



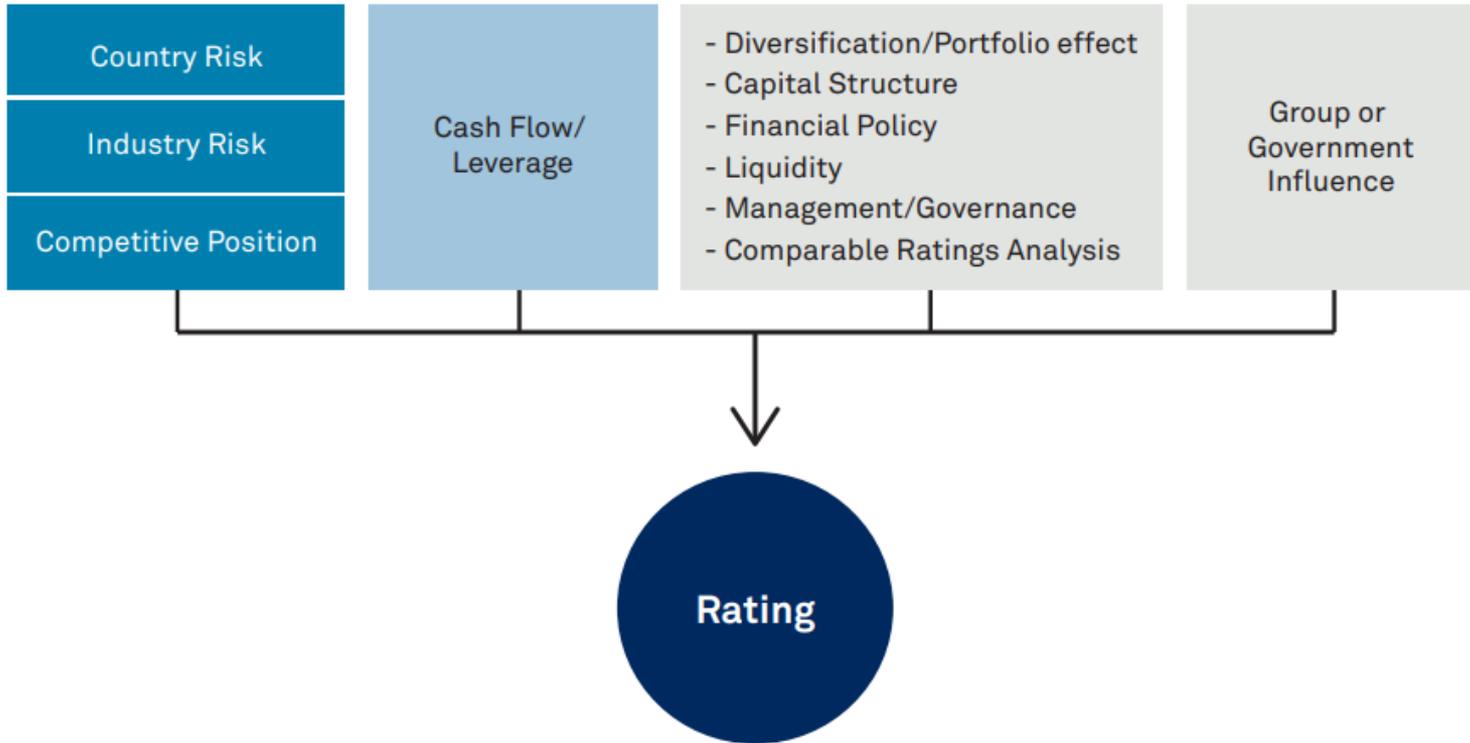
# EVOLUTION OF CORPORATE CREDIT RATINGS

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PORTFOLIO MANAGER, PRINCIPAL

JOHNSON ASSET MANAGEMENT

# HOW DO AGENCIES ARRIVE AT A RATING?

## Factors used for assessing S&P Global Ratings corporate credit ratings



» SOURCE: S&P GLOBAL

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# WHAT DO THE RATINGS MEAN?

