

Table 1
Credit Spreads distributions of 10-years bonds

The table reports the main descriptive statistics for the time series of credit spreads for bond portfolios with different ratings. For every rating the credit spread has been calculated as the difference between the (10-years) par yield of the bond portfolio and the (10-years) par yield of Treasury Bonds. The statistics are calculated over 3311 daily observation from May 1992 to February 2005.

	Min	Max	Mean	St Dev	1st qt	2nd qt	3rd qt
Aaa	-0,23	0,99	0,37	0,16	0,25	0,35	0,49
Aa	0,01	1,01	0,45	0,17	0,31	0,40	0,56
A1	0,16	1,22	0,56	0,22	0,39	0,51	0,70
A2	0,18	1,35	0,64	0,25	0,44	0,58	0,84
A3	0,20	1,46	0,75	0,29	0,53	0,68	1,00
Baa1	0,24	1,69	0,87	0,35	0,59	0,80	1,17
Baa2	0,29	1,97	0,99	0,39	0,67	0,94	1,27
Baa3	0,39	2,42	1,21	0,53	0,74	1,07	1,68
Ba1	0,50	5,82	2,00	1,17	0,89	1,72	2,91
Ba2	0,65	6,28	2,36	1,26	1,13	2,28	3,26
Ba3	0,69	7,04	2,75	1,33	1,70	2,49	3,69
B1	0,97	7,18	3,19	1,32	2,32	3,02	4,04
B2	1,12	8,40	3,73	1,48	2,88	3,44	4,60
B3	1,64	9,66	4,56	1,66	3,56	4,42	5,58

Table 2

Gross Interest Margins produced by 1-year bonds on the January 3, 2005

The table summarizes the gross interest margins produced by bond portfolios with different ratings on the January 3, 2005 considering an investment of 1000\$. The *Regulatory Capital* has been calculated under the recommendations of the standardized approach. *Interest receivables* have been calculated using the par yield of the bond portfolio, while the *Interest payable* have been proxied with the 12 months Libor. % *GIM* is the gross interest margin divided by the regulatory capital.

Rating	Investment	Regulatory capital	Interest income	Interest expense	Gross Interest Margin	% GIM
Aaa	1000	16	31.847	31	0.847	5.29%
Aa	1000	16	31.975	31	0.975	6.09%
A1	1000	40	32.756	31	1.756	4.39%
A2	1000	40	32.853	31	1.853	4.63%
A3	1000	40	33.459	31	2.459	6.15%
Baa1	1000	80	35.379	31	4.379	5.47%
Baa2	1000	80	35.515	31	4.515	5.64%
Baa3	1000	80	36.541	31	5.541	6.93%
Ba1	1000	80	37.176	31	6.176	7.72%
Ba2	1000	80	38.756	31	7.756	9.70%
Ba3	1000	80	39.282	31	8.282	10.35%
B1	1000	120	42.025	31	11.025	9.19%
B2	1000	120	45.309	31	14.309	11.92%
B3	1000	120	46.420	31	15.420	12.85%

Table 3**Mean values of percentage gross interest margin**

Gross interest margin is calculated, for every rating and every maturity as the difference between the par yield of a bond portfolio with the given rating and an interest rate representative of the cost of funding for the bank. This difference is then divided by the amount of capital that has to be reserved, under the standard approach, in order to cover the risk on a position of 1 € For maturities equal to 6 months and one year the cost of funding is equal to the 6 and 12 months libor rate, while for the 5 and 10 years maturities it is set equal to the swap rates for similar maturities. The means are calculated over 3311 daily observation from May 1992 to February 2005.

