

# Towards a common & sustainable practice in defining ,high quality corporate bonds‘ acc. to IAS 19

July 2013

European Corporate Initiative

# Agenda

- 1. Background / Summary**
2. Descriptive market data
3. Explorative analysis: dynamic approach
4. Appendix

# Background

## Who we are

1. European Corporates started to discuss pension discount rate issues as of autumn 2011.
2. This led to conferences, round-tables and publications covering the issue and finally in establishing our initiative.
3. As a first result we arranged a common position paper supported by several companies. The message is, that it is sensible to rethink the methodology on how discount rates acc. to IAS 19 shall be set, through a new interpretation of High Quality Corporate Bonds (“HQCB”)

# Current Discussion on IAS 19 & decision process

## Our understanding

- The IFRS IC received the question by DRSC (German standard setter) how to interpret HQCB.
- IFRS IC's May meeting concluded in refocusing the topic to the question, whether quality is an absolute or a relative concept
  - If absolute: How many A's are high quality?
  - If relative: How can this dynamic notion of quality be measured in a consistent way?

→ **This presentation gives information on HQCB markets and provides a framework how quality may be measured consistently over time.**

## Our proposal

- The IFRS IC requested the staff to consult appropriate experts, for example actuaries, and to prepare answers to these questions.
- Our Corporate Initiative has done research in this area and we are happy to provide material and proposals, that show the dynamics within high quality corporate bonds universes and suggest an approach on how HQCB may be framed within these dynamic markets.

# Key findings

## Status quo

1. There is a range of discount rates used by companies
2. In all corporate bond markets the share of AA rated bonds shrank significantly over time.
3. There is a clear negative rating drift since 2008 globally which implies that rating methodology by agencies changed the overall rating distribution around the world.
4. Especially AA rated bonds were downgraded.

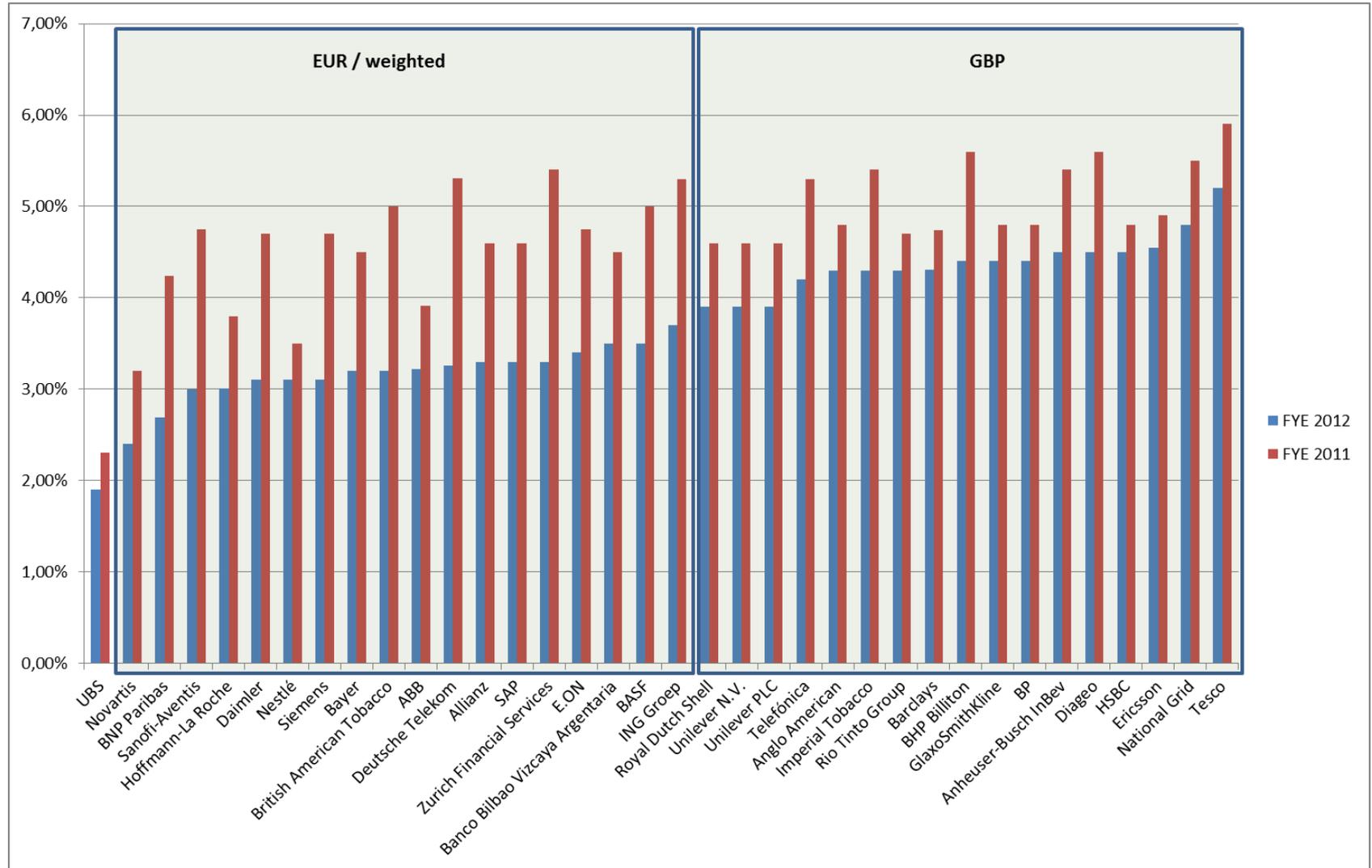
## Core messages

1. Quality is a relative measure and its notion is dynamic / changes over time.
2. As a consequence HQCB should not be directly or indirectly linked to a narrow absolute credit rating like AA
3. The universe should be large and stable enough to derive discount rates consistently going forward.
4. Therefore an extension of the number of reference bonds makes sense
5. This extension should be related to the development of average aggregate credit ratings, i.e. all bonds at or above the average rating within the investment grade universe shall be considered high quality.

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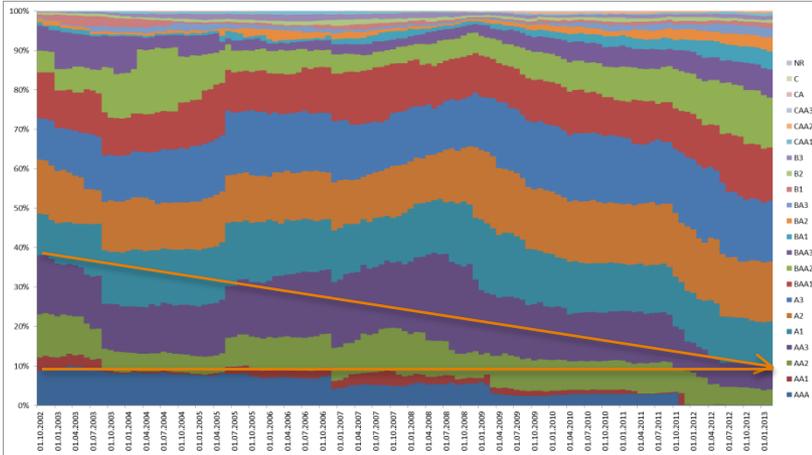
# IAS 19 Discount Rates / Stoxx 50 companies



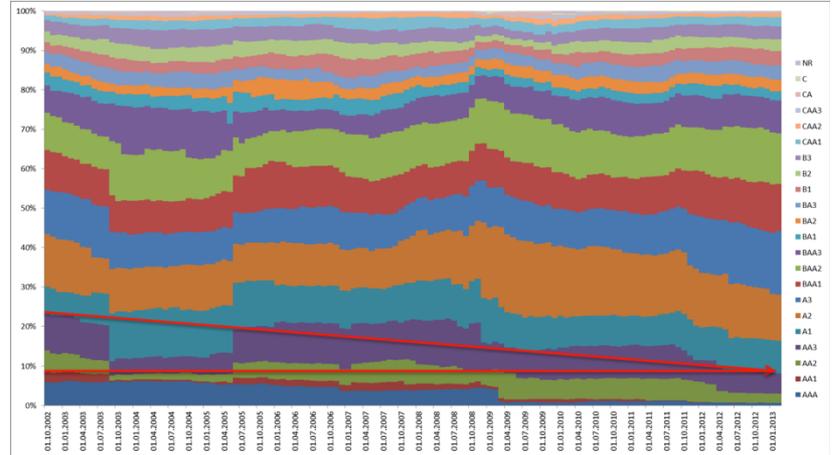
Source: Annual Reports published until 25.3.13

# Rating Distribution over time

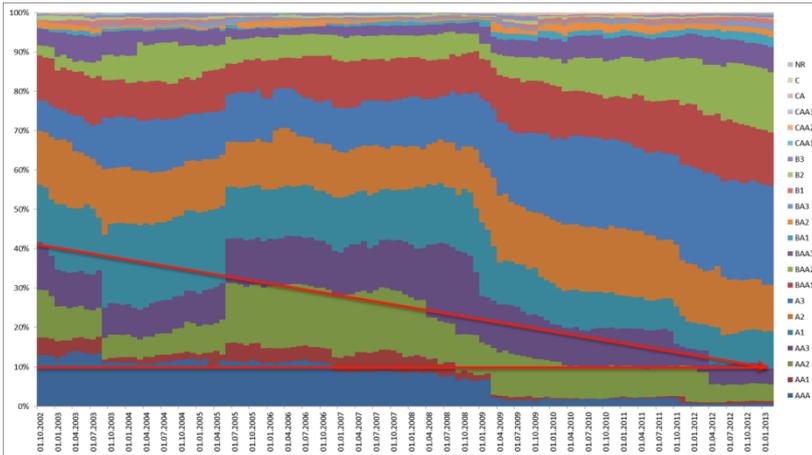
## EUR



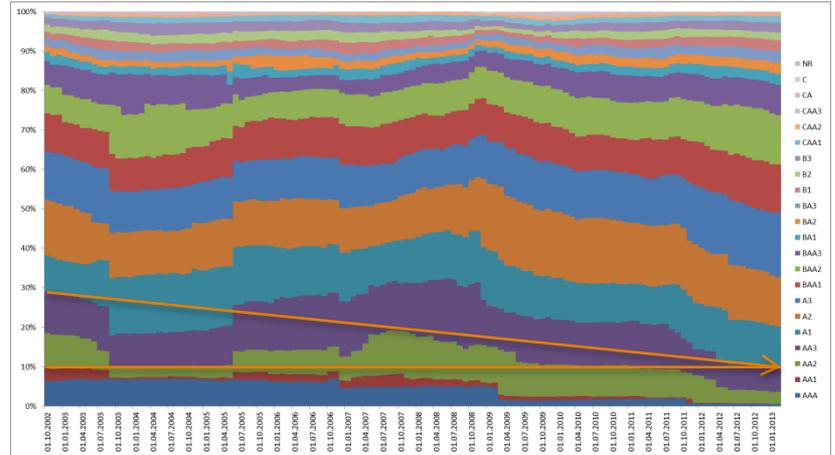
## USD



## GBP



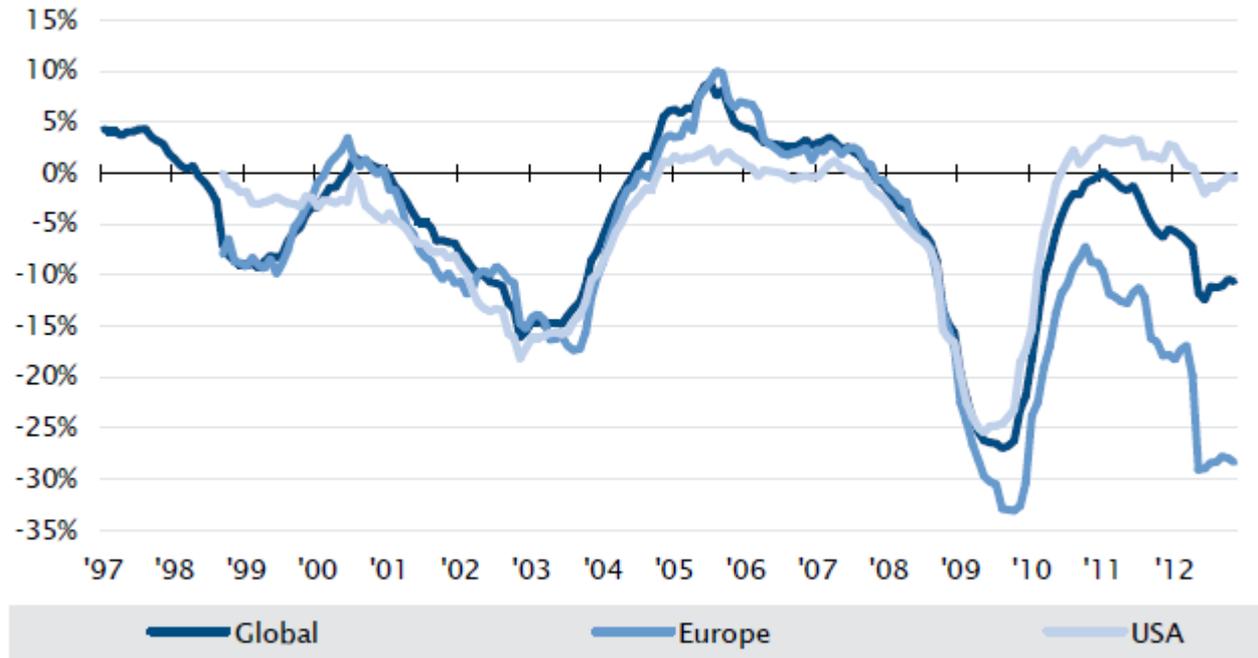
## WORLD



Source: Barclays Multiverse Corporates Index in USD unhedged

→ Proportion which used to be AA in 2002 is A today.

## Rating Changes / negative Rating Drift

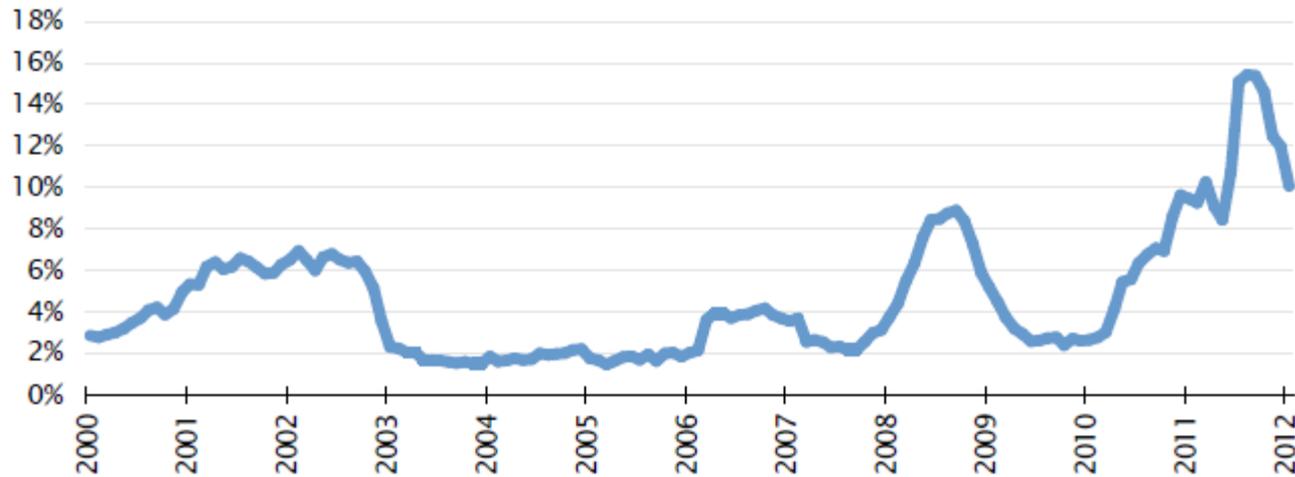


Quellen: Moody's, LBBW Credit Research

- Rating Drift negative worldwide
- It measures only the number of changes, not the amount:  

$$\text{Rating Drift} = (\# \text{Upgrades} - \# \text{Downgrades}) / \text{Total Universe}$$

# Amount of Rating Changes over time



Quellen: Moody's, LBBW Credit Research

→ **Taking the amount of changes into account, ratings were downgraded more heavily in 2011 and 2012 than in the past...**

# Rating Changes / Rating Transition over time

Europe: Corporate Average Transition Rates (one year) 1996-2011 (%)

Von/Zu	AAA	AA	A	BBB	BB	B	CCC/C	D	NR
AAA	84,14	9,47	0,66	0,22	0	0	0,22	0	5,29
AA	0,27	84,46	10,73	0,5	0	0	0	0	4,05
A	0,02	2,36	86,36	5,77	0,27	0,02	0	0,05	5,15
BBB	0	0,12	4,62	83,22	3,69	0,57	0,15	0,12	7,5
BB	0	0	0,16	5,11	70,85	7,75	0,72	0,64	14,78
B	0	0	0,1	0,3	7,61	65,07	4,9	3,7	18,32
CCC/C	0	0	0	0	0	16,33	26,53	34,69	22,45

Quellen: S&P, LBBW Credit Research

## 1996-2011 average yearly rating changes (Europe)

- Only 84,46% of AA rated bonds remain AA within one year on average.
- 21,67% of AAA and AA bonds were downgraded to A (11,39%) or below / NR within one year on average.