## General summary of the opinions reflected by our ratings

<b>Investment Grade</b>	<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
<b>Speculative Grade</b>	<b>BB+</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>	Highly vulnerable; default has not yet occurred, but is expected to be a virtual certainty
	<b>C</b>	Currently highly vulnerable to non-payment, and ultimate recovery is expected to be lower than that of higher rated obligations
	<b>D</b>	Payment default on a financial commitment or breach of an imputed promise; also used when a bankruptcy petition has been filed or similar action taken

» SOURCE: S&P GLOBAL

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# HOW WE USE RATINGS – A GOOD STARTING POINT

## TOTAL # OF IG ISSUERS

AAA	7
AA+	1
AA	13
AA-	29
A+	35
A	61
A-	71
BBB+	117
BBB	145
BBB-	135
Other	25

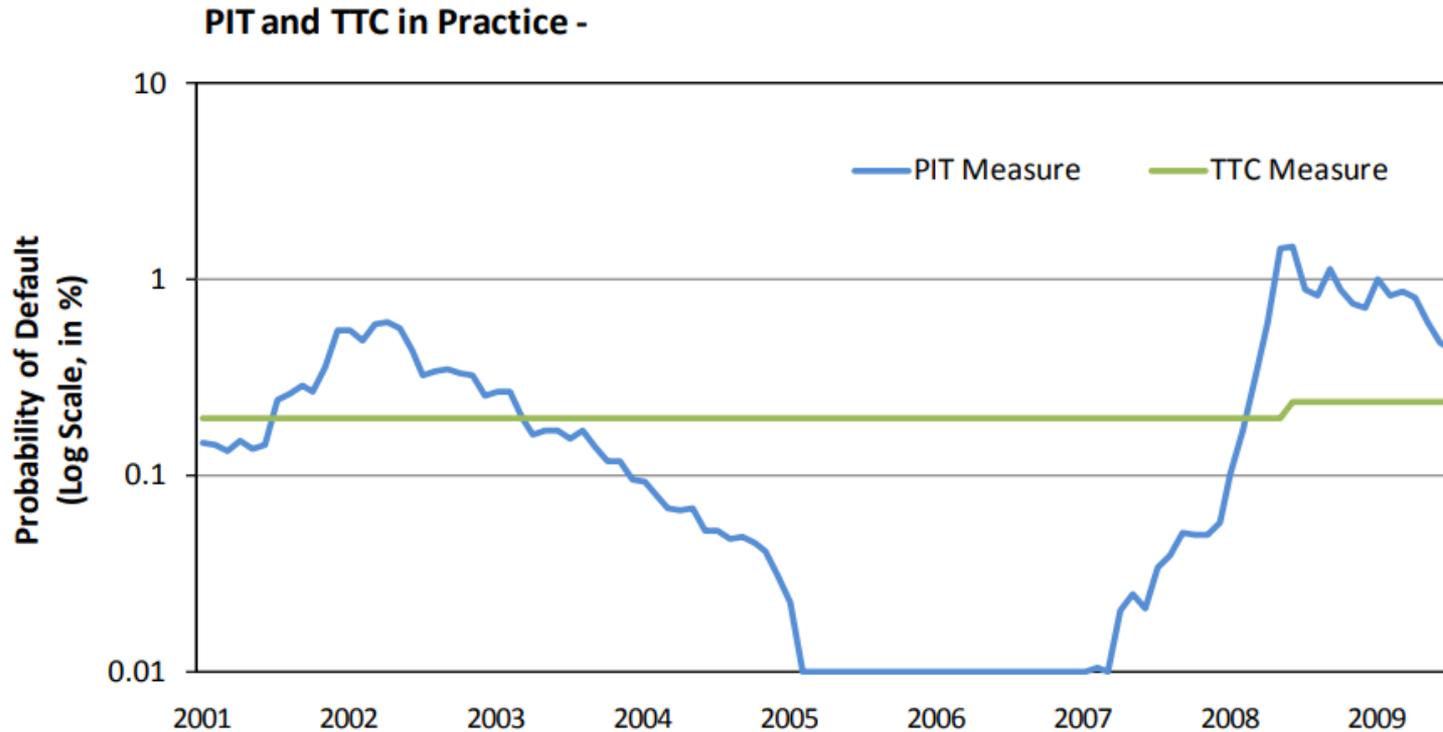
Total 639

- The “sweet spot” for quality and value
- AAA-A bonds are very high quality but often don’t offer attractive yields
- BBB / BBB- bonds have too much cyclical and downgrade risk
- Focusing on the “sweet spot” narrows the universe of issuers down from 639 to just 188.