	6 months	1 year	5 years	10 years
Aaa	2.7%	3.1%	-0.7%	0.0%
Aa	8.2%	7.7%	3.4%	4.6%
A1	6.4%	6.1%	4.6%	5.2%
A2	8.3%	8.0%	7.4%	8.0%
A3	10.8%	10.7%	10.3%	11.2%
Baa1	6.9%	6.9%	6.6%	7.1%
Baa2	8.5%	8.3%	8.1%	8.6%
Baa3	11.3%	11.1%	10.5%	11.6%
Ba1	21.2%	21.0%	19.6%	20.8%
Ba2	25.5%	25.5%	25.9%	28.1%
Ba3	30.2%	30.4%	31.7%	32.9%
B1	23.6%	23.9%	24.7%	24.9%
B2	27.9%	28.4%	29.8%	30.0%
B3	34.8%	35.3%	37.9%	38.3%

Table 4**Gross interest margin reversals for 1-year bonds**

A reversal is observed when, in a given day, the gross interest margin produced by a bond with a given rating (in row in the table) is higher than the gross interest margin produced by a bond with a lower rating (in column in the table) and the two ratings fall into two different capital requirement brackets under the standard approach. The gross interest margin is calculated, for every rating, as the difference between the par yield of a bond portfolio with a maturity of one year and the given rating and the 12 months libor. The percentages are calculated over 3311 daily observations from May 1992 to February 2005.

	Aaa	Aa	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2	B3
Aaa	-	-	33%	24%	12%	33%	27%	17%	6%	3%	0%	0%	0%	0%
Aa		-	58%	47%	32%	52%	45%	34%	11%	5%	1%	3%	1%	0%
A1			-	-	-	34%	20%	8%	1%	0%	0%	0%	0%	0%
A2				-	-	65%	41%	15%	3%	0%	0%	0%	0%	0%
A3					-	94%	83%	44%	7%	1%	0%	0%	0%	0%
Baa1						-	-	-	-	-	-	0%	0%	0%
Baa2							-	-	-	-	-	0%	0%	0%
Baa3								-	-	-	-	0%	0%	0%
Ba1									-	-	-	26%	10%	1%
Ba2										-	-	60%	31%	9%
Ba3											-	90%	62%	24%
B1												-	-	-
B2													-	-
B3														-

Table 5**Average expected cost of the New Capital Accord for discriminated ratings**

For the pairs of ratings with reversal frequency greater than 50%, the table shows the percentage of reversals observed over the entire sample (3311 daily observations from May 1992 to February 2005), the increase (measured in basis points) of the interest rate that the bond with the lower rating should experience in order to eliminate the reversal (*Interest increase for Parity*), the increase of the interest rate (measured in basis points) that would produce a difference between the gross interest margin of the lower rated bond and the one of bond with the higher rating equal to the difference observed under the current capital accord (*Interest increase for Equilibrium*). *Incidence over risk premium* is the ratio of Interest increase for equilibrium and the risk premium paid by the bond measured as the difference between the return of the bond and the yield to maturity if a government bond with the same maturity. For the last three columns the table reports mean values calculated over the days when a reversal is observed.

Higher Rating	Lower Rating	Percentage of reversals	Interest increase for Parity	Interest increase for Equilibrium	Incidence over risk premium
A3	Baa1	93.8%	34.56	47.35	52.2%
Ba3	B1	90.5%	93.68	152.68	45.1%
A3	Baa2	84.1%	25.69	50.87	48.3%
A2	Baa1	69.0%	19.29	42.27	46.0%
Ba3	B2	65.7%	68.63	192.46	46.0%
Ba2	B1	59.9%	66.24	171.05	45.4%
Aa	A1	59.0%	25.22	31.30	51.0%
Aa	Baa1	53.3%	59.77	105.66	110.4%

Table 6

RORC reversals for 1 year bonds under the standard approach

A reversal is observed when, in a given day, the RORC produced by a bond with a given rating (in row in the table) is higher than the RORC produced by a bond with a lower rating (in column in the table) and the two ratings fall into two different capital requirement brackets under the standard approach. The RORC is calculated, for every rating, using as proxies for the expected default rate and the expected loss the ex post realizations according to the official Moodys reporting. For every rating we use the appropriate capital requirement under the standard approach. The 12 months libor is used as a proxy for the cost of funding of the bank. The percentages are calculated over 3014 daily observation from May 1992 to December 2003.

