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**Moody's CreditEdge Research**

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# How Low Can You Go?

## Using CreditEdge to Search for Yield in the US Corporate Bond Market

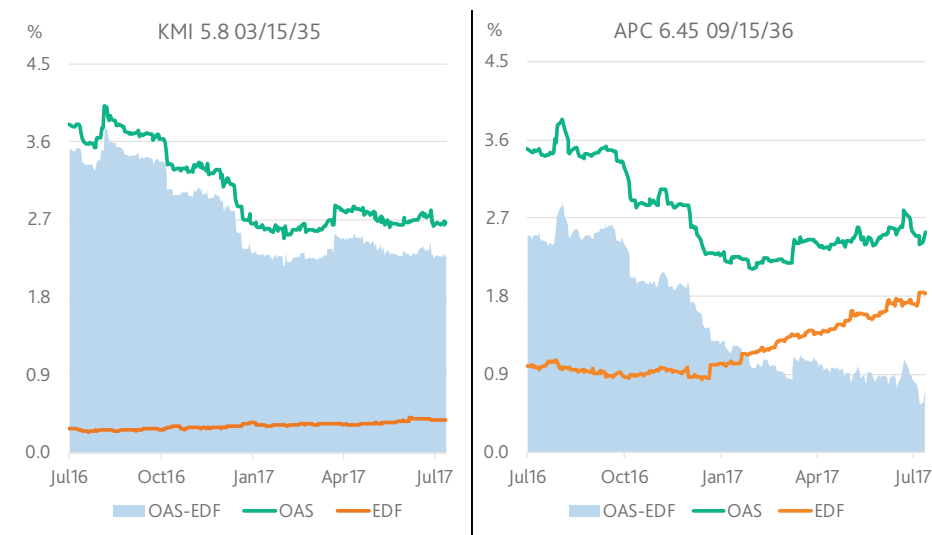
### Bottom-fishing — but with confidence

These are challenging times for corporate bond fund managers, to put it mildly. Expenses are up, management fees are down, and yields haven't been this depressed since the 1940s. Such trends are driving investment firms ever further afield in the search for assets that meet their clients' return and yield targets – and that are commensurate with fees typical for active managers. "Going low" — buying lower credit quality, and thus higher yielding, assets — is an obvious way to do this. Yet moving down the credit quality spectrum carries greater risks of downgrade and default, something that poses special challenges for managers entering riskier areas for the first time. Expected Default Frequency (EDF™) probability of default metrics, contained in Moody's Analytics' CreditEdge platform, are a way for them to take on greater credit risk with confidence, by providing granular, forward-looking views of default and downgrade risk, and by identifying undervalued securities. CreditEdge metrics also promote operational efficiencies by helping to streamline managers' existing asset selection and portfolio surveillance routines.

Default risk, as measured by security-level EDFs, often varies considerably among bonds that otherwise appear to be very similar. Two issues from companies in the US energy sector, one from Kinder Morgan and the other from Anadarko Petroleum, provide a good example of this. Both are rated Baa3 by Moody's Investors Service, have 18-19 years to maturity, and option-adjusted spreads of around 300 bp. Yet the average annualized EDF on the Kinder issue is only 0.39%, while that for the Anadarko bond is 1.73% (Figure 1).

*Default risk, as measured by EDFs, often varies considerably among bonds that otherwise appear to be very similar.*

**Figure 1: OAS and average annualized EDF metrics for selected Kinder Morgan and Anadarko bonds**



A bond's credit spread compensates the holder for a raft of unpleasant issue characteristics, ranging from default risk to illiquidity. So having the majority of the premium consumed by default risk, as is the case for the ARC issue shown on the previous page, is obviously a bad thing, one that doesn't bode well for future performance.

An investor's expected default-related loss on a bond has to be adjusted for an estimate of the loss-given default, of course. Thus, for most issues, i.e., those with LGDs of less than 100%, estimated default-related losses will be less than those suggested by the issues' PDs alone. But this doesn't change the basic point that holding bonds with high EDFs in relation to their spreads or yields could well have negative effects on future portfolio performance.

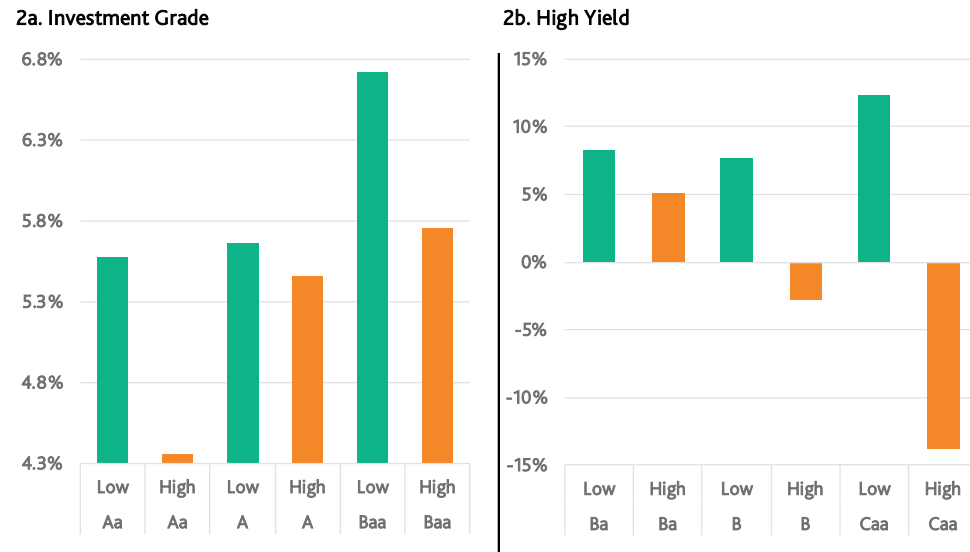
#### Bonds with low EDF measures tend to outperform those with elevated metrics

We have tested this intuitive conclusion by comparing the total returns of issues sold by entities with relatively low and relatively high firm-level EDFs, and thus with relatively low and relatively high EDFs assigned to their bonds.<sup>1</sup> As we show below, within the same rating category on average low EDF issues outperform high EDF issues, usually by a considerable margin, and have much lower downgrade/upgrade ratios and default rates (the latter only for high yield).

Our study covers the US investment grade and high yield markets for 2006-March 2017, and encompasses bonds with CreditEdge metrics that meet the inclusion rules for the iBoxx liquid benchmarks.<sup>2</sup> At the outset of the period we divided the issues based on their Moody's Investors Service ratings and rank-ordered them by their entity-level EDF metrics. We selected the bonds issued by entities in the lowest EDF quintile and those in the highest EDF quintile. We calculated their monthly total returns and annualized the results. We limited turnover by only re-ranking the issues twice a year, and charged transaction costs of 50 bp. The results are shown in Figures 2a (for investment grade) and 2b (for high yield).

*Within the same rating category on average, low EDF issues outperform high EDF issues, usually by a considerable margin, and have much lower downgrade/upgrade ratios and default rates.*

Figures 2a and 2b: Average annualized total returns for low and high EDF issues (2006-2017)



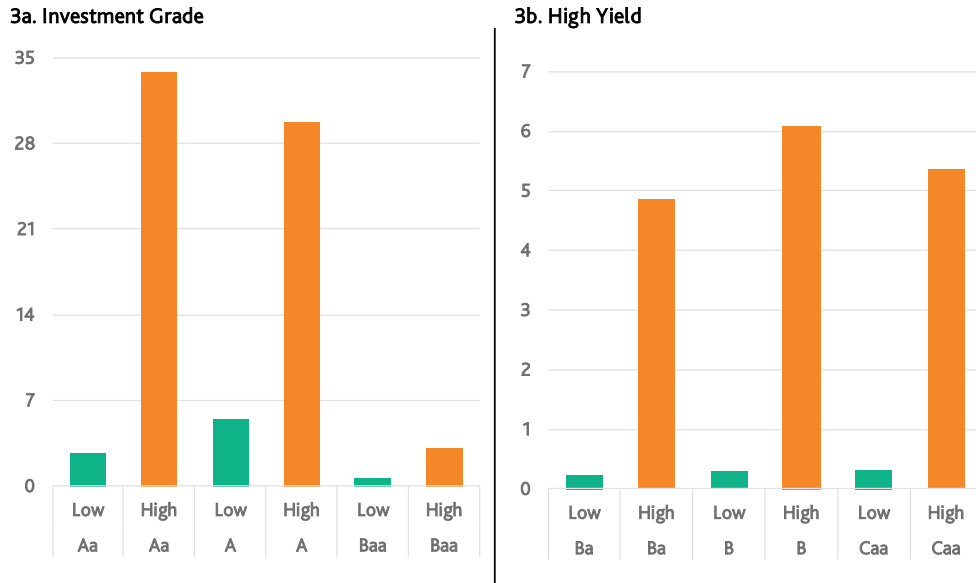
Moreover, the better return characteristics for the low EDF portfolios were achieved with a significantly reduced risk of downgrade by Moody's Investors Service (Figures 3a and 3b, for investment grade and high yield).

<sup>1</sup> As most readers will be aware, CreditEdge contains term structures of EDF measures for around 42,000 entities, updated daily, calculated on a cumulative and on an average annualized basis. We map firm-level EDF measures to bond-level metrics by first determining the duration for each issue and then taking the EDF measure from the appropriate point in the term structure and applying it to the issue.

<sup>2</sup> We will publish a white paper with full description of the study in the near future.

