Using quantitative measures for portfolio credit screening in CLO’s

June 2019

Agenda

1. Moody's Quantitative Models - CreditEdge & RiskCalc
2. Using quantitative tools for screening
3. Early Warning Default Case Study: GulfMark Offshore Inc.
4. EDFs within CLOs
5. Leveraging loan-level EDF's to forecast CLO Cashflows and ECL's

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Quantitative models in the current market

Moody's Quantitative Models - CreditEdge & RiskCalc

- **CreditEdge** is a structural quantitative model that utilizes market-based signals to produce forward-looking default risk metrics for public entities.
- **RiskCalc** is a statistical credit risk model for private firms providing default credit risk metrics based on the relationship between default observations and financial statements
- This default risk metric is called an EDF^{TM} (Expected Default Frequency), and it has been the premier tool for measuring the probability of default for publicly listed firms since 1990.
- More than 1000 of the largest banks, asset managers, corporations, insurance firms and government institutions around the globe rely on CreditEdge & RiskCalc.
- EDF measures provide greater accuracy, consistency, and efficiency in evaluating public firms than internal bank models or other commercially available solutions.

CreditEdge: A Powerful Approach to Managing Credit Risk for public firms

50

Years of default data

1989

When the first EDF measure was calculated

60,000+

EDF measure for publicly traded firms

250+

Data fields

11,700+

Defaults in our global data base

76,000+

Active CUSIPs in our database

*CreditEdge gives users the ability to leverage the industry's **most accurate PD model** through cutting-edge analytics*

RiskCalc™ Private Firm Default & Recovery Risk

RiskCalc is a credit risk model for private firms, financial institutions and insurance companies built on a proprietary dataset of global private defaults

- Provides probability of default (EDF), loss given default (LGD) and expected loss (EL) credit risk measures
- Provides default credit risk metrics based on the relationship between default observations and financial statements
- Evaluates loss in the event on default based on firm risk, debt type, capital structure and market default conditions

USE CASES:

- Underwriting
- Pre-Qualification
- Counterparty Risk Analysis
- Loan/Lease Origination
- CECL/IFRS9
- Stress Testing
- Risk Monitoring
- Supply Chain Management
- Transfer Pricing
- Benchmarking
- Exposure Loss Estimation
- Risk-based pricing
- Limit Setting
- Reserve Setting
- Economic Capital