» SOURCE: BLOOMBERG



# STRESS TESTING “THROUGH THE CYCLE”



Source: Probability of default data is based on Moody's Analytics EDF™ (expected default frequency) credit measure

» SOURCE: MOODY'S

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# MISRATINGS EXAMPLE #1 - FINANCIALS

LEHIQ US \$ Delisted

LEHIQ US Equity    90 Company Tree Ratings ▾    90 Alert    Page 1/2    Credit Rating Profile

Lehman Brothers Holdings Inc

1) Bloomberg Default Risk | DRSK »    Fitch

Moody's

2) Issuer Rating

3) Senior Unsecured Debt

4) Subordinated Debt

5) JR Subordinated Debt

6) Preferred Stock

7) Short Term

8) Standard & Poor's

9) LT Foreign Issuer Credit

10) LT Local Issuer Credit

11) ST Foreign Issuer Credit

12) ST Local Issuer Credit

Moody's Issuer Rating

Rating	Watch	Effective
WR		12/10/2008
C		12/08/2008
B3	*-	09/15/2008
A2	*	09/10/2008
A2		07/17/2008
A1	*-	06/13/2008
A1		10/22/2003
A2	**	06/24/2003
A2		11/03/2000

Up / Down / No Change / Initial

Close

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Australia 61 2 9777 8600 Brazil 5511 2395 9000 Europe 44 20 7330 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 2019 Bloomberg Finance L.P.  
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➤ SOURCE: BLOOMBERG

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# MISRATINGS EXAMPLE #2 - ENERGY

DEVN US Equity | 90 Company Tree Ratings + | 92 Alert | Page 1/1 | Credit Rating Profile  
 Devon Energy Corp

1) Bloomberg Default Risk | DRSK » Fitch

Rating	Watch	Effective
Ba1		04/21/2017
Ba2		02/25/2016
Baa1	+-	12/07/2015
Baa1		03/03/2014
Baa1	+-	11/20/2013
Baa1		09/21/2007
Baa2	++	02/08/2007
Baa2		05/02/2006
Baa2	++	02/21/2006

Up / Down / No Change / Initial

Close

Australia 61 2 9777 8600 Brazil 5511 2395 9000 Europe 44 20 7330 7500 Germany 49 69 9204 1210 Hong Kong 852 2977  
 Japan 81 3 3201 8900 Singapore 65 6212 1000 U.S. 1 212 318 2000 Copyright 2019 Bloomberg Finance L.P.  
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MRO US Equity | 90 Company Tree Ratings + | 92 Alert | Page 1/2 | Credit Rating Profile  
 Marathon Oil Corp

1) Bloomberg Default Risk | DRSK » 12) Standard & Poor's

Rating	Watch	Effective
Baa3		04/24/2019
Ba1		02/26/2016
Baa1	+-	12/16/2015
Baa1		07/31/2013
Baa2		06/28/2011
Baa1	+-	01/13/2011
Baa1		12/11/2008
Baa1	+-	08/01/2008
Baa1		05/26/2000