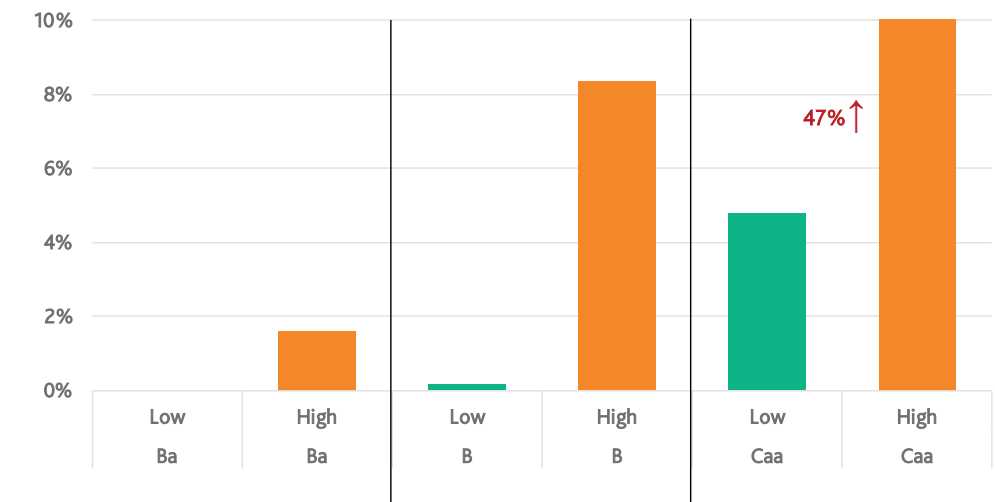
Figures 3a and 3b: Average annualized downgrade/upgrade ratios for US investment grade and high yield issues sold by low and high EDF entities

*The better return characteristics for the low EDF portfolios were achieved with a significantly reduced risk of downgrade.*



Finally, as readers would expect, within the speculative grade market the default rate on bonds issued by companies with low EDF metrics is much less than that for issues sold by entities with elevated EDFs (Figure 4).

Figure 4. Average annualized default rates for high yield entities in the low and high EDF quintiles



**Issue-level opportunities**

Having confirmed, in a reasonably rigorous way, that it's better to hold bonds with relatively low EDF metrics than bonds that CreditEdge identifies as riskier, we can now turn to picking out issues on which investors can focus.

Our starting point is same sample of issues that underlie the foregoing study, namely those that meet the eligibility criteria for the iBoxx Liquid Investment Grade and High Yield Indices. A check of TRACE trade records show that over a given 30-day period most of the securities trade in institutional lot sizes, although the number of reported trades per issue varies considerably.

We divided the issues by broad rating category, sector (industrial/utility) and duration bucket<sup>3</sup>, giving us 24 groupings for investment grade and 12 for high yield (for the latter we don't separate industrial/utility issuers from financial institutions). To illustrate better the value — or lack thereof — per bond, we constructed scatter plots of the issues, with yields on one axis and average annualized EDFs on the other. Finally, for each bucket we identified five “good” bonds (i.e., with high yields and low EDFs) and five “bad” ones, with the opposite characteristics. Our selection criteria included the number of recorded institutional lot-sized trades in TRACE. Please see the Appendix for the groupings and details of the selected issues. CreditEdge clients can access the full list of bonds via the CreditEdge platform, of course.

#### So in conclusion...

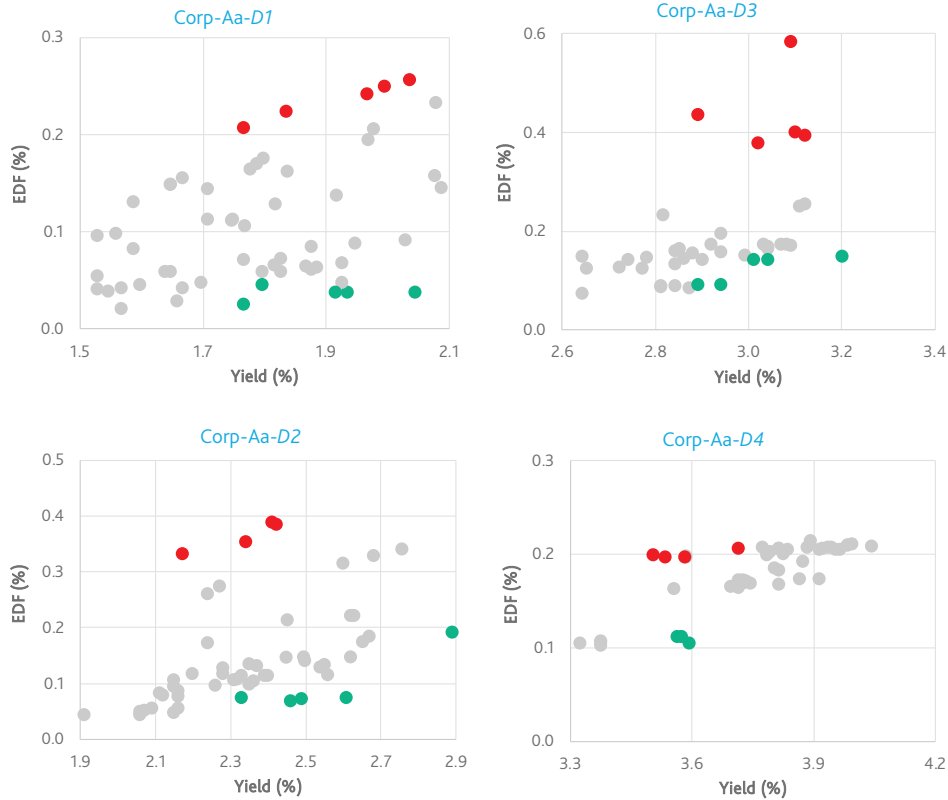
With the corporate bonds seemingly in a prolonged period of low yields, more fund managers are entering new (for them), and often riskier, parts of the market. CreditEdge metrics can help them surmount the accompanying challenges, while also providing ways to gain operational efficiencies.

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<sup>3</sup> Our four duration buckets for each market (measured in years) are, for investment grade D1 <3.4, D2<5.9, D3<11.8, D4>=11.8, and for high yield D1<3.9, D2<4.9, D3<6.1 and D4>=6.1.

APPENDIX

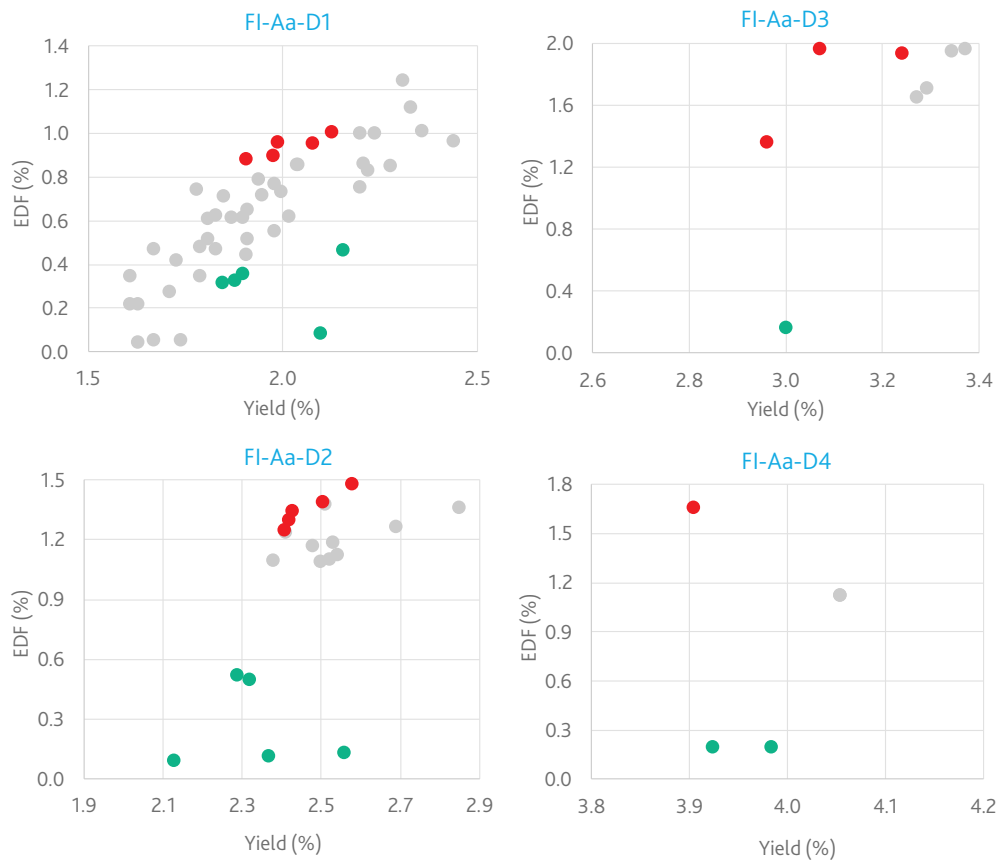
A1a. US Aa-rated Industrial/Utility Bonds – Avg. Annualized EDFs vs. Yields