Liquidity


Growth

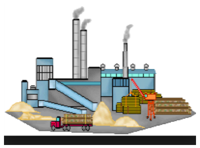

Size


Profitability


Leverage


Debt Coverage


Activity

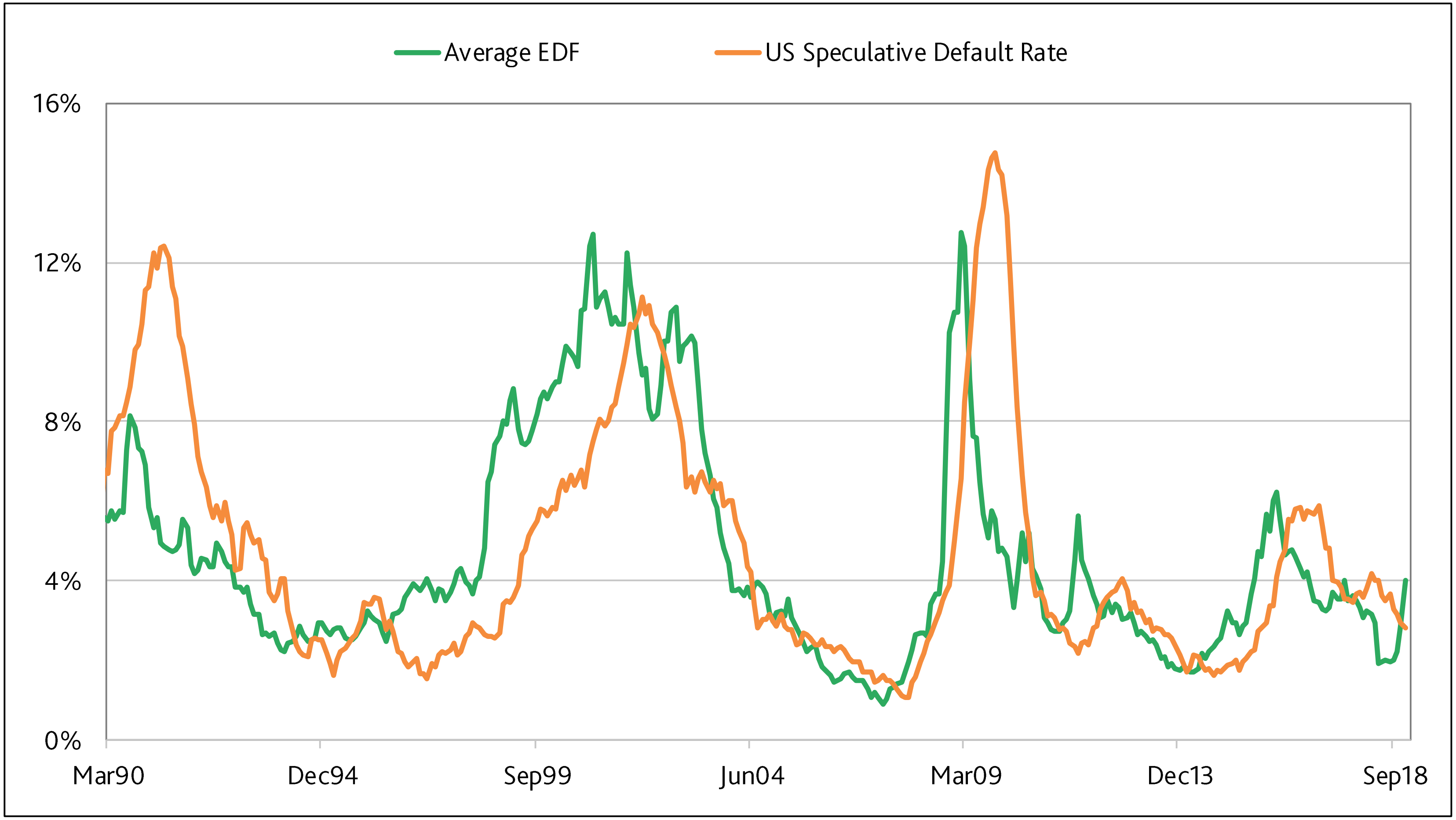

Industry

2

Using EDFs for portfolio screening

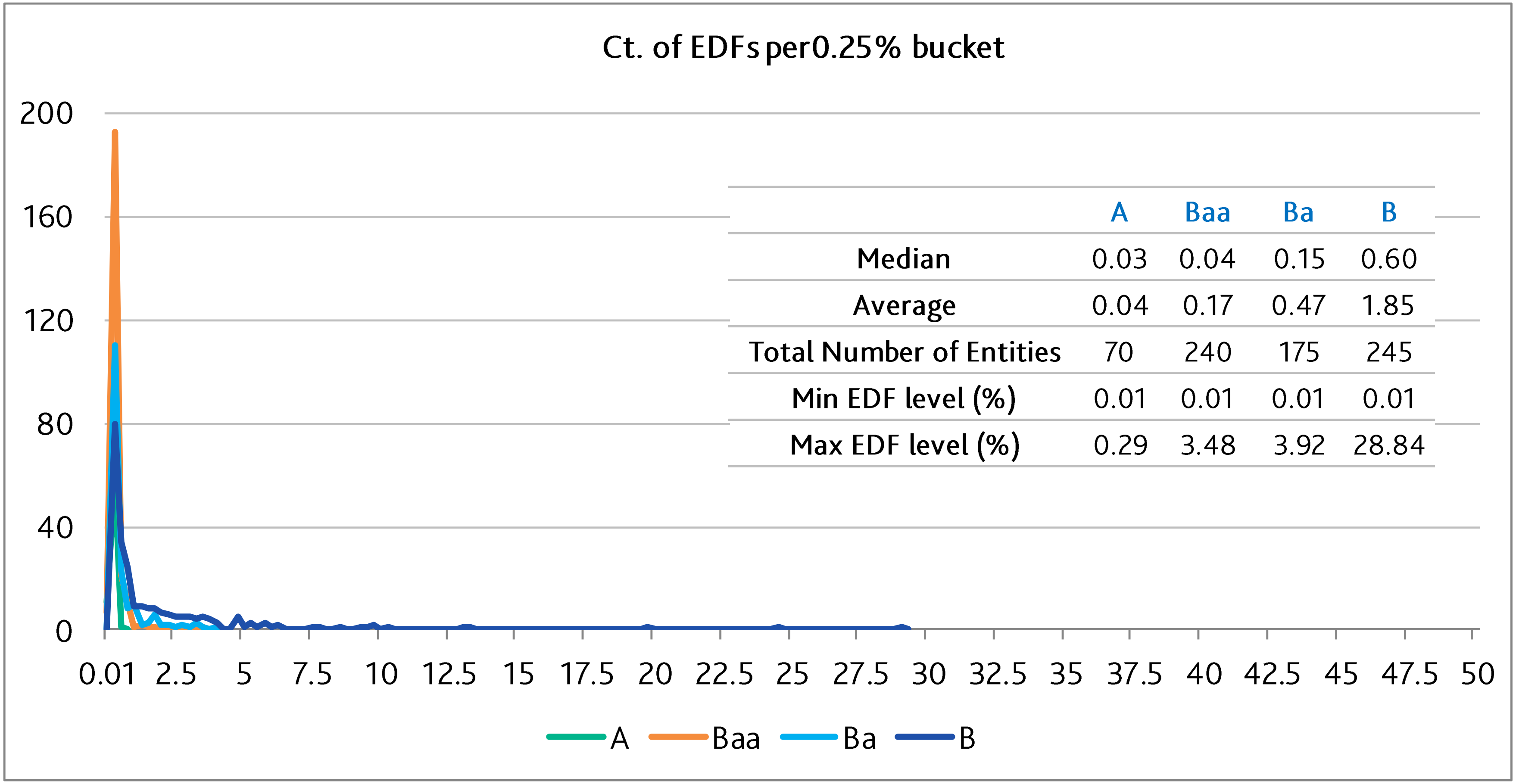
EDF measures lead realized default rates, and generally get the levels right as well…