	Aaa	Aa	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2	B3
Aaa	-	-	34%	27%	16%	39%	31%	25%	7%	3%	2%	23%	57%	69%
Aa		-	59%	53%	37%	58%	50%	46%	15%	6%	7%	42%	69%	74%
A1			-	-	-	49%	32%	23%	1%	0%	8%	35%	65%	71%
A2					-	73%	53%	34%	5%	0%	12%	38%	68%	73%
A3					-	96%	93%	65%	14%	1%	18%	51%	71%	74%
Baa1						-	-	-	-	-	-	34%	59%	65%
Baa2							-	-	-	-	-	38%	66%	71%
Baa3								-	-	-	-	53%	69%	71%
Ba1									-	-	-	77%	83%	85%
Ba2										-	-	88%	86%	90%
Ba3											-	90%	87%	96%
B1												-	-	-
B2													-	-
B3														-

Table 7

Frequency of reversals across the sample period

The table shows, for every year from 1993 to 2004, the total number of reversal observed, the average number of reversal observed every trading day and the percentage of the observed reversal over the maximum number of possible reversals. A reversal is observed when, in a given day, the gross interest margin produced by a bond with a given rating is higher than the gross interest margin produced by a bond with a lower rating and the two ratings fall into two different capital requirement brackets under the standard approach. The gross interest margin is calculated, for every rating, as the difference between the par yield of a bond portfolio with a maturity of one year and the given rating and the 12 months libor.

Year	N° of reversals	N° of reversals per day	% of reversals
1993	3856	15.7	22.8%
1994	4781	18.4	26.6%
1995	4137	15.9	23.1%
1996	4296	16.5	23.9%
1997	1353	5.2	7.5%
1998	1144	4.4	6.4%
1999	1603	6.1	8.9%
2000	1660	6.4	9.3%
2001	3112	12.0	17.4%
2002	4312	16.5	23.9%
2003	2801	10.7	15.6%
2004	1836	7.0	10.2%

Table 8

Logistic Regression

The table reports the results of a multivariate logistic regression. The dependent variable assume the value 1 when in a given day we observe a reversal: a higher Gross Interest Margin for a high credit quality bond index compared with a lower credit quality index if the two ratings fall into two different capital requirements brackets under the Basel 2 Standard Approach. The Gross Interest Margins have been calculated using 1 year bond indices daily returns from the beginning of 1993 to the end of February 2005. For the independent variables: *Distance* is the number of notches between the two ratings, *Level* is the 6 months t-bill rate of return, *Slope* is the difference between the 10 years t-bond and the 6 months t-bill returns, *Convexity* is the difference between the 5 years t-bond return and a linear combination of the 10 years t-bond and the 6 months t-bill returns. *Risk* is the average spread of corporate bonds with ratings from B1 to B3 with maturity 6 months, 1, 5 and 10 years over the yield to maturity of a government bond with the same maturity. The other variables are dummy variables for the year (neutral case 1993) and the month (results omitted). The R^2 reported is the Nagelkerke pseudo- R^2 , *Classification* is the overall correct classification ratio using a cut point equal to 0.5.

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	Model (A)		Model (B)	
	Coefficient	p-value	Coefficient	p-value
Constant	-4.84	0.00	-0.74	0.00
Distance	-0.82	0.00	-0.85	0.00
Level	0.78	0.00	0.16	0.00
Slope	1.63	0.00	1.05	0.00
Convexity	-1.73	0.00	-1.10	0.00
Risk	0.30	0.00	0.18	0.00
D_1994			0.80	0.00
D_1995			1.20	0.00
D_1996			1.16	0.00
D_1997			-0.37	0.00
D_1998			-0.33	0.00
D_1999			-0.29	0.00
D_2000			-0.03	0.68
D_2001			-0.10	0.12
D_2002			-0.49	0.00
D_2003			-1.19	0.00
D_2004			-1.16	0.00
D_2005			-1.11	0.00
Pseudo - R ²	0.48		0.51	
Classification	0.88		0.88	