreads from 2010-2012 applying Fontana and Scheicher

LMBelgium_Bond10										LMBelgium_Bond10									
Analysis of Variance Table										Residuals:									
Response: BondSpreadBelgium10										Min 1Q Median 3Q Max									
	Df	Sum Sq	Mean Sq	F value	Pr(>F)					-1.08276	-0.18979	-0.04849	0.17375	1.46561					
RiskFreeRate10	1	31.3881	31.3881	321.7982	< 2.2e-16 ***					Coefficients:									
RiskAppetite10	1	4.0955	4.0955	41.9880	1.244e-09 ***					Estimate Std. Error t value Pr(> t)									
CorpCDSPremium10	1	21.8740	21.8740	224.2570	< 2.2e-16 ***					(Intercept)	9.606924	5.027651	1.911	0.0579 .					
DebtBelgium10	1	0.2148	0.2148	2.2019	0.13994					RiskFreeRate10	0.553651	0.099734	5.551	1.25e-07 ***					
AnnVolBelgium10	1	0.3267	0.3267	3.3494	0.06921 .					RiskAppetite10	0.002833	0.008665	0.327	0.7442					
BidAsk10	1	0.0036	0.0036	0.0367	0.84826					CorpCDSPremium10	0.015066	0.002252	6.692	4.12e-10 ***					
Residuals	150	14.6310	0.0975							DebtBelgium10	-0.042806	0.020693	-2.069	0.0403 *					
---										AnnVolBelgium10	-0.023998	0.014256	-1.683	0.0944 .					
Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1										BidAsk10	0.008297	0.043287	0.192	0.8483					
LMFinland_Bond10										LMFinland_Bond10									
Analysis of Variance Table										Residuals:									
Response: BondSpreadFinland10										Min 1Q Median 3Q Max									
	Df	Sum Sq	Mean Sq	F value	Pr(>F)					-0.21256	-0.05729	-0.00800	0.03519	0.40268					
RiskFreeRate10	1	0.12751	0.12751	13.0335	0.0004165 ***					Coefficients:									
RiskAppetite10	1	0.23820	0.23820	24.3472	2.115e-06 ***					Estimate Std. Error t value Pr(> t)									
CorpCDSPremium10	1	2.08074	2.08074	212.6773	< 2.2e-16 ***					(Intercept)	0.7469041	0.6008657	1.243	0.21579					
DebtFinland10	1	0.00064	0.00064	0.0657	0.7981163					RiskFreeRate10	-0.0952703	0.0324771	-2.933	0.00388 **					
AnnVolFinland10	1	0.00921	0.00921	0.9416	0.3334316					RiskAppetite10	-0.0049166	0.0027727	-1.773	0.07822 .					
BidAsk10	1	0.16527	0.16527	16.8926	6.488e-05 ***					CorpCDSPremium10	0.0053219	0.0007102	7.494	5.37e-12 ***					
Residuals	150	1.46754	0.00978							DebtFinland10	-0.0172824	0.0090092	-1.918	0.05697 .					
---										AnnVolFinland10	-0.0005571	0.0005343	-1.043	0.29876					
Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1										BidAsk10	0.0557193	0.0135568	4.110	6.49e-05 ***					
LMFrance_Bond10										LMFrance_Bond10									
Analysis of Variance Table										Residuals:									
Response: BondSpreadFrance10										Min 1Q Median 3Q Max									
	Df	Sum Sq	Mean Sq	F value	Pr(>F)					-0.56469	-0.14790	-0.05997	0.09885	0.59776					
RiskFreeRate10	1	1.4745	1.4745	32.7097	5.613e-08 ***					Coefficients:									
RiskAppetite10	1	0.3457	0.3457	7.6689	0.006328 **					Estimate Std. Error t value Pr(> t)									
CorpCDSPremium10	1	9.9387	9.9387	220.4724	< 2.2e-16 ***					(Intercept)	5.619407	3.017693	1.862	0.0645 .					
DebtFrance10	1	0.0258	0.0258	0.5719	0.450702					RiskFreeRate10	0.032430	0.070566	0.460	0.6465					
AnnVolFrance10	1	0.2736	0.2736	6.0697	0.014882 *					RiskAppetite10	-0.008034	0.005807	-1.383	0.1686					
BidAsk10	1	0.0074	0.0074	0.1634	0.686598					CorpCDSPremium10	0.008787	0.001574	5.581	1.09e-07 ***					
Residuals	150	6.7618	0.0451							DebtFrance10	-0.024083	0.017884	-1.347	0.1801					
---										AnnVolFrance10	-0.018997	0.007679	-2.474	0.0145 *					
Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1										BidAsk10	-0.011405	0.028212	-0.404	0.6866					
LMireland_Bond10										LMireland_Bond10									
Analysis of Variance Table										Residuals:									
Response: BondSpreadIreland10										Min 1Q Median 3Q Max									
	Df	Sum Sq	Mean Sq	F value	Pr(>F)					-4.1904	-0.9624	-0.0472	1.1188	6.3242					
RiskFreeRate10	1	561.15	561.15	189.3872	< 2.2e-16 ***					Coefficients:									
RiskAppetite10	1	52.51	52.51	17.7225	4.387e-05 ***					Estimate Std. Error t value Pr(> t)									
CorpCDSPremium10	1	343.53	343.53	115.9396	< 2.2e-16 ***					(Intercept)	-5.298715	1.236836	-4.284	3.26e-05 ***					
DebtIreland10	1	38.86	38.86	13.1143	0.0004003 ***					RiskFreeRate10	4.314489	0.446201	9.669	< 2e-16 ***					
AnnVolIreland10	1	12.05	12.05	4.0678	0.0454917 *					RiskAppetite10	-0.225025	0.049523	-4.544	1.13e-05 ***					
BidAsk10	1	14.83	14.83	5.0059	0.0267349 *					CorpCDSPremium10	0.034706	0.011840	2.931	0.0039 **					
Residuals	150	444.45	2.96							DebtIreland10	0.039775	0.015992	2.487	0.0140 *					
---										AnnVolIreland10	0.002989	0.001313	2.277	0.0242 *					
Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1										BidAsk10	0.503602	0.225085	2.237	0.0267 *					
LMItaly_Bond10										LMItaly_Bond10									
Analysis of Variance Table										Residuals:									
Response: BondSpreadItaly10										Min 1Q Median 3Q Max									
	Df	Sum Sq	Mean Sq	F value	Pr(>F)					-1.42205	-0.32119	-0.05582	0.23072	1.49529					
RiskFreeRate10	1	1.480	1.480	5.4023	0.021452 *					Coefficients:									
RiskAppetite10	1	8.334	8.334	30.4145	1.49e-07 ***					Estimate Std. Error t value Pr(> t)									
CorpCDSPremium10	1	277.043	277.043	1011.0813	< 2.2e-16 ***					(Intercept)	13.7976352	6.8002016	2.029	0.044227 *					
DebtItaly10	1	0.435	0.435	1.5871	0.209696					RiskFreeRate10	-1.3390759	0.2292992	-5.840	3.12e-08 ***					
AnnVolItaly10	1	2.762	2.762	10.0818	0.001818 **					RiskAppetite10	-0.0524058	0.0144911	-3.616	0.000407 ***					
BidAsk10	1	1.074	1.074	3.9195	0.049560 *					CorpCDSPremium10	0.0491006	0.0033841	14.509	< 2e-16 ***					
Residuals	150	41.101	0.274							DebtItaly10	-0.0937443	0.0462014	-2.029	0.044223 *					
---										AnnVolItaly10	-0.0011572	0.0003145	-3.680	0.000325 ***					
Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1										BidAsk10	-0.1458512	0.0736710	-1.980	0.049560 *					

LMNetherlands_Bond10						
Analysis of Variance Table						
Response: BondSpreadNetherlands10						
	Df	Sum Sq	Mean Sq	F value	Pr(>F)	
RiskFreeRate10	1	0.0102	0.0102	0.4957	0.48250	
RiskAppetite10	1	0.2011	0.2011	9.7791	0.00212	**
CorpCDSPremium10	1	3.1646	3.1646	153.9045	< 2e-16	***
DebtNetherlands10	1	0.0060	0.0060	0.2922	0.58959	
AnnVolaNetherlands10	1	0.0166	0.0166	0.8089	0.36989	
BidAsk10	1	0.0181	0.0181	0.8814	0.34934	
Residuals	150	3.0843	0.0206			

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1						

LMPortugal_Bond10						
Analysis of Variance Table						
Response: BondSpreadPortugal10						
	Df	Sum Sq	Mean Sq	F value	Pr(>F)	
RiskFreeRate10	1	750.68	750.68	151.8796	< 2.2e-16	***
RiskAppetite10	1	12.84	12.84	2.5976	0.109125	
CorpCDSPremium10	1	1863.90	1863.90	377.1089	< 2.2e-16	***
DebtPortugal10	1	302.74	302.74	61.2520	8.357e-13	***
AnnVolAPortugal10	1	35.76	35.76	7.2354	0.007958	**
BidAsk10	1	17.58	17.58	3.5558	0.061270	.
Residuals	150	741.39	4.94			

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1						

LMSpain_Bond10						
Analysis of Variance Table						
Response: BondSpreadSpain10						
	Df	Sum Sq	Mean Sq	F value	Pr(>F)	
RiskFreeRate10	1	7.113	7.113	39.8603	2.926e-09	***
RiskAppetite10	1	0.841	0.841	4.7119	0.03153	*
CorpCDSPremium10	1	252.685	252.685	1416.0175	< 2.2e-16	***
DebtSpain10	1	8.745	8.745	49.0071	7.959e-11	***
AnnVolASpain10	1	2.943	2.943	16.4927	7.843e-05	***
BidAsk10	1	0.002	0.002	0.0119	0.91337	
Residuals	150	26.767	0.178			

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1						

LMSweden_Bond10						
Analysis of Variance Table						
Response: BondSpreadSweden10						
	Df	Sum Sq	Mean Sq	F value	Pr(>F)	
RiskFreeRate10	1	0.3350	0.33495	12.5820	0.0005201	***
RiskAppetite10	1	0.1269	0.12689	4.7664	0.0305752	*
CorpCDSPremium10	1	0.0805	0.08050	3.0238	0.0841044	.
DebtSweden10	1	0.3696	0.36956	13.8818	0.0002751	***
AnnVolASweden10	1	0.0801	0.08010	3.0090	0.0848580	.
BidAsk10	1	0.0914	0.09141	3.4336	0.0658479	.
Residuals	150	3.9932	0.02662			

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1						

LMUnitedKingdom_Bond10						
Analysis of Variance Table						
Response: BondSpreadUnitedKingdom10						
	Df	Sum Sq	Mean Sq	F value	Pr(>F)	
RiskFreeRate10	1	4.1691	4.1691	156.549	< 2.2e-16	***
RiskAppetite10	1	2.7546	2.7546	103.433	< 2.2e-16	***
CorpCDSPremium10	1	1.0309	1.0309	38.708	4.669e-09	***
DebtUnitedKingdom10	1	0.6560	0.6560	24.631	1.863e-06	***
AnnVolAUnitedKingdom10	1	0.1508	0.1508	5.663	0.01858	*
BidAsk10	1	0.1046	0.1046	3.926	0.04937	*
Residuals	150	3.9947	0.0266			

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1						

LMNetherlands_Bond10					
Residuals:					
	Min	1Q	Median	3Q	Max
	-0.23985	-0.09246	-0.01219	0.05859	0.43296
Coefficients:					
	Estimate	Std. Error	t value	Pr(> t)	
(Intercept)	-3.345e-01	6.144e-01	-0.544	0.58697	
RiskFreeRate10	-1.304e-01	4.722e-02	-2.762	0.00646	**
RiskAppetite10	-9.669e-03	4.092e-03	-2.363	0.01941	*
CorpCDSPremium10	6.492e-03	9.429e-04	6.885	1.47e-10	***
DebtNetherlands10	-1.735e-03	1.056e-02	-0.164	0.86980	
AnnVolANetherlands10	9.406e-05	1.208e-04	0.778	0.43759	
BidAsk10	-1.758e-02	1.872e-02	-0.939	0.34934	

LMPortugal_Bond10					
Residuals:					
	Min	1Q	Median	3Q	Max
	-3.4093	-1.4672	-0.4422	0.6674	7.8948
Coefficients:					
	Estimate	Std. Error	t value	Pr(> t)	
(Intercept)	-34.995460	4.135907	-8.461	2.20e-14	***
RiskFreeRate10	6.721894	0.683022	9.841	< 2e-16	***
RiskAppetite10	-0.160125	0.058555	-2.735	0.00700	**
CorpCDSPremium10	0.048865	0.015966	3.061	0.00262	**
DebtPortugal10	0.269850	0.033178	8.133	1.46e-13	***
AnnVolAPortugal10	0.004708	0.001435	3.281	0.00129	**
BidAsk10	0.617729	0.327587	1.886	0.06127	.

LMSpain_Bond10					
Residuals:					
	Min	1Q	Median	3Q	Max
	-1.15769	-0.27309	-0.03727	0.24558	1.44877
Coefficients:					
	Estimate	Std. Error	t value	Pr(> t)	
(Intercept)	4.9208686	2.4387526	2.018	0.045397	*
RiskFreeRate10	-1.4106581	0.1718590	-8.208	9.50e-14	***
RiskAppetite10	-0.0525405	0.0118963	-4.417	1.91e-05	***
CorpCDSPremium10	0.0372577	0.0030317	12.289	< 2e-16	***
DebtSpain10	-0.0032360	0.0180753	-0.179	0.858158	
AnnVolASpain10	-0.0022341	0.0006001	-3.723	0.000278	***
BidAsk10	-0.0064951	0.0596000	-0.109	0.913365	

LMSweden_Bond10					
Residuals:					
	Min	1Q	Median	3Q	Max
	-0.54210	-0.11713	0.04364	0.09638	0.45338
Coefficients:					
	Estimate	Std. Error	t value	Pr(> t)	
(Intercept)	2.5329775	0.7167459	3.534	0.000545	***
RiskFreeRate10	-0.1317623	0.0375258	-3.511	0.000589	***
RiskAppetite10	0.0013873	0.0041480	0.334	0.738498	
CorpCDSPremium10	-0.0010830	0.0008760	-1.236	0.218240	
DebtSweden10	-0.0437285	0.0173359	-2.522	0.012698	*
AnnVolASweden10	-0.0001991	0.0001285	-1.549	0.123494	
BidAsk10	0.0403250	0.0217621	1.853	0.065848	.