Average US high yield EDF and average US high yield default rate



…but within a given rating category, EDFs can vary widely

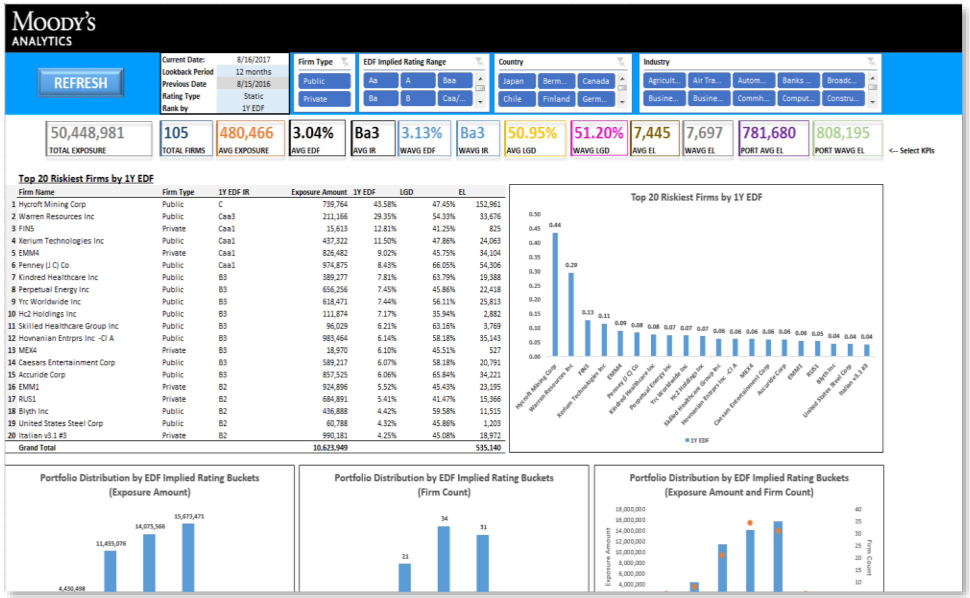
Distribution of 1yr EDFs for NA corporate firms rated A, Baa, Ba, and B (January 2019)