## 1981-2012 average yearly rating changes (Global)

- 86,29% of AA rated bonds remain AA within one year on average.
- 17,29% of AAA and AA bonds were downgraded to A (8,81%) or below / NR within one year on average.

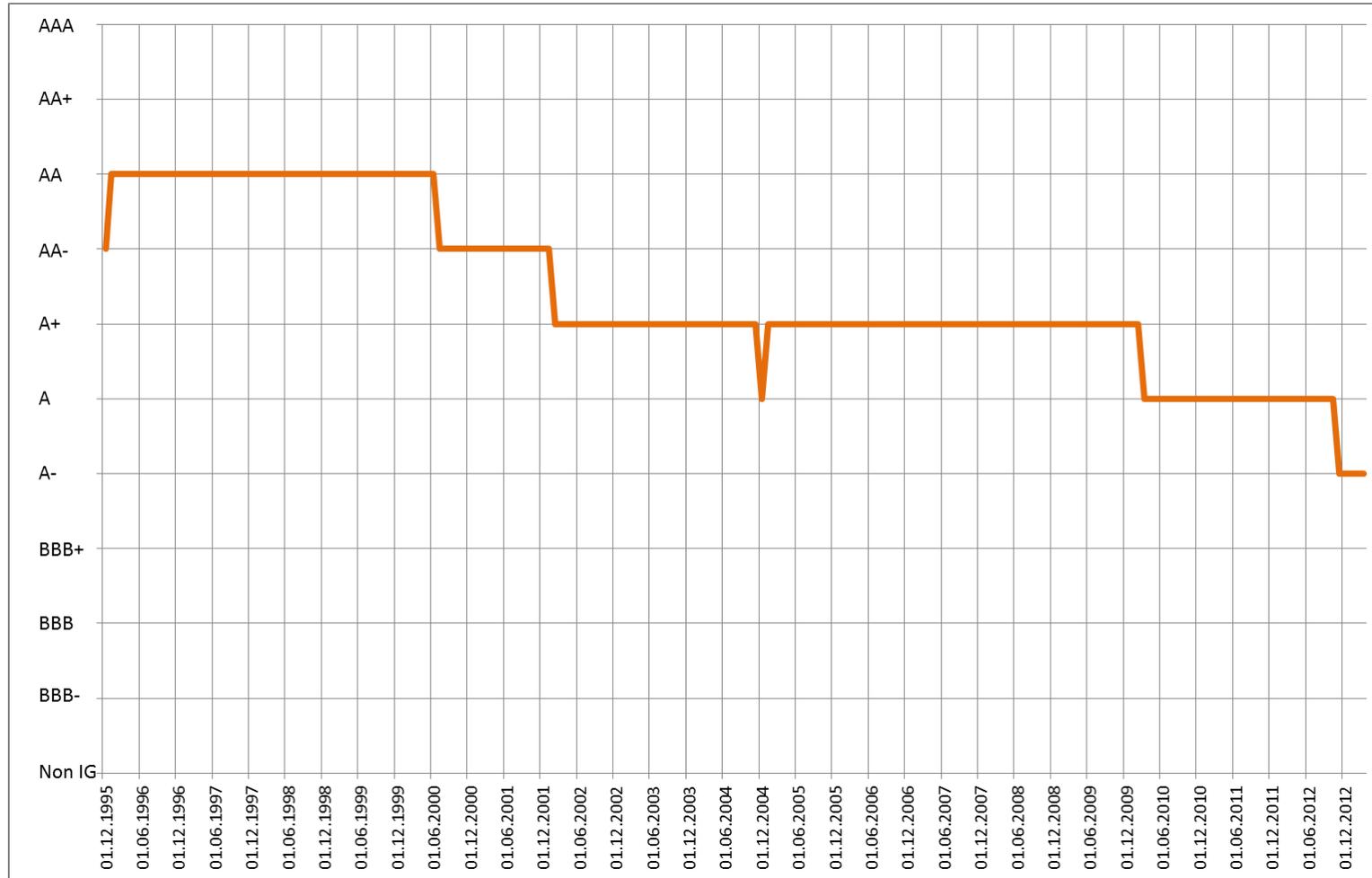
Global Corporate Average Transition Rates (1981-2012) (%)

From/To	AAA	AA	A	BBB	BB	B	CCC/C	D	NR
<b>One-year</b>									
AAA	87.17	8.69	0.54	0.05	0.08	0.03	0.05	0.00	3.38
	(9.11)	(9.13)	(0.86)	(0.31)	(0.25)	(0.20)	(0.40)	(0.00)	(2.66)
AA	0.54	86.29	8.36	0.57	0.06	0.08	0.02	0.02	4.05
	(0.55)	(4.90)	(3.99)	(0.75)	(0.25)	(0.24)	(0.07)	(0.07)	(1.91)
A	0.03	1.86	87.26	5.53	0.36	0.15	0.02	0.07	4.71
	(0.13)	(1.15)	(3.47)	(2.10)	(0.49)	(0.35)	(0.07)	(0.11)	(1.91)
BBB	0.01	0.12	3.54	85.09	3.88	0.61	0.14	0.22	6.39
	(0.06)	(0.23)	(2.31)	(4.62)	(1.82)	(1.02)	(0.24)	(0.26)	(1.79)
BB	0.02	0.04	0.15	5.18	76.12	7.20	0.72	0.86	9.71
	(0.06)	(0.16)	(0.39)	(2.35)	(5.02)	(4.63)	(0.92)	(1.04)	(2.84)
B	0.00	0.03	0.11	0.23	5.42	73.84	4.40	4.28	11.68
	(0.00)	(0.13)	(0.37)	(0.33)	(2.50)	(5.30)	(2.52)	(3.32)	(2.98)
CCC/C	0.00	0.00	0.16	0.24	0.73	13.69	43.89	26.85	14.43
	(0.00)	(0.00)	(0.70)	(1.01)	(1.29)	(8.42)	(12.62)	(12.48)	(7.19)

Source: S&P 2012 Annual Global Corporate Default Study And Rating Transitions

→ **AA is the asset class most heavily hit by downgrades, usually to A.**

# Average Rating of EUR Investment Grade Universe



Source: BofA Merrill Lynch Euro Corporate IG Index (300m+)

→ The investment universes average rating decreased from AA to A-.

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# Realized Default Rates are similar for AA and A globally

## Fitch: 1990-2012

(%)	One-Year
AAA	0.00
AA	0.03
A	0.08
BBB	0.20
BB	1.05
B	2.02
CCC to C	24.88
Investment Grade	0.12
Speculative Grade	2.99
All Corporates	0.74

Source: Fitch.

## S&P: 1981-2012

Table 4 | [Download Table](#)

Descriptive Statistics On One-Year Global Default Rates							
(%)	AAA	AA	A	BBB	BB	B	CCC/C
Minimum	0.00	0.00	0.00	0.00	0.00	0.25	0.00
Maximum	0.00	0.38	0.38	1.02	4.22	13.84	48.94
Weighted long-term average	0.00	0.02	0.07	0.22	0.86	4.28	26.85
Median	0.00	0.00	0.00	0.18	0.72	3.55	22.80
Standard deviation	0.00	0.07	0.11	0.26	1.04	3.32	12.48
2008 default rates	0.00	0.38	0.38	0.48	0.79	4.01	26.47
Latest four quarters (Q1 2012 - Q4 2012)	0.00	0.00	0.00	0.00	0.29	1.50	26.62
Difference between last four quarters and average	0.00	(0.02)	(0.07)	(0.22)	(0.58)	(2.78)	(0.23)
Number of standard deviations	0.00	(0.31)	(0.64)	(0.85)	(0.55)	(0.84)	(0.02)

Sources: Standard & Poor's Global Fixed Income Research and Standard & Poor's CreditPro®.

- Although the average default rate may be slightly higher for A issuers, the maximum, minimum and median numbers are the same.
- This is true for the default rates standard deviation as well.
- We explored whether extending to 6A in a notion HQCB = low credit risk may improve the situation and provide a more stable universe.

# Realized Default Rates are similar for AA and A globally

## Moody's: 1983-2011

EXHIBIT 31

Annual Issuer-Weighted Corporate Default Rates by Alphanumeric Rating, 1983-2011\*

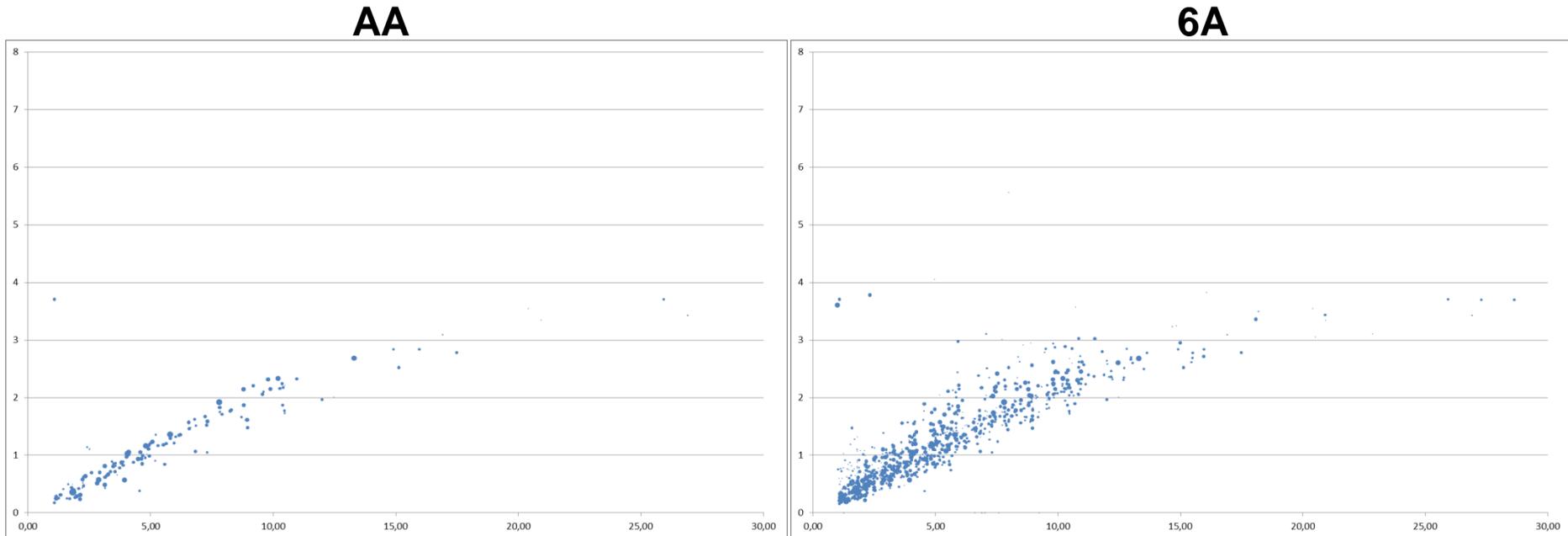
Year	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2	B3	Caa1	Caa2	Caa3	Ca-C	IG	SG	ALL
2010	0.000	0.000	0.000	0.000	0.420	0.000	0.292	0.000	0.000	0.000	0.000	0.000	0.000	0.889	0.000	0.617	2.307	11.928	26.776	39.586	0.084	3.204	1.306
2011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.246	0.000	0.000	0.000	0.541	0.000	0.352	0.000	1.711	12.034	21.723	44.444	0.041	1.821	0.808
Mean	0.000	0.000	0.000	0.110	0.059	0.025	0.044	0.125	0.147	0.359	0.653	0.553	1.928	2.646	5.713	9.630	7.884	22.116	17.675	32.683	0.089	4.667	1.689
Median	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.256	2.253	5.006	8.243	6.702	21.866	19.085	36.508	0.000	3.555	1.306
StDev	0.000	0.000	0.000	0.416	0.248	0.095	0.137	0.294	0.278	0.785	1.085	0.770	1.978	2.337	5.548	8.237	7.267	15.342	16.635	25.009	0.144	3.024	1.210
Min	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.965	0.371
Max	0.000	0.000	0.000	1.818	1.283	0.448	0.535	1.176	0.847	3.608	3.759	2.928	9.260	8.113	23.157	28.763	25.641	61.905	57.609	100.000	0.475	13.076	5.448

\* Data in percent

Source: Moody's - Annual Default Study: Corporate Default and Recovery Rates, 1920-2011

→ Under Moody's methodology Aa3 rated corporates encountered even a higher annual average default rate compared to A rated bonds in the past.