A1b. US Aa-rated Industrial/Utility Bonds – list of selected issues

Duration Bucket	Good Bad	Security	Issuer	Yield (%)	EDF (%)	OAS (bp)	Moody's Rating	Outlook
D1	Good	KO 3.1500 11/15/2020	COCA-COLA CO	2.0	0.0	39	Aa3	STABLE
	Good	KO 2.4500 11/01/2020	COCA-COLA CO	1.9	0.0	27	Aa3	STABLE
	Good	NOVN 1.8000 02/14/2020	NOVARTIS AG	1.8	0.0	30	Aa3	NEG
	Good	NOVN 5.1250 02/10/2019	NOVARTIS AG	1.8	0.0	45	Aa3	NEG
	Bad	7203 4.5000 06/17/2020	TOYOTA MOTOR CORPORATION	2.0	0.3	53	Aa3	STABLE
	Bad	7203 1.9500 04/17/2020	TOYOTA MOTOR CORPORATION	2.0	0.2	43	Aa3	STABLE
	Bad	7203 2.1500 03/12/2020	TOYOTA MOTOR CORPORATION	2.0	0.2	45	Aa3	STABLE
	Bad	ADP 2.2500 09/15/2020	AUTOMATIC DATA PROCESSING	1.8	0.2	31	Aa3	STABLE
D2	Bad	7203 1.5500 10/18/2019	TOYOTA MOTOR CORPORATION	1.8	0.2	35	Aa3	STABLE
	Good	FP 3.7000 01/15/2024	TOTAL SA	2.9	0.2	78	Aa3	STABLE
	Good	KO 3.2000 11/01/2023	COCA-COLA CO	2.6	0.1	55	Aa3	STABLE
	Good	PG 3.1000 08/15/2023	PROCTER & GAMBLE CO	2.5	0.1	40	Aa3	STABLE
	Good	JNJ 3.3750 12/05/2023	JOHNSON & JOHNSON	2.3	0.1	20	Aaa	STABLE
	Bad	7203 2.6000 01/11/2022	TOYOTA MOTOR CORPORATION	2.4	0.4	52	Aa3	STABLE
D3	Bad	7203 3.4000 09/15/2021	TOYOTA MOTOR CORPORATION	2.3	0.4	59	Aa3	STABLE
	Bad	7203 1.9000 04/08/2021	TOYOTA MOTOR CORPORATION	2.2	0.3	50	Aa3	STABLE
	Good	WMT 7.5500 02/15/2030	WAL-MART STORES INC	3.2	0.1	80	Aa2	STABLE
	Good	WMT 5.8750 04/05/2027	WAL-MART STORES INC	3.0	0.1	70	Aa2	STABLE
	Good	XOM 3.0430 03/01/2026	EXXON MOBIL CORP	3.0	0.1	72	Aaa	STABLE
	Good	KO 2.2500 09/01/2026	COCA-COLA CO	2.9	0.1	63	Aa3	STABLE
	Good	GOOGL 1.9980 08/15/2026	ALPHABET INC	2.9	0.1	53	Aa2	STABLE
	Bad	RDSA 2.8750 05/10/2026	ROYAL DUTCH SHELL PLC	3.1	0.4	80	Aa2	STABLE
	Bad	RDSA 2.5000 09/12/2026	ROYAL DUTCH SHELL PLC	3.1	0.4	76	Aa2	STABLE
	Bad	7203 3.2000 01/11/2027	TOYOTA MOTOR CORPORATION	3.1	0.6	79	Aa3	STABLE
D4	Bad	RDSA 3.2500 05/11/2025	ROYAL DUTCH SHELL PLC	3.0	0.4	76	Aa2	STABLE
	Bad	ADP 3.3750 09/15/2025	AUTOMATIC DATA PROCESSING	2.9	0.4	61	Aa3	STABLE
	Good	JNJ 5.9500 08/15/2037	JOHNSON & JOHNSON	3.6	0.1	98	Aaa	STABLE
	Good	JNJ 3.7000 03/01/2046	JOHNSON & JOHNSON	3.6	0.1	76	Aaa	STABLE
	Good	JNJ 3.7500 03/03/2047	JOHNSON & JOHNSON	3.6	0.1	69	Aaa	STABLE
	Good	MSFT 3.4500 08/08/2036	MICROSOFT CORP	3.5	0.2	86	Aaa	NEG
	Bad	MSFT 3.5000 11/15/2042	MICROSOFT CORP	3.7	0.2	92	Aaa	NEG
	Bad	AAPL 4.5000 02/23/2036	APPLE INC	3.6	0.2	95	Aa1	STABLE
	Bad	MSFT 4.1000 02/06/2037	MICROSOFT CORP	3.6	0.2	89	Aaa	NEG
Bad	MSFT 4.2000 11/03/2035	MICROSOFT CORP	3.6	0.2	95	Aaa	NEG	
Bad	MSFT 3.5000 02/12/2035	MICROSOFT CORP	3.5	0.2	92	Aaa	NEG	

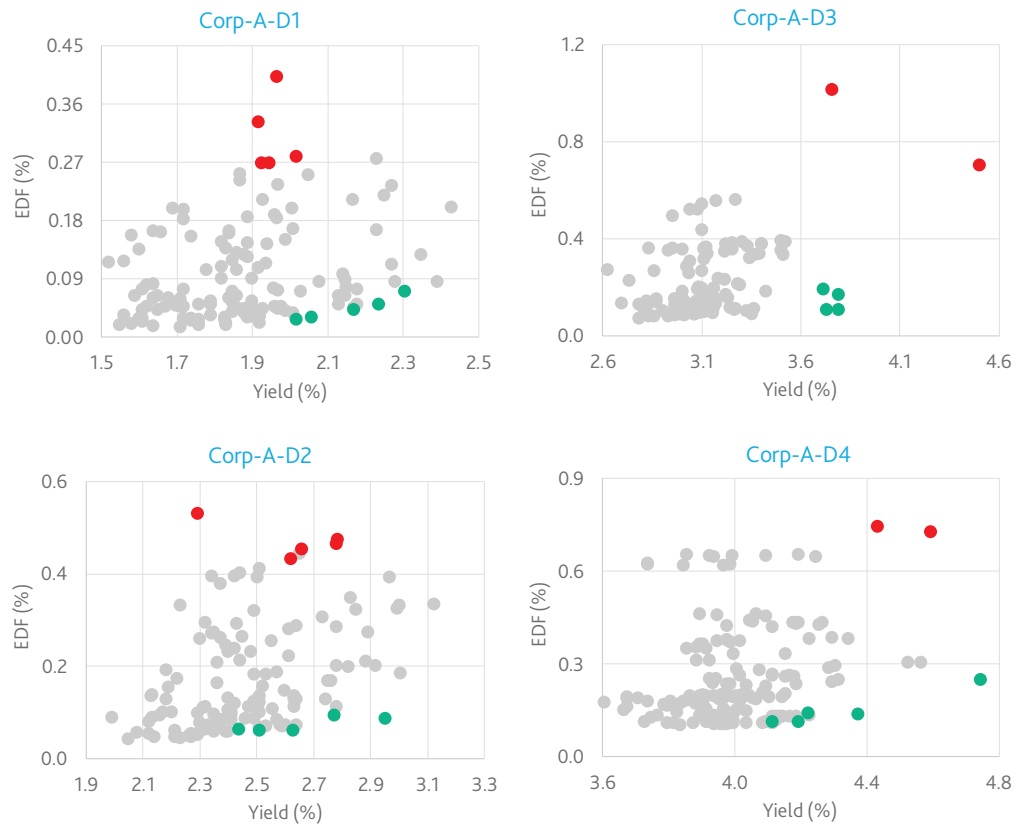
2a. US Aa-rated financial institutions — Avg. Annualized EDFs vs. Yields



A2b. US Aa-rated financial institutions – list of selected issues

Duration Bucket	Good Bad	Security	Issuer	Yield (%)	EDF (%)	OAS (bp)	Moody's Rating	Outlook
D1	Good	TD 2.5000 12/14/2020	TORONTO DOMINION BANK	2.2	0.5	53	Aa2	NEG
	Good	BRK/B 4.2500 01/15/2021	BERKSHIRE HATHAWAY	2.1	0.1	36	Aa2	STABLE
	Good	TD 2.2500 11/05/2019	TORONTO DOMINION BANK	1.9	0.4	43	Aa2	NEG
	Good	TD 1.4500 08/13/2019	TORONTO DOMINION BANK	1.9	0.3	46	Aa2	NEG
	Good	TD 2.1250 07/02/2019	TORONTO DOMINION BANK	1.8	0.3	46	Aa2	NEG
	Bad	WBC 2.3000 05/26/2020	WESTPAC BANKING CORPORATION	2.1	1.0	72	Aa3	STABLE
	Bad	WBC 2.1500 03/06/2020	WESTPAC BANKING CORPORATION	2.1	1.0	53	Aa3	STABLE
	Bad	ANZ 2.0500 09/23/2019	AUSTRALIA AND NEW ZEALAND BANKING	2.0	1.0	54	Aa3	STABLE
	Bad	ANZ 1.6000 07/15/2019	AUSTRALIA AND NEW ZEALAND BANKING	2.0	0.9	57	Aa3	STABLE
D2	Good	BRK/B 2.7500 03/15/2023	BERKSHIRE HATHAWAY	2.6	0.1	45	Aa2	STABLE
	Good	BRK/B 3.0000 05/15/2022	BERKSHIRE HATHAWAY	2.4	0.1	41	Aa2	STABLE
	Good	TD 2.1250 04/07/2021	TORONTO DOMINION BANK	2.3	0.5	59	Aa2	NEG
	Good	TD 1.8000 07/13/2021	TORONTO DOMINION BANK	2.3	0.5	51	Aa2	NEG
	Good	BRK/B 2.2000 03/15/2021	BERKSHIRE HATHAWAY	2.1	0.1	30	Aa2	STABLE
	Bad	ANZ 2.5500 11/23/2021	AUSTRALIA AND NEW ZEALAND BANKING	2.6	1.5	73	Aa3	STABLE
D3	Bad	WBC 2.8000 01/11/2022	WESTPAC BANKING CORPORATION	2.5	1.4	56	Aa3	STABLE
	Bad	WBC 2.1000 05/13/2021	WESTPAC BANKING CORPORATION	2.4	1.2	65	Aa3	STABLE
	Good	BRK/B 3.1250 03/15/2026	BERKSHIRE HATHAWAY	3.0	0.2	67	Aa2	STABLE
	Bad	WBC 2.8500 05/13/2026	WESTPAC BANKING CORPORATION	3.2	1.9	96	Aa3	STABLE
D4	Bad	ANZ 3.7000 11/16/2025	AUSTRALIA AND NEW ZEALAND BANKING	3.1	2.0	78	Aa3	STABLE
	Bad	CME 3.0000 03/15/2025	CME GROUP INC	3.0	1.4	71	Aa3	STABLE
	Good	BRK/B 5.7500 01/15/2040	BERKSHIRE HATHAWAY	4.0	0.2	126	Aa2	STABLE
	Good	BRK/B 4.5000 02/11/2043	BERKSHIRE HATHAWAY	3.9	0.2	118	Aa2	STABLE
	Bad	CME 5.3000 09/15/2043	CME GROUP INC	3.9	1.7	112	Aa3	STABLE