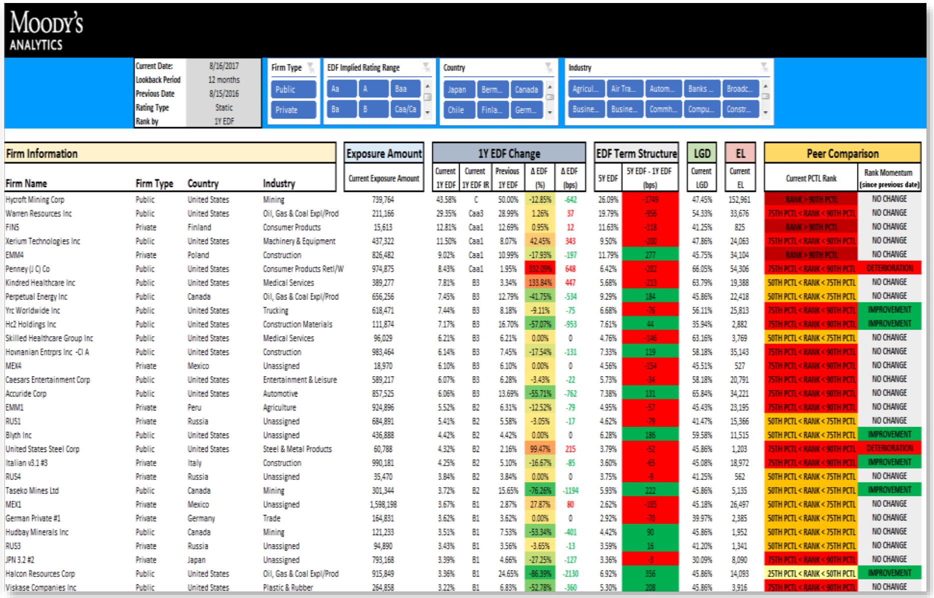


	A	Baa	Ba	B
Median	0.03	0.04	0.15	0.60
Average	0.04	0.17	0.47	1.85
Total Number of Entities	70	240	175	245
Min EDF level (%)	0.01	0.01	0.01	0.01
Max EDF level (%)	0.29	3.48	3.92	28.84

The Early Warning Toolkit helps uncover additional insight into elevated default and deterioration risk within your investment pool

- » Templates/Data points to streamline your early warning and monitoring processes
- » Get an overall view of risks and exposures across your portfolio
- » Rank and screen the investment universe by EDF and implied rating bucket
- » Early Warning Toolkit Framework based on EDF changes and peer group comparisons





Portfolio Early Warning

The Early Warning Toolkit (EWTK) tracks five EDF-related metrics and two additional signals associated with elevated default risk:

- » EDF level
- » Relative EDF level — Percentile ranking of a company's EDF relative to its peers.
- » EDF change — Year-over-year percent change in EDF level.
- » Relative EDF change — Change in relative EDF level.
- » EDF term structure — Whether the term structure is inverted.
- » Trigger-EDF level — Whether a company's EDF level exceeds a breakeven threshold.
- » Deterioration Propensity — Whether a company's credit risk is increasing.