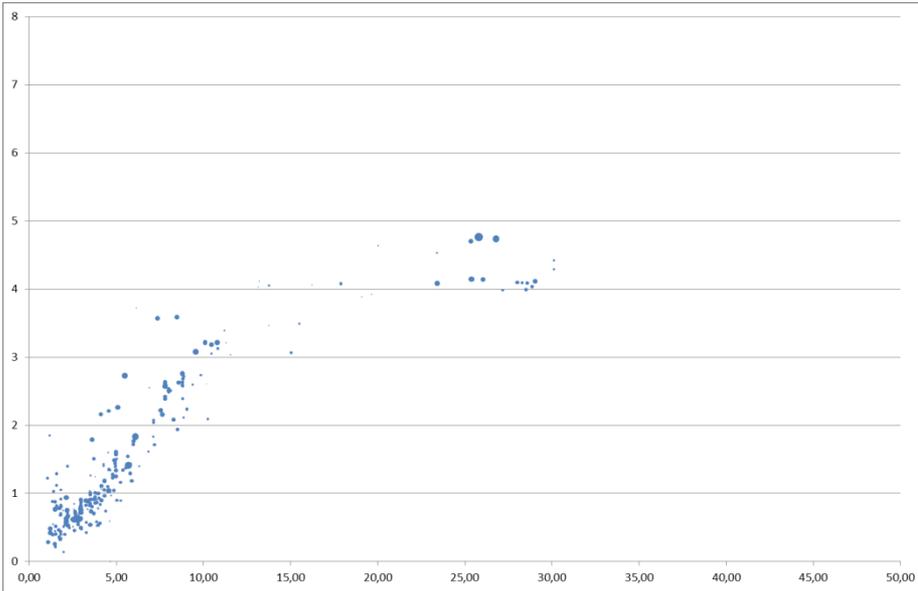
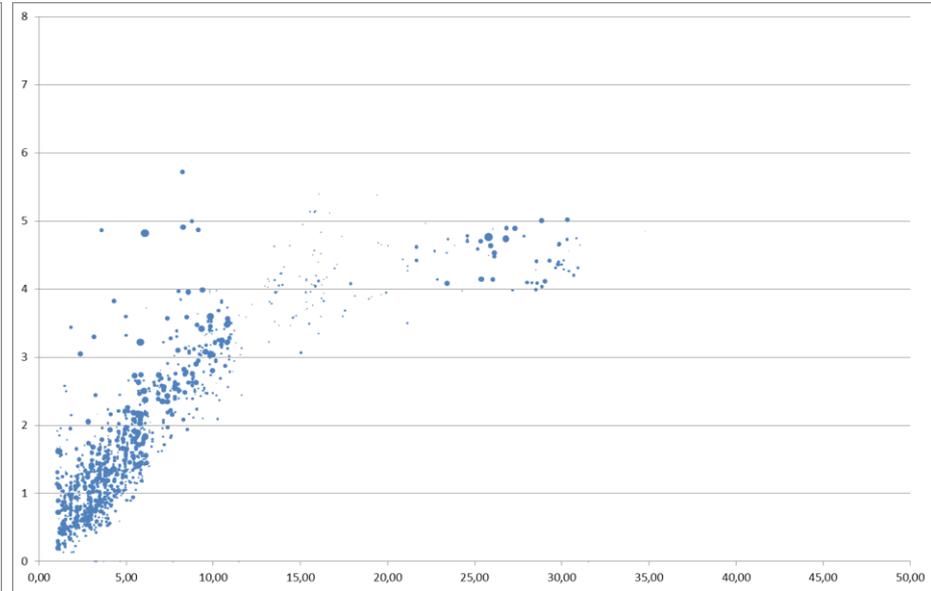
# The EUR Corporate Bond Market



Source: Bloomberg, Average Rating (AA or, AAA+AA+A), Outstanding Amount 100m+, 28.3.13

- **6A universe is deeper and better diversified by issuers and by maturity dates (esp. 10+)**
- **6A universe is comparably priced to AA universe.**

# The USD Corporate Bond Market

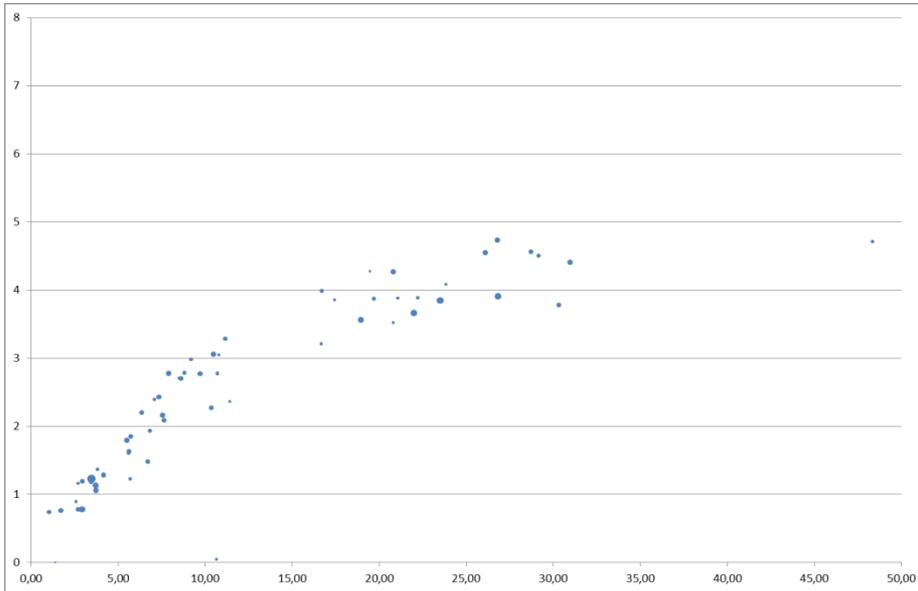
**AA****6A**

Source: Bloomberg, Average Rating (AA or, AAA+AA+A), Outstanding Amount 100m+, 28.3.13

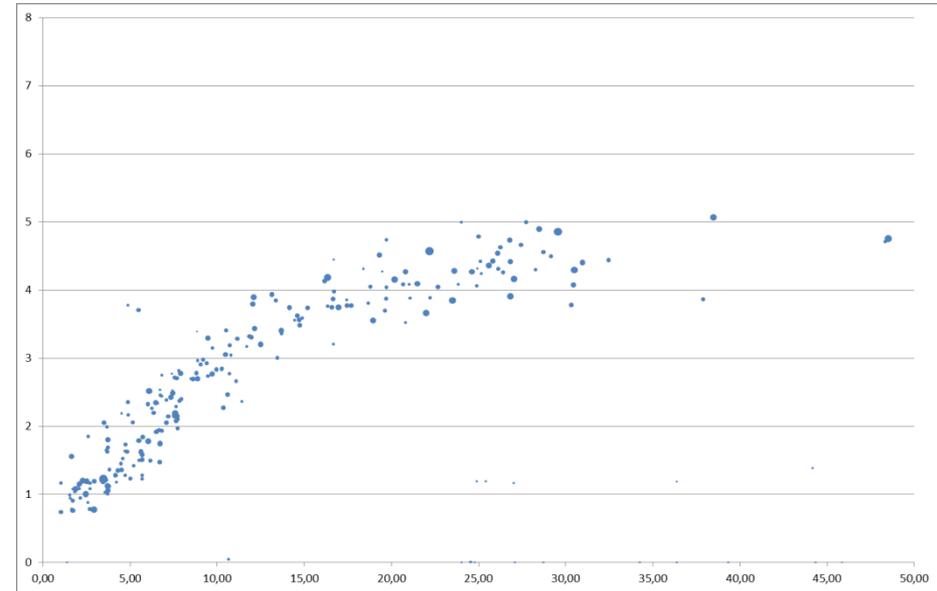
→ **Similar picture in USD market**

# The GBP Corporate Bond Market

## AA



## 6A



Source: Bloomberg, Average Rating (AA or, AAA+AA+A), Outstanding Amount 100m+, 28.3.13

- Same results for UK
- In UK the 6A universe is in the same valuation range as the AA universe (ie no additional spread)

# Towards a sustainable practice: Criteria

## Possible Criteria

- *Representativeness:*  
Eligible high quality corporate bonds should represent the real capital market (regarding issuers & rating evolution). The discount rate should not be sensitive to a limited basket of bonds.
- *Consistency:*  
Defining HQCB today needs to be consistent with the past AA interpretation and should incorporate market dynamics to be consistently applied in the future.

## Possible Criteria (ctd.)

- *Comparability:*  
Comparability of the eligible universe is a result of a clear, pragmatic and easy definition of HQCB based on public information.
- *Distinction of cases acc. to IAS 19:*  
A dynamic needs to take into account that at some stage IAS 19 requests the use of government bonds. This may be implemented by a floor level of eligible absolute ratings.

Note: Differences in methodologies exist already today between markets (eg USD ⇔ EUR) and / or between preparers and actuaries due to differences in best practice. This leads to different yield curves (i) due to a different definition of the bond universe used and/or (ii) different data fitting procedures.

# Towards a sustainable practice: proposed approach

## Idea

- *Starting point: average IG rating*  
The average investment grade (IG) rating within a currency area is a public information which shows market dynamics quite obvious.
- *Definition: eligible HQCB*  
Any corporate bond with a rating at or above the average IG rating of a broad corporate investment grade index is eligible to be used in the HQCB universe.
- *Floor:*  
If average rating is lower than BBB, government, HQCB bond universe is no longer deep.

## Calculation

- *Derive average IG rating*  
This number is publicly available from index providers (e.g. BofA Merrill Lynch, iboxx).
- *Populate universe of eligible bonds with a credit rating at or above the average IG rating*
- *Proceed with calculation as usual*  
In the following we estimate a resulting time series of discount rates for main currency areas. It proxies the discount rate for a duration of 15y (typically for a mixed DB scheme).

# How to derive the average IG rating?

<HELP> für Erklärungen.  
<Menu> zurück

ER00 99 Download BofAML AnlIndizes: Indexmerkmale

The BofA Merrill Lynch Euro Corporate Index Auflegung 12/31/1995

12/31/2012 Währung EUR Kalkulation Konventionell

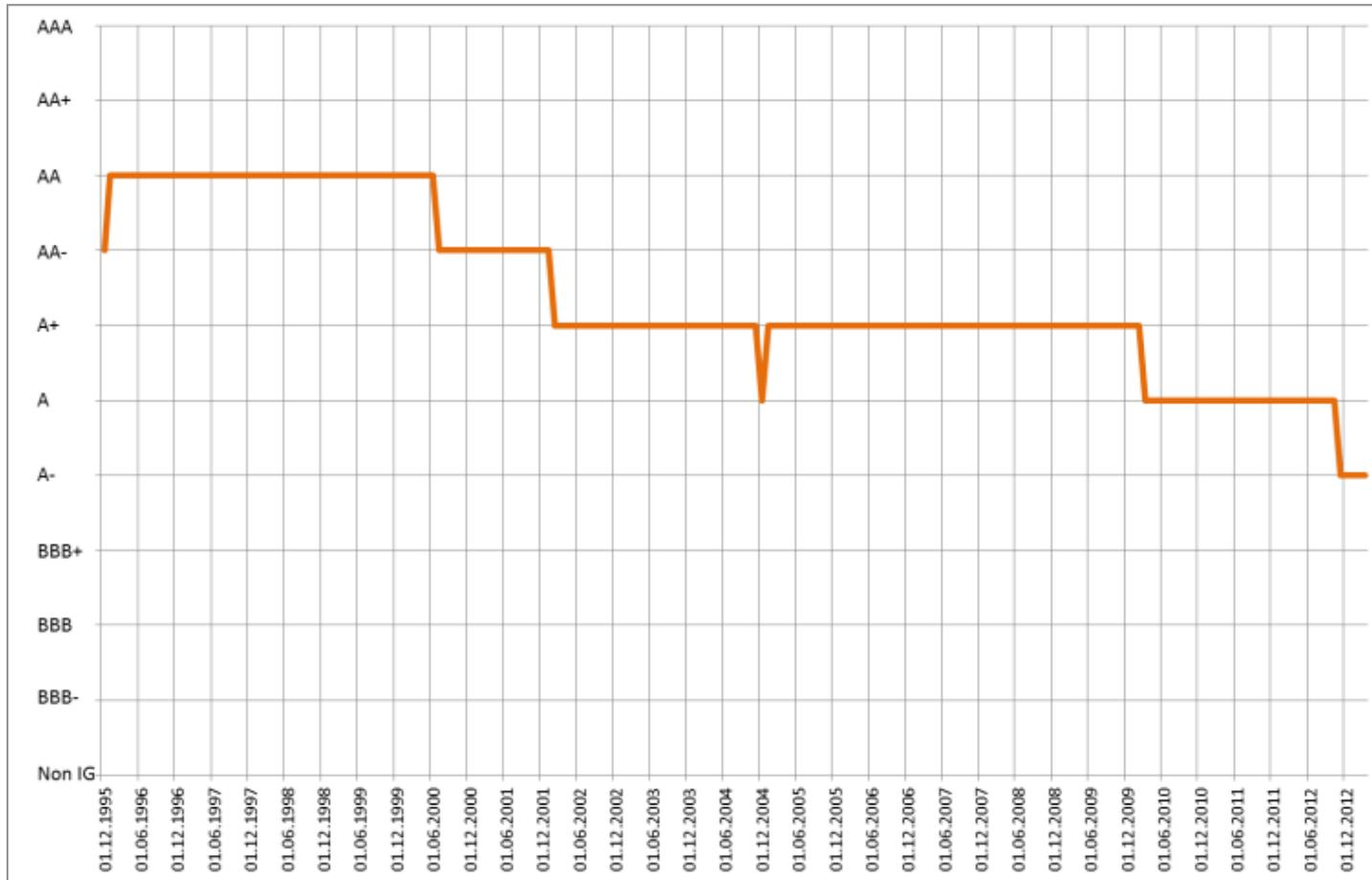
			12/31 Ausgleich			Dez Marktänderung	
			Jan Index 12/31/2012	Dez Index 12/31/2012	AusglÄnd. 12/31/2012	Dez Index 11/30/2012	MTD-Änd. 12/31/2012
	Bis 'Worst' (vs. Staatsanl.)		124	120	4	148	-28
	OAS (vs. Staatsanl.)		145	141	4	150	-9
	LIBOR OAS		127	123	4	130	-7
	Asset-Swap		131	127	4	133	-6
<b>Duration</b>							
	Effektive Duration		4.27	4.17	0.10	4.24	-0.07
	Spread-Duration		4.20	4.10	0.10	4.17	-0.07
	Mod Dur bis 'Worst'		4.17	4.08	0.09	4.14	-0.06
	Mod Dur bis Fälligkeit		4.20	4.11	0.09	4.15	-0.04
	Mac Dur bis Fälligkeit		4.30	4.20	0.10	4.25	-0.05
<b>Konvexität</b>							
	Effektive Konvexität		0.29	0.28	0.01	0.28	0.00
	Konvexität zu 'Worst'		0.30	0.29	0.01	0.29	0.00
	Konvexität zu Fälligkeit		0.31	0.29	0.01	0.29	0.00
<b>Sonstige</b>							
	Jahre bis Workout		5.78	5.63	0.15	4.87	0.76
	Jahre bis Fälligkeit		4.94	4.81	0.13	4.89	-0.08
	NomGew. Preis		109.09	109.07	0.01	108.49	0.58
	NomGew. Kupon		4.46	4.45	0.01	4.45	0.00
	MktGew. Kupon		4.51	4.49	0.02	4.50	-0.01
	Composite Rating		A3	A3		A3	

Australia 61 2 9777 8600 Brazil 5511 3048 4500 Europe 44 20 7500 Germany 49 69 9204 1210 Hong Kong 852 2977 6000  
Japan 81 3 3201 8900 Singapore 65 6212 1000 U.S. 1 212 318 2000 Copyright 2013 Bloomberg Finance L.P.  
SN 559599 CEST GMT+2:00 H472-2111-0 16-Apr-2013 14:36:36

Source: Bloomberg, BofA Merrill Lynch Euro Corporate Index.