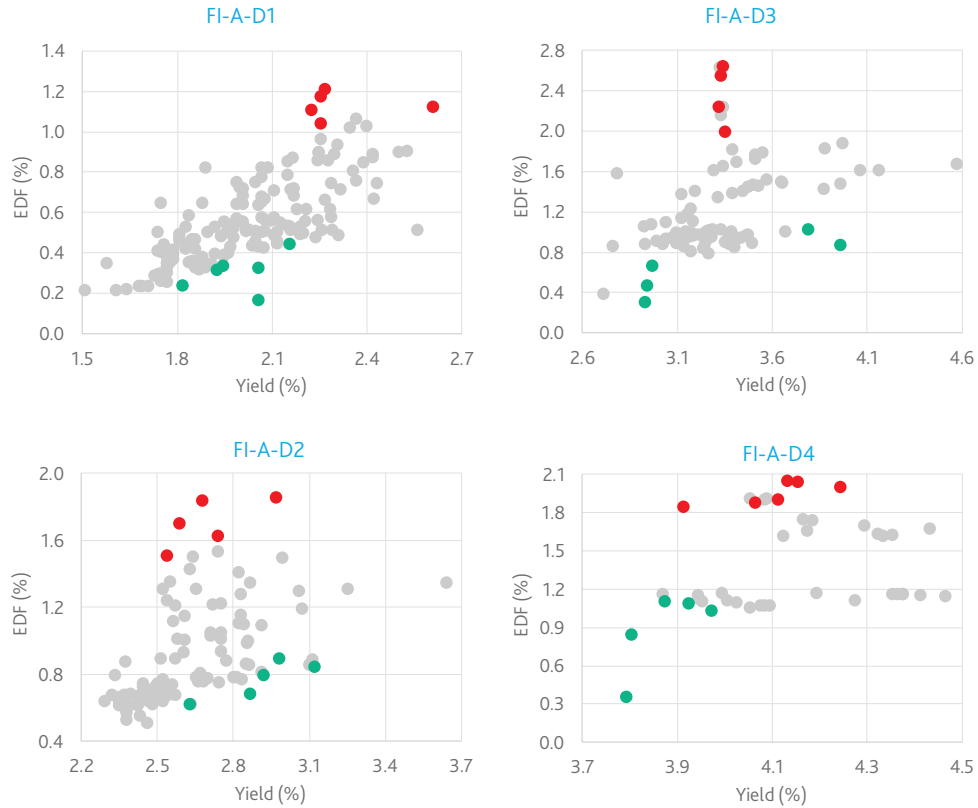
**A3a. US A-rated Industrial/Utility Bonds – Avg. Annualized EDFs vs. Yields**



**A3b. US A-rated Industrial/Utility Bonds – list of selected issues**

Duration Bucket	Good Bad	Security	Issuer	Yield (%)	EDF (%)	OAS (bp)	Moody's Rating	Outlook
D1	Good	UNA 4.2500 02/10/2021	UNILEVER N.V.	2.3	0.1	55	A1	STABLE
	Good	SYU 2.6000 10/01/2020	SYSCO CORP	2.2	0.1	59	A3	NEG
	Good	HON 4.2500 03/01/2021	HONEYWELL INTERNATIONAL INC	2.2	0.0	45	A2	STABLE
	Good	MO 2.6250 01/14/2020	ALTRIA GROUP INC	2.1	0.0	55	A3	STABLE
	Good	TRP 7.1250 01/15/2019	TRANSCANADA CORP	2.0	0.0	72	A3	STABLE
	Bad	UNH 2.7000 07/15/2020	UNITEDHEALTH GROUP INC	2.0	0.3	39	A3	NEG
	Bad	7267 2.4500 09/24/2020	HONDA MOTOR CO., LTD.	2.0	0.4	35	A1	
	Bad	QCOM 2.1000 05/20/2020	QUALCOMM INC	1.9	0.3	36	A1	STABLE
	Bad	QCOM 2.2500 05/20/2020	QUALCOMM INC	1.9	0.3	40	A1	STABLE
D2	Good	MO 4.0000 01/31/2024	ALTRIA GROUP INC	3.0	0.1	81	A3	STABLE
	Good	HD 3.7500 02/15/2024	HOME DEPOT INC	2.8	0.1	59	A2	STABLE
	Good	CMCSA 9.4550 11/15/2022	COMCAST CORP	2.6	0.1	70	A3	STABLE
	Good	GIS 3.1500 12/15/2021	GENERAL MILLS INC	2.5	0.1	66	A3	STABLE
	Good	CMCSA 3.1250 07/15/2022	COMCAST CORP	2.4	0.1	44	A3	STABLE
	Bad	BHP 3.8500 09/30/2023	BHP BILLITON LIMITED	2.8	0.5	74	A3	POS
	Bad	AMXL 3.1250 07/16/2022	AMERICA MOVIL S.A.B. DE C.V.	2.8	0.5	84	A3	STABLE
	Bad	UNH 2.8750 03/15/2023	UNITEDHEALTH GROUP INC	2.7	0.5	64	A3	NEG
	Bad	DE 2.8000 03/06/2023	DEERE & CO	2.6	0.4	63	A2	NEG
D3	Good	7267 1.7000 09/09/2021	HONDA MOTOR CO., LTD.	2.3	0.5	49	A1	
	Good	CMCSA 7.0500 03/15/2033	COMCAST CORP	3.8	0.1	129	A3	STABLE
	Good	PFE 6.5000 02/01/2034	PFIZER INC	3.8	0.2	135	A1	STABLE
	Good	CMCSA 4.2500 01/15/2033	COMCAST CORP	3.7	0.1	108	A3	STABLE
	Good	PCG 6.0500 03/01/2034	PG&E CORP	3.7	0.2	117	A3	POS
D4	Bad	AMXL 6.3750 03/01/2035	AMERICA MOVIL S.A.B. DE C.V.	4.5	0.7	195	A3	STABLE
	Bad	DAI 8.5000 01/18/2031	DAIMLER AG	3.8	1.0	137	A2	STABLE
	Good	MON 4.7000 07/15/2064	MONSANTO CO	4.7	0.3	173	A3	
	Good	TRP 7.6250 01/15/2039	TRANSCANADA CORP	4.4	0.1	174	A3	STABLE
	Good	TRP 6.1000 06/01/2040	TRANSCANADA CORP	4.2	0.1	154	A3	STABLE
D4	Good	CMCSA 5.9500 04/01/2041	COMCAST CORP	4.2	0.1	147	A3	STABLE
	Good	CMCSA 6.5500 07/01/2039	COMCAST CORP	4.1	0.1	141	A3	STABLE
	Bad	AMXL 6.1250 03/30/2040	AMERICA MOVIL S.A.B. DE C.V.	4.6	0.7	195	A3	STABLE
	Bad	AMXL 4.3750 07/16/2042	AMERICA MOVIL S.A.B. DE C.V.	4.4	0.7	167	A3	STABLE