MOODY'S ANALYTICS

Early Warning Toolkit- Risk of Default and Deterioration Probability

Current Date	Please log in.
Lookback	12 months
Previous Date	

REFRESH

Firm Type: Private | Public

1Y EDF IR: Ba3 | Baa1 | Baa2

1Y EDF Above Trigger L...: No | Yes

Term Structure Inversi...: No | Yes

1Y EDF Change: Deteriorating | Improving | No Change

Relative 1Y EDF Change: Deteriorating | Improving | No Change

Region: Japan | Australia & New... | Canada | Chile | Finland | Germany | Greece | Italy | Lithuania | Mexico | Mexico & South ... | Middle East & N... | Netherlands | Norway | Peru

Firm Type	Firm Name	1Y EDF	Deterioration Probability	1Y EDF % Change	1Y EDF Change	Term Structure Inversion	Relative 1Y EDF	Relative 1Y EDF Change	LGD %	EL %
Private	FIN5	12.99%	21.35%	1.41%	Deteriorating	Yes	Above 90th Pctl	No Change	45.00%	5.85%
Private	EMM4	12.69%	20.06%	40.69%	Deteriorating	No	Above 90th Pctl	No Change	45.00%	5.71%
Public	Bausch Health Companies Inc.	11.11%	23.12%	-54.45%	Improving	Yes	75th Pctl <> 90th Pctl	Improving	58.00%	6.44%
Public	Lannett Company, Inc.	7.43%	29.64%	-20.88%	Improving	Yes	75th Pctl <> 90th Pctl	Improving	58.00%	4.31%
Private	EMM1	7.14%	20.55%	29.35%	Deteriorating	Yes	75th Pctl <> 90th Pctl	No Change	45.00%	3.21%
Private	MEX4	6.10%	19.57%	0.00%	No Change	Yes	75th Pctl <> 90th Pctl	No Change	45.00%	2.75%
Private	Test1	6.10%	19.57%	0.00%	No Change	Yes	75th Pctl <> 90th Pctl	No Change	45.00%	2.75%
Private	Test2	6.10%	19.57%	0.00%	No Change	Yes	75th Pctl <> 90th Pctl	No Change	45.00%	2.75%
Private	Test3	6.10%	19.57%	0.00%	No Change	Yes	75th Pctl <> 90th Pctl	No Change	45.00%	2.75%
Private	RUS1	5.30%	18.02%	-2.03%	Improving	Yes	50th Pctl <> 75th Pctl	No Change	45.00%	2.39%
Public	Avon Products, Inc.	4.87%	21.28%	26.38%	Deteriorating	Yes	Above 90th Pctl	No Change	61.67%	3.00%
Private	JPN 3.2 #2	3.93%	18.65%	15.93%	Deteriorating	Yes	75th Pctl <> 90th Pctl	No Change	45.00%	1.77%
Private	RUS4	3.84%	16.99%	0.00%	No Change	Yes	50th Pctl <> 75th Pctl	No Change	45.00%	1.73%
Private	German Private #2	3.64%	18.16%	20.93%	Deteriorating	Yes	50th Pctl <> 75th Pctl	No Change	45.00%	1.64%
Private	German Private #1	3.62%	17.86%	0.00%	No Change	Yes	50th Pctl <> 75th Pctl	No Change	45.00%	1.63%
Private	Italian v3.1 #3	3.49%	17.90%	-17.88%	Improving	Yes	75th Pctl <> 90th Pctl	No Change	45.00%	1.57%
Private	RUS3	3.34%	16.11%	-2.62%	Improving	No	50th Pctl <> 75th Pctl	No Change	45.00%	1.50%
Public	Impax Laboratories, Inc.	3.07%	26.25%	-3.77%	Improving	No	50th Pctl <> 75th Pctl	Improving	56.97%	1.75%
Private	EMM6	3.06%	16.20%	6.99%	Deteriorating	No	50th Pctl <> 75th Pctl	No Change	45.00%	1.38%
Private	EMM5	2.96%	16.55%	27.04%	Deteriorating	No	50th Pctl <> 75th Pctl	Deteriorating	45.00%	1.33%
Private	Italian v3.1 #4	2.94%	17.95%	0.00%	No Change	Yes	75th Pctl <> 90th Pctl	No Change	45.00%	1.32%
Public	Revlon Consumer Products Corporat	2.90%	19.51%	38.14%	Deteriorating	Yes	75th Pctl <> 90th Pctl	Deteriorating	61.67%	1.79%