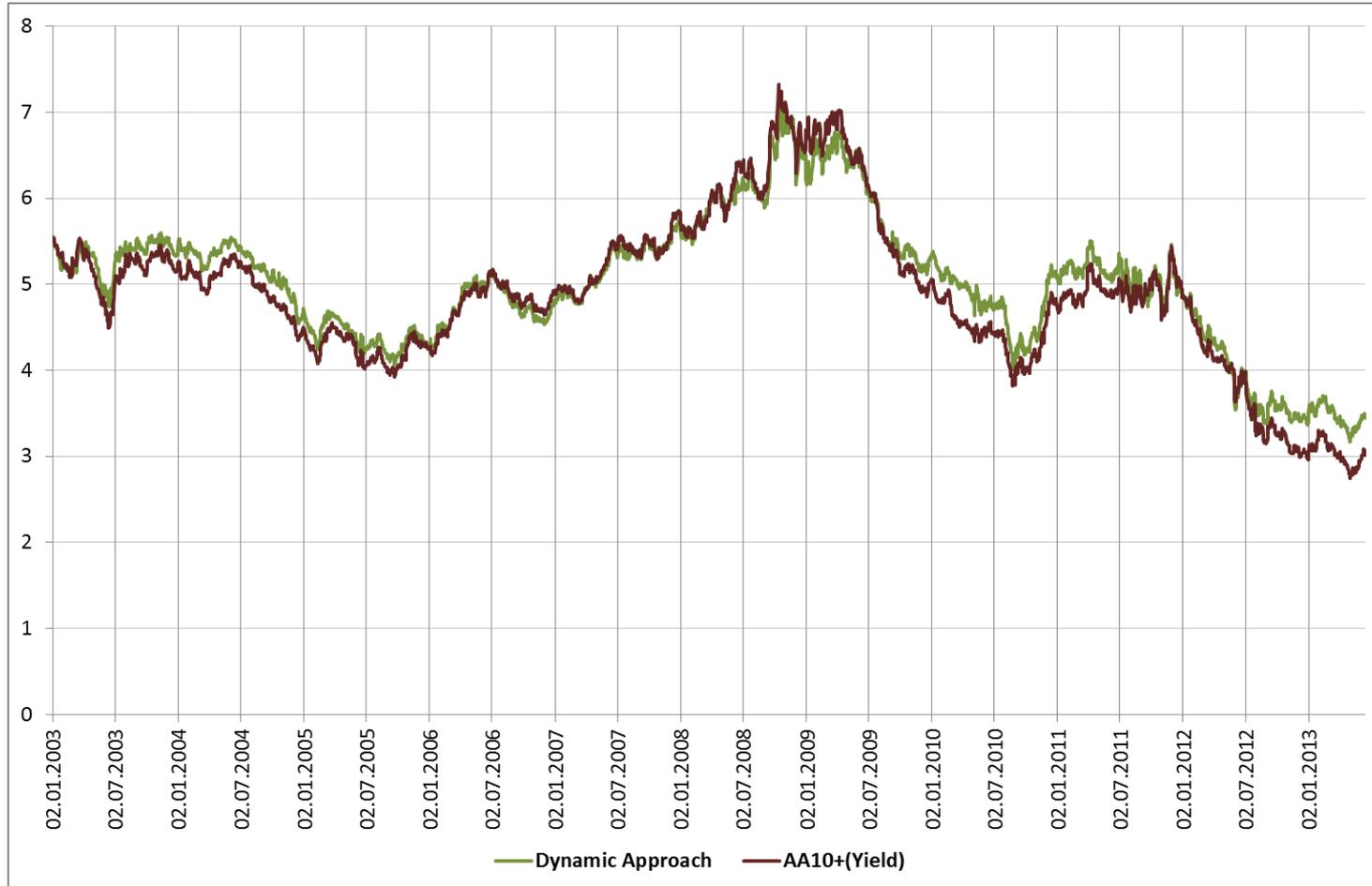
→ Public available information calculated by index providers  
(eg BofA Merrill Lynch)

# Dynamic approach: EUR Average Rating



Source: BofA Merrill Lynch Euro Corporate Index

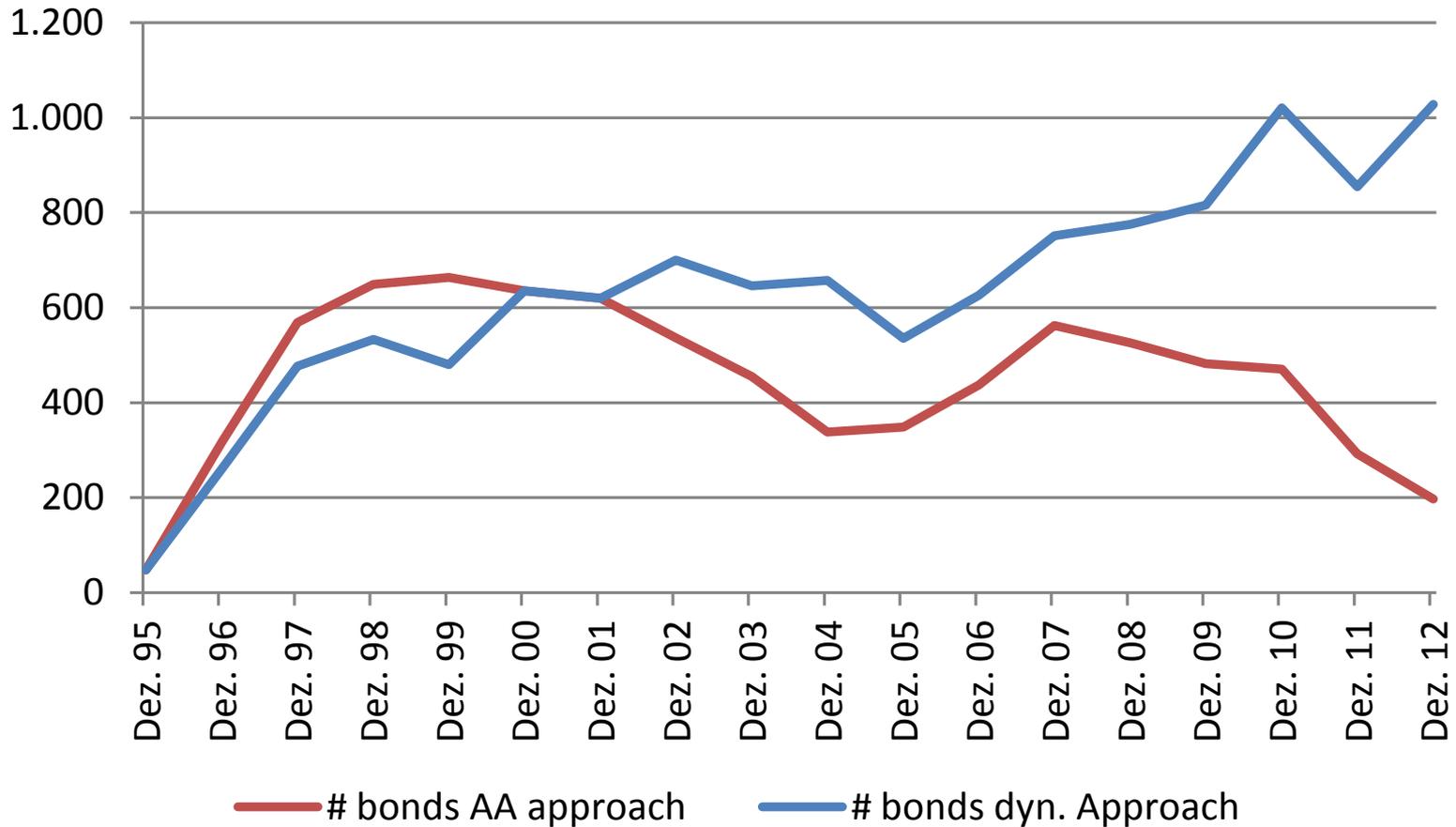
# Dynamic approach: EUR Resulting Discount Rate



Source: Own calculation; BofA Merrill Lynch EUR Corp AA 10+yrs

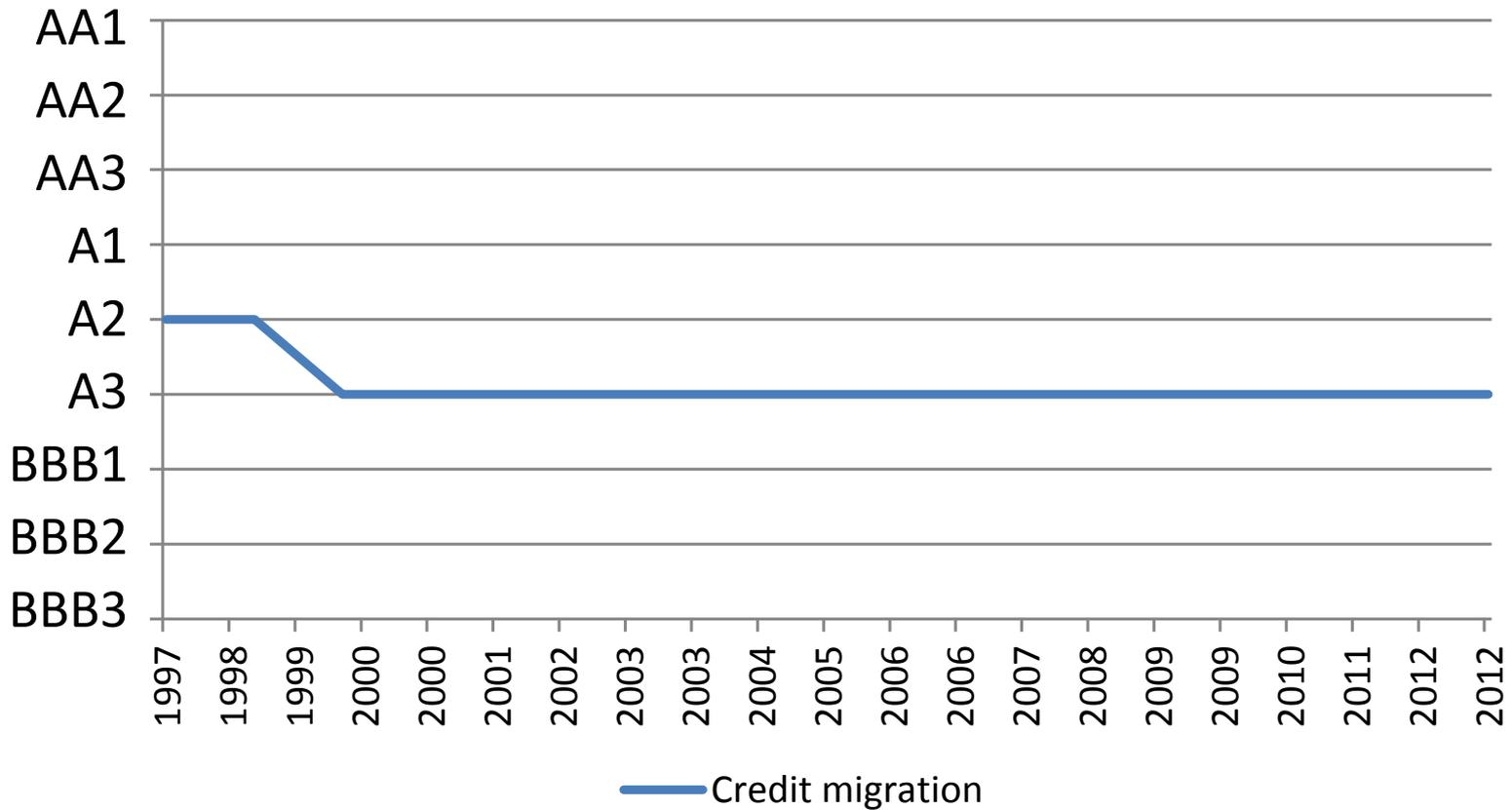
# Dynamic approach: EUR

## Number of Bonds



Source: Own calculation; BofA Merrill Lynch Euro Corporate Index

# Dynamic approach: USD Average Rating



Source: BofA Merrill Lynch USD Corporate Index

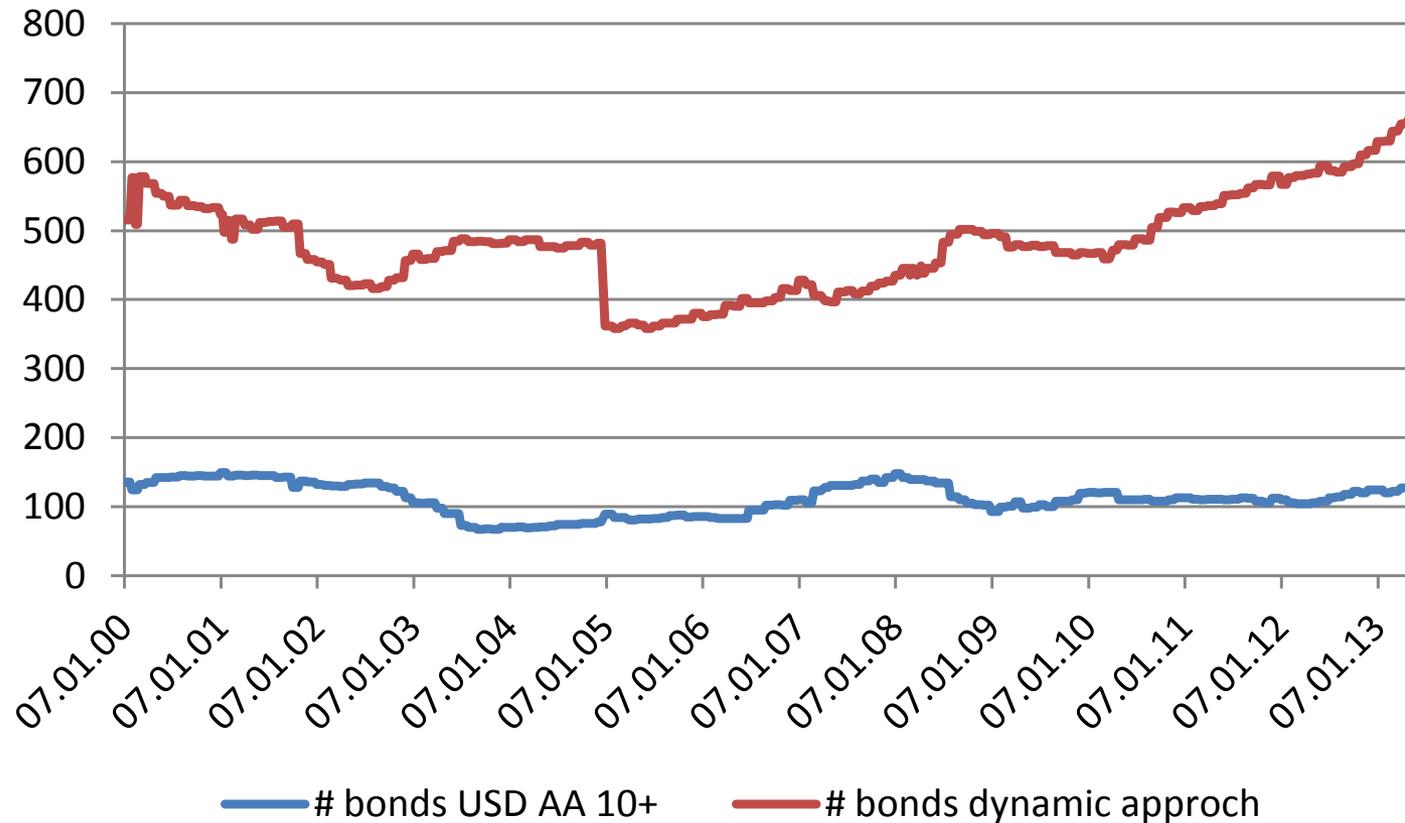
# Dynamic approach: USD Resulting Discount Rate