A4a. US A-rated financial institutions — Avg. Annualized EDFs vs. Yields

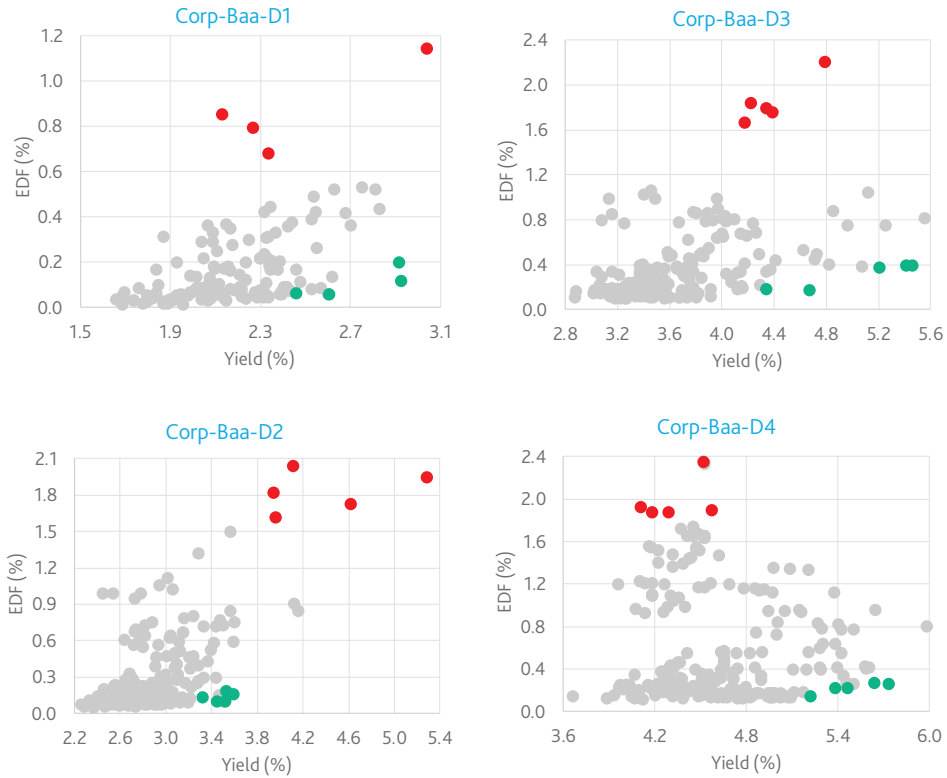


A4b. US A-rated financial institutions – list of selected issues

Duration Bucket	Good Bad	Security	Issuer	Yield (%)	EDF (%)	OAS (bp)	Moody's Rating	Outlook
D1	Good	CB 2.3000 11/03/2020 USD	CHUBB LTD	2.2	0.4	40	A3	STABLE
	Good	V 2.2000 12/14/2020 USD	VISA INC	2.1	0.3	31	A1	STABLE
	Good	GE 2.3420 11/15/2020 USD	GENERAL ELECTRIC CO	2.1	0.2	39	A1	STABLE
	Good	BNS 1.6500 06/14/2019 USD	BANK OF NOVA SCOTIA	1.9	0.3	57	A1	NEG
	Good	PNC 1.8000 11/05/2018 USD	PNC FINANCIAL SVCS GROUP INC	1.9	0.3	54	A2	STABLE
	Good	AXP 2.1250 07/27/2018 USD	AMERICAN EXPRESS CO	1.8	0.2	60	A2	STABLE
	Bad	MS 5.7500 01/25/2021 USD	MORGAN STANLEY	2.6	1.1	94	A3	STABLE
	Bad	MET 4.7500 02/08/2021 USD	METLIFE INC	2.3	1.2	58	A3	STABLE
	Bad	MS 2.8000 06/16/2020 USD	MORGAN STANLEY	2.3	1.0	73	A3	STABLE
	Bad	AMP 5.3000 03/15/2020 USD	AMERIPRISE FINANCIAL INC	2.3	1.2	67	A3	STABLE
Bad	8306 2.2500 02/10/2020 USD	MITSUBISHI UFJ FINANCIAL GROUP INCORPORA	2.2	1.1	83	A3	STABLE	
D2	Good	JPM 3.8750 02/01/2024 USD	JPMORGAN CHASE & CO	3.1	0.8	100	A3	STABLE
	Good	BK 3.6500 02/04/2024 USD	BANK OF NEW YORK MELLON CORP	3.0	0.9	80	A1	STABLE
	Good	PNC 3.8000 07/25/2023 USD	PNC FINANCIAL SVCS GROUP INC	2.9	0.8	81	A3	STABLE
	Good	PLD 4.2500 08/15/2023 USD	PROLOGIS INC	2.9	0.7	76	A3	STABLE
	Good	BNS 2.7000 03/07/2022 USD	BANK OF NOVA SCOTIA	2.6	0.6	75	A1	NEG
	Bad	AMP 4.0000 10/15/2023 USD	AMERIPRISE FINANCIAL INC	3.0	1.9	76	A3	STABLE
	Bad	8316 3.2000 07/18/2022 USD	SUMITOMO MITSUI FINANCIAL GROUP INC	2.7	1.6	80	A1	STABLE
	Bad	8306 2.9980 02/22/2022 USD	MITSUBISHI UFJ FINANCIAL GROUP INCORPORA	2.7	1.8	82	A1	STABLE
D3	Good	TD FRN 09/15/2031 USD	TORONTO DOMINION BANK	4.0	0.9	153	A3	NEG
	Good	WFC 4.3000 07/22/2027 USD	WELLS FARGO & CO	3.8	1.0	141	A3	STABLE
	Good	V 3.1500 12/14/2025 USD	VISA INC	3.0	0.7	72	A1	STABLE
	Good	MA 2.9500 11/21/2026 USD	MASTERCARD INC	2.9	0.5	59	A2	STABLE
	Good	GE 3.3730 11/15/2025 USD	GENERAL ELECTRIC CO	2.9	0.3	64	A1	STABLE
	Bad	8411 2.8390 09/13/2026 USD	MIZUHO FINANCIAL GROUP INC	3.4	2.0	98	A1	STABLE
	Bad	8306 3.6770 02/22/2027 USD	MITSUBISHI UFJ FINANCIAL GROUP INCORPORA	3.3	2.6	99	A1	STABLE
D4	Good	8316 3.4460 01/11/2027 USD	SUMITOMO MITSUI FINANCIAL GROUP INC	3.3	2.2	98	A1	STABLE
	Bad	8316 3.0100 10/19/2026 USD	SUMITOMO MITSUI FINANCIAL GROUP INC	3.3	2.2	97	A1	STABLE
	Good	PGR 4.1250 04/15/2047 USD	PROGRESSIVE CORP-OHIO	4.0	1.0	110	A2	STABLE
	Good	JPM 4.8500 02/01/2044 USD	JPMORGAN CHASE & CO	3.9	1.1	115	A3	STABLE
	Good	CB 6.0000 05/11/2037 USD	CHUBB LTD	3.9	1.1	127	A3	STABLE
	Good	V 4.3000 12/14/2045 USD	VISA INC	3.8	0.8	94	A1	STABLE
	Good	GE 4.4180 11/15/2035 USD	GENERAL ELECTRIC CO	3.8	0.4	119	A1	STABLE
	Bad	MS 6.3750 07/24/2042 USD	MORGAN STANLEY	4.2	2.0	150	A3	STABLE
	Bad	MS 4.3000 01/27/2045 USD	MORGAN STANLEY	4.2	2.0	134	A3	STABLE
	Bad	MS 4.3750 01/22/2047 USD	MORGAN STANLEY	4.1	2.0	130	A3	STABLE
	Bad	MET 4.8750 11/13/2043 USD	METLIFE INC	4.1	1.9	131	A3	STABLE
	Bad	MET 5.8750 02/06/2041 USD	METLIFE INC	4.1	1.9	136	A3	STABLE
	Bad	MET 5.7000 06/15/2035 USD	METLIFE INC	3.9	1.8	134	A3	STABLE



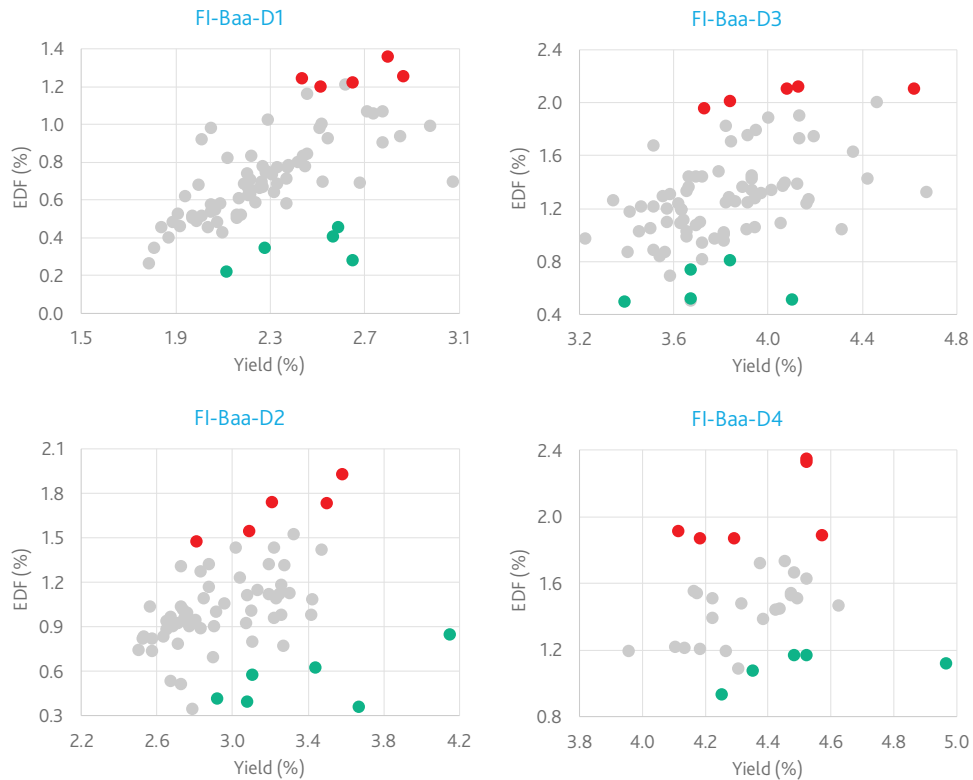
A5a. US Baa-rated Industrial/Utility Bonds – Avg. Annualized EDFs vs. Yields



A5b. US Baa-rated Industrial/Utility Bonds – list of selected issues

Duration Bucket	Good Bad	Security	Issuer	Yield (%)	EDF (%)	OAS (bp)	Moody's Rating	Outlook
D1	Good	ETP 4.1500 10/01/2020	ENERGY TRANSFER PARTNERS -LP	2.9	0.1	124	Baa3	
	Good	CA 5.3750 12/01/2019	CA INC	2.9	0.2	165	Baa2	STABLE
	Good	T 4.6000 02/15/2021	AT&T INC	2.6	0.1	92	Baa1	
	Good	TMO 4.5000 03/01/2021	THERMO FISHER SCIENTIFIC INC	2.5	0.1	76	Baa2	STABLE
	Bad	CQP 5.6250 02/01/2021	CHENIERE ENERGY PARTNERS LP	3.0	1.1	120	Baa3	STABLE
	Bad	WPZ 5.2500 03/15/2020	WILLIAMS PARTNERS LP	2.3	0.7	81	Baa3	STABLE
	Bad	NBL 8.2500 03/01/2019	NOBLE ENERGY INC	2.3	0.8	94	Baa3	STABLE
	Bad	STX 3.7500 11/15/2018	SEAGATE TECHNOLOGY PLC - ADR	2.1	0.9	94	Baa3	NEG
D2	Good	ETP 5.8750 03/01/2022	ENERGY TRANSFER PARTNERS -LP	3.6	0.2	158	Baa3	
	Good	ETP 3.6000 02/01/2023	ENERGY TRANSFER PARTNERS -LP	3.5	0.2	149	Baa3	
	Good	T 4.4500 04/01/2024	AT&T INC	3.5	0.1	135	Baa1	
	Good	T 3.8000 03/01/2024	AT&T INC	3.5	0.1	130	Baa1	
	Good	VZ 4.1500 03/15/2024	VERIZON COMMUNICATIONS INC	3.3	0.1	120	Baa1	STABLE
	Bad	MU 7.5000 09/15/2023	MICRON TECHNOLOGY INC	5.3	1.9	149	Baa2	STABLE
	Bad	M 2.8750 02/15/2023	MACY'S INC	4.6	1.7	255	Baa3	STABLE
	Bad	STX 4.7500 06/01/2023	SEAGATE TECHNOLOGY PLC - ADR	4.1	2.0	210	Baa3	NEG
D3	Bad	CQP 5.7500 05/15/2024	CHENIERE ENERGY PARTNERS LP	4.0	1.6	177	Baa3	STABLE
	Bad	STX 4.2500 03/01/2022	SEAGATE TECHNOLOGY PLC - ADR	4.0	1.8	206	Baa3	NEG
	Good	SCCO 7.5000 07/27/2035	SOUTHERN COPPER CORP	5.5	0.4	288	Baa2	STABLE
	Good	KMI 6.9500 01/15/2038	KINDER MORGAN INC	5.4	0.4	280	Baa3	STABLE
	Good	KMI 7.7500 01/15/2032	KINDER MORGAN INC	5.2	0.4	280	Baa3	STABLE
	Good	VZ 5.0500 03/15/2034	VERIZON COMMUNICATIONS INC	4.7	0.2	212	Baa1	STABLE
	Good	FOXA 6.2000 12/15/2034	TWENTY-FIRST CENTURY FOX INC	4.3	0.2	187	Baa1	STABLE
	Bad	STX 4.7500 01/01/2025	SEAGATE TECHNOLOGY PLC - ADR	4.8	2.2	255	Baa3	NEG
D4	Bad	CQP 5.8750 06/30/2026	CHENIERE ENERGY PARTNERS LP	4.4	1.7	204	Baa3	STABLE
	Bad	CQP 5.0000 03/15/2027	CHENIERE ENERGY PARTNERS LP	4.3	1.8	195	Baa3	STABLE
	Bad	CQP 4.2000 03/15/2028	CHENIERE ENERGY PARTNERS LP	4.2	1.8	183	Baa3	STABLE
	Bad	CQP 5.6250 03/01/2025	CHENIERE ENERGY PARTNERS LP	4.2	1.7	190	Baa3	STABLE
	Good	ETP 6.5000 02/01/2042	ENERGY TRANSFER PARTNERS -LP	5.7	0.3	298	Baa3	
	Good	ETP 6.1250 12/15/2045	ENERGY TRANSFER PARTNERS -LP	5.6	0.3	283	Baa3	
	Good	DISCA 6.3500 06/01/2040	DISCOVERY COMMUNICATIONS INC	5.5	0.2	288	Baa3	STABLE
	Good	DISCA 4.8750 04/01/2043	DISCOVERY COMMUNICATIONS INC	5.4	0.2	264	Baa3	STABLE
D4	Good	T 5.7000 03/01/2057	AT&T INC	5.2	0.1	221	Baa1	
	Bad	RJF 4.9500 07/15/2046	RAYMOND JAMES FINANCIAL CORP	4.6	1.9	176	Baa2	
	Bad	BARC 4.9500 01/10/2047	BARCLAYS PLC	4.5	2.3	174	Baa2	NEG
	Bad	PRU 6.6250 12/01/2037	PRUDENTIAL FINANCIAL INC	4.3	1.9	161	Baa1	STABLE
	Bad	PRU 5.7000 12/14/2036	PRUDENTIAL FINANCIAL INC	4.2	1.9	150	Baa1	STABLE
	Bad	PRU 4.6000 05/15/2044	PRUDENTIAL FINANCIAL INC	4.1	1.9	131	Baa1	STABLE