LMUnitedKingdom_Bond10					
Residuals:					
	Min	1Q	Median	3Q	Max
	-0.45259	-0.11406	0.00792	0.12718	0.31468
Coefficients:					
	Estimate	Std. Error	t value	Pr(> t)	
(Intercept)	103.173389	36.487601	2.828	0.00533	**
RiskFreeRate10	-0.584910	0.050862	-11.500	< 2e-16	***
RiskAppetite10	0.020017	0.004448	4.500	1.35e-05	***
CorpCDSPremium10	0.001383	0.001157	1.195	0.23407	
DebtUnitedKingdom10	0.010578	0.011352	0.932	0.35293	
AnnVolAUnitedKingdom10	-0.134627	0.048368	-2.783	0.00607	**
BidAsk10	-0.045752	0.023091	-1.981	0.04937	*

Thus the bond models of the selected countries for the first sample period 2010-2012 are:

$$\begin{aligned} \text{Bond spread}_{BE} = & 9.61 + 0.55 * \text{Risk free rate} + 0.0028 * \text{Risk Appetite} + 0.02 \\ & * \text{Corporate CDS premium} - 0.04 * \text{Debt} - 0.02 * \text{Volatility} + 0.01 \\ & * \text{BidAsk spread} \end{aligned} \quad (11)$$

$$\begin{aligned} \text{Bond spread}_{FI} = & 0.75 - 0.10 * \text{Risk free rate} - 0.005 * \text{Risk Appetite} + 0.005 \\ & * \text{Corporate CDS premium} - 0.02 * \text{Debt} - 0.001 * \text{Volatility} + 0.06 \\ & * \text{BidAsk spread} \end{aligned} \quad (12)$$

$$\begin{aligned} \text{Bond spread}_{FR} = & 5.62 + 0.03 * \text{Risk free rate} - 0.008 * \text{Risk Appetite} + 0.01 \\ & * \text{Corporate CDS premium} - 0.02 * \text{Debt} - 0.02 * \text{Volatility} - 0.01 \\ & * \text{BidAsk spread} \end{aligned} \quad (13)$$

$$\begin{aligned} \text{Bond spread}_{IE} = & -5.30 + 4.31 * \text{Risk free rate} - 0.23 * \text{Risk Appetite} + 0.03 \\ & * \text{Corporate CDS premium} + 0.04 * \text{Debt} + 0.003 * \text{Volatility} + 0.50 \\ & * \text{BidAsk spread} \end{aligned} \quad (14)$$

$$\begin{aligned} \text{Bond spread}_{IT} = & 13.80 - 1.34 * \text{Risk free rate} - 0.05 * \text{Risk Appetite} + 0.05 \\ & * \text{Corporate CDS premium} - 0.09 * \text{Debt} - 0.001 * \text{Volatility} - 0.15 \\ & * \text{BidAsk spread} \end{aligned} \quad (15)$$

$$\begin{aligned} \text{Bond spread}_{NL} = & -0.33 - 0.13 * \text{Risk free rate} - 0.01 * \text{Risk Appetite} + 0.01 \\ & * \text{Corporate CDS premium} - 0.002 * \text{Debt} + 0.0001 * \text{Volatility} - 0.02 \\ & * \text{BidAsk spread} \end{aligned} \quad (16)$$

$$\begin{aligned} \text{Bond spread}_{PT} = & -35.00 + 6.72 * \text{Risk free rate} - 0.16 * \text{Risk Appetite} + 0.05 \\ & * \text{Corporate CDS premium} + 0.27 * \text{Debt} + 0.005 * \text{Volatility} + 0.62 \\ & * \text{BidAsk spread} \end{aligned} \quad (17)$$

$$\begin{aligned} \text{Bond spread}_{ES} = & 4.92 - 1.41 * \text{Risk free rate} - 0.05 * \text{Risk Appetite} + 0.04 \\ & * \text{Corporate CDS premium} - 0.003 * \text{Debt} - 0.002 * \text{Volatility} - 0.006 \\ & * \text{BidAsk spread} \end{aligned} \quad (18)$$

$$\begin{aligned} \text{Bond spread}_{SE} = & 2.53 - 0.13 * \text{Risk free rate} + 0.001 * \text{Risk Appetite} - 0.001 \\ & * \text{Corporate CDS premium} - 0.04 * \text{Debt} - 0.002 * \text{Volatility} + 0.04 \\ & * \text{BidAsk spread} \end{aligned} \quad (19)$$

$$\begin{aligned} \text{Bond spread}_{UK} = & 103.17 - 0.58 * \text{Risk free rate} + 0.02 * \text{Risk Appetite} + 0.001 \\ & * \text{Corporate CDS premium} + 0.01 * \text{Debt} - 0.13 * \text{Volatility} - 0.05 \\ & * \text{BidAsk spread} \end{aligned} \quad (20)$$

Appendix C

Implementing the Fontana and Scheicher model for the second sample period 2013-2015 following analysis and residuals are obtained for CDS spreads:

Table 8 Analysis and residuals for CDS spreads from 2013-2015 applying Fontana and Scheicher

LMBelgium_CDS13

Analysis of Variance Table

Response: CDSSpreadBelgium13

	Df	Sum Sq	Mean Sq	F value	Pr(>F)
RiskFreeRate13	1	2.4143e+10	2.4143e+10	324.3567	< 2.2e-16 ***
RiskAppetite13	1	7.3789e+08	7.3789e+08	9.9134	0.001983 **
CorpCDSPremium13	1	4.1673e+09	4.1673e+09	55.9870	5.859e-12 ***
DebtBelgium13	1	6.3667e+06	6.3667e+06	0.0855	0.770339
AnnVolBelgium13	1	1.2617e+08	1.2617e+08	1.6951	0.194942
BidAsk13	1	1.2935e+08	1.2935e+08	1.7377	0.189449
Residuals	149	1.1091e+10	7.4434e+07		

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

LMFinland_CDS13

Analysis of Variance Table

Response: CDSSpreadFinland13

	Df	Sum Sq	Mean Sq	F value	Pr(>F)
RiskFreeRate13	1	4.5019e+10	4.5019e+10	418.7501	< 2.2e-16 ***
RiskAppetite13	1	1.0406e+09	1.0406e+09	9.6793	0.0022339 **
CorpCDSPremium13	1	1.5229e+10	1.5229e+10	141.6517	< 2.2e-16 ***
DebtFinland13	1	1.2661e+09	1.2661e+09	11.7764	0.0007766 ***
AnnVolFinland13	1	3.5032e+08	3.5032e+08	3.2585	0.0730711 .
BidAsk13	1	9.3409e+07	9.3409e+07	0.8688	0.3527823
Residuals	149	1.6019e+10	1.0751e+08		

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

LMFrance_CDS13

Analysis of Variance Table

Response: CDSSpreadFrance13

	Df	Sum Sq	Mean Sq	F value	Pr(>F)
RiskFreeRate13	1	3833790078	3833790078	540.9947	< 2.2e-16 ***
RiskAppetite13	1	17452536	17452536	2.4628	0.1186945
CorpCDSPremium13	1	543136631	543136631	76.6432	4.131e-15 ***
DebtFrance13	1	129954559	129954559	18.3382	3.299e-05 ***
AnnVolFrance13	1	87479115	87479115	12.3444	0.0005859 ***
BidAsk13	1	8417534	8417534	1.1878	0.2775298
Residuals	149	1055897128	7086558		

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

LMireland_CDS13

Analysis of Variance Table

Response: CDSSpreadIreland13

	Df	Sum Sq	Mean Sq	F value	Pr(>F)
RiskFreeRate13	1	2.8628e+10	2.8628e+10	645.366	< 2.2e-16 ***
RiskAppetite13	1	7.7382e+08	7.7382e+08	17.445	5.016e-05 ***
CorpCDSPremium13	1	9.0999e+09	9.0999e+09	205.145	< 2.2e-16 ***
DebtIreland13	1	6.0980e+09	6.0980e+09	137.470	< 2.2e-16 ***
AnnVolIreland13	1	4.6020e+08	4.6020e+08	10.375	0.001569 **
BidAsk13	1	1.0424e+07	1.0424e+07	0.235	0.628560
Residuals	149	6.6094e+09	4.4359e+07		

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

LMItaly_CDS13

Analysis of Variance Table

Response: CDSSpreadItaly13

	Df	Sum Sq	Mean Sq	F value	Pr(>F)
RiskFreeRate13	1	5.2544e+09	5254383835	38.9229	4.335e-09 ***
RiskAppetite13	1	6.2483e+07	62483220	0.4629	0.4973477
CorpCDSPremium13	1	4.4353e+09	4435304734	32.8554	5.330e-08 ***
DebtItaly13	1	3.6426e+09	3642601335	26.9833	6.636e-07 ***
AnnVolItaly13	1	1.5575e+09	1557484710	11.5374	0.0008748 ***
BidAsk13	1	1.0453e+08	104526027	0.7743	0.3803081
Residuals	149	2.0114e+10	134994767		

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

LMBelgium_CDS13

Residuals:

	Min	1Q	Median	3Q	Max
	-18195	-7504	1590	6832	16632

Coefficients:

	Estimate	Std. Error	t value	Pr(> t)
(Intercept)	4227261.80	3498846.39	1.208	0.229
RiskFreeRate13	-60527.26	8180.19	-7.399	9.27e-12 ***
RiskAppetite13	1144.13	284.32	4.024	9.07e-05 ***
CorpCDSPremium13	-296.06	41.81	-7.080	5.27e-11 ***
DebtBelgium13	-162.28	433.50	-0.374	0.709
AnnVolBelgium13	-18839.76	15374.93	-1.225	0.222
BidAsk13	-4770.64	3618.97	-1.318	0.189

LMFinland_CDS13

Residuals:

	Min	1Q	Median	3Q	Max
	-18865	-10265	1454	9157	20656

Coefficients:

	Estimate	Std. Error	t value	Pr(> t)
(Intercept)	3528124.41	2185201.50	1.615	0.108523
RiskFreeRate13	-53970.03	12663.94	-4.262	3.58e-05 ***
RiskAppetite13	1277.72	352.16	3.628	0.000391 ***
CorpCDSPremium13	-411.67	69.74	-5.903	2.32e-08 ***
DebtFinland13	1764.80	739.41	2.387	0.018252 *
AnnVolFinland13	-13002.62	7596.97	-1.712	0.089060 .
BidAsk13	-4139.54	4440.99	-0.932	0.352782

LMFrance_CDS13

Residuals:

	Min	1Q	Median	3Q	Max
	-7722.2	-1585.7	230.8	2175.5	4244.2

Coefficients:

	Estimate	Std. Error	t value	Pr(> t)
(Intercept)	115570.84	21624.02	5.345	3.33e-07 ***
RiskFreeRate13	29512.01	3498.74	8.435	2.65e-14 ***
RiskAppetite13	-43.72	97.58	-0.448	0.654769
CorpCDSPremium13	90.77	25.76	3.524	0.000566 ***
DebtFrance13	-1643.80	296.13	-5.551	1.27e-07 ***
AnnVolFrance13	169.07	52.83	3.200	0.001679 **
BidAsk13	-1285.12	1179.15	-1.090	0.277530

LMireland_CDS13

Residuals:

	Min	1Q	Median	3Q	Max
	-11533.3	-5023.8	272.2	3296.4	18409.0

Coefficients:

	Estimate	Std. Error	t value	Pr(> t)
(Intercept)	14910.61	23148.00	0.644	0.52047
RiskFreeRate13	46618.28	10717.78	4.350	2.52e-05 ***
RiskAppetite13	484.97	234.92	2.064	0.04071 *
CorpCDSPremium13	-348.04	41.66	-8.355	4.22e-14 ***
DebtIreland13	-1013.47	164.95	-6.144	6.99e-09 ***
AnnVolIreland13	69.10	21.52	3.211	0.00162 **
BidAsk13	1377.14	2840.89	0.485	0.62856

LMItaly_CDS13

Residuals:

	Min	1Q	Median	3Q	Max
	-28878.2	-7728.3	-247.7	7401.5	28130.3

Coefficients:

	Estimate	Std. Error	t value	Pr(> t)
(Intercept)	370474.36	146095.05	2.536	0.012248 *
RiskFreeRate13	-4730.02	11221.45	-0.422	0.673986
RiskAppetite13	476.00	430.27	1.106	0.270391
CorpCDSPremium13	-357.98	124.46	-2.876	0.004614 **
DebtItaly13	4757.99	813.37	5.850	3.01e-08 ***
AnnVolItaly13	-196.68	56.29	-3.494	0.000626 ***
BidAsk13	-4468.95	5078.69	-0.880	0.380308

LMNetherlands_CDS13

Analysis of Variance Table

Response: CDSSpreadNetherlands13

	Df	Sum Sq	Mean Sq	F value	Pr(>F)
RiskFreeRate13	1	3.4207e+10	3.4207e+10	430.8226	< 2.2e-16 ***
RiskAppetite13	1	1.0091e+09	1.0091e+09	12.7093	0.0004894 ***
CorpCDSPremium13	1	1.2869e+10	1.2869e+10	162.0776	< 2.2e-16 ***
DebtNetherlands13	1	5.9527e+08	5.9527e+08	7.4972	0.0069329 **
AnnVolaNetherlands13	1	3.4124e+09	3.4124e+09	42.9783	8.516e-10 ***
BidAsk13	1	2.4194e+08	2.4194e+08	3.0471	0.0829431 .
Residuals	149	1.1830e+10	7.9399e+07		

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

LMPortugal_CDS13

Analysis of Variance Table

Response: CDSSpreadPortugal13

	Df	Sum Sq	Mean Sq	F value	Pr(>F)
RiskFreeRate13	1	1.5391e+10	1.5391e+10	346.7147	< 2.2e-16 ***
RiskAppetite13	1	3.6689e+08	3.6689e+08	8.2649	0.004634 **
CorpCDSPremium13	1	1.2855e+10	1.2855e+10	289.5820	< 2.2e-16 ***
DebtPortugal13	1	2.1687e+07	2.1687e+07	0.4885	0.485667
AnnVolaportugal13	1	1.8544e+09	1.8544e+09	41.7739	1.375e-09 ***
BidAsk13	1	3.0509e+08	3.0509e+08	6.8726	0.009661 **
Residuals	149	6.6144e+09	4.4392e+07		

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

LMSpain_CDS13

Analysis of Variance Table

Response: CDSSpreadSpain13

	Df	Sum Sq	Mean Sq	F value	Pr(>F)
RiskFreeRate13	1	9264843837	9264843837	825.4667	< 2.2e-16 ***
RiskAppetite13	1	22471883	22471883	2.0022	0.1592
CorpCDSPremium13	1	3973798949	3973798949	354.0522	< 2.2e-16 ***
DebtSpain13	1	351440775	351440775	31.3122	1.025e-07 ***
AnnVolaspain13	1	388402518	388402518	34.6054	2.560e-08 ***
BidAsk13	1	23251091	23251091	2.0716	0.1522
Residuals	149	1672340996	11223765		

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

LMSweden_CDS13

Analysis of Variance Table

Response: CDSSpreadSweden13

	Df	Sum Sq	Mean Sq	F value	Pr(>F)
RiskFreeRate13	1	3.3212e+10	3.3212e+10	387.7549	< 2.2e-16 ***
RiskAppetite13	1	1.0680e+09	1.0680e+09	12.4697	0.0005508 ***
CorpCDSPremium13	1	1.2743e+10	1.2743e+10	148.7761	< 2.2e-16 ***
DebtSweden13	1	6.9424e+08	6.9424e+08	8.1055	0.0050363 **
AnnVolasweden13	1	3.7619e+09	3.7619e+09	43.9212	5.865e-10 ***
BidAsk13	1	1.4666e+08	1.4666e+08	1.7123	0.1927052
Residuals	149	1.2762e+10	8.5651e+07		

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

LMUnitedKingdom_CDS13

Analysis of Variance Table

Response: CDSSpreadUnitedKingdom13

	Df	Sum Sq	Mean Sq	F value	Pr(>F)
RiskFreeRate13	1	9742547087	9742547087	167.8483	< 2.2e-16 ***
RiskAppetite13	1	598562681	598562681	10.3123	0.001619 **
CorpCDSPremium13	1	5221630811	5221630811	89.9602	< 2.2e-16 ***
DebtUnitedKingdom13	1	614863465	614863465	10.5931	0.001405 **
AnnVolauitedkingdom13	1	1502165902	1502165902	25.8799	1.078e-06 ***
BidAsk13	1	56286272	56286272	0.9697	0.326346
Residuals	149	8648520368	58043761		

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

LMNetherlands_CDS13

Residuals:

Min	1Q	Median	3Q	Max
-21380.3	-6382.5	-646.2	6770.9	16330.2

Coefficients:

	Estimate	Std. Error	t value	Pr(> t)
(Intercept)	-170595.99	78358.34	-2.177	0.0310 *
RiskFreeRate13	6641.67	12433.82	0.534	0.5940
RiskAppetite13	577.34	323.01	1.787	0.0759 .
CorpCDSPremium13	-466.89	50.01	-9.335	< 2e-16 ***
DebtNetherlands13	472.96	1045.01	0.453	0.6515
AnnVolaNetherlands13	139.13	21.71	6.408	1.82e-09 ***
BidAsk13	-6477.43	3710.73	-1.746	0.0829 .