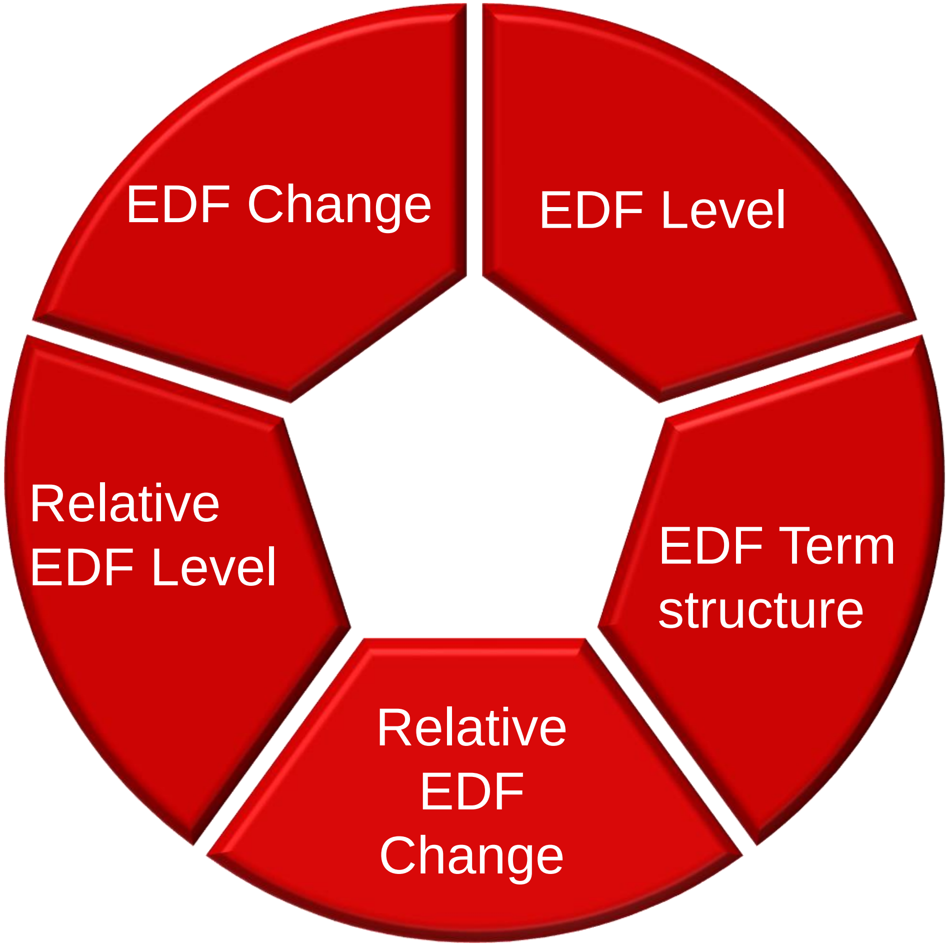
*Trigger Level is calculated **Expected income** ((1 – EDF)*Spread) = **Expected Loss** (EDF * LGD)

3

Early Warning Default Case Study: *GulfMark Offshore Inc.*

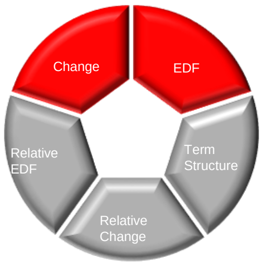
GulfMark Offshore Inc. showed signs of default risk in the Early Warning Framework