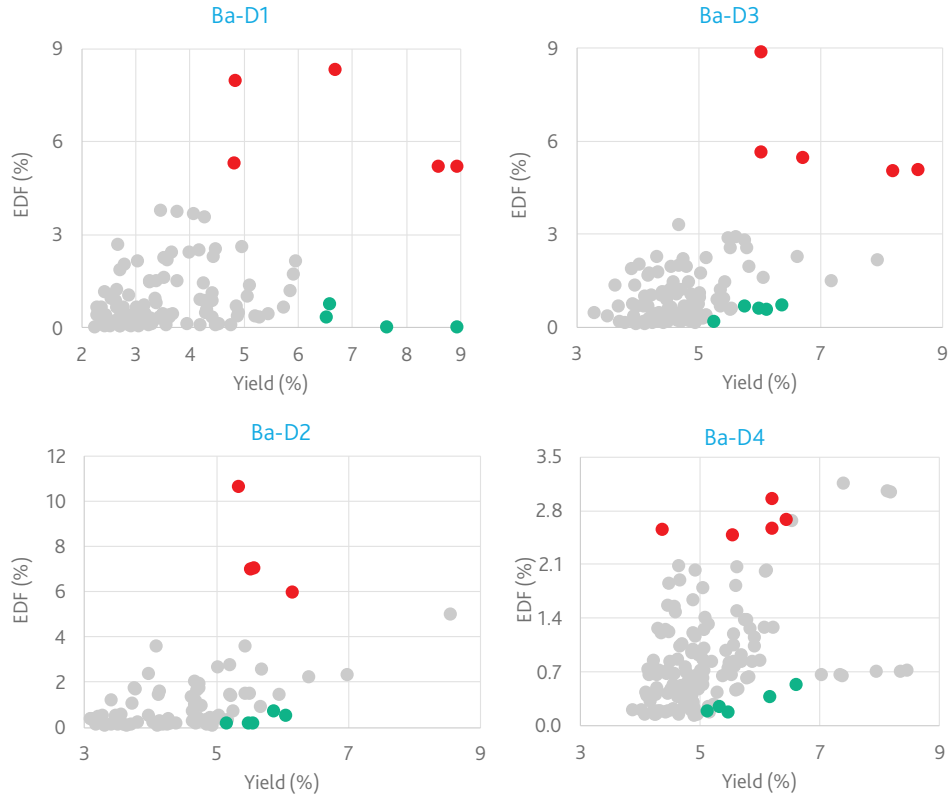
A6a. Baa-rated financial institutions — Avg. Annualized EDFs vs. Yields



A6b. US Baa-rated financial institutions – list of selected issues

Duration Bucket	Good Bad	Security	Issuer	Yield (%)	EDF (%)	OAS (bp)	Moody's Rating	Outlook
D1	Good	CCI 3.4000 02/15/2021	CROWN CASTLE INTL CORP	2.6	0.3	93	Baa3	STABLE
	Good	VER 3.0000 02/06/2019	VEREIT INC	2.6	0.5	125	Baa3	STABLE
	Good	AMT 3.3000 02/15/2021	AMERICAN TOWER CORP	2.6	0.4	87	Baa3	STABLE
	Good	AMT 2.8000 06/01/2020	AMERICAN TOWER CORP	2.3	0.3	73	Baa3	STABLE
	Good	AMT 3.4000 02/15/2019	AMERICAN TOWER CORP	2.1	0.2	75	Baa3	STABLE
	Bad	BARC 5.1400 10/14/2020	BARCLAYS PLC	2.9	1.3	122	Baa3	NEG
	Bad	BARC 3.2500 01/12/2021	BARCLAYS PLC	2.8	1.4	113	Baa2	NEG
	Bad	SAN 3.1250 01/08/2021	BANCO SANTANDER SA	2.6	1.2	100	Baa1	NEG
	Bad	BARC 2.8750 06/08/2020	BARCLAYS PLC	2.5	1.2	101	Baa2	NEG
	Bad	BBVA 3.0000 10/20/2020	BANCO BILBAO VIZCAYA ARGENTARIA SA	2.4	1.2	75	Baa1	STABLE
D2	Good	CBG 5.0000 03/15/2023	CBRE GROUP INC	4.2	0.8	149	Baa3	POS
	Good	BAM/A 4.0000 04/01/2024	BROOKFIELD ASSET MANAGEMENT	3.7	0.4	151	Baa2	STABLE
	Good	AMT 5.0000 02/15/2024	AMERICAN TOWER CORP	3.4	0.6	114	Baa3	STABLE
	Good	AMT 3.5000 01/31/2023	AMERICAN TOWER CORP	3.1	0.6	104	Baa3	STABLE
	Good	CCI 5.2500 01/15/2023	CROWN CASTLE INTL CORP	3.1	0.4	108	Baa3	STABLE
	Good	CCI 3.8490 04/15/2023	CROWN CASTLE INTL CORP	2.9	0.4	90	Baa2	NEG
	Good	BARC 3.2000 08/10/2021	BARCLAYS PLC	2.8	1.5	110	Baa2	NEG
	Bad	ISP 5.2500 01/12/2024	INTESA SANPAOLO SPA	3.6	1.9	142	Baa1	NEG
	Bad	RBS 3.8750 09/12/2023	ROYAL BANK OF SCOTLAND GROUP PLC	3.5	1.7	143	Baa3	STABLE
	Bad	BARC 3.6840 01/10/2023	BARCLAYS PLC	3.2	1.7	118	Baa2	NEG
Bad	SAN 3.5710 01/10/2023	BANCO SANTANDER SA	3.1	1.5	115	Baa1	NEG	
D3	Good	WY 7.3750 03/15/2032	WEYERHAEUSER CO	4.1	0.5	158	Baa2	STABLE
	Good	BNS 4.5000 12/16/2025	BANK OF NOVA SCOTIA	3.8	0.8	156	Baa2	NEG
	Good	CCI 3.7000 06/15/2026	CROWN CASTLE INTL CORP	3.7	0.5	139	Baa3	STABLE
	Good	AMT 3.3750 10/15/2026	AMERICAN TOWER CORP	3.7	0.7	137	Baa3	STABLE
	Good	AON 3.8750 12/15/2025	AON PLC - ADR	3.4	0.5	117	Baa2	STABLE
	Bad	BARC 4.8360 05/09/2028	BARCLAYS PLC	4.6	2.1	217	Baa3	NEG
	Bad	WBC FRN 11/23/2031	WESTPAC BANKING CORPORATION	4.1	2.1	175	Baa1	STABLE
	Bad	BARC 4.3370 01/10/2028	BARCLAYS PLC	4.1	2.1	163	Baa2	NEG
D4	Bad	BARC 4.3750 01/12/2026	BARCLAYS PLC	3.8	2.0	161	Baa2	NEG
	Bad	BARC 3.6500 03/16/2025	BARCLAYS PLC	3.7	2.0	155	Baa2	NEG
	Good	WFC 5.9500 12/15/2036	WELLS FARGO & CO	5.0	1.1	233	Baa1	STABLE
	Good	BAC 7.7500 05/14/2038	BANK OF AMERICA CORP	4.5	1.2	193	Baa3	POS
	Good	BAC 6.1100 01/29/2037	BANK OF AMERICA CORP	4.5	1.2	186	Baa3	POS
	Good	JPM 5.6250 08/16/2043	JPMORGAN CHASE & CO	4.4	1.1	159	Baa1	STABLE
	Good	EQR 4.5000 07/01/2044	EQUITY RESIDENTIAL	4.3	0.9	144	Baa1	POS
	Bad	RJF 4.9500 07/15/2046	RAYMOND JAMES FINANCIAL CORP	4.6	1.9	176	Baa2	NEG
	Bad	BARC 4.9500 01/10/2047	BARCLAYS PLC	4.5	2.3	174	Baa2	NEG
	Bad	PRU 6.6250 12/01/2037	PRUDENTIAL FINANCIAL INC	4.3	1.9	161	Baa1	STABLE
	Bad	PRU 5.7000 12/14/2036	PRUDENTIAL FINANCIAL INC	4.2	1.9	150	Baa1	STABLE
	Bad	PRU 4.6000 05/15/2044	PRUDENTIAL FINANCIAL INC	4.1	1.9	131	Baa1	STABLE