LMPortugal_CDS13

Residuals:

Min	1Q	Median	3Q	Max
-12161.4	-5417.9	236.2	4683.4	16378.0

Coefficients:

	Estimate	Std. Error	t value	Pr(> t)
(Intercept)	-2175.272	42758.043	-0.051	0.95949
RiskFreeRate13	-19931.713	6080.571	-3.278	0.00130 **
RiskAppetite13	947.641	218.036	4.346	2.55e-05 ***
CorpCDSPremium13	-607.553	36.041	-16.857	< 2e-16 ***
DebtPortugal13	22.495	325.141	0.069	0.94494
AnnVolaportugal13	-26.006	3.945	-6.593	7.02e-10 ***
BidAsk13	-7343.512	2801.196	-2.622	0.00966 **

LMSpain_CDS13

Residuals:

Min	1Q	Median	3Q	Max
-7115.2	-1985.4	-147.1	1910.8	7814.0

Coefficients:

	Estimate	Std. Error	t value	Pr(> t)
(Intercept)	708320.65	100199.87	7.069	5.61e-11 ***
RiskFreeRate13	21673.05	3442.40	6.296	3.24e-09 ***
RiskAppetite13	-30.31	121.42	-0.250	0.8032
CorpCDSPremium13	40.59	35.34	1.149	0.2526
DebtSpain13	430.31	254.23	1.693	0.0926 .
AnnVolaspain13	-474.69	78.39	-6.055	1.09e-08 ***
BidAsk13	-2113.72	1468.57	-1.439	0.1522

LMSweden_CDS13

Residuals:

Min	1Q	Median	3Q	Max
-21634	-6979	-551	7699	16805

Coefficients:

	Estimate	Std. Error	t value	Pr(> t)
(Intercept)	-205001.95	34712.12	-5.906	2.29e-08 ***
RiskFreeRate13	17165.05	13316.33	1.289	0.1994
RiskAppetite13	442.49	343.21	1.289	0.1993
CorpCDSPremium13	-409.82	56.02	-7.315	1.47e-11 ***
DebtSweden13	1350.78	760.14	1.777	0.0776 .
AnnVolasweden13	119.27	18.47	6.456	1.42e-09 ***
BidAsk13	-5039.70	3851.39	-1.309	0.1927

LMUnitedKingdom_CDS13

Residuals:

Min	1Q	Median	3Q	Max
-13634.2	-6775.9	550.4	7024.3	17324.2

Coefficients:

	Estimate	Std. Error	t value	Pr(> t)
(Intercept)	-1.543e+05	1.037e+05	-1.488	0.13892
RiskFreeRate13	1.880e+04	9.713e+03	1.935	0.05484 .
RiskAppetite13	7.485e+02	2.715e+02	2.757	0.00656 **
CorpCDSPremium13	-3.075e+02	5.825e+01	-5.279	4.51e-07 ***
DebtUnitedKingdom13	7.965e+02	1.197e+03	0.665	0.50683
AnnVolauitedkingdom13	2.806e+01	5.426e+00	5.171	7.39e-07 ***
BidAsk13	-3.216e+03	3.266e+03	-0.985	0.32635

Hence the CDS models of the selected countries for the second sample period 2013-2015 are:

$$\begin{aligned} CDS\ spread_{BE} = & 4,227,261.80 - 60,527.26 * Risk\ free\ rate - 1,144.13 * Risk\ Appetite \\ & - 296.06 * Corporate\ CDS\ premium - 162.28 * Debt - 18,839.76 \\ & * Volatility - 4,770.64 * BidAsk\ spread \end{aligned} \quad (21)$$

$$\begin{aligned} CDS\ spread_{FI} = & 3,528,124.41 - 53,970.03 * Risk\ free\ rate + 1,277.72 * Risk\ Appetite \\ & - 411.67 * Corporate\ CDS\ premium + 1,7684.80 * Debt - 13,002.62 \\ & * Volatility - 4,139.54 * BidAsk\ spread \end{aligned} \quad (22)$$

$$\begin{aligned} CDS\ spread_{FR} = & 115,570.84 + 29,512.01 * Risk\ free\ rate - 43.72 * Risk\ Appetite + 90.77 \\ & * Corporate\ CDS\ premium - 1,643.80 * Debt + 169.07 * Volatility \\ & - 1,285.12 * BidAsk\ spread \end{aligned} \quad (23)$$

$$\begin{aligned} CDS\ spread_{IE} = & 14,910.61 + 46,618.28 * Risk\ free\ rate + 484.97 * Risk\ Appetite - 348.04 \\ & * Corporate\ CDS\ premium - 1,013.47 * Debt + 69.10 * Volatility + 1,377.14 \\ & * BidAsk\ spread \end{aligned} \quad (24)$$

$$\begin{aligned} CDS\ spread_{IT} = & 370,474.36 - 4,730.02 * Risk\ free\ rate + 476.00 * Risk\ Appetite - 357.98 \\ & * Corporate\ CDS\ premium + 4,757.99 * Debt - 196,68 * Volatility \\ & - 4,468.95 * BidAsk\ spread \end{aligned} \quad (25)$$

$$\begin{aligned} CDS\ spread_{NL} = & -170,595.99 + 6,641.67 * Risk\ free\ rate + 4577.34 * Risk\ Appetite \\ & - 466.89 * Corporate\ CDS\ premium + 472.96 * Debt + 139.13 * Volatility \\ & - 6,477.43 * BidAsk\ spread \end{aligned} \quad (26)$$

$$\begin{aligned} CDS\ spread_{PT} = & -2,175.27 - 19,931.71 * Risk\ free\ rate + 947.64 * Risk\ Appetite - 607.55 \\ & * Corporate\ CDS\ premium + 22.50 * Debt - 26.01 * Volatility - 7,343.51 \\ & * BidAsk\ spread \end{aligned} \quad (27)$$

$$\begin{aligned} CDS\ spread_{ES} = & 708,320.65 + 21,673.05 * Risk\ free\ rate - 30.31 * Risk\ Appetite + 40.59 \\ & * Corporate\ CDS\ premium + 430.31 * Debt - 474.69 * Volatility - 2,113.72 \\ & * BidAsk\ spread \end{aligned} \quad (28)$$

$$\begin{aligned} CDS\ spread_{SE} = & -205,001.95 + 17,165.05 * Risk\ free\ rate + 442.49 * Risk\ Appetite \\ & - 409.82 * Corporate\ CDS\ premium + 1,350.78 * Debt + 119.27 * Volatility \\ & - 5,039.70 * BidAsk\ spread \end{aligned} \quad (29)$$

$$\begin{aligned} CDS\ spread_{UK} = & -154,300.00 + 18,800.00 * Risk\ free\ rate + 748.50 * Risk\ Appetite \\ & - 307.50 * Corporate\ CDS\ premium + 796.50 * Debt + 28.06 * Volatility \\ & - 3,216.00 * BidAsk\ spread \end{aligned} \quad (30)$$

For the bond spreads following analysis and residuals for the second period are obtained:

Table 9 Analysis and residuals for bond spreads from 2013–2015 applying Fontana and Scheicher

LMBelgium_Bond13

Analysis of Variance Table

Response: BondSpreadBelgium13

	Df	Sum Sq	Mean Sq	F value	Pr(>F)							
RiskFreeRate13	1	1.98932	1.98932	422.303	< 2.2e-16 ***							
RiskAppetite13	1	0.00342	0.00342	0.725	0.3958893							
CorpCDSPremium13	1	2.90349	2.90349	616.367	< 2.2e-16 ***							
DebtBelgium13	1	0.09373	0.09373	19.898	1.6e-05 ***							
AnnVolBelgium13	1	0.05312	0.05312	11.276	0.0009967 ***							
BidAsk13	1	0.00390	0.00390	0.827	0.3645984							
Residuals	149	0.70189	0.00471									

Signif. codes:	0	****	0.001	***	0.01	**	0.05	.	0.1	'	'	1

LMFinland_Bond13

Analysis of Variance Table

Response: BondSpreadFinland13

	Df	Sum Sq	Mean Sq	F value	Pr(>F)							
RiskFreeRate13	1	0.00005	0.000050	0.0058	0.9394							
RiskAppetite13	1	0.00084	0.000837	0.0964	0.7566							
CorpCDSPremium13	1	0.00064	0.000644	0.0742	0.7857							
DebtFinland13	1	0.17274	0.172745	19.8945	1.602e-05 ***							
AnnVolFinland13	1	0.00003	0.000034	0.0039	0.9500							
BidAsk13	1	0.00160	0.001596	0.1838	0.6687							
Residuals	149	1.29377	0.008683									

Signif. codes:	0	****	0.001	***	0.01	**	0.05	.	0.1	'	'	1

LMFrance_Bond13

Analysis of Variance Table

Response: BondSpreadFrance13

	Df	Sum Sq	Mean Sq	F value	Pr(>F)							
RiskFreeRate13	1	1.19964	1.19964	477.1130	< 2e-16 ***							
RiskAppetite13	1	0.00077	0.00077	0.3052	0.58146							
CorpCDSPremium13	1	1.19778	1.19778	476.3721	< 2e-16 ***							
DebtFrance13	1	0.01203	0.01203	4.7851	0.03027 *							
AnnVolFrance13	1	0.00074	0.00074	0.2938	0.58863							
BidAsk13	1	0.00012	0.00012	0.0461	0.83029							
Residuals	149	0.37464	0.00251									

Signif. codes:	0	****	0.001	***	0.01	**	0.05	.	0.1	'	'	1

LMIreland_Bond13

Analysis of Variance Table

Response: BondSpreadIreland13

	Df	Sum Sq	Mean Sq	F value	Pr(>F)							
RiskFreeRate13	1	31.166	31.166	941.7841	< 2.2e-16 ***							
RiskAppetite13	1	0.016	0.016	0.4939	0.483280							
CorpCDSPremium13	1	55.346	55.346	1672.4734	< 2.2e-16 ***							
DebtIreland13	1	3.219	3.219	97.2847	< 2.2e-16 ***							
AnnVolIreland13	1	1.307	1.307	39.4903	3.444e-09 ***							
BidAsk13	1	0.285	0.285	8.6129	0.003867 **							
Residuals	149	4.931	0.033									

Signif. codes:	0	****	0.001	***	0.01	**	0.05	.	0.1	'	'	1

LMItaly_Bond13

Analysis of Variance Table

Response: BondSpreadItaly13

	Df	Sum Sq	Mean Sq	F value	Pr(>F)							
RiskFreeRate13	1	19.889	19.889	664.3750	< 2.2e-16 ***							
RiskAppetite13	1	0.013	0.013	0.4224	0.5167241							
CorpCDSPremium13	1	35.494	35.494	1185.6276	< 2.2e-16 ***							
DebtItaly13	1	0.437	0.437	14.5936	0.0001953 ***							
AnnVolItaly13	1	0.385	0.385	12.8687	0.0004525 ***							
BidAsk13	1	0.012	0.012	0.3900	0.5332473							
Residuals	149	4.461	0.030									

Signif. codes:	0	****	0.001	***	0.01	**	0.05	.	0.1	'	'	1

LMBelgium_Bond13

Residuals:

	Min	1Q	Median	3Q	Max
	-0.17984	-0.04513	-0.00622	0.04115	0.21014

Coefficients:

	Estimate	Std. Error	t value	Pr(> t)
(Intercept)	92.8550498	27.8342669	3.336	0.001073 **
RiskFreeRate13	0.3522169	0.0650756	5.412	2.43e-07 ***
RiskAppetite13	-0.0070195	0.0022618	-3.103	0.002289 **
CorpCDSPremium13	0.0082931	0.0003326	24.931	< 2e-16 ***
DebtBelgium13	0.0102539	0.0034486	2.973	0.003436 **
AnnVolBelgium13	-0.4163541	0.1223117	-3.404	0.000853 ***
BidAsk13	0.0261821	0.0287899	0.909	0.364598

LMFinland_Bond13

Residuals:

	Min	1Q	Median	3Q	Max
	-0.43051	-0.04205	0.01156	0.04277	0.31026

Coefficients:

	Estimate	Std. Error	t value	Pr(> t)
(Intercept)	1.2926905	19.6383588	0.066	0.94761
RiskFreeRate13	-0.3070859	0.1138105	-2.698	0.00778 **
RiskAppetite13	0.0048750	0.0031648	1.540	0.12560
CorpCDSPremium13	-0.0015573	0.0006267	-2.485	0.01407 *
DebtFinland13	-0.0266457	0.0066451	-4.010	9.58e-05 ***
AnnVolFinland13	0.0015699	0.0682738	0.023	0.98169
BidAsk13	0.0171117	0.0399111	0.429	0.66873

LMFrance_Bond13

Residuals:

	Min	1Q	Median	3Q	Max
	-0.208836	-0.022545	-0.005894	0.028330	0.141367

Coefficients:

	Estimate	Std. Error	t value	Pr(> t)
(Intercept)	-0.9776743	0.4073187	-2.400	0.01762 *
RiskFreeRate13	0.3794908	0.0659037	5.758	4.69e-08 ***
RiskAppetite13	-0.0052549	0.0018380	-2.859	0.00486 **
CorpCDSPremium13	0.0054012	0.0004852	11.132	< 2e-16 ***
DebtFrance13	0.0105162	0.0055779	1.885	0.06133 .
AnnVolFrance13	-0.0005725	0.0009951	-0.575	0.56595
BidAsk13	-0.0047688	0.0222110	-0.215	0.83029

LMIreland_Bond13

Residuals:

	Min	1Q	Median	3Q	Max
	-0.38279	-0.13983	-0.00713	0.11847	0.54153

Coefficients:

	Estimate	Std. Error	t value	Pr(> t)
(Intercept)	-7.2393746	0.6322515	-11.450	< 2e-16 ***
RiskFreeRate13	-1.4904564	0.2927394	-5.091	1.06e-06 ***
RiskAppetite13	-0.0425292	0.0064165	-6.628	5.84e-10 ***
CorpCDSPremium13	0.0274564	0.0011378	24.131	< 2e-16 ***
DebtIreland13	0.0481688	0.0045053	10.692	< 2e-16 ***
AnnVolIreland13	0.0036588	0.0005879	6.224	4.68e-09 ***
BidAsk13	0.2277226	0.0775945	2.935	0.00387 **

LMItaly_Bond13

Residuals:

	Min	1Q	Median	3Q	Max
	-0.50595	-0.10469	0.01381	0.11910	0.37607

Coefficients:

	Estimate	Std. Error	t value	Pr(> t)
(Intercept)	9.4443117	2.1756159	4.341	2.61e-05 ***
RiskFreeRate13	0.4605986	0.1671075	2.756	0.006577 **
RiskAppetite13	-0.0143229	0.0064075	-2.235	0.026883 *
CorpCDSPremium13	0.0199203	0.0018534	10.748	< 2e-16 ***
DebtItaly13	0.0048940	0.0121125	0.404	0.686759
AnnVolItaly13	-0.0028830	0.0008382	-3.439	0.000756 ***
BidAsk13	0.0472322	0.0756308	0.625	0.533247

LMNetherlands_Bond13

Analysis of Variance Table

Response: BondSpreadNetherlands13

	Df	Sum Sq	Mean Sq	F value	Pr(>F)
RiskFreeRate13	1	1.17701	1.17701	204.9669	< 2.2e-16 ***
RiskAppetite13	1	0.01644	0.01644	2.8624	0.09276 .
CorpCDSPremium13	1	0.83367	0.83367	145.1764	< 2.2e-16 ***
DebtNetherlands13	1	0.35625	0.35625	62.0381	6.476e-13 ***
AnnVolaNetherlands13	1	0.00229	0.00229	0.3987	0.52875
BidAsk13	1	0.00002	0.00002	0.0032	0.95493
Residuals	149	0.85563	0.00574		