Up / Down / No Change / Initial

Close

Australia 61 2 9777 8600 Brazil 5511 2395 9000 Europe 44 20 7330 7500 Germany 49 69 9204 1210 Hong Kong 852 2977 6090  
 Japan 81 3 3201 8900 Singapore 65 6212 1000 U.S. 1 212 318 2000 Copyright 2019 Bloomberg Finance L.P.  
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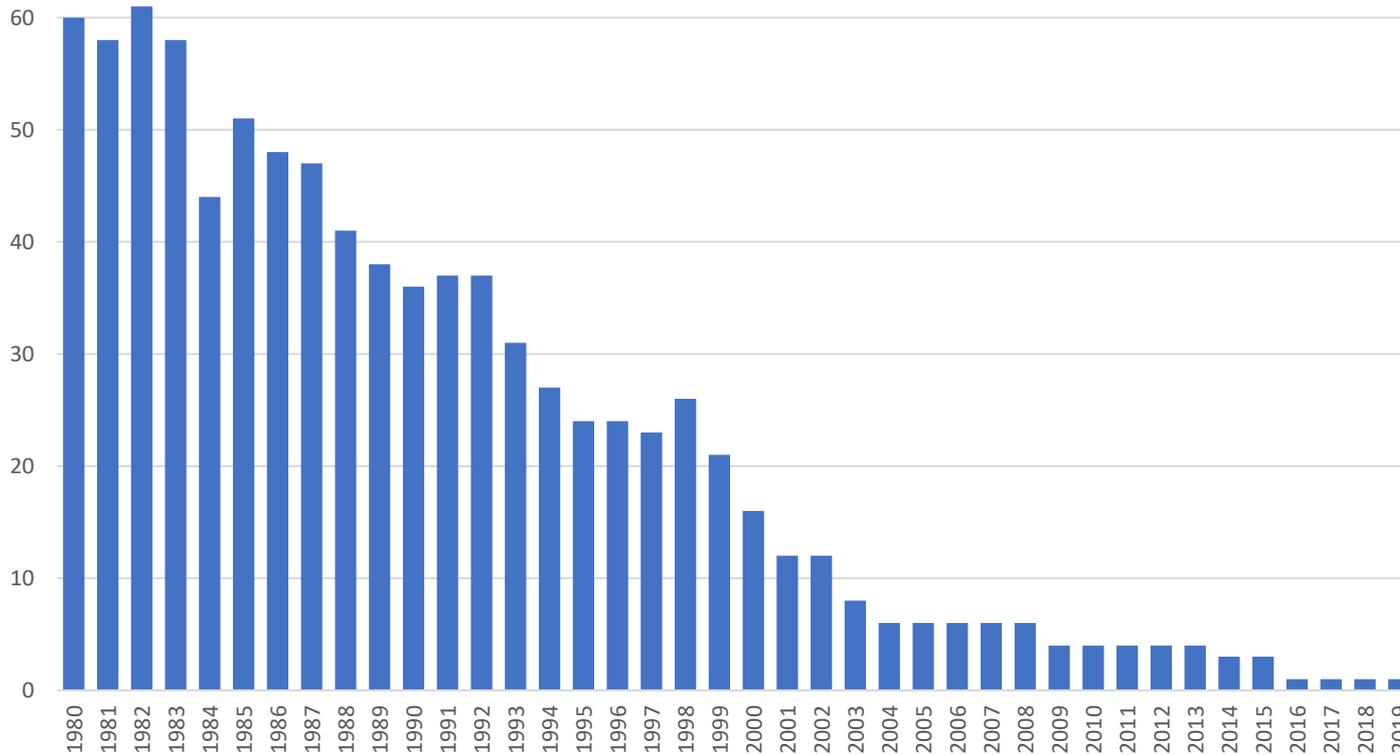
➤ SOURCE: BLOOMBERG

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# AAA COMPANIES NEARLY EXTINCT