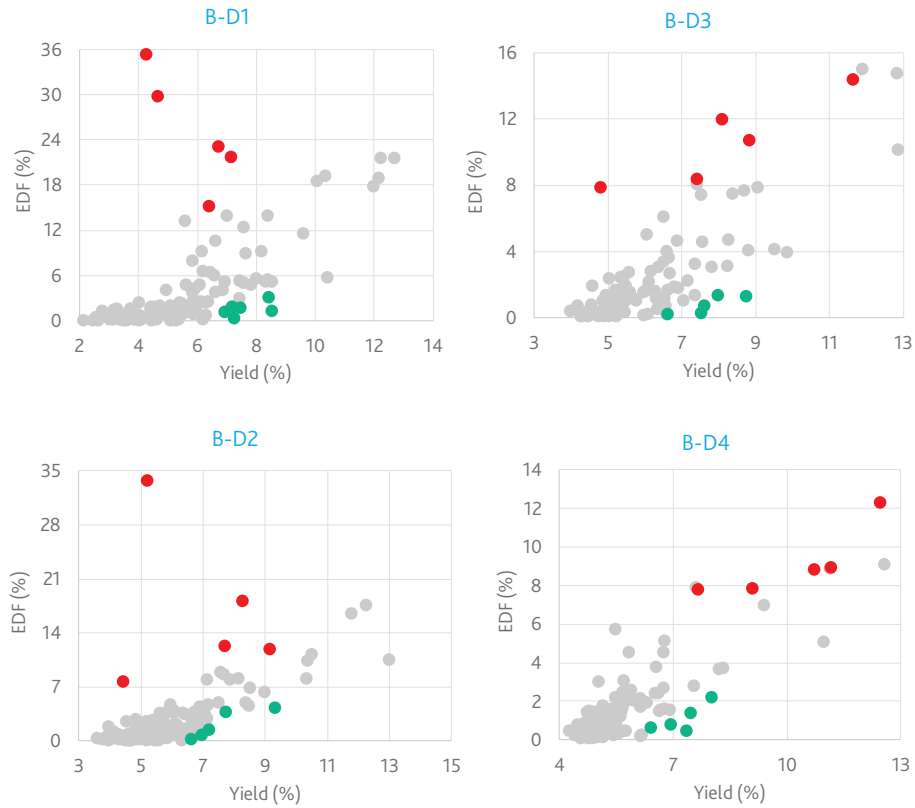
A7a. US Ba-rated Bonds – Avg. Annualized EDFs vs. Yields



A7b. US Ba-rated Bonds – list of selected issues

Duration Bucket	Good Bad	Security	Issuer	Yield (%)	EDF (%)	OAS (bp)	Moody's Rating	Outlook
D1	Good	SIRI 4.2500 05/15/2020	SIRIUS XM HOLDINGS INC	8.9	0.0	173	Ba3	STABLE
	Good	SIRI 5.7500 08/01/2021	SIRIUS XM HOLDINGS INC	7.6	0.0	241	Ba3	STABLE
	Good	HRG 7.8750 07/15/2019	HRG GROUP INC	6.6	0.8	241	Ba3	STABLE
	Good	VII 8.2500 05/15/2020	SEVEN GENERATIONS ENERGY LTD	6.5	0.3	423	Ba3	STABLE
	Good	MIC 6.6250 10/15/2021	MILLICOM INTERNATIONAL CELLULAR SA	5.7	0.7	365	Ba2	NEG
	Bad	GNW 7.6250 09/24/2021	GENWORTH FINANCIAL INC	9.0	5.2	719	Ba3	
	Bad	GNW 7.7000 06/15/2020	GENWORTH FINANCIAL INC	8.6	5.2	699	Ba3	
	Bad	PFC 3.4000 10/10/2018	PETROFAC LIMITED	6.7	8.3	552	Ba1	NEG
	Bad	CYH 5.1250 08/01/2021	COMMUNITY HEALTH SYSTEMS INC	4.8	7.9	292	Ba3	NEG
Bad	CLF 8.2500 03/31/2020	CLIFFS NATURAL RESOURCES INC	4.8	5.3	219	Ba3	STABLE	
D2	Good	VII 6.7500 05/01/2023	SEVEN GENERATIONS ENERGY LTD	6.0	0.5	398	Ba3	STABLE
	Good	MTCH 6.7500 12/15/2022	MATCH GROUP INC	5.9	0.7	223	Ba3	STABLE
	Good	TMUS 6.8360 04/28/2023	T-MOBILE US INC	5.6	0.2	202	Ba3	STABLE
	Good	DVA 5.7500 08/15/2022	DAVITA INC	5.2	0.2	302	Ba3	STABLE
	Bad	BTU 6.0000 03/31/2022	PEABODY ENERGY CORP	6.1	6.0	435	Ba3	STABLE
	Bad	CYH 6.2500 03/31/2023	COMMUNITY HEALTH SYSTEMS INC	5.6	7.0	355	Ba3	NEG
	Bad	SGMS 7.0000 01/01/2022	SCIENTIFIC GAMES CORP	5.5	7.0	338	Ba3	STABLE
Bad	VRX 6.5000 03/15/2022	VALEANT PHARMACEUTICALS INTL	5.3	10.7	328	Ba3	NEG	
D3	Good	OLN 10.0000 10/15/2025	OLIN CORP	6.4	0.7	229	Ba1	STABLE
	Good	VII 6.8750 06/30/2023	SEVEN GENERATIONS ENERGY LTD	6.1	0.5	387	Ba3	STABLE
	Good	OLN 9.7500 10/15/2023	OLIN CORP	5.8	0.7	196	Ba1	STABLE
	Good	TMUS 6.5000 01/15/2024	T-MOBILE US INC	5.3	0.2	256	Ba3	STABLE
	Bad	GNW 4.9000 08/15/2023	GENWORTH FINANCIAL INC	8.6	5.1	650	Ba3	
	Bad	GNW 4.8000 02/15/2024	GENWORTH FINANCIAL INC	8.2	5.0	603	Ba3	
	Bad	BTU 6.3750 03/31/2025	PEABODY ENERGY CORP	6.7	5.5	444	Ba3	STABLE
	Bad	VRX 7.0000 03/15/2024	VALEANT PHARMACEUTICALS INTL	6.0	8.9	374	Ba3	NEG
Bad	JCP 5.8750 07/01/2023	PENNEY (J C) CO	6.0	5.6	402	Ba2		
D4	Good	USM 6.7000 12/15/2033	US CELLULAR CORP	6.6	0.5	404	Ba1	NEG
	Good	KMI 7.7680 12/15/2037	KINDER MORGAN INC	6.2	0.4	355	Ba1	STABLE
	Good	SEE 6.8750 07/15/2033	SEALED AIR CORP	5.5	0.2	292	Ba3	STABLE
	Good	HCA 5.5000 06/15/2047	HCA HEALTHCARE INC	5.3	0.2	251	Ba1	POS
	Good	TMUS 6.3750 03/01/2025	T-MOBILE US INC	5.2	0.2	248	Ba3	STABLE
	Bad	MT 7.2500 03/01/2041	ARCELORMITTAL SA	6.5	2.7	380	Ba1	STABLE
	Bad	CLR 4.9000 06/01/2044	CONTINENTAL RESOURCES INC	6.2	2.6	343	Ba3	POS
	Bad	NAVI 6.7500 06/25/2025	NAVIENT CORP	6.2	3.0	395	Ba3	STABLE
	Bad	ETFC FRN	E TRADE FINANCIAL CORP	5.5	2.5	276	Ba3	STABLE
Bad	MT 6.1250 06/01/2025	ARCELORMITTAL SA	4.4	2.5	211	Ba1	STABLE	

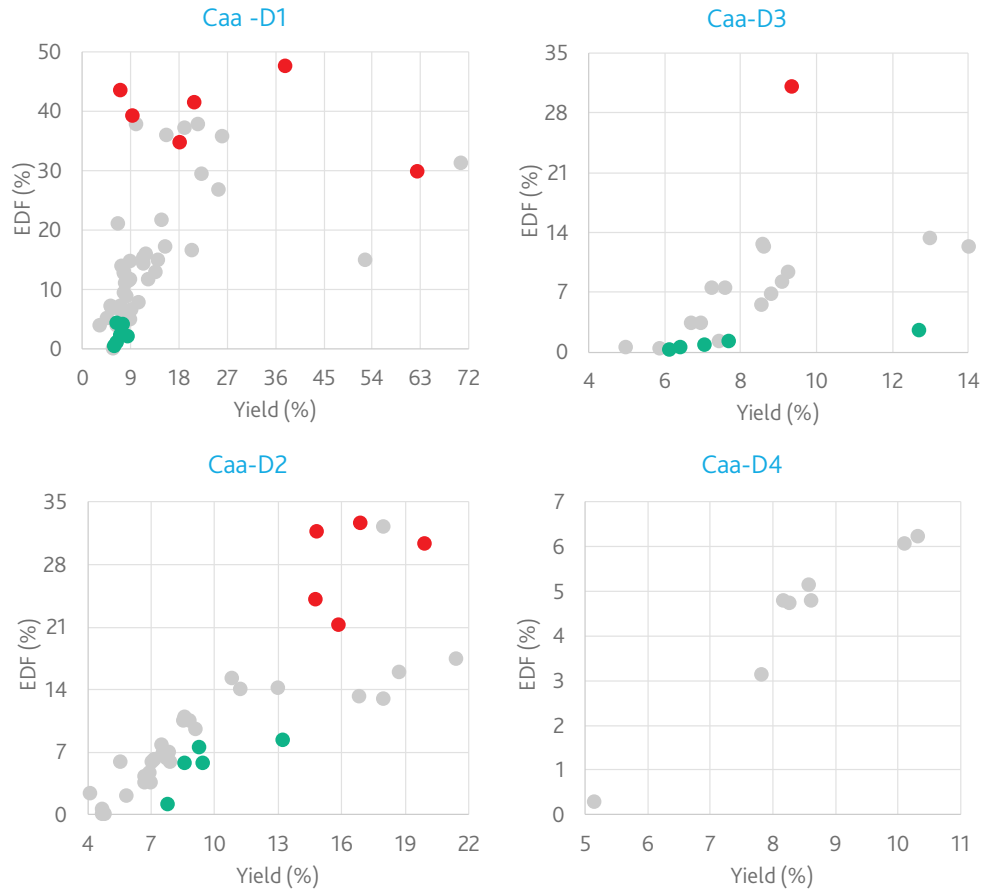
**A8a. US B-rated Bonds – Avg. Annualized EDFs vs. Yields**