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

LMPortugal_Bond13

Analysis of Variance Table

Response: BondSpreadPortugal13

	Df	Sum Sq	Mean Sq	F value	Pr(>F)
RiskFreeRate13	1	160.423	160.423	442.1376	< 2e-16 ***
RiskAppetite13	1	0.158	0.158	0.4353	0.51044
CorpCDSPremium13	1	151.632	151.632	417.9094	< 2e-16 ***
DebtPortugal13	1	0.330	0.330	0.9096	0.34178
AnnVolPortugal13	1	1.791	1.791	4.9370	0.02780 *
BidAsk13	1	1.058	1.058	2.9168	0.08975 .
Residuals	149	54.062	0.363		

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

LMSpain_Bond13

Analysis of Variance Table

Response: BondSpreadSpain13

	Df	Sum Sq	Mean Sq	F value	Pr(>F)
RiskFreeRate13	1	37.062	37.062	1747.9000	<2e-16 ***
RiskAppetite13	1	0.047	0.047	2.2021	0.1399
CorpCDSPremium13	1	75.578	75.578	3564.3625	<2e-16 ***
DebtSpain13	1	3.685	3.685	173.7836	<2e-16 ***
AnnVolSpain13	1	2.928	2.928	138.0814	<2e-16 ***
BidAsk13	1	0.024	0.024	1.1102	0.2937
Residuals	149	3.159	0.021		

LMSweden_Bond13

Analysis of Variance Table

Response: BondSpreadSweden13

	Df	Sum Sq	Mean Sq	F value	Pr(>F)
RiskFreeRate13	1	14.0269	14.0269	745.3645	< 2.2e-16 ***
RiskAppetite13	1	0.0430	0.0430	2.2848	0.1327627
CorpCDSPremium13	1	3.8971	3.8971	207.0869	< 2.2e-16 ***
DebtSweden13	1	0.1327	0.1327	7.0539	0.0087701 **
AnnVolSweden13	1	0.2647	0.2647	14.0676	0.0002519 ***
BidAsk13	1	0.0078	0.0078	0.4142	0.5208125
Residuals	149	2.8040	0.0188		

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

LMUnitedKingdom_Bond13

Analysis of Variance Table

Response: BondSpreadUnitedKingdom13

	Df	Sum Sq	Mean Sq	F value	Pr(>F)
RiskFreeRate13	1	3.9715	3.9715	131.7528	< 2.2e-16 ***
RiskAppetite13	1	0.2210	0.2210	7.3311	0.007569 **
CorpCDSPremium13	1	14.2441	14.2441	472.5412	< 2.2e-16 ***
DebtUnitedkingdom13	1	1.4612	1.4612	48.4761	9.948e-11 ***
AnnVolUnitedKingdom13	1	0.7511	0.7511	24.9170	1.651e-06 ***
BidAsk13	1	0.1804	0.1804	5.9859	0.015584 *
Residuals	149	4.4914	0.0301		

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

LMNetherlands_Bond13

Residuals:

Min	1Q	Median	3Q	Max
-0.214383	-0.044938	0.003246	0.047769	0.149238

Coefficients:

	Estimate	Std. Error	t value	Pr(> t)
(Intercept)	-4.8382667	0.6663882	-7.260	1.99e-11 ***
RiskFreeRate13	0.4186916	0.1057418	3.960	0.000116 ***
RiskAppetite13	0.0012931	0.0027470	0.471	0.638531
CorpCDSPremium13	0.0056526	0.0004253	13.290	< 2e-16 ***
DebtNetherlands13	0.0654635	0.0088872	7.366	1.11e-11 ***
AnnVolaNetherlands13	0.0001155	0.0001846	0.625	0.532619
BidAsk13	-0.0017865	0.0315574	-0.057	0.954932

LMPortugal_Bond13

Residuals:

Min	1Q	Median	3Q	Max
-1.59366	-0.28383	-0.03315	0.27431	1.81091

Coefficients:

	Estimate	Std. Error	t value	Pr(> t)
(Intercept)	-6.7080176	3.8656402	-1.735	0.08476 .
RiskFreeRate13	3.7003607	0.5497282	6.731	3.4e-10 ***
RiskAppetite13	-0.0594641	0.0197120	-3.017	0.00301 **
CorpCDSPremium13	0.0576413	0.0032584	17.690	< 2e-16 ***
DebtPortugal13	0.0468047	0.0293951	1.592	0.11345
AnnVolPortugal13	-0.0007590	0.0003566	-2.128	0.03495 *
BidAsk13	0.4325126	0.2532486	1.708	0.08975 .

LMSpain_Bond13

Residuals:

Min	1Q	Median	3Q	Max
-0.41184	-0.10314	0.00809	0.09265	0.39690

Coefficients:

	Estimate	Std. Error	t value	Pr(> t)
(Intercept)	55.3575697	4.3551654	12.711	<2e-16 ***
RiskFreeRate13	-0.4215018	0.1496231	-2.817	0.0055 **
RiskAppetite13	0.0006271	0.0052775	0.119	0.9056
CorpCDSPremium13	0.0185218	0.0015360	12.059	<2e-16 ***
DebtSpain13	0.0231619	0.0110503	2.096	0.0378 *
AnnVolSpain13	-0.0382398	0.0034073	-11.223	<2e-16 ***

LMSweden_Bond13

Residuals:

Min	1Q	Median	3Q	Max
-0.27495	-0.09777	-0.00477	0.10315	0.33822

Coefficients:

	Estimate	Std. Error	t value	Pr(> t)
(Intercept)	-1.2696809	0.5145313	-2.468	0.014732 *
RiskFreeRate13	1.3107981	0.1973855	6.641	5.47e-10 ***
RiskAppetite13	-0.0127740	0.0050874	-2.511	0.013109 *
CorpCDSPremium13	0.0101933	0.0008304	12.275	< 2e-16 ***
DebtSweden13	0.0361131	0.0112674	3.205	0.001652 **
AnnVolSweden13	-0.0010397	0.0002738	-3.797	0.000213 ***
BidAsk13	-0.0367431	0.0570884	-0.644	0.520813

LMUnitedKingdom_Bond13

Residuals:

Min	1Q	Median	3Q	Max
-0.55511	-0.11463	0.01145	0.13051	0.45372

Coefficients:

	Estimate	Std. Error	t value	Pr(> t)
(Intercept)	-1.515e+01	2.364e+00	-6.409	1.82e-09 ***
RiskFreeRate13	-5.123e-02	2.213e-01	-0.231	0.8173
RiskAppetite13	-1.050e-02	6.187e-03	-1.698	0.0916 .
CorpCDSPremium13	-1.025e-02	1.327e-03	-7.722	1.55e-12 ***
DebtUnitedkingdom13	2.032e-01	2.728e-02	7.450	7.01e-12 ***
AnnVolUnitedKingdom13	-5.741e-04	1.237e-04	-4.643	7.48e-06 ***
BidAsk13	-1.821e-01	7.443e-02	-2.447	0.0156 *

Thus the bond models of the selected countries for the second sample period 2013-2015 are:

$$\begin{aligned} \text{Bond spread}_{BE} = & 92.86 + 0.5 * \text{Risk free rate} - 0.01 * \text{Risk Appetite} + 0.01 \\ & * \text{Corporate CDS premium} - 0.01 * \text{Debt} - 0.42 * \text{Volatility} + 0.03 \\ & * \text{BidAsk spread} \end{aligned} \quad (31)$$

$$\begin{aligned} \text{Bond spread}_{FI} = & 1.29 - 0.31 * \text{Risk free rate} + 0.005 * \text{Risk Appetite} - 0.002 \\ & * \text{Corporate CDS premium} - 0.03 * \text{Debt} + 0.002 * \text{Volatility} + 0.02 \\ & * \text{BidAsk spread} \end{aligned} \quad (32)$$

$$\begin{aligned} \text{Bond spread}_{FR} = & -0.98 + 0.38 * \text{Risk free rate} - 0.01 * \text{Risk Appetite} + 0.01 \\ & * \text{Corporate CDS premium} + 0.01 * \text{Debt} - 0.001 * \text{Volatility} - 0.005 \\ & * \text{BidAsk spread} \end{aligned} \quad (33)$$

$$\begin{aligned} \text{Bond spread}_{IE} = & -7.24 - 1.49 * \text{Risk free rate} - 0.04 * \text{Risk Appetite} + 0.03 \\ & * \text{Corporate CDS premium} + 0.05 * \text{Debt} + 0.004 * \text{Volatility} + 0.23 \\ & * \text{BidAsk spread} \end{aligned} \quad (34)$$

$$\begin{aligned} \text{Bond spread}_{IT} = & 9.44 + 0.49 * \text{Risk free rate} - 0.01 * \text{Risk Appetite} + 0.02 \\ & * \text{Corporate CDS premium} + 0.005 * \text{Debt} - 0.003 * \text{Volatility} + 0.05 \\ & * \text{BidAsk spread} \end{aligned} \quad (35)$$

$$\begin{aligned} \text{Bond spread}_{NL} = & -4.84 + 0.42 * \text{Risk free rate} + 0.001 * \text{Risk Appetite} + 0.006 \\ & * \text{Corporate CDS premium} + 0.07 * \text{Debt} + 0.0001 * \text{Volatility} - 0.002 \\ & * \text{BidAsk spread} \end{aligned} \quad (36)$$

$$\begin{aligned} \text{Bond spread}_{PT} = & -6.71 + 3.70 * \text{Risk free rate} - 0.06 * \text{Risk Appetite} + 0.06 \\ & * \text{Corporate CDS premium} + 0.05 * \text{Debt} - 0.001 * \text{Volatility} + 0.43 \\ & * \text{BidAsk spread} \end{aligned} \quad (37)$$

$$\begin{aligned} \text{Bond spread}_{ES} = & 55.36 - 0.42 * \text{Risk free rate} + 0.001 * \text{Risk Appetite} + 0.02 \\ & * \text{Corporate CDS premium} + 0.02 * \text{Debt} - 0.04 * \text{Volatility} + 0.07 \\ & * \text{BidAsk spread} \end{aligned} \quad (38)$$

$$\begin{aligned} \text{Bond spread}_{SE} = & -1.27 + 1.31 * \text{Risk free rate} - 0.01 * \text{Risk Appetite} + 0.01 \\ & * \text{Corporate CDS premium} + 0.04 * \text{Debt} - 0.001 * \text{Volatility} - 0.04 \\ & * \text{BidAsk spread} \end{aligned} \quad (39)$$

$$\begin{aligned} \text{Bond spread}_{UK} = & -15.15 - 0.05 * \text{Risk free rate} - 0.01 * \text{Risk Appetite} - 0.01 \\ & * \text{Corporate CDS premium} + 0.20 * \text{Debt} - 0.001 * \text{Volatility} - 0.18 \\ & * \text{BidAsk spread} \end{aligned} \quad (40)$$

Appendix D

The optimisation incorporating all parameters for the first sample period resulted in following output for the parameters, given the different scenarios:

Table 10 Results of parameters for 2010-2012 using all parameters_ First and second scenario

2010-2012: 1.Scenario, all parameters_change of CDS spreads to originale state						2010-2012: 2.Scenario, all parameters_change of CDS spreads to originale state					
Belgium						Belgium					
Increase of bond yields by	2%	5%	7%	10%	20%	Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%	RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	0.00%	0.00%	0.00%	0.00%	0.00%	RA	0.00%	0.00%	0.00%	0.00%	0.00%
CorpCDSPrem	0.00%	0.00%	0.00%	0.00%	0.00%	CorpCDSPrem	0.00%	0.00%	0.00%	0.00%	0.00%
Debt	52.42%	51.58%	51.03%	50.19%	47.39%	Debt	50.00%	50.00%	50.00%	50.00%	47.39%
Vola	0.00%	0.00%	0.00%	0.00%	0.00%	Vola	0.00%	0.00%	0.00%	0.00%	0.00%
BidAsk	0.11%	0.11%	0.11%	0.10%	0.10%	BidAsk	100.00%	100.00%	100.00%	90.91%	0.10%
Finland						Finland					
Increase of bond yields by	2%	5%	7%	10%	20%	Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%	RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	2.71%	2.62%	2.57%	2.49%	2.21%	RA	2.71%	2.62%	2.57%	2.49%	2.21%
CorpCDSPrem	0.00%	0.00%	0.00%	0.00%	0.00%	CorpCDSPrem	0.00%	0.00%	0.00%	0.00%	0.00%
Debt	27.88%	27.03%	26.46%	25.61%	22.77%	Debt	27.88%	27.03%	26.46%	25.61%	22.77%
Vola	0.00%	0.00%	0.00%	0.00%	0.00%	Vola	0.00%	0.00%	0.00%	0.00%	0.00%
BidAsk	2.09%	2.03%	1.98%	1.92%	1.71%	BidAsk	2.09%	2.03%	1.98%	1.92%	1.71%
France						France					
Increase of bond yields by	2%	5%	7%	10%	20%	Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%	RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	2.96%	2.91%	2.88%	2.84%	2.68%	RA	2.96%	2.91%	2.88%	2.84%	2.68%
CorpCDSPrem	0.00%	0.00%	0.00%	0.00%	0.00%	CorpCDSPrem	0.00%	0.00%	0.00%	0.00%	0.00%
Debt	46.60%	45.86%	45.36%	44.62%	42.14%	Debt	46.60%	45.86%	45.36%	44.62%	42.14%
Vola	0.00%	0.00%	0.00%	0.00%	0.00%	Vola	0.00%	0.00%	0.00%	0.00%	0.00%
BidAsk	0.00%	0.00%	0.00%	0.00%	0.00%	BidAsk	0.00%	0.00%	0.00%	0.00%	0.00%
Ireland						Ireland					
Increase of bond yields by	2%	5%	7%	10%	20%	Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%	RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	0.00%	0.00%	0.00%	0.00%	0.00%	RA	0.00%	0.00%	0.00%	0.00%	0.00%
CorpCDSPrem	55.46%	57.14%	58.26%	59.95%	65.57%	CorpCDSPrem	55.46%	57.14%	58.26%	59.95%	67.52%
Debt	44.44%	45.79%	46.69%	48.04%	52.55%	Debt	44.44%	45.79%	46.69%	48.04%	50.00%
Vola	11.82%	12.18%	12.42%	12.78%	13.98%	Vola	11.82%	12.18%	12.42%	12.78%	14.40%
BidAsk	0.00%	0.00%	0.00%	0.00%	0.00%	BidAsk	0.00%	0.00%	0.00%	0.00%	0.00%
Italy						Italy					
Increase of bond yields by	2%	5%	7%	10%	20%	Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%	RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	3.47%	3.42%	3.39%	3.35%	3.20%	RA	3.47%	3.42%	3.39%	3.35%	3.20%
CorpCDSPrem	0.00%	0.00%	0.00%	0.00%	0.00%	CorpCDSPrem	0.00%	0.00%	0.00%	0.00%	0.00%
Debt	45.15%	44.58%	44.19%	43.62%	41.72%	Debt	45.15%	44.58%	44.19%	43.62%	41.72%
Vola	0.00%	0.00%	0.00%	0.00%	0.00%	Vola	0.00%	0.00%	0.00%	0.00%	0.00%
BidAsk	0.00%	0.00%	0.00%	0.00%	0.00%	BidAsk	0.00%	0.00%	0.00%	0.00%	0.00%
Netherlands						Netherlands					
Increase of bond yields by	2%	5%	7%	10%	20%	Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%	RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	0.00%	0.00%	0.00%	0.00%	0.00%	RA	0.00%	0.00%	0.00%	0.00%	0.00%
CorpCDSPrem	31.72%	32.06%	32.29%	32.63%	33.77%	CorpCDSPrem	31.72%	32.06%	32.29%	32.63%	33.77%
Debt	0.00%	0.00%	0.00%	0.00%	0.00%	Debt	0.00%	0.00%	0.00%	0.00%	0.00%
Vola	36.16%	36.55%	36.81%	37.20%	38.49%	Vola	36.16%	36.55%	36.81%	37.20%	38.49%
BidAsk	0.70%	0.70%	0.71%	0.72%	0.74%	BidAsk	0.70%	0.70%	0.71%	0.72%	0.74%