# of AAA Rated Companies

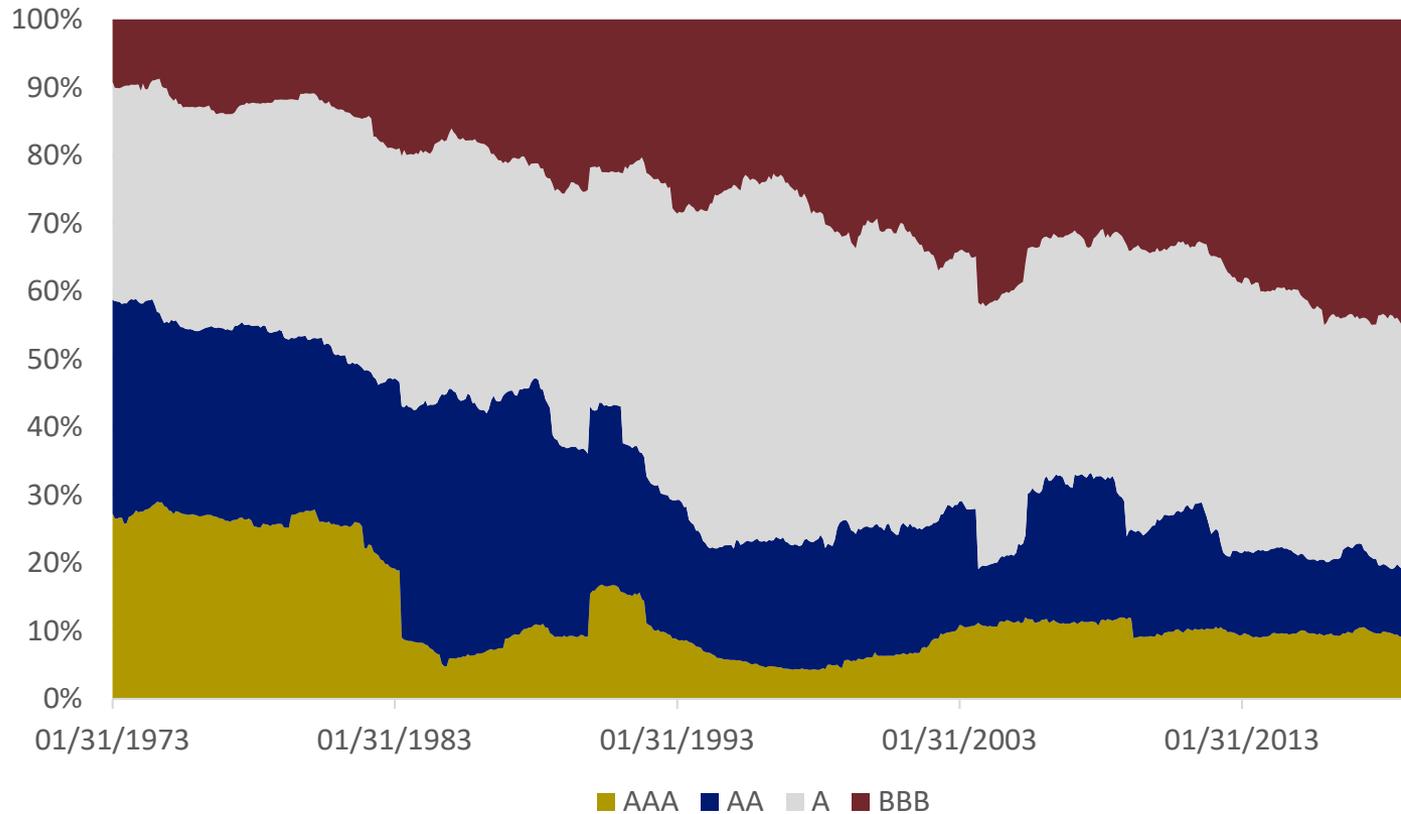


»SOURCE: THEATLAS.COM & S&P

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# CURRENT STATE OF CREDIT RATINGS