Source: Own calculation; BofA Merrill Lynch USD Corp AA 10+yrs

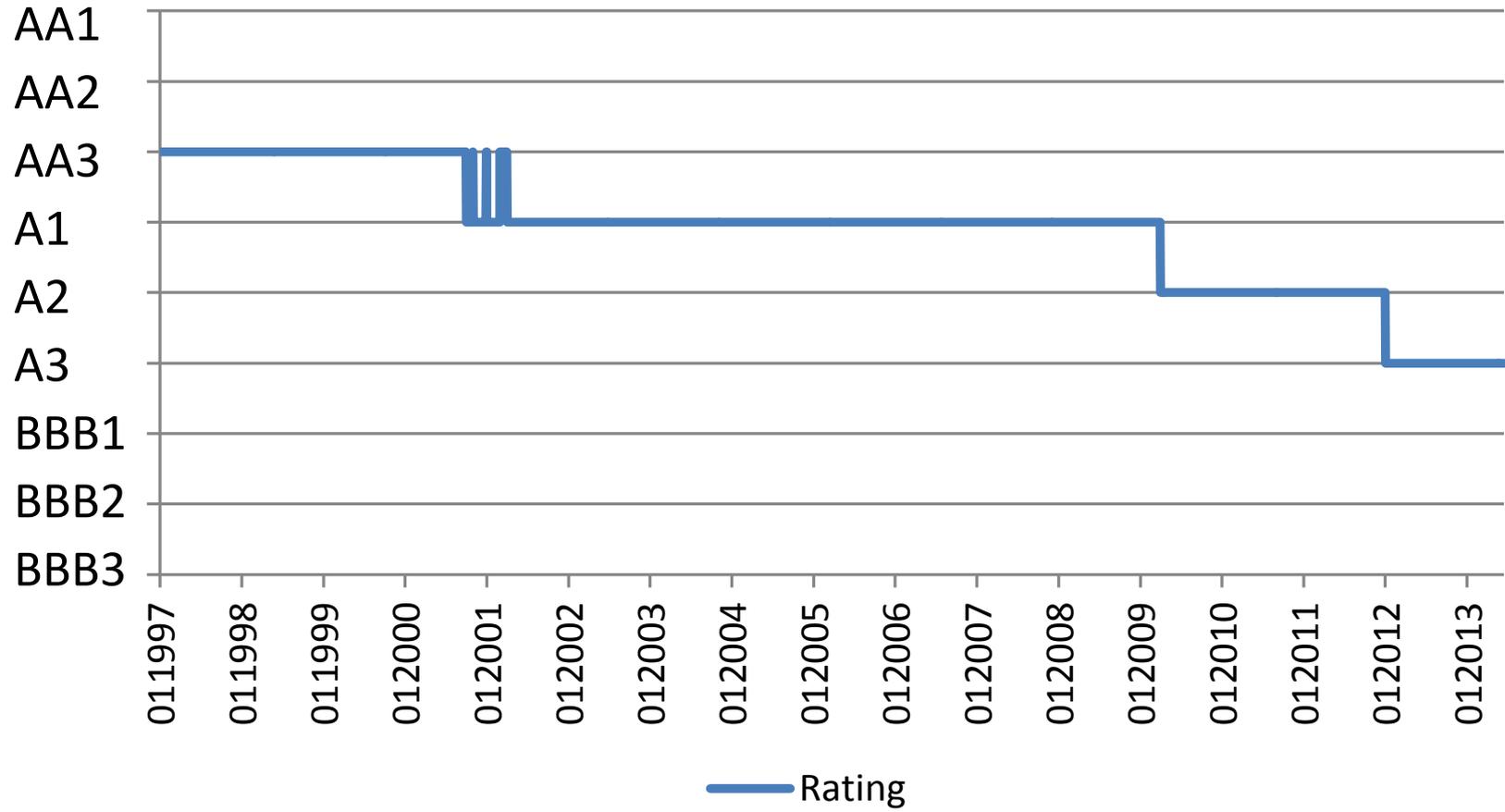
# Dynamic approach: USD

## Number of Bonds



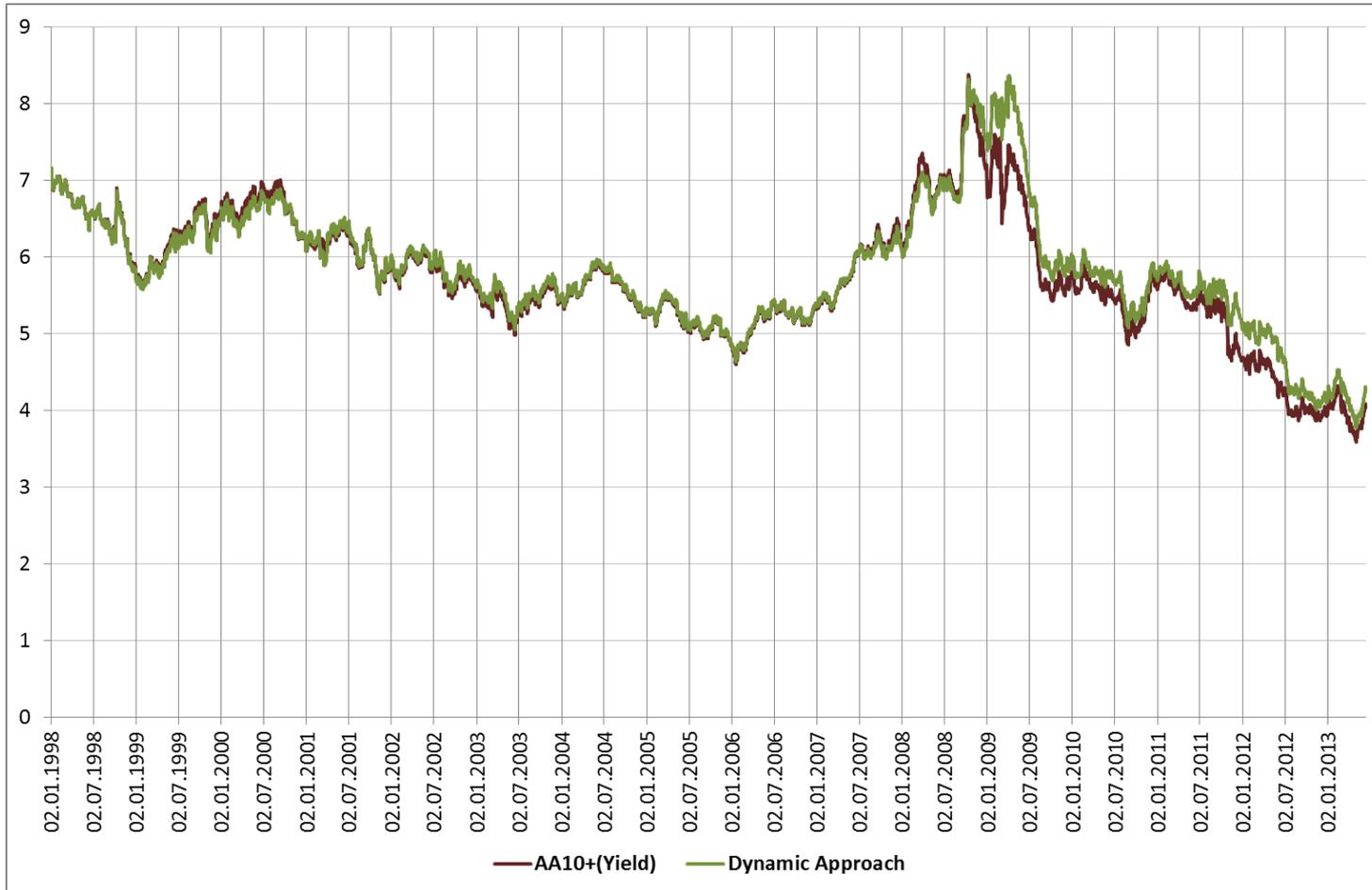
Source: Own calculation; BofA Merrill Lynch USD Corporate Index

# Dynamic approach: GBP Average Rating



Source: BofA Merrill Lynch GBP Corporate Index

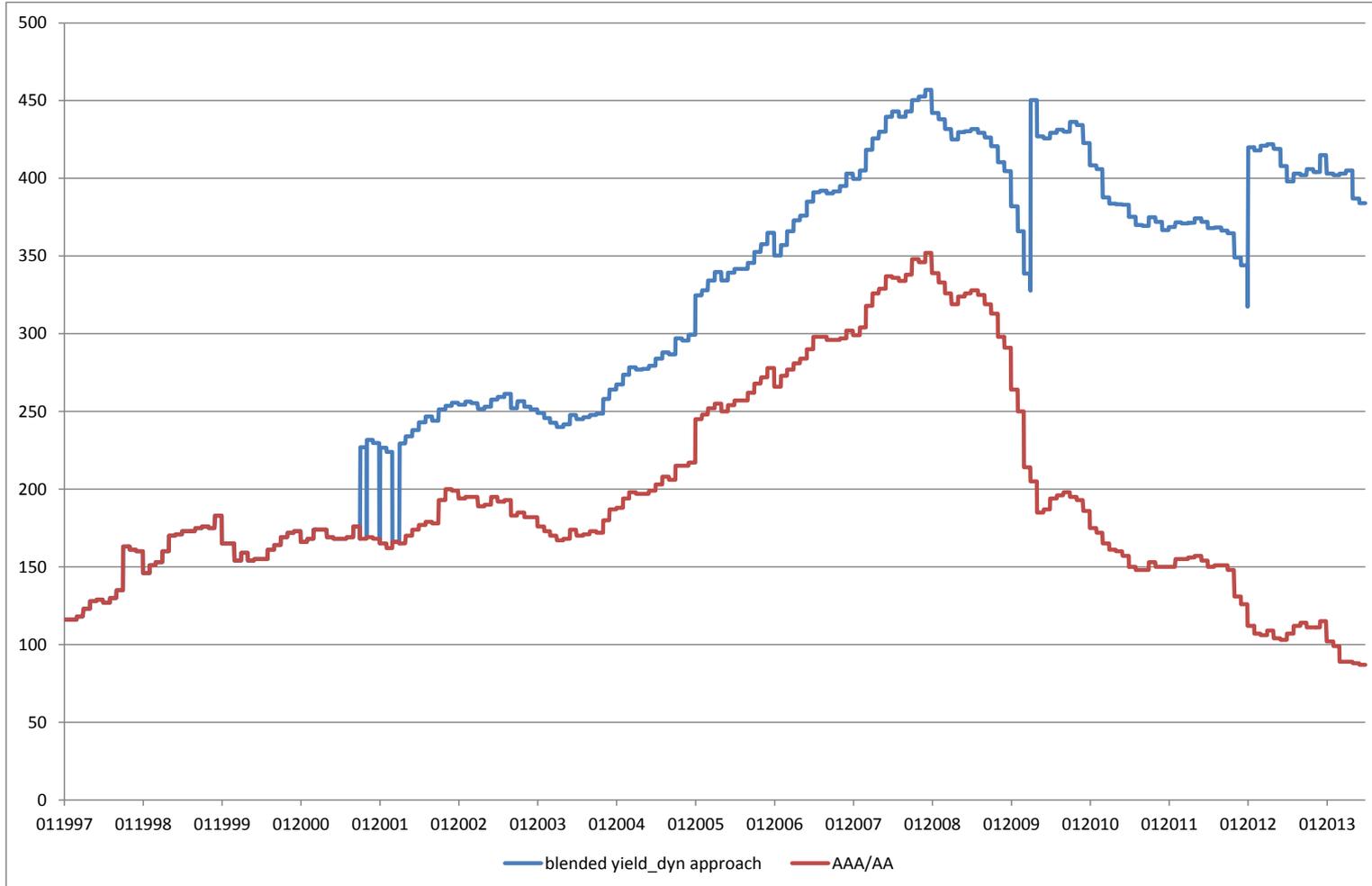
# Dynamic approach: GBP Resulting Discount Rate



Source: Own calculation; BofA Merrill Lynch Sterling Corp Securities AA 10+yrs

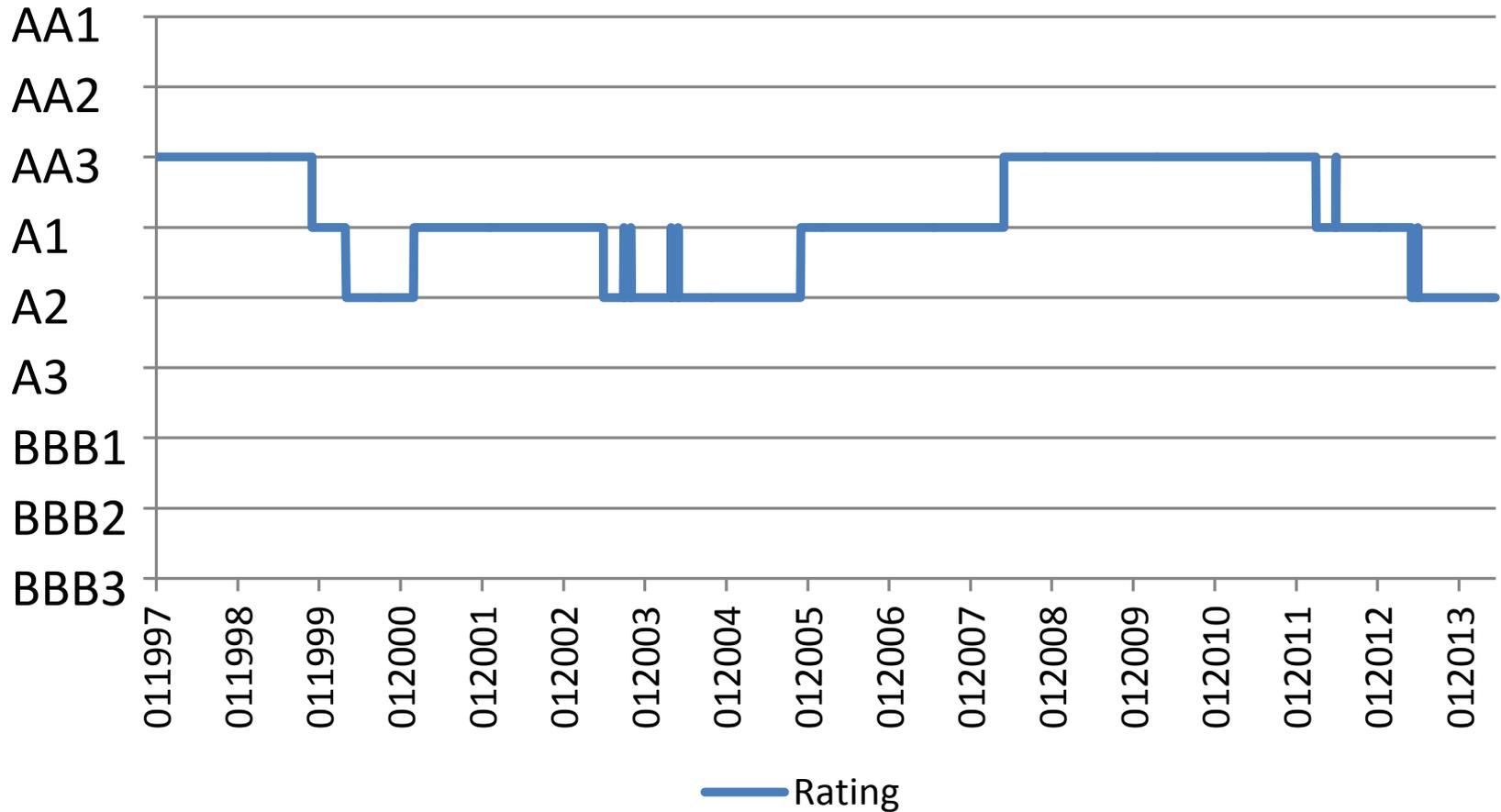
# Dynamic approach: GBP

## Number of Bonds



Source: Own calculation; BofA Merrill Lynch GBP Corporate Index

# Dynamic approach: JPY Average Rating



Source: BofA Merrill Lynch JPY Corporate Index

# Adjustment of original discount curve

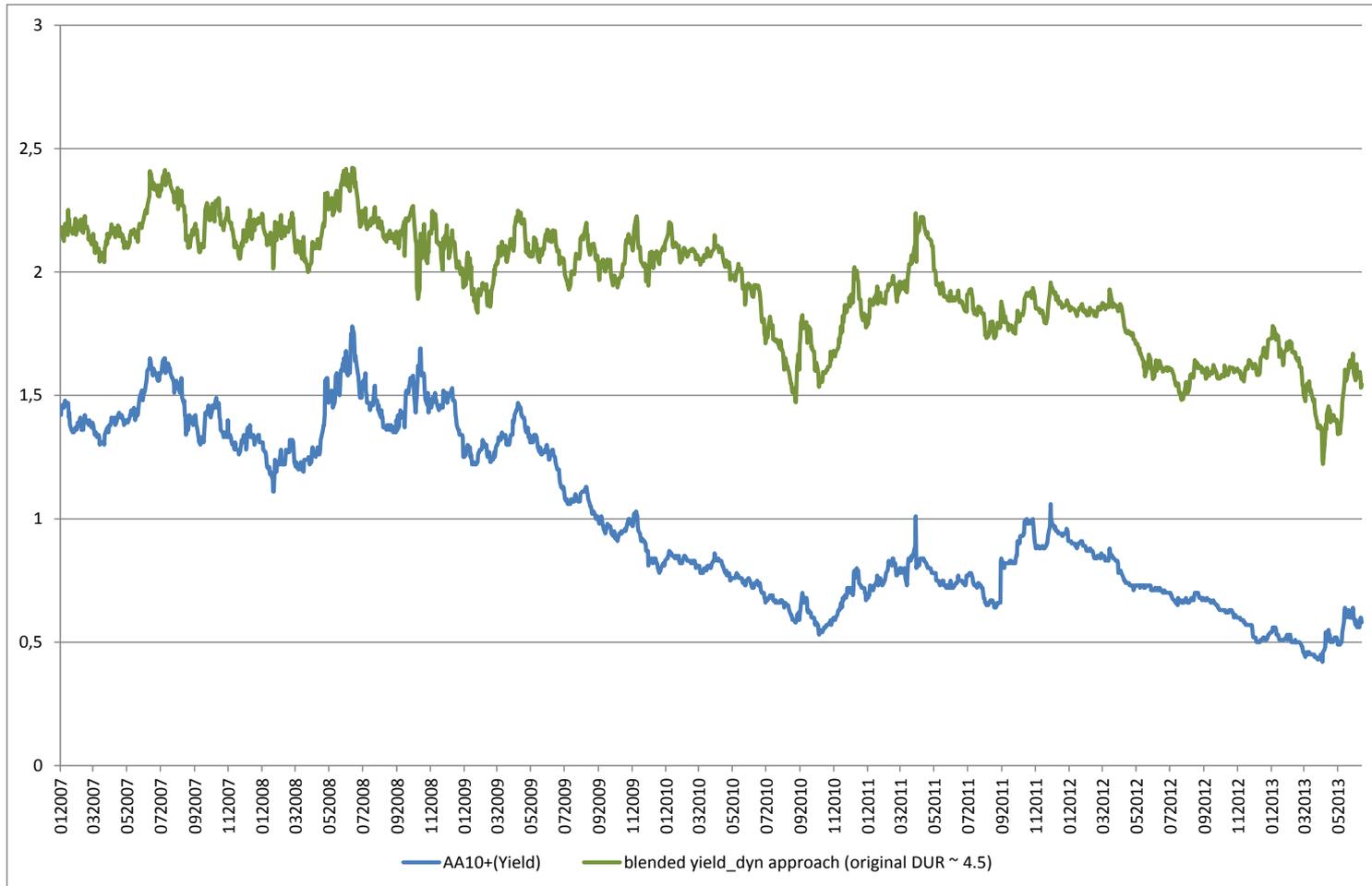
## Starting position

- JPY and CAD index components have a significant lower duration than EUR, USD and GBP indices
- Resulting blended index duration lower than 5
- Comparability requires yield adjustment