Portugal						Portugal					
Increase of bond yields by	2%	5%	7%	10%	20%	Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%	RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	0.00%	0.00%	0.00%	0.00%	0.00%	RA	0.00%	0.00%	0.00%	0.00%	0.00%
CorpCDSPrem	52.35%	55.72%	57.97%	61.35%	72.60%	CorpCDSPrem	100.00%	100.00%	100.00%	100.00%	100.00%
Debt	100.00%	100.00%	100.00%	100.00%	100.00%	Debt	50.00%	50.00%	50.00%	50.00%	50.00%
Vola	7.93%	8.44%	8.78%	9.29%	10.99%	Vola	100.00%	100.00%	100.00%	100.00%	100.00%
BidAsk	0.00%	0.00%	0.00%	0.00%	0.00%	BidAsk	0.00%	0.00%	0.00%	0.00%	0.00%

Spain						Spain					
Increase of bond yields by	2%	5%	7%	10%	20%	Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%	RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	0.00%	0.00%	0.00%	0.00%	0.00%	RA	0.00%	0.00%	0.00%	0.00%	0.00%
CorpCDSPrem	77.17%	78.80%	79.89%	81.52%	86.95%	CorpCDSPrem	77.17%	78.80%	79.89%	81.52%	86.95%
Debt	0.00%	0.00%	0.00%	0.00%	0.00%	Debt	0.00%	0.00%	0.00%	0.00%	0.00%
Vola	15.33%	15.65%	15.87%	16.19%	17.27%	Vola	15.33%	15.65%	15.87%	16.19%	17.27%
BidAsk	0.11%	0.11%	0.11%	0.12%	0.12%	BidAsk	0.11%	0.11%	0.11%	0.12%	0.12%

Sweden						Sweden					
Increase of bond yields by	2%	5%	7%	10%	20%	Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%	RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	0.00%	0.00%	0.00%	0.00%	0.00%	RA	0.00%	0.00%	0.00%	0.00%	0.00%
CorpCDSPrem	99.57%	90.36%	84.22%	75.01%	44.30%	CorpCDSPrem	100.00%	100.00%	100.00%	100.00%	100.00%
Debt	100.00%	100.00%	100.00%	100.00%	100.00%	Debt	50.00%	50.00%	50.00%	50.00%	50.00%
Vola	0.00%	0.00%	0.00%	0.00%	0.00%	Vola	0.00%	0.00%	0.00%	0.00%	0.00%
BidAsk	30.03%	27.25%	25.40%	22.62%	13.36%	BidAsk	100.00%	100.00%	100.00%	100.00%	100.00%

United Kingdom						United Kingdom					
Increase of bond yields by	2%	5%	7%	10%	20%	Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%	RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	24.51%	24.64%	24.72%	24.85%	25.28%	RA	27.31%	27.51%	27.64%	27.85%	28.52%
CorpCDSPrem	14.24%	14.32%	14.37%	14.44%	14.69%	CorpCDSPrem	15.87%	15.98%	16.06%	16.18%	16.57%
Debt	62.16%	62.48%	62.70%	63.02%	64.10%	Debt	50.00%	50.00%	50.00%	50.00%	50.00%
Vola	76.21%	76.60%	76.87%	77.27%	78.59%	Vola	84.90%	85.53%	85.95%	86.58%	88.67%
BidAsk	3.82%	3.84%	3.85%	3.87%	3.94%	BidAsk	4.25%	4.28%	4.30%	4.34%	4.44%

Table 11 Results of parameters for 2010-2012 using all parameters_ Third and fourth scenario

2010-2012: 3.Scenario, all parameters_change of CDS spreads to originale state						2010-2012: 4.Scenario, all parameters_change of CDS spreads to originale state					
Belgium						Belgium					
Increase of bond yields by	2%	5%	7%	10%	20%	Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%	RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	-0.43%	-0.42%	-0.42%	-0.41%	-0.39%	RA	-0.43%	-0.42%	-0.42%	-0.41%	-0.39%
CorpCDSPrem	-19.13%	-18.82%	-18.62%	-18.31%	-17.29%	CorpCDSPrem	-19.13%	-18.82%	-18.62%	-18.31%	-17.29%
Debt	41.46%	40.80%	40.36%	39.69%	37.48%	Debt	41.46%	40.80%	40.36%	39.69%	37.48%
Vola	-9.40%	-9.25%	-9.15%	-9.00%	-8.49%	Vola	-9.40%	-9.25%	-9.15%	-9.00%	-8.49%
BidAsk	0.09%	0.08%	0.08%	0.08%	0.08%	BidAsk	0.09%	0.08%	0.08%	0.08%	0.08%

Finland						Finland					
Increase of bond yields by	2%	5%	7%	10%	20%	Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%	RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	0.83%	0.81%	0.79%	0.76%	0.68%	RA	0.83%	0.81%	0.79%	0.76%	0.68%
CorpCDSPrem	-7.56%	-7.33%	-7.18%	-6.95%	-6.18%	CorpCDSPrem	-7.56%	-7.33%	-7.18%	-6.95%	-6.18%
Debt	8.56%	8.30%	8.12%	7.86%	6.99%	Debt	8.56%	8.30%	8.12%	7.86%	6.99%
Vola	-10.52%	-10.20%	-9.98%	-9.66%	-8.59%	Vola	-10.52%	-10.20%	-9.98%	-9.66%	-8.59%
BidAsk	0.64%	0.62%	0.61%	0.59%	0.52%	BidAsk	0.64%	0.62%	0.61%	0.59%	0.52%

France						France					
Increase of bond yields by	2%	5%	7%	10%	20%	Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%	RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	1.87%	1.84%	1.82%	1.79%	1.69%	RA	1.87%	1.84%	1.82%	1.79%	1.69%
CorpCDSPrem	-17.22%	-16.95%	-16.76%	-16.49%	-15.57%	CorpCDSPrem	-17.22%	-16.95%	-16.76%	-16.49%	-15.57%
Debt	29.46%	28.99%	28.68%	28.21%	26.64%	Debt	29.46%	28.99%	28.68%	28.21%	26.64%
Vola	-14.50%	-14.27%	-14.12%	-13.89%	-13.11%	Vola	-14.50%	-14.27%	-14.12%	-13.89%	-13.11%
BidAsk	-0.18%	-0.18%	-0.18%	-0.17%	-0.16%	BidAsk	-0.18%	-0.18%	-0.18%	-0.17%	-0.16%

Ireland					
Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	-31.43%	-32.38%	-33.02%	-33.98%	-37.16%
CorpCDSPrem	40.76%	42.00%	42.83%	44.07%	48.20%
Debt	32.67%	33.66%	34.32%	35.32%	38.63%
Vola	8.69%	8.96%	9.13%	9.40%	10.28%
BidAsk	-4.79%	-4.94%	-5.03%	-5.18%	-5.67%

Italy					
Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	2.53%	2.49%	2.47%	2.44%	2.33%
CorpCDSPrem	-19.90%	-19.65%	-19.48%	-19.23%	-18.39%
Debt	32.90%	32.49%	32.21%	31.79%	30.41%
Vola	-3.00%	-2.96%	-2.94%	-2.90%	-2.77%
BidAsk	-0.48%	-0.47%	-0.47%	-0.46%	-0.44%

Netherlands					
Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	-5.51%	-5.57%	-5.61%	-5.67%	-5.86%
CorpCDSPrem	31.11%	31.44%	31.66%	32.00%	33.11%
Debt	-3.73%	-3.77%	-3.79%	-3.83%	-3.97%
Vola	35.46%	35.84%	36.09%	36.47%	37.74%
BidAsk	0.68%	0.69%	0.69%	0.70%	0.73%

Portugal					
Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	-17.60%	-18.74%	-19.50%	-20.63%	-24.42%
CorpCDSPrem	45.18%	48.09%	50.03%	52.95%	62.66%
Debt	100.00%	100.00%	100.00%	100.00%	100.00%
Vola	6.84%	7.28%	7.58%	8.02%	9.49%
BidAsk	-4.63%	-4.92%	-5.12%	-5.42%	-6.42%

Spain					
Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	-12.58%	-12.85%	-13.02%	-13.29%	-14.17%
CorpCDSPrem	75.02%	76.60%	77.66%	79.24%	84.52%
Debt	-3.12%	-3.18%	-3.23%	-3.29%	-3.51%
Vola	14.90%	15.22%	15.43%	15.74%	16.79%
BidAsk	0.11%	0.11%	0.11%	0.11%	0.12%

Sweden					
Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	-1.08%	-1.07%	-1.06%	-1.06%	-1.03%
CorpCDSPrem	7.08%	7.02%	6.98%	6.93%	6.73%
Debt	79.54%	78.89%	78.46%	77.81%	75.65%
Vola	-48.38%	-47.99%	-47.72%	-47.33%	-46.01%
BidAsk	2.14%	2.12%	2.11%	2.09%	2.03%

United Kingdom					
Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	24.51%	24.64%	24.72%	24.85%	25.28%
CorpCDSPrem	14.24%	14.32%	14.37%	14.44%	14.69%
Debt	62.16%	62.48%	62.70%	63.02%	64.10%
Vola	76.21%	76.60%	76.87%	77.27%	78.59%
BidAsk	3.82%	3.84%	3.85%	3.87%	3.94%

Ireland					
Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	-31.43%	-32.38%	-33.02%	-33.98%	-37.16%
CorpCDSPrem	40.76%	42.00%	42.83%	44.07%	48.20%
Debt	32.67%	33.66%	34.32%	35.32%	38.63%
Vola	8.69%	8.96%	9.13%	9.40%	10.28%
BidAsk	-4.79%	-4.94%	-5.03%	-5.18%	-5.67%

Italy					
Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	2.53%	2.49%	2.47%	2.44%	2.33%
CorpCDSPrem	-19.90%	-19.65%	-19.48%	-19.23%	-18.39%
Debt	32.90%	32.49%	32.21%	31.79%	30.41%
Vola	-3.00%	-2.96%	-2.94%	-2.90%	-2.77%
BidAsk	-0.48%	-0.47%	-0.47%	-0.46%	-0.44%

Netherlands					
Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	-5.51%	-5.57%	-5.61%	-5.67%	-5.86%
CorpCDSPrem	31.11%	31.44%	31.66%	32.00%	33.11%
Debt	-3.73%	-3.77%	-3.79%	-3.83%	-3.97%
Vola	35.46%	35.84%	36.09%	36.47%	37.74%
BidAsk	0.68%	0.69%	0.69%	0.70%	0.73%

Portugal					
Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	-50.00%	-50.00%	-50.00%	-50.00%	-50.00%
CorpCDSPrem	50.00%	50.00%	50.00%	50.00%	50.00%
Debt	50.00%	50.00%	50.00%	50.00%	50.00%
Vola	50.00%	50.00%	50.00%	50.00%	50.00%
BidAsk	-50.00%	-50.00%	-50.00%	-50.00%	-50.00%

Spain					
Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	-50.00%	-50.00%	-50.00%	-50.00%	-50.00%
CorpCDSPrem	50.00%	50.00%	50.00%	50.00%	50.00%
Debt	-50.00%	-50.00%	-50.00%	-50.00%	-50.00%
Vola	50.00%	50.00%	50.00%	50.00%	50.00%
BidAsk	50.00%	50.00%	50.00%	50.00%	50.00%

Sweden					
Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	-50.00%	-50.00%	-50.00%	-50.00%	-50.00%
CorpCDSPrem	50.00%	50.00%	50.00%	50.00%	50.00%
Debt	50.00%	50.00%	50.00%	50.00%	50.00%
Vola	-50.00%	-50.00%	-50.00%	-50.00%	-50.00%
BidAsk	50.00%	50.00%	50.00%	50.00%	50.00%

United Kingdom					
Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	50.00%	50.00%	50.00%	50.00%	50.00%
CorpCDSPrem	50.00%	50.00%	50.00%	50.00%	50.00%
Debt	50.00%	50.00%	50.00%	50.00%	50.00%
Vola	50.00%	50.00%	50.00%	50.00%	50.00%
BidAsk	50.00%	50.00%	50.00%	50.00%	50.00%

Following results for the different scenarios are obtained incorporating five parameters:

Table 12 Results of parameters for 2010-2012 using five parameters_ First and second scenario

2010-2012: 1.Scenario, five parameters_change of CDS spreads to originale state						2010-2012: 2.Scenario, five parameters_change of CDS spreads to originale state					
Belgium						Belgium					
Increase of bond yields by	2%	5%	7%	10%	20%	Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%	RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	1.51%	1.52%	1.52%	1.53%	2.00%	RA	0.00%	0.00%	0.00%	0.00%	2.00%
CorpCDSPrem	0.00%	0.00%	0.00%	0.00%	3.01%	CorpCDSPrem	0.00%	0.00%	0.00%	0.00%	3.01%
Debt	52.48%	51.65%	51.09%	50.25%	49.98%	Debt	50.00%	50.00%	50.00%	50.00%	49.98%
Vola	0.00%	0.00%	0.00%	0.00%	5.00%	Vola	0.00%	0.00%	0.00%	0.00%	5.00%
BidAsk	5.10%	5.10%	5.09%	5.09%	5.00%	BidAsk	100.00%	100.00%	100.00%	100.00%	5.00%
Finland						Finland					
Increase of bond yields by	2%	5%	7%	10%	20%	Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%	RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	4.17%	4.09%	4.03%	3.95%	1.45%	RA	4.17%	4.09%	4.03%	3.95%	1.45%
CorpCDSPrem	0.00%	0.00%	0.00%	0.00%	8.00%	CorpCDSPrem	0.00%	0.00%	0.00%	0.00%	8.00%
Debt	27.34%	26.49%	25.92%	25.07%	44.34%	Debt	27.34%	26.49%	25.92%	25.07%	44.34%
Vola	0.00%	0.00%	0.00%	0.00%	11.95%	Vola	0.00%	0.00%	0.00%	0.00%	11.95%
BidAsk	6.67%	6.61%	6.57%	6.50%	4.58%	BidAsk	6.67%	6.61%	6.57%	6.50%	4.58%
France						France					
Increase of bond yields by	2%	5%	7%	10%	20%	Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%	RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	4.64%	4.59%	4.56%	4.51%	1.86%	RA	4.64%	4.59%	4.56%	4.51%	1.86%
CorpCDSPrem	0.00%	0.00%	0.00%	0.00%	4.31%	CorpCDSPrem	0.00%	0.00%	0.00%	0.00%	4.31%
Debt	46.53%	45.79%	45.29%	44.55%	47.75%	Debt	46.53%	45.79%	45.29%	44.55%	47.75%
Vola	0.00%	0.00%	0.00%	0.00%	6.11%	Vola	0.00%	0.00%	0.00%	0.00%	6.11%
BidAsk	4.74%	4.75%	4.75%	4.76%	5.01%	BidAsk	4.74%	4.75%	4.75%	4.76%	5.01%
Ireland						Ireland					
Increase of bond yields by	2%	5%	7%	10%	20%	Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%	RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	0.00%	0.00%	0.00%	0.00%	0.00%	RA	0.00%	0.00%	0.00%	0.00%	0.00%
CorpCDSPrem	52.80%	54.48%	55.61%	57.29%	42.20%	CorpCDSPrem	52.80%	54.48%	55.61%	57.29%	66.24%
Debt	44.91%	46.26%	47.16%	48.51%	81.42%	Debt	44.91%	46.26%	47.16%	48.51%	50.00%
Vola	20.62%	20.98%	21.22%	21.58%	13.36%	Vola	20.62%	20.98%	21.22%	21.58%	18.48%
BidAsk	0.00%	0.00%	0.00%	0.00%	0.39%	BidAsk	0.00%	0.00%	0.00%	0.00%	0.00%
Italy						Italy					
Increase of bond yields by	2%	5%	7%	10%	20%	Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%	RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	5.12%	5.07%	5.04%	5.00%	1.67%	RA	5.12%	5.07%	5.04%	5.00%	1.67%
CorpCDSPrem	0.00%	0.00%	0.00%	0.00%	5.58%	CorpCDSPrem	0.00%	0.00%	0.00%	0.00%	5.58%
Debt	45.60%	45.04%	44.66%	44.09%	45.73%	Debt	45.60%	45.04%	44.66%	44.09%	45.73%
Vola	6.30%	6.35%	6.38%	6.44%	5.39%	Vola	6.30%	6.35%	6.38%	6.44%	5.39%
BidAsk	4.41%	4.42%	4.42%	4.43%	5.06%	BidAsk	4.41%	4.42%	4.42%	4.43%	5.06%
Netherlands						Netherlands					
Increase of bond yields by	2%	5%	7%	10%	20%	Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%	RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	0.00%	0.00%	0.00%	0.00%	0.00%	RA	0.00%	0.00%	0.00%	0.00%	0.00%
CorpCDSPrem	28.55%	28.88%	29.11%	29.45%	35.37%	CorpCDSPrem	28.55%	28.88%	29.11%	29.45%	35.37%
Debt	1.94%	1.90%	1.87%	1.83%	46.12%	Debt	1.94%	1.90%	1.87%	1.83%	46.12%
Vola	39.12%	39.51%	39.76%	40.15%	41.90%	Vola	39.12%	39.51%	39.76%	40.15%	41.90%
BidAsk	5.56%	5.57%	5.57%	5.58%	5.71%	BidAsk	5.56%	5.57%	5.57%	5.58%	5.71%