Composition of Credit Index

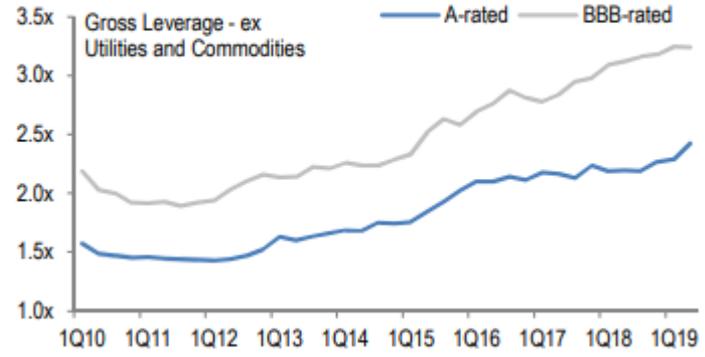


» SOURCE: BARCLAYS

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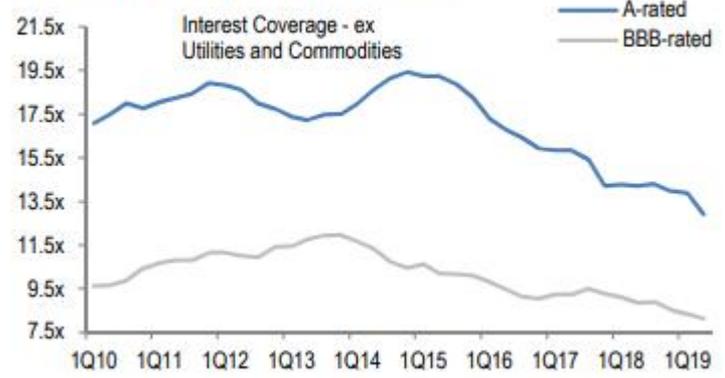
# INVESTMENT GRADE FUNDAMENTALS

**Exhibit 6: Gross leverage for A rated issuers is lower than for BBBs, but over the past year A leverage has risen faster and BBB has slowed**



Source: J.P. Morgan

**Exhibit 8: Interest coverage declined at a significantly higher pace for A rated issuers compared to BBB issuers**



Source: J.P. Morgan

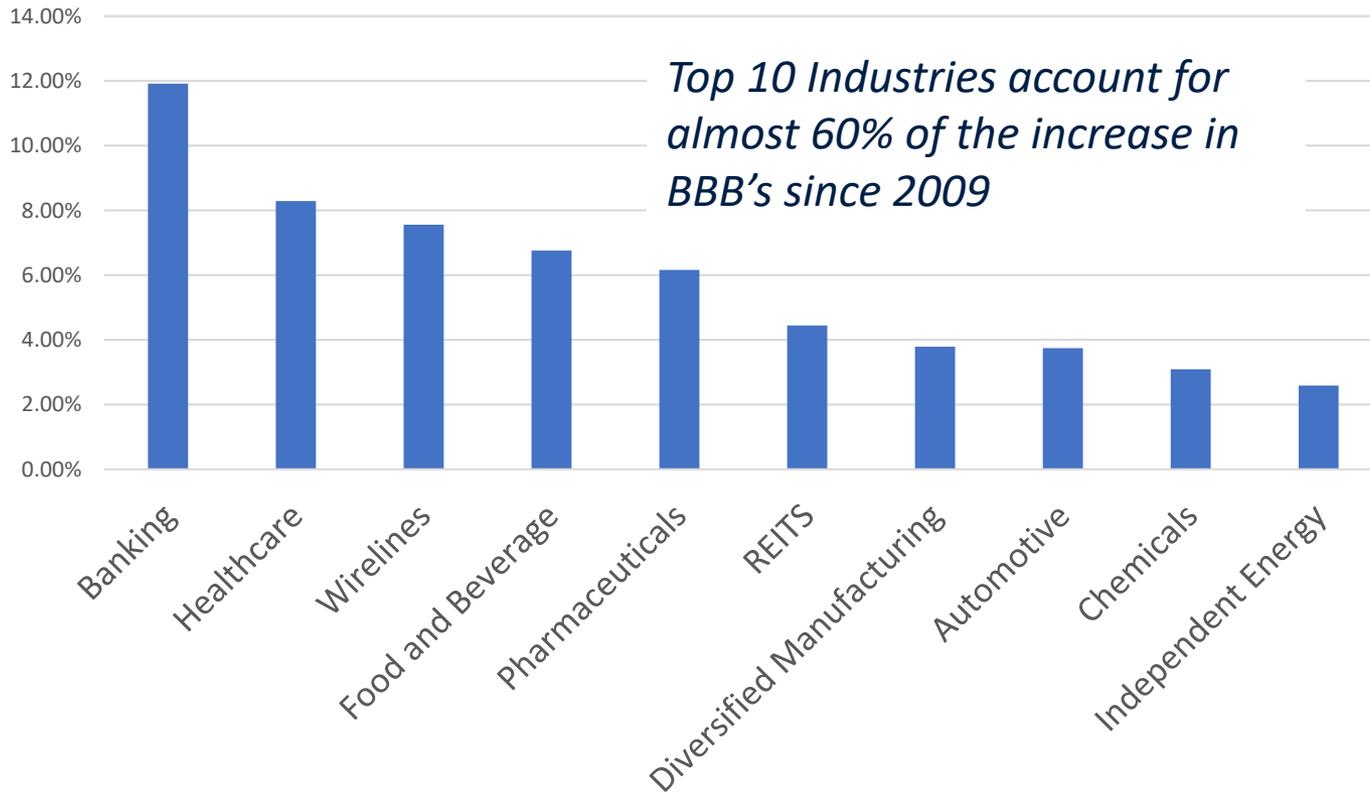
» SOURCE: JP MORGAN

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# NOT ALL BBB'S CREATED EQUALLY