## Duration adjustment

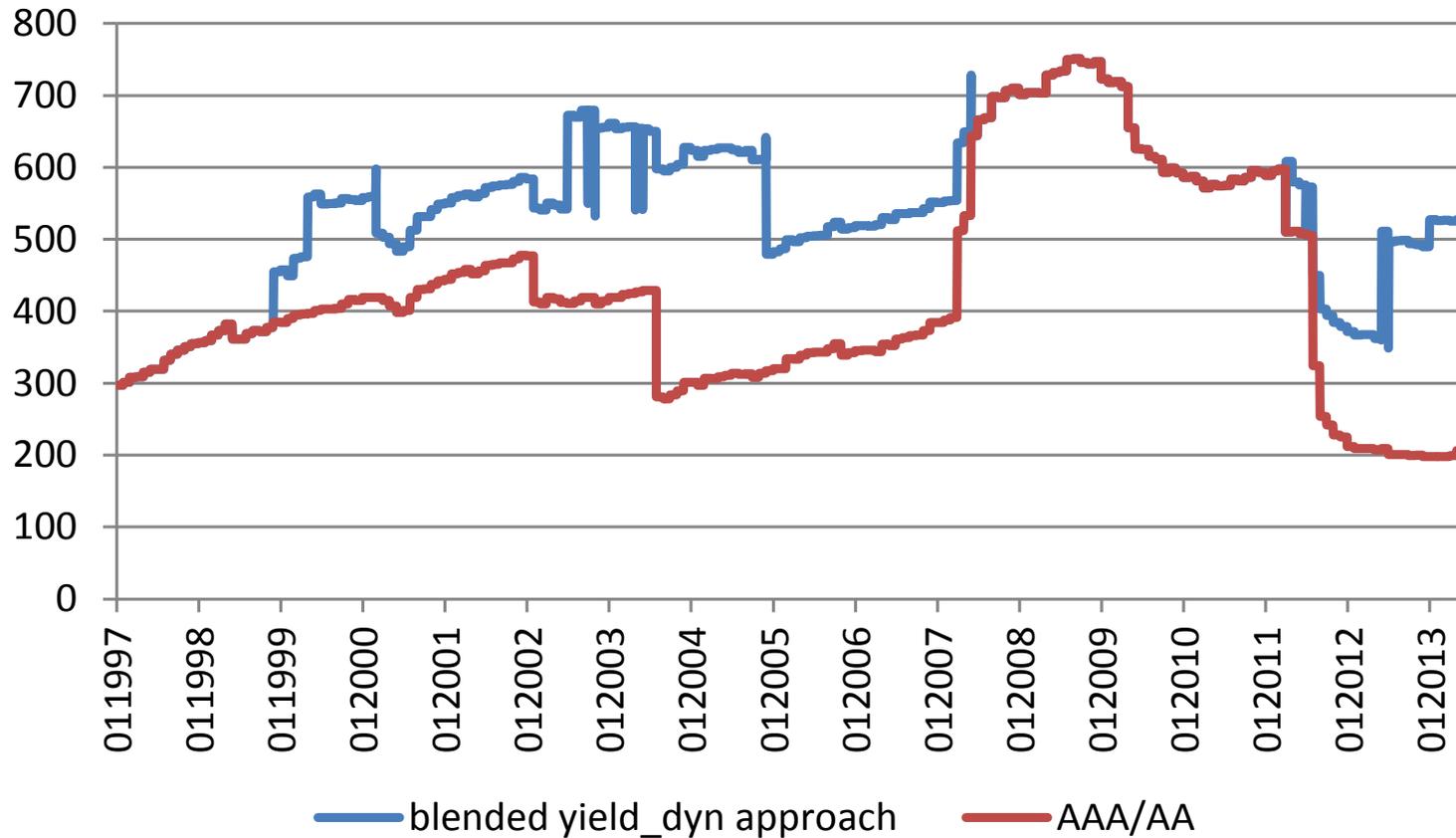
- *Adjustment accounting for curve steepness:*  
Low duration is adjusted along to curve to reflect a duration of 15 comparable to EUR, USD and GBP
- *Adjustment accounting for zero rate :*  
Adding the curve difference between the yield curve and the zero coupon curve resulting in a discount rate

# Dynamic approach: JPY Resulting Discount Rate



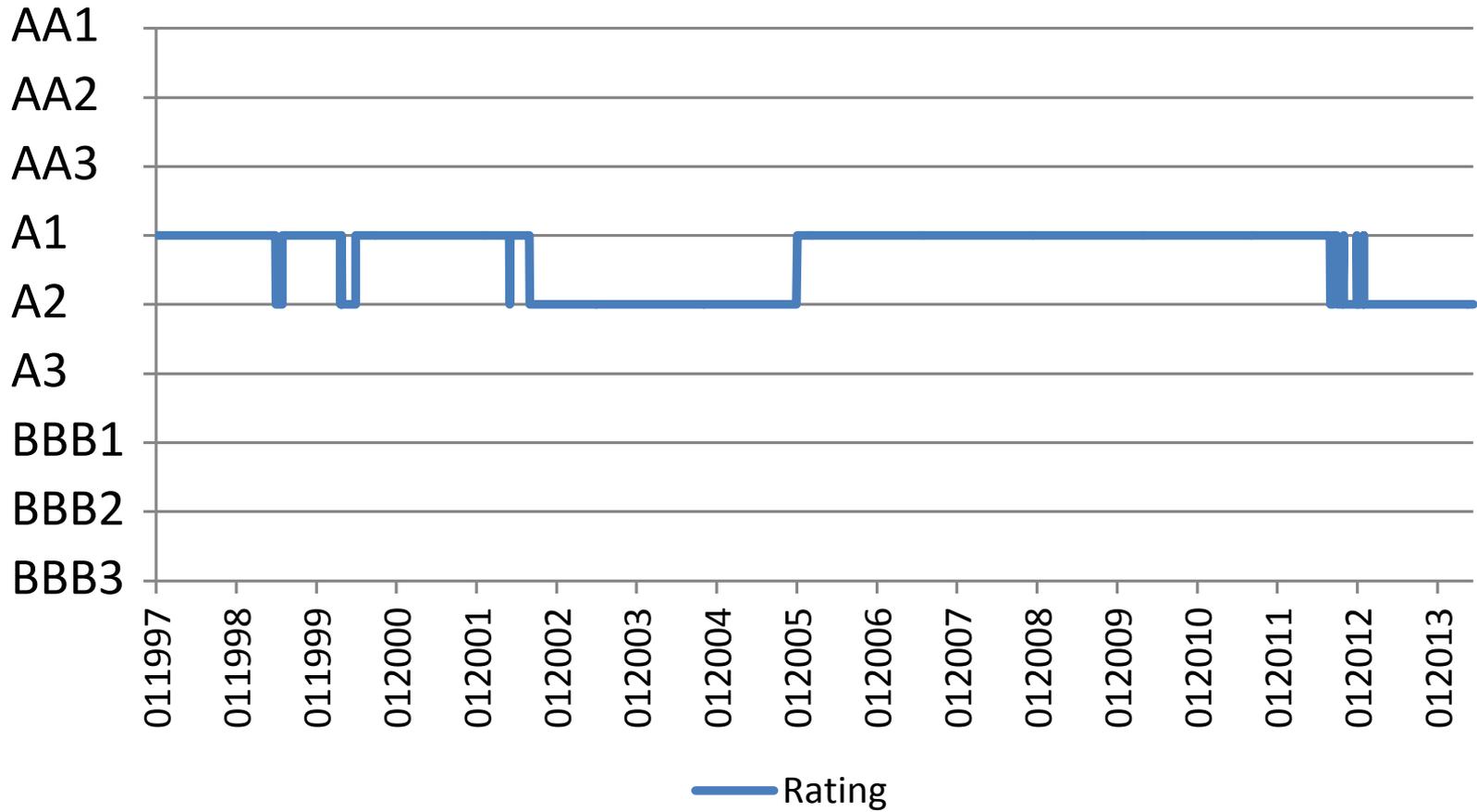
Source: Own calculation; BofA Merrill Lynch Japan Corp Securities AAyrs

# Dynamic approach: JPY Number of Bonds



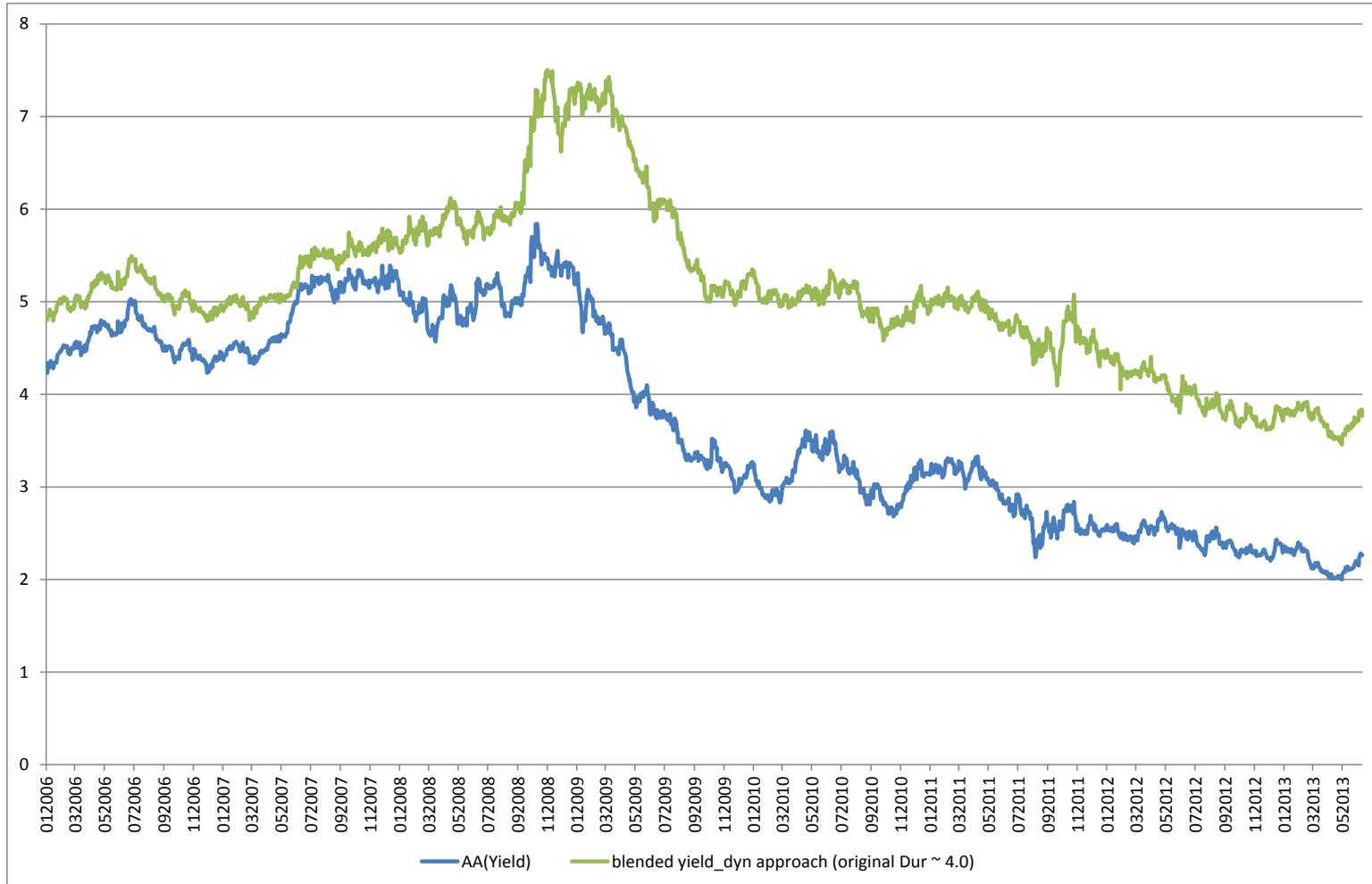
Source: Own calculation; BofA Merrill Lynch JPY Corporate Index

# Dynamic approach: CAD Average Rating



Source: BofA Merrill Lynch CAD Corporate Index

# Dynamic approach: CAD Resulting Discount Rate



Source: Own calculation; BofA Merrill Lynch CAD Corporate Index

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# Rating descriptions

## S&P

## Moody's

## Fitch

INVESTMENT GRADE	<b>'AAA'</b>	Extremely strong capacity to meet financial commitments. Highest rating
	<b>'AA'</b>	Very strong capacity to meet financial commitments
	<b>'A'</b>	Strong capacity to meet financial commitments, but somewhat susceptible to adverse economic conditions and changes in circumstances
	<b>'BBB'</b>	Adequate capacity to meet financial commitments, but more subject to adverse economic conditions
	<b>'BBB-'</b>	Considered lowest investment grade by market participants
SPECULATIVE GRADE	<b>'BBB+'</b>	Considered highest speculative grade by market participants
	<b>'BB'</b>	Less vulnerable in the near-term but faces major ongoing uncertainties to adverse business, financial and economic conditions
	<b>'B'</b>	More vulnerable to adverse business, financial and economic conditions but currently has the capacity to meet financial commitments
	<b>'CCC'</b>	Currently vulnerable and dependent on favorable business, financial and economic conditions to meet financial commitments
	<b>'CC'</b>	Currently highly vulnerable
	<b>'C'</b>	A bankruptcy petition has been filed or similar action taken, but payments of financial commitments are continued
	<b>'D'</b>	Payments default on financial commitments
Ratings from 'AA' to 'CCC' may be modified by the addition of a plus (+) or minus (-) sign to show relative standing within the major rating categories.		