Portugal						Portugal					
Increase of bond yields by	2%	5%	7%	10%	20%	Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%	RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	0.00%	0.00%	0.00%	0.00%	0.00%	RA	0.00%	0.00%	0.00%	0.00%	0.00%
CorpCDSPrem	50.51%	53.87%	56.12%	59.49%	71.48%	CorpCDSPrem	100.00%	100.00%	100.00%	100.00%	100.00%
Debt	100.00%	100.00%	100.00%	100.00%	100.00%	Debt	50.00%	50.00%	50.00%	50.00%	50.00%
Vola	17.19%	17.70%	18.04%	18.56%	15.37%	Vola	100.00%	100.00%	100.00%	100.00%	100.00%
BidAsk	0.14%	0.00%	0.00%	0.00%	0.00%	BidAsk	0.00%	0.00%	0.00%	0.00%	0.00%

Spain						Spain					
Increase of bond yields by	2%	5%	7%	10%	20%	Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%	RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	0.00%	0.00%	0.00%	0.00%	0.00%	RA	0.00%	0.00%	0.00%	0.00%	0.00%
CorpCDSPrem	75.57%	77.20%	78.28%	79.91%	88.08%	CorpCDSPrem	75.57%	77.20%	78.28%	79.91%	88.08%
Debt	1.98%	1.92%	1.87%	1.80%	46.46%	Debt	1.98%	1.92%	1.87%	1.80%	46.46%
Vola	24.41%	24.74%	24.95%	25.28%	21.90%	Vola	24.41%	24.74%	24.95%	25.28%	21.90%
BidAsk	5.10%	5.10%	5.11%	5.11%	5.12%	BidAsk	5.10%	5.10%	5.11%	5.11%	5.12%

Sweden						Sweden					
Increase of bond yields by	2%	5%	7%	10%	20%	Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%	RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	0.00%	0.00%	0.00%	0.00%	0.00%	RA	0.00%	0.00%	0.00%	0.00%	0.00%
CorpCDSPrem	98.07%	88.86%	82.72%	73.51%	42.80%	CorpCDSPrem	100.00%	100.00%	100.00%	100.00%	100.00%
Debt	100.00%	100.00%	100.00%	100.00%	100.00%	Debt	50.00%	50.00%	50.00%	50.00%	50.00%
Vola	0.00%	0.00%	0.00%	0.00%	0.00%	Vola	0.00%	0.00%	0.00%	0.00%	0.00%
BidAsk	33.68%	30.90%	29.04%	26.27%	17.00%	BidAsk	100.00%	100.00%	100.00%	100.00%	100.00%

United Kingdom						United Kingdom					
Increase of bond yields by	2%	5%	7%	10%	20%	Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%	RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	23.79%	23.92%	24.00%	24.13%	18.91%	RA	26.15%	26.35%	26.49%	26.69%	28.77%
CorpCDSPrem	15.66%	15.74%	15.79%	15.86%	12.83%	CorpCDSPrem	17.03%	17.15%	17.23%	17.35%	18.56%
Debt	60.26%	60.59%	60.80%	61.13%	92.89%	Debt	50.00%	50.00%	50.00%	50.00%	50.00%
Vola	77.75%	78.15%	78.41%	78.81%	57.58%	Vola	85.09%	85.72%	86.14%	86.76%	88.24%
BidAsk	8.39%	8.41%	8.43%	8.45%	7.63%	BidAsk	8.76%	8.79%	8.81%	8.84%	9.17%

Table 13 Results of parameters for 2010-2012 using five parameters_ Third and fourth scenario

2010-2012: 3.Scenario, five parameters_change of CDS spreads to originale state						2010-2012: 4.Scenario, five parameters_change of CDS spreads to originale state					
Belgium						Belgium					
Increase of bond yields by	2%	5%	7%	10%	20%	Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%	RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	-0.43%	-0.42%	-0.42%	-0.41%	-0.39%	RA	-0.43%	-0.42%	-0.42%	-0.41%	-0.39%
CorpCDSPrem	-19.15%	-18.84%	-18.64%	-18.33%	-17.31%	CorpCDSPrem	-19.15%	-18.84%	-18.64%	-18.33%	-17.31%
Debt	41.51%	40.84%	40.40%	39.74%	37.53%	Debt	41.51%	40.84%	40.40%	39.74%	37.53%
Vola	-9.41%	-9.26%	-9.16%	-9.01%	-8.50%	Vola	-9.41%	-9.26%	-9.16%	-9.01%	-8.50%
BidAsk	0.09%	0.08%	0.08%	0.08%	0.08%	BidAsk	0.09%	0.08%	0.08%	0.08%	0.08%

Finland						Finland					
Increase of bond yields by	2%	5%	7%	10%	20%	Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%	RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	0.83%	0.80%	0.79%	0.76%	0.68%	RA	0.83%	0.80%	0.79%	0.76%	0.68%
CorpCDSPrem	-7.55%	-7.32%	-7.17%	-6.93%	-6.16%	CorpCDSPrem	-7.55%	-7.32%	-7.17%	-6.93%	-6.16%
Debt	8.54%	8.28%	8.11%	7.85%	6.97%	Debt	8.54%	8.28%	8.11%	7.85%	6.97%
Vola	-10.50%	-10.18%	-9.96%	-9.64%	-8.57%	Vola	-10.50%	-10.18%	-9.96%	-9.64%	-8.57%
BidAsk	0.64%	0.62%	0.61%	0.59%	0.52%	BidAsk	0.64%	0.62%	0.61%	0.59%	0.52%

France						France					
Increase of bond yields by	2%	5%	7%	10%	20%	Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%	RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	1.87%	1.84%	1.82%	1.79%	1.69%	RA	1.87%	1.84%	1.82%	1.79%	1.69%
CorpCDSPrem	-17.22%	-16.95%	-16.77%	-16.49%	-15.57%	CorpCDSPrem	-17.22%	-16.95%	-16.77%	-16.49%	-15.57%
Debt	29.47%	29.00%	28.68%	28.21%	26.65%	Debt	29.47%	29.00%	28.68%	28.21%	26.65%
Vola	-14.51%	-14.27%	-14.12%	-13.89%	-13.12%	Vola	-14.51%	-14.27%	-14.12%	-13.89%	-13.12%
BidAsk	-0.18%	-0.18%	-0.18%	-0.17%	-0.16%	BidAsk	-0.18%	-0.18%	-0.18%	-0.17%	-0.16%

Ireland					
Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	-31.29%	-32.25%	-32.88%	-33.84%	-37.02%
CorpCDSPrem	40.59%	41.82%	42.65%	43.89%	48.02%
Debt	32.52%	33.52%	34.18%	35.17%	38.48%
Vola	8.65%	8.92%	9.09%	9.36%	10.24%
BidAsk	-4.77%	-4.92%	-5.01%	-5.16%	-5.64%

Italy					
Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	2.52%	2.49%	2.47%	2.44%	2.33%
CorpCDSPrem	-19.88%	-19.62%	-19.46%	-19.21%	-18.37%
Debt	32.86%	32.45%	32.17%	31.75%	30.37%
Vola	-3.00%	-2.96%	-2.93%	-2.89%	-2.77%
BidAsk	-0.48%	-0.47%	-0.47%	-0.46%	-0.44%

Netherlands					
Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	-5.51%	-5.57%	-5.61%	-5.67%	-5.87%
CorpCDSPrem	31.13%	31.47%	31.69%	32.03%	33.14%
Debt	-3.73%	-3.77%	-3.80%	-3.84%	-3.97%
Vola	35.49%	35.87%	36.13%	36.51%	37.78%
BidAsk	0.68%	0.69%	0.70%	0.70%	0.73%

Portugal					
Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	-17.46%	-18.59%	-19.35%	-20.48%	-24.27%
CorpCDSPrem	44.80%	47.71%	49.65%	52.56%	62.27%
Debt	100.00%	100.00%	100.00%	100.00%	100.00%
Vola	6.78%	7.23%	7.52%	7.96%	9.43%
BidAsk	-4.59%	-4.89%	-5.08%	-5.38%	-6.38%

Spain					
Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	-12.60%	-12.87%	-13.04%	-13.31%	-14.19%
CorpCDSPrem	75.14%	76.72%	77.78%	79.36%	84.64%
Debt	-3.12%	-3.19%	-3.23%	-3.30%	-3.52%
Vola	14.92%	15.24%	15.45%	15.76%	16.81%
BidAsk	0.11%	0.11%	0.11%	0.11%	0.12%

Sweden					
Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	-1.08%	-1.07%	-1.06%	-1.05%	-1.03%
CorpCDSPrem	7.08%	7.02%	6.98%	6.92%	6.73%
Debt	79.51%	78.87%	78.43%	77.78%	75.62%
Vola	-48.36%	-47.97%	-47.71%	-47.31%	-46.00%
BidAsk	2.13%	2.12%	2.11%	2.09%	2.03%

United Kingdom					
Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	24.56%	24.69%	24.77%	24.90%	25.32%
CorpCDSPrem	14.27%	14.34%	14.39%	14.47%	14.71%
Debt	62.28%	62.60%	62.82%	63.14%	64.22%
Vola	76.35%	76.75%	77.01%	77.41%	78.73%
BidAsk	3.82%	3.84%	3.86%	3.88%	3.94%

Ireland					
Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	-31.29%	-32.25%	-32.88%	-33.84%	-37.02%
CorpCDSPrem	40.59%	41.82%	42.65%	43.89%	48.02%
Debt	32.52%	33.52%	34.18%	35.17%	38.48%
Vola	8.65%	8.92%	9.09%	9.36%	10.24%
BidAsk	-4.77%	-4.92%	-5.01%	-5.16%	-5.64%

Italy					
Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	2.52%	2.49%	2.47%	2.44%	2.33%
CorpCDSPrem	-19.88%	-19.62%	-19.46%	-19.21%	-18.37%
Debt	32.86%	32.45%	32.17%	31.75%	30.37%
Vola	-3.00%	-2.96%	-2.93%	-2.89%	-2.77%
BidAsk	-0.48%	-0.47%	-0.47%	-0.46%	-0.44%

Netherlands					
Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	-5.51%	-5.57%	-5.61%	-5.67%	-5.87%
CorpCDSPrem	31.13%	31.47%	31.69%	32.03%	33.14%
Debt	-3.73%	-3.77%	-3.80%	-3.84%	-3.97%
Vola	35.49%	35.87%	36.13%	36.51%	37.78%
BidAsk	0.68%	0.69%	0.70%	0.70%	0.73%

Portugal					
Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	-50.00%	-50.00%	-50.00%	-50.00%	-50.00%
CorpCDSPrem	50.00%	50.00%	50.00%	50.00%	50.00%
Debt	50.00%	50.00%	50.00%	50.00%	50.00%
Vola	50.00%	50.00%	50.00%	50.00%	50.00%
BidAsk	-50.00%	-50.00%	-50.00%	-50.00%	-50.00%

Spain					
Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	-50.00%	-50.00%	-50.00%	-50.00%	-50.00%
CorpCDSPrem	50.00%	50.00%	50.00%	50.00%	50.00%
Debt	-50.00%	-50.00%	-50.00%	-50.00%	-50.00%
Vola	50.00%	50.00%	50.00%	50.00%	50.00%
BidAsk	50.00%	50.00%	50.00%	50.00%	50.00%

Sweden					
Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	-50.00%	-50.00%	-50.00%	-50.00%	-50.00%
CorpCDSPrem	50.00%	50.00%	50.00%	50.00%	50.00%
Debt	50.00%	50.00%	50.00%	50.00%	50.00%
Vola	-50.00%	-50.00%	-50.00%	-50.00%	-50.00%
BidAsk	50.00%	50.00%	50.00%	50.00%	50.00%

United Kingdom					
Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	50.00%	50.00%	50.00%	50.00%	50.00%
CorpCDSPrem	50.00%	50.00%	50.00%	50.00%	50.00%
Debt	50.00%	50.00%	50.00%	50.00%	50.00%
Vola	50.00%	50.00%	50.00%	50.00%	50.00%
BidAsk	50.00%	50.00%	50.00%	50.00%	50.00%

Appendix E

The optimisation incorporating all parameters for the second sample period resulted in following output for the parameters, given the different scenarios:

Table 14 Results of parameters for 2013-2015 using all parameters_ First and second scenario

2013-2015: 1.Scenario, all parameters_change of CDS spreads to originale state

Belgium					
Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	0.00%	0.00%	0.00%	0.00%	0.00%
CorpCDSPrem	40.36%	40.56%	40.70%	40.91%	41.60%
Debt	69.64%	70.00%	70.24%	70.59%	71.78%
Vola	62.67%	62.99%	63.21%	63.53%	64.60%
BidAsk	0.00%	0.00%	0.00%	0.00%	0.00%

Finland					
Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	0.00%	0.00%	0.00%	0.00%	0.00%
CorpCDSPrem	59.15%	57.16%	55.83%	53.83%	47.17%
Debt	100.00%	100.00%	100.00%	100.00%	100.00%
Vola	0.00%	0.00%	0.00%	0.00%	0.00%
BidAsk	5.31%	5.13%	5.01%	4.83%	4.24%

France					
Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	0.00%	0.00%	0.00%	0.00%	0.00%
CorpCDSPrem	26.20%	26.36%	26.46%	26.61%	27.13%
Debt	61.92%	62.29%	62.53%	62.90%	64.12%
Vola	62.88%	63.25%	63.50%	63.87%	65.11%
BidAsk	0.19%	0.19%	0.19%	0.19%	0.20%

Ireland					
Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	0.00%	0.00%	0.00%	0.00%	0.00%
CorpCDSPrem	57.34%	58.44%	59.17%	60.26%	63.91%
Debt	100.00%	100.00%	100.00%	100.00%	100.00%
Vola	27.07%	27.59%	27.93%	28.45%	30.17%
BidAsk	0.00%	0.00%	0.00%	0.00%	0.00%

Italy					
Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	0.00%	0.00%	0.00%	0.00%	0.00%
CorpCDSPrem	81.51%	82.99%	83.98%	85.46%	90.39%
Debt	33.80%	34.41%	34.82%	35.43%	37.48%
Vola	53.04%	54.00%	54.64%	55.60%	58.81%
BidAsk	0.00%	0.00%	0.00%	0.00%	0.00%