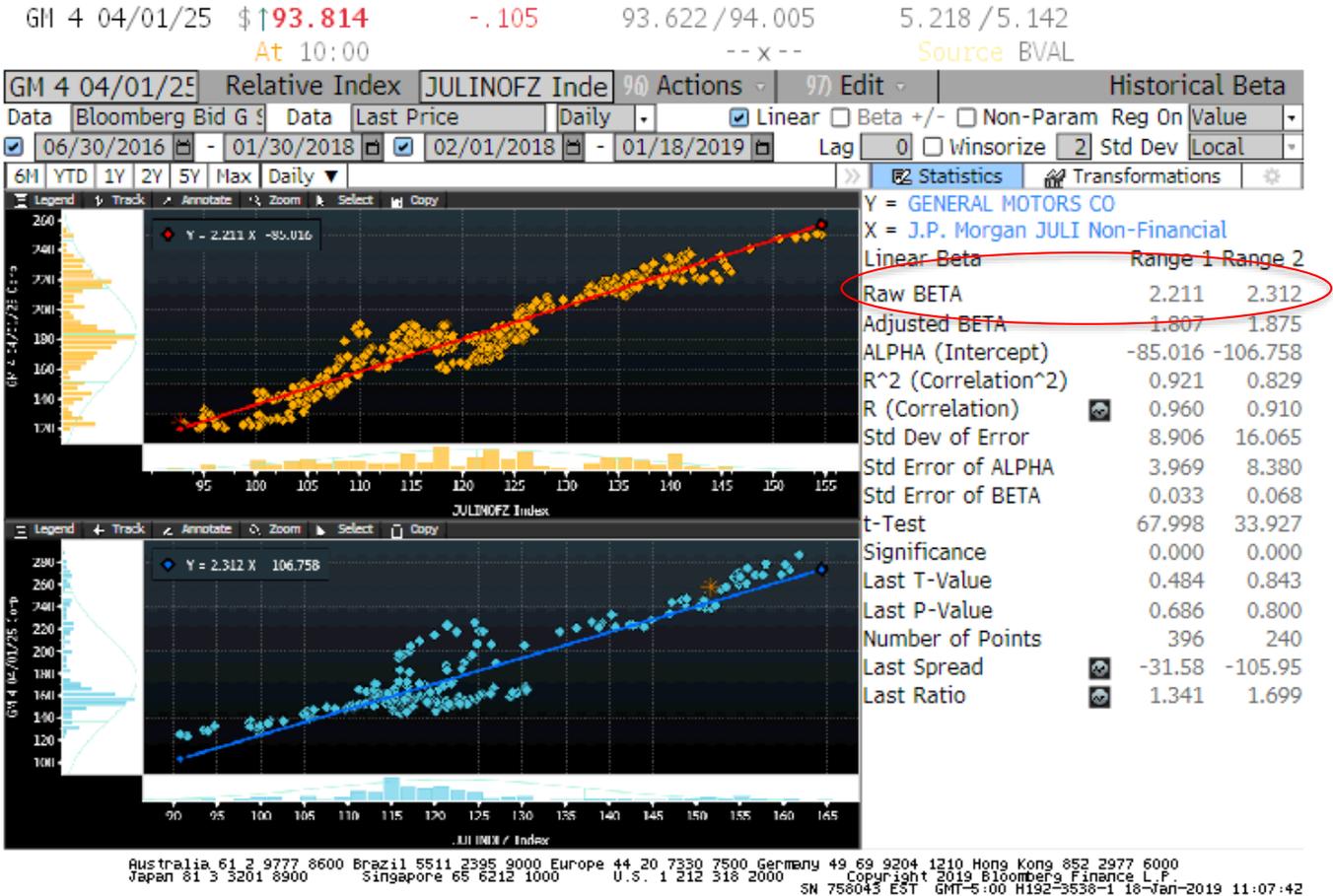
Contribution to Change in BBB's by Industry