**A8b. US B-rated Bonds – list of selected issues**

Duration Bucket	Good Bad	Security	Issuer	Yield (%)	EDF (%)	OAS (bp)	Moody's Rating	Outlook
D1	Good	REV 5.7500 02/15/2021	REVLON INC -CLA	8.5	1.3	672	B3	STABLE
	Good	SPN 7.1250 12/15/2021	SUPERIOR ENERGY SERVICES INC	8.4	3.0	687	B2	NEG
	Good	MDR 8.0000 05/01/2021	MCDERMOTT INTL INC	7.5	1.6	564	B2	POS
	Good	ALR 7.2500 07/01/2018	ALERE INC	7.2	0.2	448	B3	
	Good	FET 6.2500 10/01/2021	FORUM ENERGY TECH INC	6.9	1.1	512	B2	STABLE
	Bad	FTR 8.8750 09/15/2020	FRONTIER COMMUNICATIONS CORP	7.2	21.7	527	B2	NEG
	Bad	FTR 8.5000 04/15/2020	FRONTIER COMMUNICATIONS CORP	6.7	23.1	522	B2	NEG
	Bad	CLMT 11.5000 01/15/2021	CALUMET SPECIALTY PRODS -LP	6.4	15.2	381	B2	
	Bad	FTR 7.1250 03/15/2019	FRONTIER COMMUNICATIONS CORP	4.7	29.7	327	B2	NEG
Bad	FTR 8.1250 10/01/2018	FRONTIER COMMUNICATIONS CORP	4.3	35.3	282	B2	NEG	
D2	Good	ENDP 5.3750 01/15/2023	ENDO INTERNATIONAL PLC	9.3	4.3	737	B3	
	Good	KND 8.7500 01/15/2023	KINDRED HEALTHCARE INC	7.7	3.7	545	B3	STABLE
	Good	MNK 5.7500 08/01/2022	MALLINCKRODT PLC	7.2	1.3	524	B1	
	Good	LUK 6.8750 04/15/2022	LEUCADIA NATIONAL CORP	7.0	0.8	512	B1	
	Good	ATC 10.1250 01/15/2023	ALTICE NV	6.6	0.2	277	B2	STABLE
	Bad	HTZ 6.2500 10/15/2022	HERTZ GLOBAL HOLDINGS INC	9.2	11.9	729	B3	STABLE
	Bad	MNI 9.0000 12/15/2022	MCCLATCHY CO -CLA	8.3	18.1	613	B1	STABLE
	Bad	HTZ 7.6250 06/01/2022	HERTZ GLOBAL HOLDINGS INC	7.7	12.3	583	B1	STABLE
Bad	I 9.5000 09/30/2022	INTELSAT SA	5.2	33.7	333	B1		
Bad	000415 5.2500 08/15/2022	BOHAI CAPITAL HOLDING CO LTD	4.4	7.6	247	B1	STABLE	
D3	Good	REV 6.2500 08/01/2024	REVLON INC -CLA	8.8	1.3	652	B3	STABLE
	Good	MNK 4.7500 04/15/2023	MALLINCKRODT PLC	8.0	1.4	588	B2	STABLE
	Good	CNDT 10.5000 12/15/2024	CONDUENT INC	7.6	0.7	482	B2	
	Good	ATC 10.8750 10/15/2025	ALTICE NV	7.5	0.3	383	B2	STABLE
	Good	CBS 7.2500 11/01/2024	CBS CORP	6.6	0.2	446	B3	STABLE
	Bad	FTR 7.6250 04/15/2024	FRONTIER COMMUNICATIONS CORP	11.9	15.0	952	B2	NEG
	Bad	HTZ 5.5000 10/15/2024	HERTZ GLOBAL HOLDINGS INC	8.8	10.7	677	B3	STABLE
	Bad	EPE 8.0000 11/29/2024	EP ENERGY CORP	8.1	11.9	583	B3	
	Bad	SM 5.0000 01/15/2024	SM ENERGY CO	7.4	8.4	531	B2	STABLE
Bad	000415 5.5000 02/15/2024	BOHAI CAPITAL HOLDING CO LTD	4.8	7.8	263	B1	STABLE	
D4	Good	PBF 7.2500 06/15/2025	PBF ENERGY INC	8.0	2.2	579	B1	
	Good	MNK 5.5000 04/15/2025	MALLINCKRODT PLC	7.5	1.4	533	B1	
	Good	QVCA 8.2500 02/01/2030	LIBERTY INTERACTV CP QVC GRP	7.4	0.4	493	B2	STABLE
	Good	CPN 5.7500 01/15/2025	CALPINE CORP	6.9	0.8	473	B2	STABLE
	Good	CVA 5.8750 07/01/2025	COVANTA HOLDING CORP	6.4	0.6	401	B1	STABLE
	Bad	FTR 9.0000 08/15/2031	FRONTIER COMMUNICATIONS CORP	12.5	12.3	981	B2	NEG
	Bad	NE 6.0500 03/01/2041	NOBLE CORP PLC	11.2	8.9	854	B2	NEG
	Bad	NE 5.2500 03/15/2042	NOBLE CORP PLC	10.7	8.8	819	B2	NEG
	Bad	RDC 5.8500 01/15/2044	ROWAN COMPANIES PLC	8.3	3.7	561	B1	STABLE
Bad	SM 5.6250 06/01/2025	SM ENERGY CO	7.6	7.9	524	B2	STABLE	
Bad	WLH 5.8750 01/31/2025	WILLIAM LYON HOMES	5.5	5.7	316	B3	STABLE	

**A9a. US Caa-rated Bonds – Avg. Annualized EDFs vs. Yields**



**A9b. US Caa-rated Bonds – list of selected issues**

Duration Bucket	Good Bad	Security	Issuer	Yield (%)	EDF (%)	OAS (bp)	Moody's Rating	Outlook
D1	Good	ENVA 9.7500 06/01/2021	ENOVA INTERNATIONAL INC	8.5	2.1	657	Caa1	STABLE
D1	Good	NAV 8.2500 11/01/2021	NAVISTAR INTERNATIONAL CORP	8.0	2.3	451	Caa1	STABLE
D1	Good	CCO 7.6250 03/15/2020	CLEAR CHANNEL OUTDOOR HLDGS	7.7	4.0	639	Caa1	NEG
D1	Good	PAH 10.3750 05/01/2021	PLATFORM SPECIALTY PRODUCTS	7.2	2.2	236	Caa1	NEG
D1	Good	HRG 7.7500 01/15/2022	HRG GROUP INC	6.5	0.9	381	Caa1	STABLE
D1	Good	ALR 6.5000 06/15/2020	ALERE INC	5.9	0.4	346	Caa1	
D1	Bad	PACD 5.3750 06/01/2020	PACIFIC DRILLING SA	38.0	47.5	3,545	Caa3	NEG
D1	Bad	IHRT 9.0000 12/15/2019	IHEARTMEDIA INC	20.9	41.4	1,934	Caa1	NEG
D1	Bad	LGCY 6.6250 12/01/2021	LEGACY RESERVES LP	18.2	34.7	1,528	Caa3	
D1	Bad	I7.2500 10/15/2020	INTELSAT SA	9.3	39.1	772	Caa2	
D1	Bad	I7.2500 04/01/2019	INTELSAT SA	7.2	43.4	581	Caa2	
D2	Good	FELP 11.5000 04/01/2023	FORESIGHT ENERGY LP	13.2	8.4	1,114	Caa2	
D2	Good	WFT 9.8750 02/15/2024	WEATHERFORD INTL PLC -ADR	9.5	5.8	734	Caa1	
D2	Good	ECR 8.8750 07/15/2023	ECLIPSE RESOURCES CORP	9.3	7.5	720	Caa2	STABLE
D2	Good	WFT 8.2500 06/15/2023	WEATHERFORD INTL PLC -ADR	8.6	5.7	631	Caa1	
D2	Good	CG 6.6250 05/15/2022	CARLYLE GROUP LP	7.8	1.1	584	Caa2	
D2	Bad	CRC 8.0000 12/15/2022	CALIFORNIA RESOURCES CORP	19.9	30.3	1,838	Caa3	NEG
D2	Bad	IHRT 9.0000 09/15/2022	IHEARTMEDIA INC	16.9	32.6	1,475	Caa1	NEG
D2	Bad	JONE 6.7500 04/01/2022	JONES ENERGY INC	15.9	21.3	1,416	Caa2	
D2	Bad	I12.5000 11/15/2024	INTELSAT SA	14.8	31.7	1,276	Ca	NEG
D2	Bad	QHC 11.6250 04/15/2023	QUORUM HEALTH CORP	14.8	24.1	1,271	Caa2	NEG
D3	Good	CNGO 9.5000 06/15/2024	CENGAGE LEARNING HLDGS II	12.7	2.5	1,045	Caa2	STABLE
D3	Good	UNIT 8.2500 10/15/2023	UNITI GROUP INC	7.7	1.2	549	Caa1	
D3	Good	LAUR 8.2500 05/01/2025	LAUREATE EDUCATION INC	7.1	0.9	380	Caa1	STABLE
D3	Good	WBT 9.5000 02/15/2024	WELBILT INC	6.4	0.5	213	Caa1	STABLE
D3	Good	ATC 7.7500 07/15/2025	ALTICE NV	6.1	0.3	347	Caa1	
D3	Bad	I5.5000 08/01/2023	INTELSAT SA	9.4	31.0	727	Caa2	

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