Netherlands					
Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	0.59%	0.59%	0.60%	0.60%	0.62%
CorpCDSPrem	16.69%	16.83%	16.92%	17.06%	17.53%
Debt	100.00%	100.00%	100.00%	100.00%	100.00%
Vola	38.28%	38.60%	38.81%	39.13%	40.19%
BidAsk	0.04%	0.04%	0.04%	0.04%	0.05%

2013-2015: 2.Scenario, all parameters_change of CDS spreads to originale state

Belgium					
Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	0.00%	0.00%	0.00%	0.00%	0.00%
CorpCDSPrem	50.29%	50.68%	50.94%	51.32%	52.61%
Debt	50.00%	50.00%	50.00%	50.00%	50.00%
Vola	78.10%	78.70%	79.10%	79.71%	81.71%
BidAsk	0.00%	0.00%	0.00%	0.00%	0.00%

Finland					
Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	0.00%	0.00%	0.00%	0.00%	0.00%
CorpCDSPrem	100.00%	100.00%	100.00%	100.00%	100.00%
Debt	50.00%	50.00%	50.00%	50.00%	50.00%
Vola	0.00%	0.00%	0.00%	0.00%	0.00%
BidAsk	100.00%	100.00%	100.00%	100.00%	100.00%

France					
Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	0.00%	0.00%	0.00%	0.00%	0.00%
CorpCDSPrem	30.37%	30.65%	30.84%	31.12%	32.07%
Debt	50.00%	50.00%	50.00%	50.00%	50.00%
Vola	72.88%	73.56%	74.01%	74.69%	76.96%
BidAsk	0.22%	0.22%	0.22%	0.22%	0.23%

Ireland					
Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	0.00%	0.00%	0.00%	0.00%	0.00%
CorpCDSPrem	100.00%	100.00%	100.00%	100.00%	100.00%
Debt	50.00%	50.00%	50.00%	50.00%	50.00%
Vola	100.00%	100.00%	100.00%	100.00%	100.00%
BidAsk	0.00%	0.00%	0.00%	0.00%	0.00%

Italy					
Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	0.00%	0.00%	0.00%	0.00%	0.00%
CorpCDSPrem	81.51%	82.99%	83.98%	85.46%	90.39%
Debt	33.80%	34.41%	34.82%	35.43%	37.48%
Vola	53.04%	54.00%	54.64%	55.60%	58.81%
BidAsk	0.00%	0.00%	0.00%	0.00%	0.00%

Netherlands					
Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	100.00%	100.00%	100.00%	100.00%	100.00%
CorpCDSPrem	100.00%	100.00%	100.00%	100.00%	100.00%
Debt	50.00%	50.00%	50.00%	50.00%	50.00%
Vola	100.00%	100.00%	100.00%	100.00%	100.00%
BidAsk	100.00%	100.00%	100.00%	100.00%	100.00%

Portugal						Portugal					
Increase of bond yields by	2%	5%	7%	10%	20%	Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%	RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	0.00%	0.00%	0.00%	0.00%	0.00%	RA	0.00%	0.00%	0.00%	0.00%	0.00%
CorpCDSPrem	75.40%	77.07%	78.19%	79.86%	85.43%	CorpCDSPrem	100.00%	100.00%	100.00%	100.00%	100.00%
Debt	100.00%	100.00%	100.00%	100.00%	100.00%	Debt	50.00%	50.00%	50.00%	50.00%	50.00%
Vola	16.96%	17.33%	17.58%	17.96%	19.21%	Vola	100.00%	100.00%	100.00%	100.00%	100.00%
BidAsk	0.00%	0.00%	0.00%	0.00%	0.00%	BidAsk	0.00%	0.00%	0.00%	0.00%	0.00%

Spain						Spain					
Increase of bond yields by	2%	5%	7%	10%	20%	Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%	RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	0.35%	0.36%	0.37%	0.39%	0.43%	RA	100.00%	100.00%	100.00%	100.00%	100.00%
CorpCDSPrem	67.19%	69.78%	71.51%	74.10%	82.73%	CorpCDSPrem	100.00%	100.00%	100.00%	100.00%	100.00%
Debt	100.00%	100.00%	100.00%	100.00%	100.00%	Debt	50.00%	50.00%	50.00%	50.00%	50.00%
Vola	47.02%	48.83%	50.04%	51.85%	57.89%	Vola	100.00%	100.00%	100.00%	100.00%	100.00%
BidAsk	0.00%	0.00%	0.00%	0.00%	0.00%	BidAsk	0.00%	0.00%	0.00%	0.00%	0.00%

Sweden						Sweden					
Increase of bond yields by	2%	5%	7%	10%	20%	Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%	RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	0.00%	0.00%	0.00%	0.00%	0.00%	RA	0.00%	0.00%	0.00%	0.00%	0.00%
CorpCDSPrem	43.96%	44.27%	44.48%	44.79%	45.84%	CorpCDSPrem	69.20%	69.96%	70.47%	71.22%	73.75%
Debt	84.41%	85.02%	85.42%	86.03%	88.04%	Debt	50.00%	50.00%	50.00%	50.00%	50.00%
Vola	55.89%	56.29%	56.56%	56.96%	58.29%	Vola	87.99%	88.96%	89.60%	90.57%	93.78%
BidAsk	1.30%	1.30%	1.31%	1.32%	1.35%	BidAsk	2.04%	2.06%	2.08%	2.10%	2.17%

United Kingdom						United Kingdom					
Increase of bond yields by	2%	5%	7%	10%	20%	Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%	RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	0.00%	0.00%	0.00%	0.00%	0.00%	RA	0.00%	0.00%	0.00%	0.00%	0.00%
CorpCDSPrem	0.00%	0.00%	0.00%	0.00%	0.00%	CorpCDSPrem	0.00%	0.00%	0.00%	0.00%	0.00%
Debt	95.22%	95.38%	95.49%	95.66%	96.22%	Debt	50.00%	50.00%	50.00%	50.00%	50.00%
Vola	5.44%	5.45%	5.46%	5.47%	5.50%	Vola	100.00%	100.00%	100.00%	100.00%	100.00%
BidAsk	0.63%	0.63%	0.63%	0.63%	0.63%	BidAsk	100.00%	100.00%	100.00%	100.00%	100.00%

Table 15 Results of parameters for 2013-2015 using all parameters_ Third and fourth scenario

2013-2015: 3.Scenario, all parameters_change of CDS spreads to originale state						2013-2015: 4.Scenario, all parameters_change of CDS spreads to originale state					
Belgium						Belgium					
Increase of bond yields by	2%	5%	7%	10%	20%	Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%	RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	-5.26%	-5.28%	-5.30%	-5.33%	-5.42%	RA	-50.00%	-50.00%	-50.00%	-50.00%	-50.00%
CorpCDSPrem	40.25%	40.45%	40.59%	40.80%	41.48%	CorpCDSPrem	50.00%	50.00%	50.00%	50.00%	50.00%
Debt	69.45%	69.81%	70.04%	70.40%	71.58%	Debt	50.00%	50.00%	50.00%	50.00%	50.00%
Vola	62.50%	62.82%	63.03%	63.35%	64.42%	Vola	50.00%	50.00%	50.00%	50.00%	50.00%
BidAsk	-1.04%	-1.04%	-1.05%	-1.05%	-1.07%	BidAsk	-50.00%	-50.00%	-50.00%	-50.00%	-50.00%

Finland						Finland					
Increase of bond yields by	2%	5%	7%	10%	20%	Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%	RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	-2.76%	-2.75%	-2.75%	-2.75%	-2.73%	RA	-50.00%	-50.00%	-50.00%	-50.00%	-50.00%
CorpCDSPrem	5.71%	5.70%	5.69%	5.68%	5.66%	CorpCDSPrem	50.00%	50.00%	50.00%	50.00%	50.00%
Debt	73.31%	73.20%	73.13%	73.02%	72.65%	Debt	50.00%	50.00%	50.00%	50.00%	50.00%
Vola	-47.50%	-47.43%	-47.39%	-47.31%	-47.08%	Vola	-50.00%	-50.00%	-50.00%	-50.00%	-50.00%
BidAsk	0.51%	0.51%	0.51%	0.51%	0.51%	BidAsk	50.00%	50.00%	50.00%	50.00%	50.00%

France						France					
Increase of bond yields by	2%	5%	7%	10%	20%	Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%	RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	-3.93%	-3.95%	-3.97%	-3.99%	-4.07%	RA	-50.00%	-50.00%	-50.00%	-50.00%	-50.00%
CorpCDSPrem	26.15%	26.31%	26.41%	26.57%	27.08%	CorpCDSPrem	50.00%	50.00%	50.00%	50.00%	50.00%
Debt	61.81%	62.17%	62.42%	62.78%	64.00%	Debt	50.00%	50.00%	50.00%	50.00%	50.00%
Vola	62.76%	63.13%	63.38%	63.75%	64.99%	Vola	50.00%	50.00%	50.00%	50.00%	50.00%
BidAsk	0.19%	0.19%	0.19%	0.19%	0.20%	BidAsk	50.00%	50.00%	50.00%	50.00%	50.00%

Ireland					
Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	-13.05%	-13.30%	-13.47%	-13.72%	-14.55%
CorpCDSPrem	54.58%	55.63%	56.32%	57.37%	60.84%
Debt	100.00%	100.00%	100.00%	100.00%	100.00%
Vola	25.77%	26.26%	26.59%	27.08%	28.72%
BidAsk	-3.70%	-3.77%	-3.82%	-3.89%	-4.12%

Italy					
Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	-8.98%	-9.14%	-9.25%	-9.41%	-9.95%
CorpCDSPrem	80.87%	82.34%	83.32%	84.78%	89.67%
Debt	33.53%	34.14%	34.55%	35.16%	37.18%
Vola	52.62%	53.57%	54.21%	55.17%	58.35%
BidAsk	-1.57%	-1.60%	-1.61%	-1.64%	-1.74%

Netherlands					
Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	0.59%	0.59%	0.60%	0.60%	0.62%
CorpCDSPrem	16.69%	16.83%	16.92%	17.06%	17.53%
Debt	100.00%	100.00%	100.00%	100.00%	100.00%
Vola	38.28%	38.60%	38.81%	39.13%	40.19%
BidAsk	0.04%	0.04%	0.04%	0.04%	0.05%

Portugal					
Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	-11.69%	-11.94%	-12.11%	-12.37%	-13.24%
CorpCDSPrem	73.43%	75.00%	76.08%	77.71%	83.13%
Debt	99.95%	100.00%	100.00%	100.00%	100.00%
Vola	16.51%	16.86%	17.11%	17.47%	18.69%
BidAsk	-4.50%	-4.60%	-4.67%	-4.77%	-5.10%

Spain					
Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	0.35%	0.36%	0.37%	0.39%	0.43%
CorpCDSPrem	67.15%	69.74%	71.46%	74.05%	82.68%
Debt	100.00%	100.00%	100.00%	100.00%	100.00%
Vola	46.99%	48.80%	50.01%	51.82%	57.86%
BidAsk	-1.99%	-2.07%	-2.12%	-2.20%	-2.45%

Sweden					
Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	-8.45%	-8.51%	-8.55%	-8.61%	-8.82%
CorpCDSPrem	43.70%	44.01%	44.22%	44.53%	45.57%
Debt	83.91%	84.52%	84.92%	85.52%	87.52%
Vola	55.56%	55.96%	56.23%	56.62%	57.95%
BidAsk	1.29%	1.30%	1.30%	1.31%	1.34%

United Kingdom					
Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	-0.68%	-0.68%	-0.68%	-0.68%	-0.69%
CorpCDSPrem	-4.30%	-4.30%	-4.31%	-4.32%	-4.34%
Debt	95.02%	95.18%	95.30%	95.46%	96.02%
Vola	5.43%	5.44%	5.45%	5.46%	5.49%
BidAsk	0.62%	0.62%	0.63%	0.63%	0.63%

Ireland					
Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	-50.00%	-50.00%	-50.00%	-50.00%	-50.00%
CorpCDSPrem	50.00%	50.00%	50.00%	50.00%	50.00%
Debt	50.00%	50.00%	50.00%	50.00%	50.00%
Vola	50.00%	50.00%	50.00%	50.00%	50.00%
BidAsk	-50.00%	-50.00%	-50.00%	-50.00%	-50.00%

Italy					
Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	-50.00%	-50.00%	-50.00%	-50.00%	-50.00%
CorpCDSPrem	50.00%	50.00%	50.00%	50.00%	50.00%
Debt	50.00%	50.00%	50.00%	50.00%	50.00%
Vola	50.00%	50.00%	50.00%	50.00%	50.00%
BidAsk	-50.00%	-50.00%	-50.00%	-50.00%	-50.00%

Netherlands					
Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	50.00%	50.00%	50.00%	50.00%	50.00%
CorpCDSPrem	50.00%	50.00%	50.00%	50.00%	50.00%
Debt	50.00%	50.00%	50.00%	50.00%	50.00%
Vola	50.00%	50.00%	50.00%	50.00%	50.00%
BidAsk	50.00%	50.00%	50.00%	50.00%	50.00%

Portugal					
Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	-50.00%	-50.00%	-50.00%	-50.00%	-50.00%
CorpCDSPrem	50.00%	50.00%	50.00%	50.00%	50.00%
Debt	50.00%	50.00%	50.00%	50.00%	50.00%
Vola	50.00%	50.00%	50.00%	50.00%	50.00%
BidAsk	-50.00%	-50.00%	-50.00%	-50.00%	-50.00%

Spain					
Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	50.00%	50.00%	50.00%	50.00%	50.00%
CorpCDSPrem	50.00%	50.00%	50.00%	50.00%	50.00%
Debt	50.00%	50.00%	50.00%	50.00%	50.00%
Vola	50.00%	50.00%	50.00%	50.00%	50.00%
BidAsk	-50.00%	-50.00%	-50.00%	-50.00%	-50.00%

Sweden					
Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	-50.00%	-50.00%	-50.00%	-50.00%	-50.00%
CorpCDSPrem	50.00%	50.00%	50.00%	50.00%	50.00%
Debt	50.00%	50.00%	50.00%	50.00%	50.00%
Vola	50.00%	50.00%	50.00%	50.00%	50.00%
BidAsk	50.00%	50.00%	50.00%	50.00%	50.00%

United Kingdom					
Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	-50.00%	-50.00%	-50.00%	-50.00%	-50.00%
CorpCDSPrem	-50.00%	-50.00%	-50.00%	-50.00%	-50.00%
Debt	50.00%	50.00%	50.00%	50.00%	50.00%
Vola	50.00%	50.00%	50.00%	50.00%	50.00%
BidAsk	50.00%	50.00%	50.00%	50.00%	50.00%

Following results for the different scenarios are obtained incorporating five parameters:

Table 16 Results of parameters for 2013-2015 using five parameters_ First and second scenario