<b>Aaa</b>	Obligations rated Aaa are judged to be of the highest quality, with minimal credit risk.
<b>Aa</b>	Obligations rated Aa are judged to be of high quality and are subject to very low credit risk.
<b>A</b>	Obligations rated A are considered upper-medium grade and are subject to low credit risk.
<b>Baa</b>	Obligations rated Baa are subject to moderate credit risk. They are considered medium-grade and as such may possess certain speculative characteristics.
<b>Ba</b>	Obligations rated Ba are judged to have speculative elements and are subject to substantial credit risk.
<b>B</b>	Obligations rated B are considered speculative and are subject to high credit risk.
<b>Caa</b>	Obligations rated Caa are judged to be of poor standing and are subject to very high credit risk.
<b>Ca</b>	Obligations rated Ca are highly speculative and are likely in, or very near, default, with some prospect of recovery of principal and interest.
<b>C</b>	Obligations rated C are the lowest rated class of bonds and are typically in default, with little prospect for recovery of principal or interest.
<i>Note: Moody's appends numerical modifiers 1, 2, and 3 to each generic rating classification from Aa through Caa. The modifier 1 indicates that the obligation ranks in the higher end of its generic rating category; the modifier 2 indicates a mid-range ranking; and the modifier 3 indicates a ranking in the lower end of that generic rating category.</i>	

<b>AAA: Highest credit quality.</b>
'AAA' ratings denote the lowest expectation of credit risk. They are assigned only in cases of exceptionally strong capacity for payment of financial commitments. This capacity is highly unlikely to be adversely affected by foreseeable events.
<b>AA: Very high credit quality.</b>
'AA' ratings denote expectations of very low credit risk. They indicate very strong capacity for payment of financial commitments. This capacity is not significantly vulnerable to foreseeable events.
<b>A: High credit quality.</b>
'A' ratings denote expectations of low credit risk. The capacity for payment of financial commitments is considered strong. This capacity may, nevertheless, be more vulnerable to adverse business or economic conditions than is the case for higher ratings.
<b>BBB: Good credit quality.</b>
'BBB' ratings indicate that expectations of credit risk are currently low. The capacity for payment of financial commitments is considered adequate but adverse business or economic conditions are more likely to impair this capacity.
<b>BB: Speculative.</b>
'BB' ratings indicate an elevated vulnerability to credit risk, particularly in the event of adverse changes in business or economic conditions over time; however, business or financial alternatives may be available to allow financial commitments to be met.
<b>B: Highly speculative.</b>
'B' ratings indicate that material credit risk is present <sup>†</sup> .
<b>CCC: Substantial credit risk.</b>
'CCC' ratings indicate that substantial credit risk is present <sup>†</sup> .
<b>CC: Very high levels of credit risk.</b>
'CC' ratings indicate very high levels of credit risk <sup>†</sup> .
<b>C: Exceptionally high levels of credit risk.</b>
'C' indicates exceptionally high levels of credit risk <sup>†</sup> .

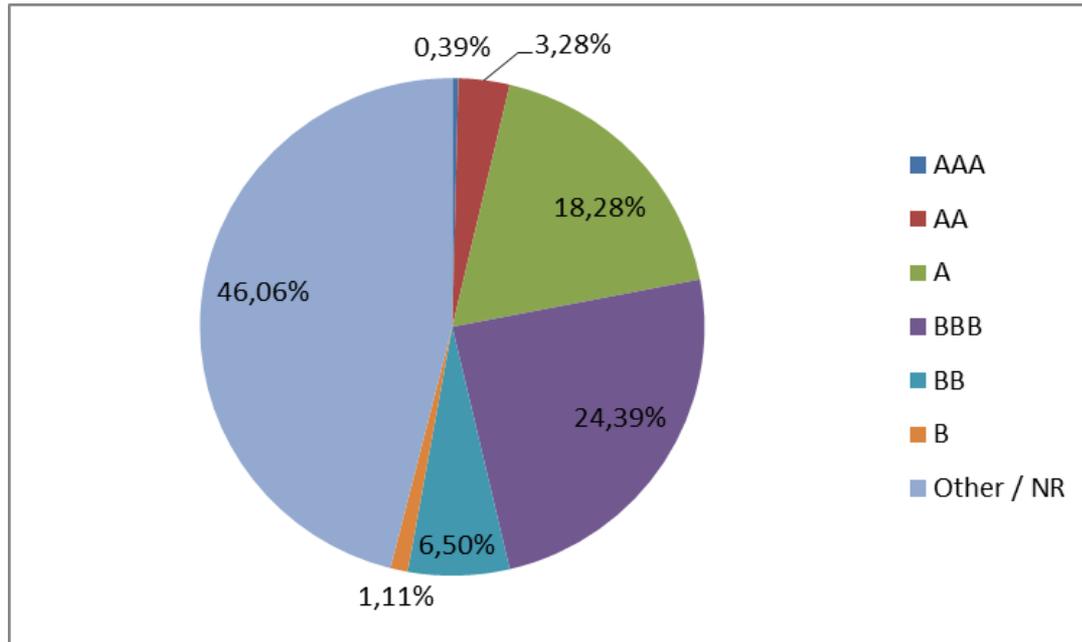
10 | STANDARD & POOR'S GUIDE TO CREDIT RATING ESSENTIALS

Source: S&P, Moody's, Fitch rating methodology papers.

→ ,High quality' at Fitch (A) is equivalent to ,low credit risk' at Moody's.

# S&P Rating distribution within the STOXX® Global 1800

The STOXX Global 1800 Index provides a broad yet liquid representation of the world's most developed markets with a fixed number of 1,800 components. The STOXX Global 1800 Index contains 600 European, 600 American and 600 Asia/Pacific region stocks represented by the STOXX Europe 600 Index, the STOXX North America 600 Index and the STOXX Asia/Pacific 600 Index.



Source: Stoxx, Bloomberg

→ **AA rated companies are something of a rarity among Global Bluechips...**

# S&P Rating distribution within the EuroStoxx® 50

The EURO STOXX 50 Index, Europe's leading Blue-chip index for the Eurozone, provides a Blue-chip representation of supersector leaders in the Eurozone. The index covers 50 stocks from 12 Eurozone countries: Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal and Spain.

NAME	S&P	FITCH	MOODY's				
Air Liquide SA	A	WD		Essilor International SA			
Allianz SE	AA	AA-		France Telecom SA	A- *-	BBB+	A3
Anheuser-Busch InBev NV	A	A		GDF Suez	A *-	NR	A1
ArcelorMittal	BB+	BB+	Ba1	Iberdrola SA	BBB	BBB+	Baa1
ASML Holding NV		BBB	WR	Inditex SA			
Assicurazioni Generali SpA	A	BBB+		ING Groep NV	A	A	
AXA SA	A-	A		Intesa Sanpaolo SpA	BBB+	BBB+	Baa2
BBVA	BBB-	BBB+	Baa3	Royal Philips	A-	A	A3
Banco Santander SA	BBB	BBB+	Baa2	L'Oreal SA			
BASF SE	A+	A+		LVMH Moet Hennessy Louis Vuitt	A	WD	
Bayer AG	A-	A		Munich Re	AA-	AA-	
Bayerische Motoren Werke AG	A			Nokia OYJ	BB-	BB-	Ba3
BNP Paribas SA	A+	A+	A2	Repsol SA	BBB-	BBB-	Baa3
Carrefour SA	BBB	BBB		RWE AG	BBB+	A-	
Cie de St-Gobain	BBB	BBB+		Sanofi	AA-	AA-	A1
CRH PLC	BBB+	BBB	Baa2	SAP AG			
Daimler AG	A-	A-		Schneider Electric SA	A-	WD	A3
Danone SA	A-			Siemens AG	A+	A+	Aa3
Deutsche Bank AG	A+ *-	A+	A2	Societe Generale SA	A	A+	
Deutsche Telekom AG	BBB+	BBB+		Telefonica SA	BBB	BBB+	
E.ON SE	A-	A		Total SA	AA-	AA	
Enel SpA	BBB+	BBB+	Baa2	Unibail-Rodamco SE	A	A	WR
Eni SpA	A	A+	A3	UniCredit SpA	BBB+	BBB+	
				Unilever NV	A+	A+	A1
				Vinci SA	BBB+	BBB+	Baa1
				Vivendi SA	BBB	BBB	Baa2
				Volkswagen AG	A-	A-	A3

Source: Stoxx, Bloomberg as of April 2013

... as well as among European Bluechips.

# Relevant recent developments in related regulatory environments which can provide useful reference

1. Corporate Bonds rated from single A+ to BBB- are since 6/01/2013 (Decision of **Basel Committee** on Banking Supervision) admitted as “**high quality liquid assets**” for the purpose of the Liquidity Cover Ratio
2. **American Benefits Council** has initiated a dialogue with FASB on revising discount rate setting rules for accounting purposes in light of recent evolution of US funding rules (MAP 21 legislation of summer 2012) which are now based on a discount rate smoothed over 25 year to address “artificial decrease of interest rates”
3. **EIOPA** is suggesting to use a “**counter cyclical premium**” to be added to discount factors in case of “stressed financial markets”

# Relevant recent developments in related regulatory environments which can provide useful reference

4. Based on the belief that long term interest rates are artificially depressed, **Dutch Pension Fund regulator DNB** has introduced since 2012 an “**ultimate forward rate**” (**UFR**) methodology where “normal” long term rate is set at 4.2% and an interest rates curve is derived from this last point

5. Finally, European Parliament voted on 16/01/2013 in favor of **reducing the “over reliance on credit ratings”**: by 2020 no EU legislation should directly refer to external ratings and investment firms are urged to develop their own rating capabilities to enable them to prepare their own risk assessment

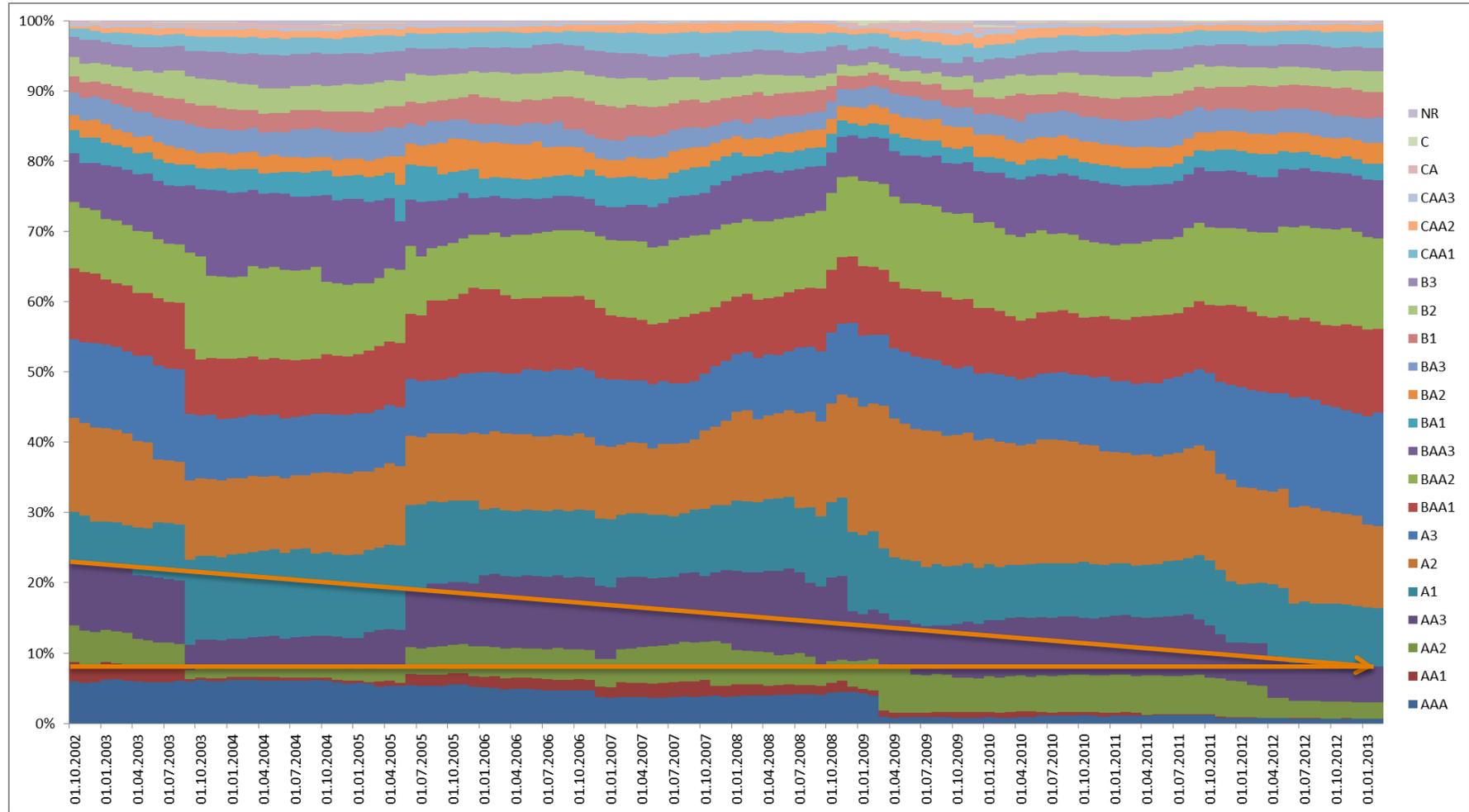
# Where are the liquid and deep markets?

## IAS 19 – Basis of the determination the discount rate

<b>Countries or unions with the same currency</b>		
<b>in which market participants consistently consider there to be a deep market of high quality corporate bonds</b>	<b>in which the market for high quality corporate bonds is sometimes considered deep, and sometimes not deep</b>	<b>in which market participants consistently consider there to be no deep market of high quality corporate bonds (discount rate based on government bonds or inflation + spread)</b>
USA UK Eurozone Canada Japan Switzerland	Australia Sweden Norway South Korea	Rest of the world

Source: Mercer

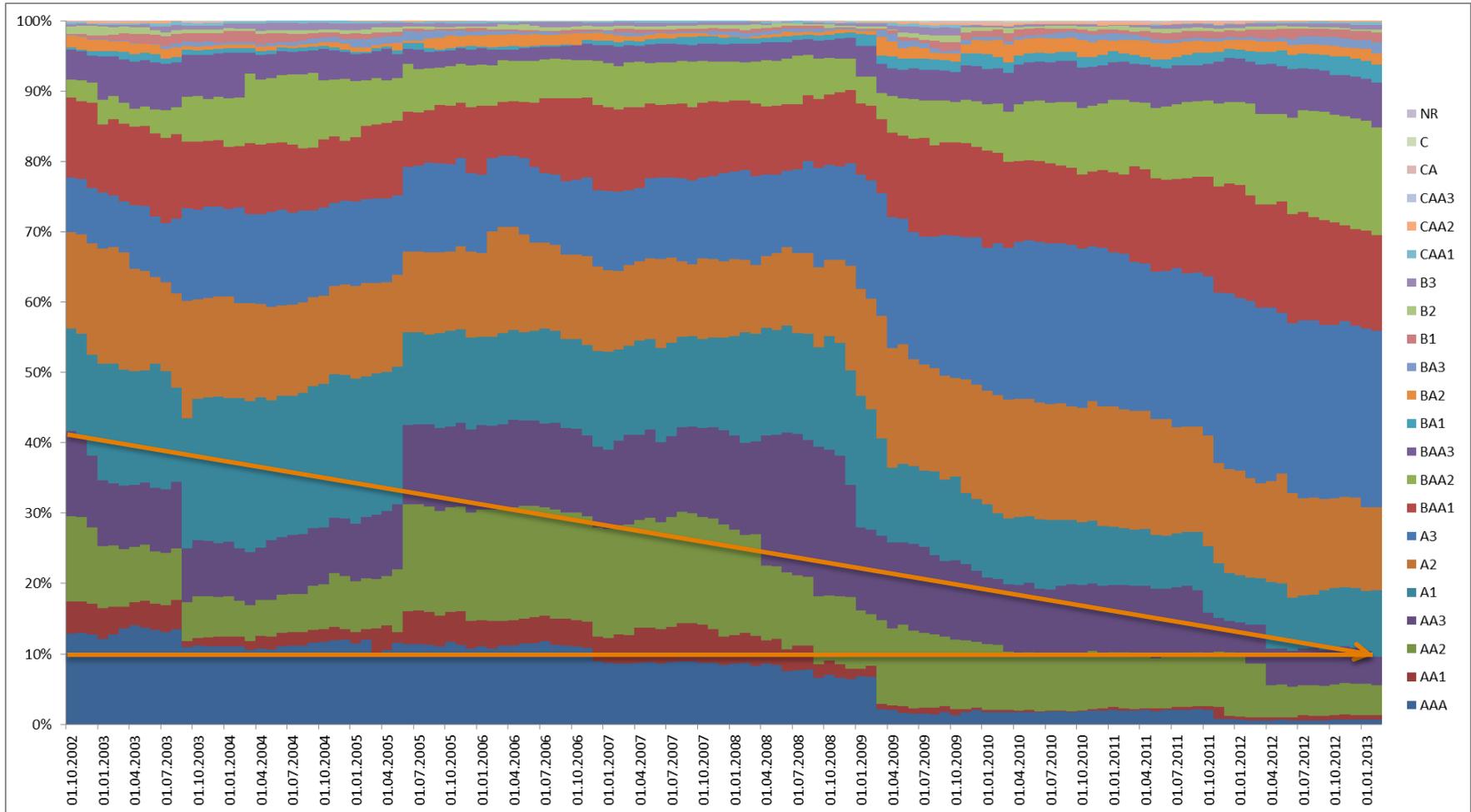
# Rating Distribution over time / value weighted USD