» SOURCE: BARCLAYS

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➤ SOURCE: BLOOMBERG

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# BBB DOWNGRADE RISK

**Table 2: Historical percentage of HG debt downgraded to HY based on rating bucket each year**

1 year	BBB+	BBB-flat	BBB-
Average	2%	3%	12%
Median	0%	1%	10%
Std Dev	3%	3%	10%
Min	0%	0%	2%
Max	11%	13%	45%

Source: J.P Morgan

**Table 3: Historical percentage of HG debt downgraded to HY based on rating bucket over a two year period**

2 year	BBB+	BBB-flat	BBB-
Average	3%	5%	24%
Median	1%	5%	21%
Std Dev	4%	5%	14%
Min	0%	0%	5%
Max	13%	15%	53%

Source: J.P. Morgan

» SOURCE: JP MORGAN

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# BBB DEFAULT DATA

**Exhibit 44. Average cumulative issuer-weighted global default rates by alphanumeric rating, 1983-2018**

Rating\Year	1	2	3	4	5	6	7	8	9	10
Aaa	0.00%	0.01%	0.01%	0.04%	0.06%	0.10%	0.13%	0.13%	0.13%	0.13%
Aa1	0.00%	0.00%	0.00%	0.05%	0.09%	0.14%	0.14%	0.14%	0.16%	0.22%
Aa2	0.00%	0.01%	0.11%	0.23%	0.35%	0.43%	0.52%	0.61%	0.73%	0.87%
Aa3	0.05%	0.12%	0.17%	0.24%	0.37%	0.48%	0.62%	0.74%	0.82%	0.90%
A1	0.07%	0.20%	0.41%	0.61%	0.81%	1.02%	1.22%	1.41%	1.55%	1.72%
A2	0.05%	0.14%	0.29%	0.49%	0.72%	1.05%	1.40%	1.76%	2.13%	2.50%
A3	0.05%	0.16%	0.36%	0.54%	0.80%	1.01%	1.27%	1.56%	1.88%	2.15%
Baa1	0.12%	0.33%	0.58%	0.84%	1.07%	1.31%	1.53%	1.69%	1.86%	2.09%
Baa2	0.16%	0.41%	0.68%	1.04%	1.36%	1.71%	2.09%	2.47%	2.88%	3.34%
Baa3	0.24%	0.60%	1.03%	1.55%	2.17%	2.81%	3.37%	3.98%	4.57%	5.13%
Ba1	0.43%	1.42%	2.63%	3.83%	5.09%	6.26%	7.17%	7.91%	8.66%	9.52%
Ba2	0.74%	1.92%	3.30%	4.69%	5.97%	7.00%	8.01%	9.16%	10.47%	11.84%
Ba3	1.36%	3.82%	6.78%	10.05%	12.74%	15.25%	17.60%	19.80%	21.79%	23.69%
B1	1.99%	5.30%	8.93%	12.44%	16.01%	19.28%	22.48%	25.26%	27.73%	29.72%
B2	3.00%	7.69%	12.37%	16.68%	20.28%	23.57%	26.40%	28.71%	30.89%	32.88%
B3	4.90%	10.69%	16.55%	21.68%	26.25%	30.29%	33.69%	36.66%	39.09%	41.05%
Caa	7.90%	15.33%	21.85%	27.42%	32.17%	35.96%	39.12%	42.13%	45.00%	47.28%
Ca-C	30.67%	40.87%	47.70%	52.42%	55.14%	56.37%	58.85%	60.60%	61.52%	61.52%
IG	0.09%	0.24%	0.43%	0.66%	0.90%	1.16%	1.41%	1.66%	1.91%	2.16%
SG	4.12%	8.37%	12.42%	16.02%	19.12%	21.76%	24.07%	26.09%	27.91%	29.51%
All	1.63%	3.26%	4.76%	6.04%	7.12%	8.03%	8.80%	9.47%	10.08%	10.61%

» SOURCE: MOODY'S

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