2013-2015: 1.Scenario, five parameters_change of CDS spreads to originale state						2013-2015: 2.Scenario, five parameters_change of CDS spreads to originale state					
Belgium						Belgium					
Increase of bond yields by	2%	5%	7%	10%	20%	Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%	RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	0.00%	0.00%	0.00%	0.00%	0.00%	RA	0.00%	0.00%	0.00%	0.00%	0.00%
CorpCDSPrem	39.11%	39.32%	39.46%	39.66%	29.42%	CorpCDSPrem	47.87%	48.26%	48.52%	48.90%	52.47%
Debt	67.32%	67.68%	67.91%	68.27%	95.58%	Debt	50.00%	50.00%	50.00%	50.00%	50.00%
Vola	66.08%	66.40%	66.62%	66.94%	46.02%	Vola	79.68%	80.28%	80.68%	81.29%	81.82%
BidAsk	4.07%	4.06%	4.06%	4.05%	4.32%	BidAsk	3.84%	3.83%	3.83%	3.82%	3.72%
Finland						Finland					
Increase of bond yields by	2%	5%	7%	10%	20%	Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%	RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	0.00%	0.00%	0.00%	0.00%	0.00%	RA	0.00%	0.00%	0.00%	0.00%	0.00%
CorpCDSPrem	58.42%	56.43%	55.10%	53.10%	46.44%	CorpCDSPrem	100.00%	100.00%	100.00%	100.00%	100.00%
Debt	100.00%	100.00%	100.00%	100.00%	100.00%	Debt	50.00%	50.00%	50.00%	50.00%	50.00%
Vola	0.00%	0.00%	0.00%	0.00%	0.00%	Vola	0.00%	0.00%	0.00%	0.00%	0.00%
BidAsk	9.98%	9.80%	9.68%	9.50%	8.90%	BidAsk	100.00%	100.00%	100.00%	100.00%	100.00%
France						France					
Increase of bond yields by	2%	5%	7%	10%	20%	Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%	RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	0.00%	0.00%	0.00%	0.00%	0.00%	RA	0.00%	0.00%	0.00%	0.00%	0.00%
CorpCDSPrem	26.04%	26.20%	26.30%	26.46%	19.33%	CorpCDSPrem	29.35%	29.64%	29.83%	30.11%	32.83%
Debt	59.46%	59.83%	60.07%	60.44%	88.60%	Debt	50.00%	50.00%	50.00%	50.00%	50.00%
Vola	65.30%	65.67%	65.92%	66.29%	44.19%	Vola	73.24%	73.92%	74.37%	75.05%	76.58%
BidAsk	5.17%	5.17%	5.17%	5.17%	5.12%	BidAsk	5.19%	5.19%	5.19%	5.20%	5.22%
Ireland						Ireland					
Increase of bond yields by	2%	5%	7%	10%	20%	Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%	RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	0.00%	0.00%	0.00%	0.00%	0.00%	RA	0.00%	0.00%	0.00%	0.00%	0.00%
CorpCDSPrem	54.18%	55.27%	56.00%	57.09%	62.65%	CorpCDSPrem	100.00%	100.00%	100.00%	100.00%	100.00%
Debt	100.00%	100.00%	100.00%	100.00%	100.00%	Debt	50.00%	50.00%	50.00%	50.00%	50.00%
Vola	34.16%	34.68%	35.02%	35.54%	33.16%	Vola	100.00%	100.00%	100.00%	100.00%	100.00%
BidAsk	1.53%	1.46%	1.41%	1.33%	0.96%	BidAsk	0.00%	0.00%	0.00%	0.00%	0.00%
Italy						Italy					
Increase of bond yields by	2%	5%	7%	10%	20%	Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%	RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	0.00%	0.00%	0.00%	0.00%	0.00%	RA	0.00%	0.00%	0.00%	0.00%	0.00%
CorpCDSPrem	77.28%	78.75%	79.74%	81.22%	76.49%	CorpCDSPrem	77.28%	78.75%	79.74%	81.22%	85.37%
Debt	35.80%	36.41%	36.82%	37.43%	80.47%	Debt	35.80%	36.41%	36.82%	37.43%	50.00%
Vola	58.33%	59.29%	59.93%	60.89%	52.82%	Vola	58.33%	59.29%	59.93%	60.89%	58.59%
BidAsk	3.56%	3.53%	3.51%	3.48%	3.58%	BidAsk	3.56%	3.53%	3.51%	3.48%	3.40%
Netherlands						Netherlands					
Increase of bond yields by	2%	5%	7%	10%	20%	Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%	RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	2.44%	2.45%	2.45%	2.46%	2.54%	RA	100.00%	100.00%	100.00%	100.00%	100.00%
CorpCDSPrem	15.52%	15.66%	15.75%	15.89%	18.18%	CorpCDSPrem	100.00%	100.00%	100.00%	100.00%	100.00%
Debt	100.00%	100.00%	100.00%	100.00%	100.00%	Debt	50.00%	50.00%	50.00%	50.00%	50.00%
Vola	38.71%	39.02%	39.24%	39.55%	39.82%	Vola	100.00%	100.00%	100.00%	100.00%	100.00%
BidAsk	5.03%	5.03%	5.03%	5.03%	5.04%	BidAsk	100.00%	100.00%	100.00%	100.00%	100.00%

Portugal						Portugal					
Increase of bond yields by	2%	5%	7%	10%	20%	Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%	RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	0.00%	0.00%	0.00%	0.00%	0.00%	RA	0.00%	0.00%	0.00%	0.00%	0.00%
CorpCDSPrem	73.35%	75.02%	76.13%	77.79%	84.41%	CorpCDSPrem	100.00%	100.00%	100.00%	100.00%	100.00%
Debt	100.00%	100.00%	100.00%	100.00%	100.00%	Debt	50.00%	50.00%	50.00%	50.00%	50.00%
Vola	25.82%	26.19%	26.44%	26.82%	23.31%	Vola	100.00%	100.00%	100.00%	100.00%	100.00%
BidAsk	0.69%	0.58%	0.52%	0.41%	0.01%	BidAsk	0.00%	0.00%	0.00%	0.00%	0.00%

Spain						Spain					
Increase of bond yields by	2%	5%	7%	10%	20%	Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%	RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	2.32%	2.33%	2.34%	2.35%	2.41%	RA	100.00%	100.00%	100.00%	100.00%	100.00%
CorpCDSPrem	63.97%	66.15%	67.87%	70.46%	81.44%	CorpCDSPrem	100.00%	100.00%	100.00%	100.00%	100.00%
Debt	99.60%	100.00%	100.00%	100.00%	100.00%	Debt	50.00%	50.00%	50.00%	50.00%	50.00%
Vola	52.67%	54.19%	55.40%	57.21%	59.89%	Vola	100.00%	100.00%	100.00%	100.00%	100.00%
BidAsk	3.19%	3.13%	3.07%	3.00%	2.67%	BidAsk	0.00%	0.00%	0.00%	0.00%	0.00%

Sweden						Sweden					
Increase of bond yields by	2%	5%	7%	10%	20%	Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%	RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	0.00%	0.00%	0.00%	0.00%	0.00%	RA	0.00%	0.00%	0.00%	0.00%	0.00%
CorpCDSPrem	42.88%	43.20%	43.41%	43.72%	36.36%	CorpCDSPrem	66.06%	66.82%	67.33%	68.09%	73.04%
Debt	81.60%	82.20%	82.60%	83.21%	100.00%	Debt	50.00%	50.00%	50.00%	50.00%	50.00%
Vola	60.72%	61.12%	61.38%	61.78%	47.42%	Vola	90.19%	91.15%	91.80%	92.76%	94.06%
BidAsk	6.18%	6.18%	6.19%	6.20%	5.98%	BidAsk	6.86%	6.88%	6.90%	6.92%	7.06%

United Kingdom						United Kingdom					
Increase of bond yields by	2%	5%	7%	10%	20%	Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%	RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	1.36%	1.36%	1.36%	1.36%	1.67%	RA	0.00%	0.00%	0.00%	0.00%	0.00%
CorpCDSPrem	0.00%	0.00%	0.00%	0.00%	0.91%	CorpCDSPrem	0.00%	0.00%	0.00%	0.00%	0.00%
Debt	94.64%	94.81%	94.92%	95.09%	96.12%	Debt	50.00%	50.00%	50.00%	50.00%	50.00%
Vola	15.13%	15.13%	15.14%	15.15%	7.64%	Vola	100.00%	100.00%	100.00%	100.00%	100.00%
BidAsk	5.59%	5.59%	5.59%	5.59%	5.30%	BidAsk	100.00%	100.00%	100.00%	100.00%	100.00%

Table 17 Results of parameters for 2013-2015 using five parameters_ Third and fourth scenario

2013-2015: 3.Scenario, five parameters_ change of CDS spreads to originale state						2013-2015: 4.Scenario, five parameters_ change of CDS spreads to originale state					
Belgium						Belgium					
Increase of bond yields by	2%	5%	7%	10%	20%	Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%	RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	-5.26%	-5.28%	-5.30%	-5.33%	-5.42%	RA	-50.00%	-50.00%	-50.00%	-50.00%	-50.00%
CorpCDSPrem	40.24%	40.44%	40.58%	40.78%	41.47%	CorpCDSPrem	50.00%	50.00%	50.00%	50.00%	50.00%
Debt	69.43%	69.79%	70.02%	70.38%	71.57%	Debt	50.00%	50.00%	50.00%	50.00%	50.00%
Vola	62.48%	62.80%	63.02%	63.34%	64.40%	Vola	50.00%	50.00%	50.00%	50.00%	50.00%
BidAsk	-1.04%	-1.04%	-1.05%	-1.05%	-1.07%	BidAsk	-50.00%	-50.00%	-50.00%	-50.00%	-50.00%

Finland						Finland					
Increase of bond yields by	2%	5%	7%	10%	20%	Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%	RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	-2.76%	-2.75%	-2.75%	-2.75%	-2.73%	RA	-50.00%	-50.00%	-50.00%	-50.00%	-50.00%
CorpCDSPrem	5.71%	5.70%	5.69%	5.68%	5.65%	CorpCDSPrem	50.00%	50.00%	50.00%	50.00%	50.00%
Debt	73.29%	73.18%	73.11%	73.00%	72.63%	Debt	50.00%	50.00%	50.00%	50.00%	50.00%
Vola	-47.49%	-47.42%	-47.37%	-47.30%	-47.07%	Vola	-50.00%	-50.00%	-50.00%	-50.00%	-50.00%
BidAsk	0.51%	0.51%	0.51%	0.51%	0.51%	BidAsk	50.00%	50.00%	50.00%	50.00%	50.00%

France						France					
Increase of bond yields by	2%	5%	7%	10%	20%	Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%	RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	-3.93%	-3.95%	-3.96%	-3.99%	-4.07%	RA	-50.00%	-50.00%	-50.00%	-50.00%	-50.00%
CorpCDSPrem	26.14%	26.30%	26.40%	26.56%	27.07%	CorpCDSPrem	50.00%	50.00%	50.00%	50.00%	50.00%
Debt	61.79%	62.15%	62.40%	62.76%	63.98%	Debt	50.00%	50.00%	50.00%	50.00%	50.00%
Vola	62.74%	63.11%	63.36%	63.73%	64.97%	Vola	50.00%	50.00%	50.00%	50.00%	50.00%
BidAsk	0.19%	0.19%	0.19%	0.19%	0.20%	BidAsk	50.00%	50.00%	50.00%	50.00%	50.00%

Ireland					
Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	-13.07%	-13.32%	-13.48%	-13.73%	-14.56%
CorpCDSPrem	54.65%	55.69%	56.39%	57.43%	60.91%
Debt	100.00%	100.00%	100.00%	100.00%	100.00%
Vola	25.80%	26.29%	26.62%	27.11%	28.75%
BidAsk	-3.70%	-3.78%	-3.82%	-3.89%	-4.13%

Italy					
Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	-8.97%	-9.14%	-9.24%	-9.41%	-9.95%
CorpCDSPrem	80.85%	82.31%	83.29%	84.76%	89.65%
Debt	33.52%	34.13%	34.54%	35.15%	37.17%
Vola	52.60%	53.56%	54.20%	55.15%	58.33%
BidAsk	-1.57%	-1.60%	-1.61%	-1.64%	-1.74%

Netherlands					
Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	0.59%	0.59%	0.60%	0.60%	0.62%
CorpCDSPrem	16.67%	16.81%	16.91%	17.05%	17.51%
Debt	100.00%	100.00%	100.00%	100.00%	100.00%
Vola	38.24%	38.55%	38.77%	39.08%	40.15%
BidAsk	0.04%	0.04%	0.04%	0.04%	0.05%

Portugal					
Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	-11.69%	-11.93%	-12.10%	-12.36%	-13.22%
CorpCDSPrem	73.39%	74.90%	75.99%	77.61%	83.03%
Debt	99.91%	100.00%	100.00%	100.00%	100.00%
Vola	16.50%	16.84%	17.09%	17.45%	18.67%
BidAsk	-4.50%	-4.59%	-4.66%	-4.76%	-5.09%

Spain					
Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	0.35%	0.36%	0.37%	0.39%	0.43%
CorpCDSPrem	67.17%	69.76%	71.49%	74.08%	82.71%
Debt	100.00%	100.00%	100.00%	100.00%	100.00%
Vola	47.01%	48.82%	50.03%	51.84%	57.88%
BidAsk	-1.99%	-2.07%	-2.12%	-2.20%	-2.45%

Sweden					
Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	-8.45%	-8.51%	-8.55%	-8.61%	-8.81%
CorpCDSPrem	43.66%	43.98%	44.19%	44.50%	45.54%
Debt	83.85%	84.45%	84.86%	85.46%	87.46%
Vola	55.52%	55.92%	56.18%	56.58%	57.91%
BidAsk	1.29%	1.30%	1.30%	1.31%	1.34%

United Kingdom					
Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	-0.68%	-0.68%	-0.68%	-0.68%	-0.69%
CorpCDSPrem	-4.30%	-4.30%	-4.31%	-4.32%	-4.34%
Debt	95.02%	95.18%	95.30%	95.46%	96.02%
Vola	5.43%	5.44%	5.45%	5.46%	5.49%
BidAsk	0.62%	0.62%	0.63%	0.63%	0.63%

Ireland					
Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	-50.00%	-50.00%	-50.00%	-50.00%	-50.00%
CorpCDSPrem	50.00%	50.00%	50.00%	50.00%	50.00%
Debt	50.00%	50.00%	50.00%	50.00%	50.00%
Vola	50.00%	50.00%	50.00%	50.00%	50.00%
BidAsk	-50.00%	-50.00%	-50.00%	-50.00%	-50.00%

Italy					
Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	-50.00%	-50.00%	-50.00%	-50.00%	-50.00%
CorpCDSPrem	50.00%	50.00%	50.00%	50.00%	50.00%
Debt	50.00%	50.00%	50.00%	50.00%	50.00%
Vola	50.00%	50.00%	50.00%	50.00%	50.00%
BidAsk	-50.00%	-50.00%	-50.00%	-50.00%	-50.00%

Netherlands					
Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	50.00%	50.00%	50.00%	50.00%	50.00%
CorpCDSPrem	50.00%	50.00%	50.00%	50.00%	50.00%
Debt	50.00%	50.00%	50.00%	50.00%	50.00%
Vola	50.00%	50.00%	50.00%	50.00%	50.00%
BidAsk	50.00%	50.00%	50.00%	50.00%	50.00%

Portugal					
Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	-50.00%	-50.00%	-50.00%	-50.00%	-50.00%
CorpCDSPrem	50.00%	50.00%	50.00%	50.00%	50.00%
Debt	50.00%	50.00%	50.00%	50.00%	50.00%
Vola	50.00%	50.00%	50.00%	50.00%	50.00%
BidAsk	-50.00%	-50.00%	-50.00%	-50.00%	-50.00%

Spain					
Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	50.00%	50.00%	50.00%	50.00%	50.00%
CorpCDSPrem	50.00%	50.00%	50.00%	50.00%	50.00%
Debt	50.00%	50.00%	50.00%	50.00%	50.00%
Vola	50.00%	50.00%	50.00%	50.00%	50.00%
BidAsk	-50.00%	-50.00%	-50.00%	-50.00%	-50.00%

Sweden					
Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	-50.00%	-50.00%	-50.00%	-50.00%	-50.00%
CorpCDSPrem	50.00%	50.00%	50.00%	50.00%	50.00%
Debt	50.00%	50.00%	50.00%	50.00%	50.00%
Vola	50.00%	50.00%	50.00%	50.00%	50.00%
BidAsk	50.00%	50.00%	50.00%	50.00%	50.00%

United Kingdom					
Increase of bond yields by	2%	5%	7%	10%	20%
RFR	0.00%	0.00%	0.00%	0.00%	0.00%
RA	-50.00%	-50.00%	-50.00%	-50.00%	-50.00%
CorpCDSPrem	-50.00%	-50.00%	-50.00%	-50.00%	-50.00%
Debt	50.00%	50.00%	50.00%	50.00%	50.00%
Vola	50.00%	50.00%	50.00%	50.00%	50.00%
BidAsk	50.00%	50.00%	50.00%	50.00%	50.00%

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