Source: Barclays Multiverse Corporates Index in USD unhedged

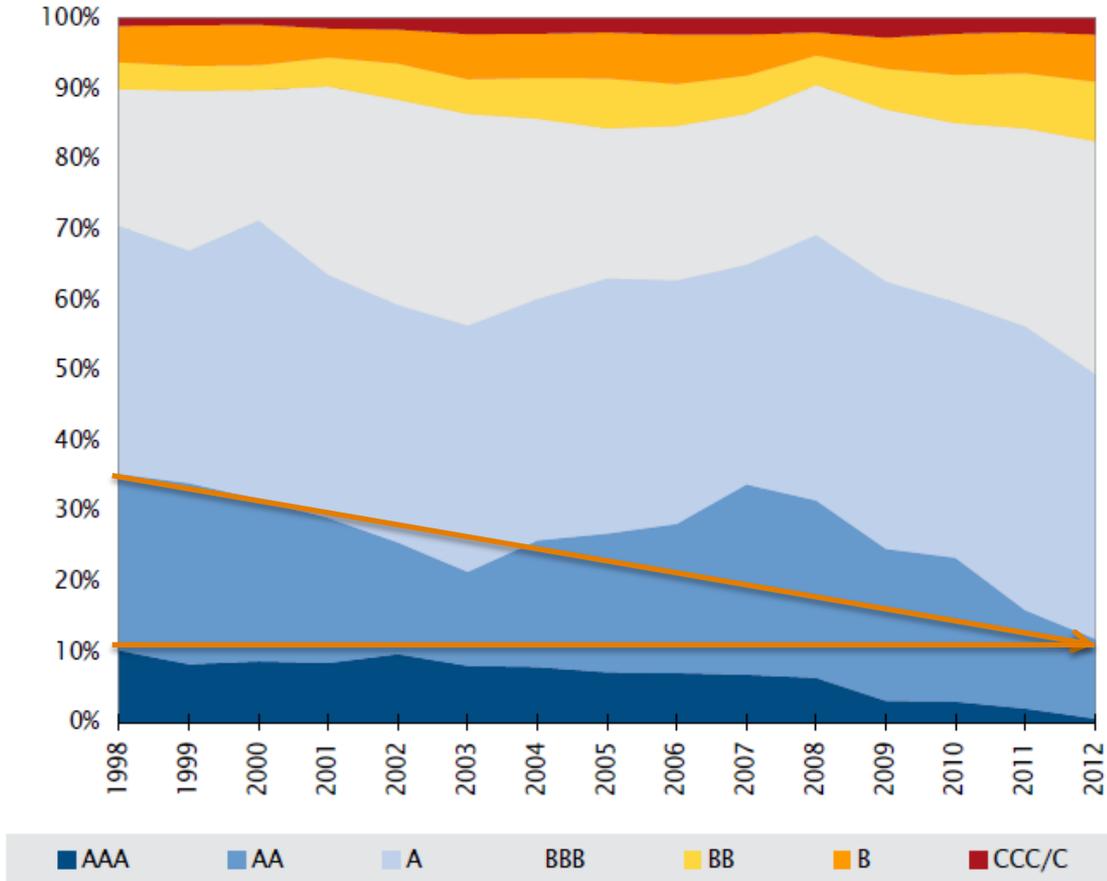


# Rating Distribution over time / value weighted GBP



Source: Barclays Multiverse Corporates Index in USD unhedged

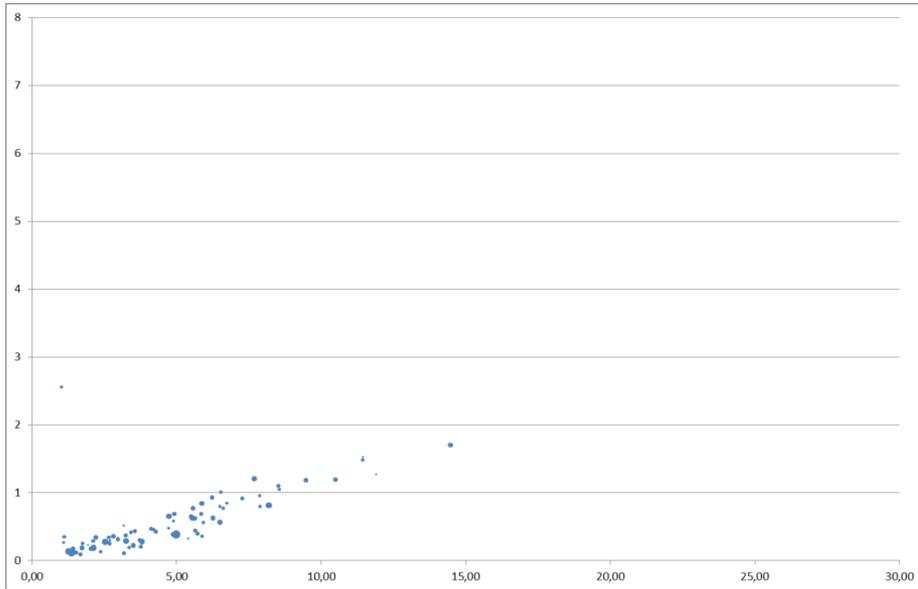
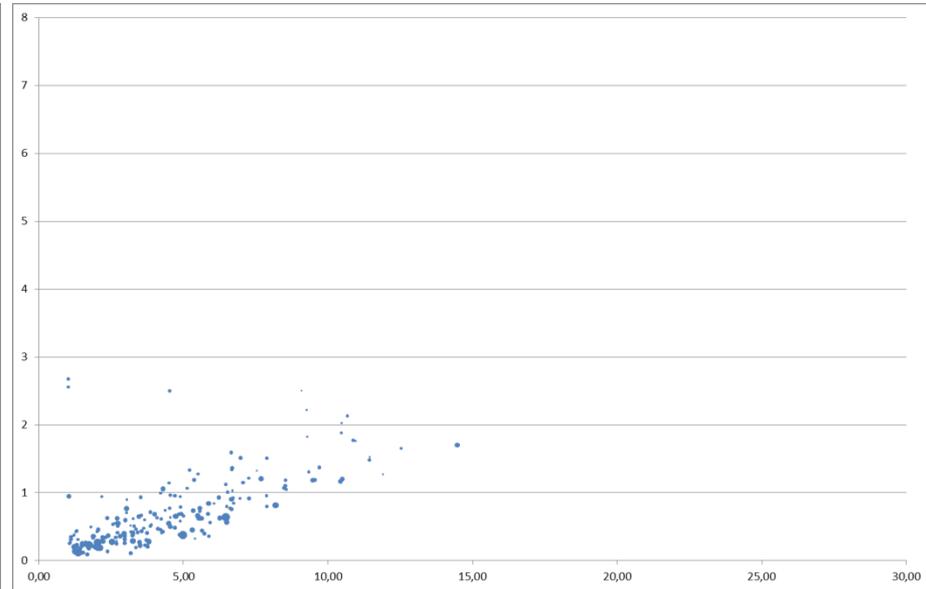
# Global Rating Universe based on BoA / ML indices



Quellen: Bloomberg, LBBW Credit Research

→ Same picture: AAA no longer available, AA on retreat.

# The CHF Corporate Bond Market

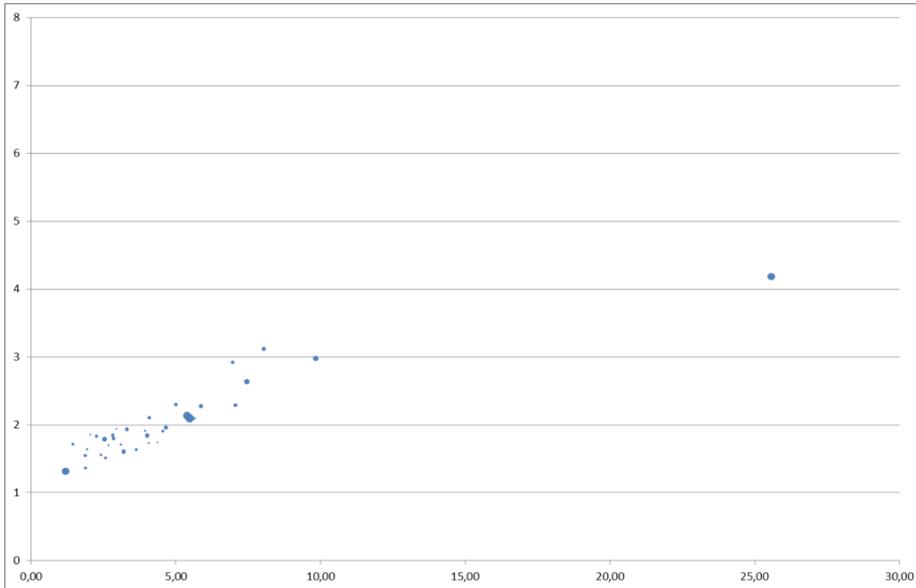
**AA****6A**

Source: Bloomberg, Average Rating (AA or, AAA+AA+A), Outstanding Amount 100m+, 28.3.13

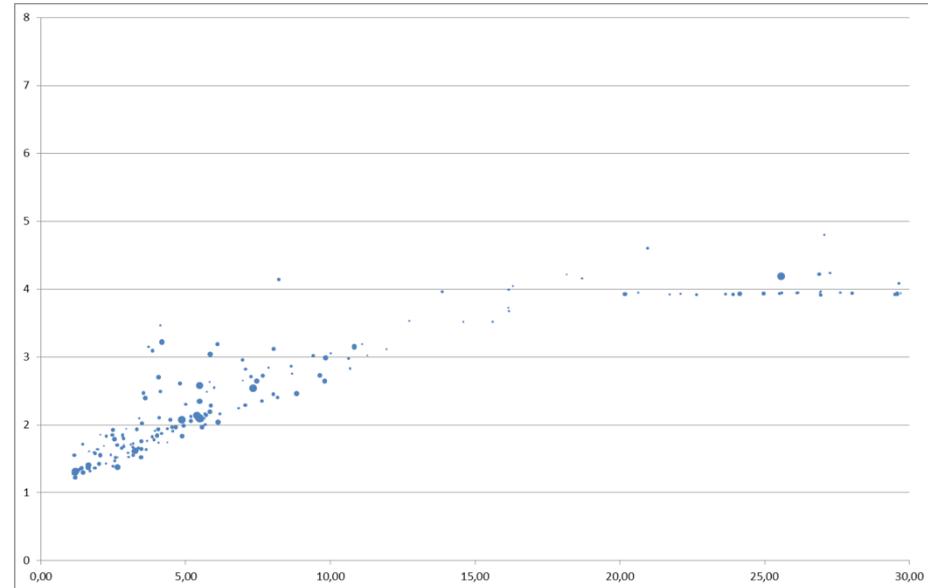
- **The CHF corporate bond market is similar to the EUR market with bond maturities quite liquid until 15 years.**
- **Breadth increases significantly when extending to A.**

# The CAD Corporate Bond Market

## AA



## 6A

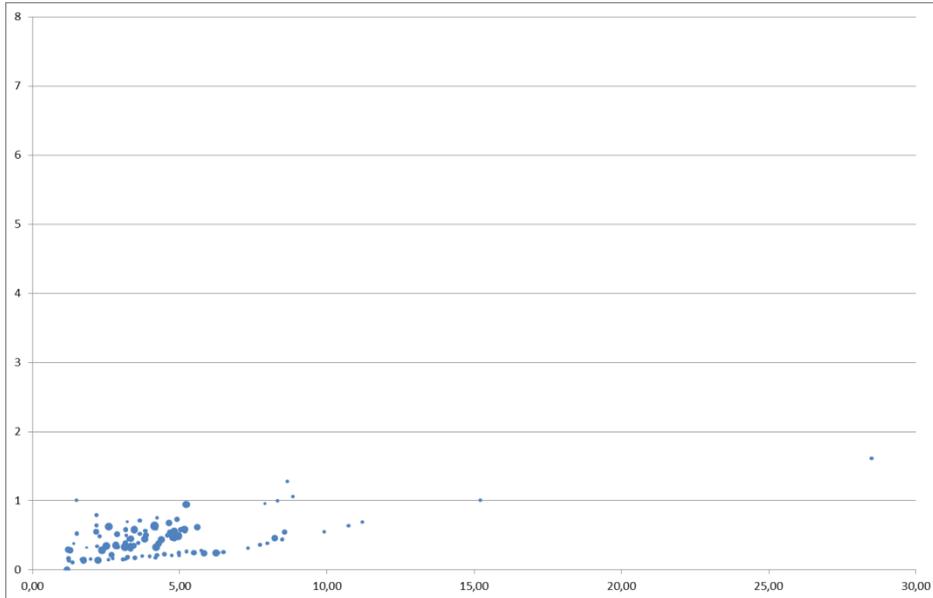


Source: Bloomberg, Average Rating (AA or, AAA+AA+A), Outstanding Amount 100m+, 28.3.13

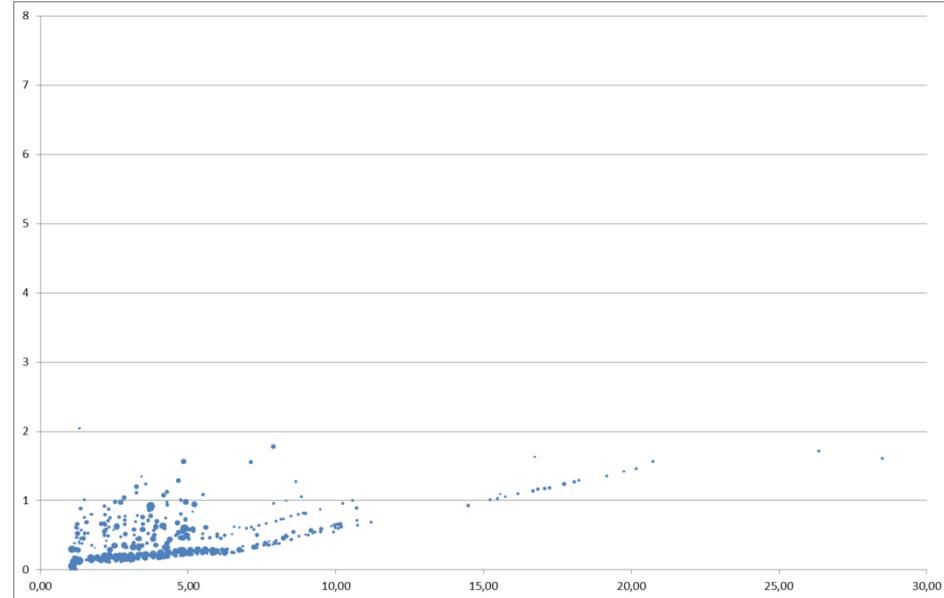
→ **A 6A approach would enable CAD sponsors to derive a discount rate based on a true yield curve.**

# The JPY Corporate Bond Market

## AA



## 6A



Source: Bloomberg, Average Rating (AA or, AAA+AA+A), Outstanding Amount 100m+ (EUR), 28.3.13

→ **A 6A approach increases number of bonds significantly.**