» Prior to default, GulfMark Offshore Inc. exhibited warning signals across all 5 early warning indicators

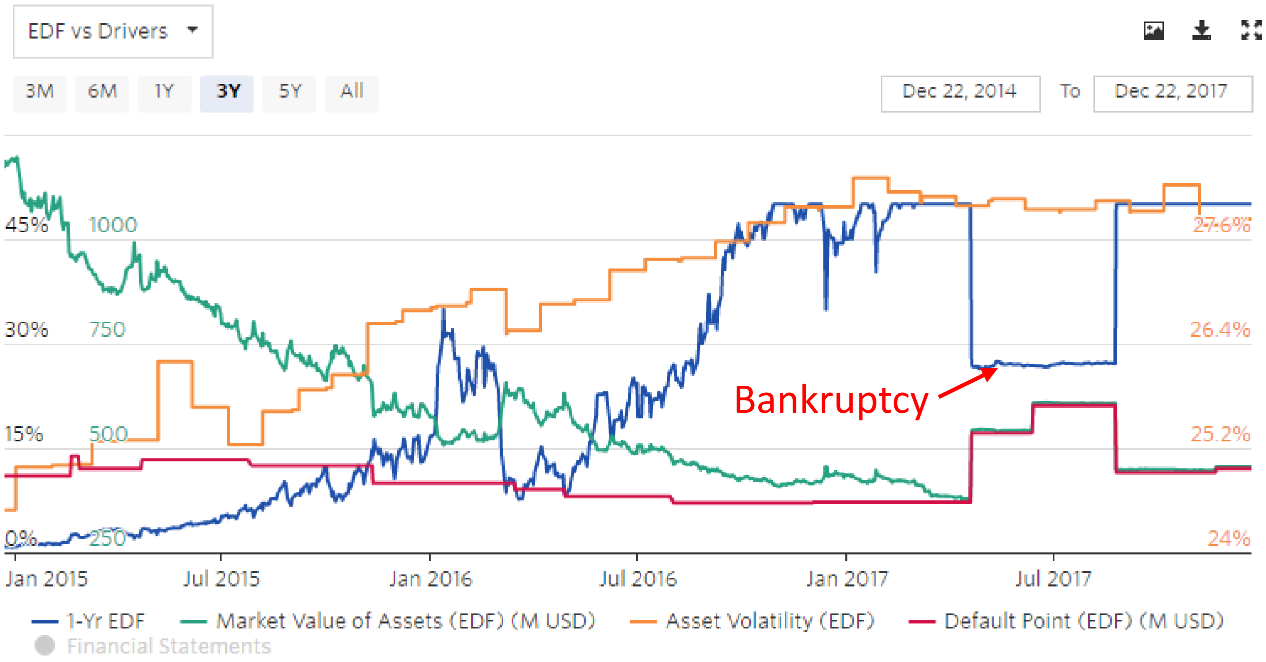


*GulfMark Offshore, Inc. headquartered in Houston, TX engages in the provision of marine transportation services to the energy industry through a fleet of offshore support vessels serving major offshore energy markets in the world

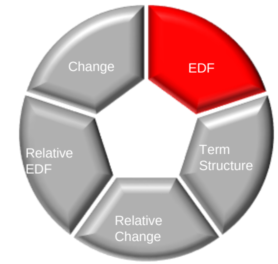
GulfMark Offshore's EDF increased in the 3 years prior to default



- GulfMark Offshore's EDF increased steadily from January 2015, with a declining Market Value of Assets and surging business risk.
- GulfMark filed for Chapter 11 bankruptcy in May 2017.
- GulfMark Offshore merged with Tidewater Inc. in late-2017

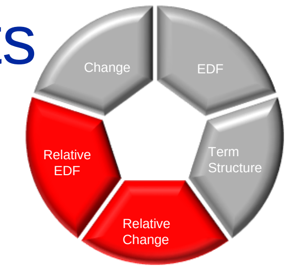


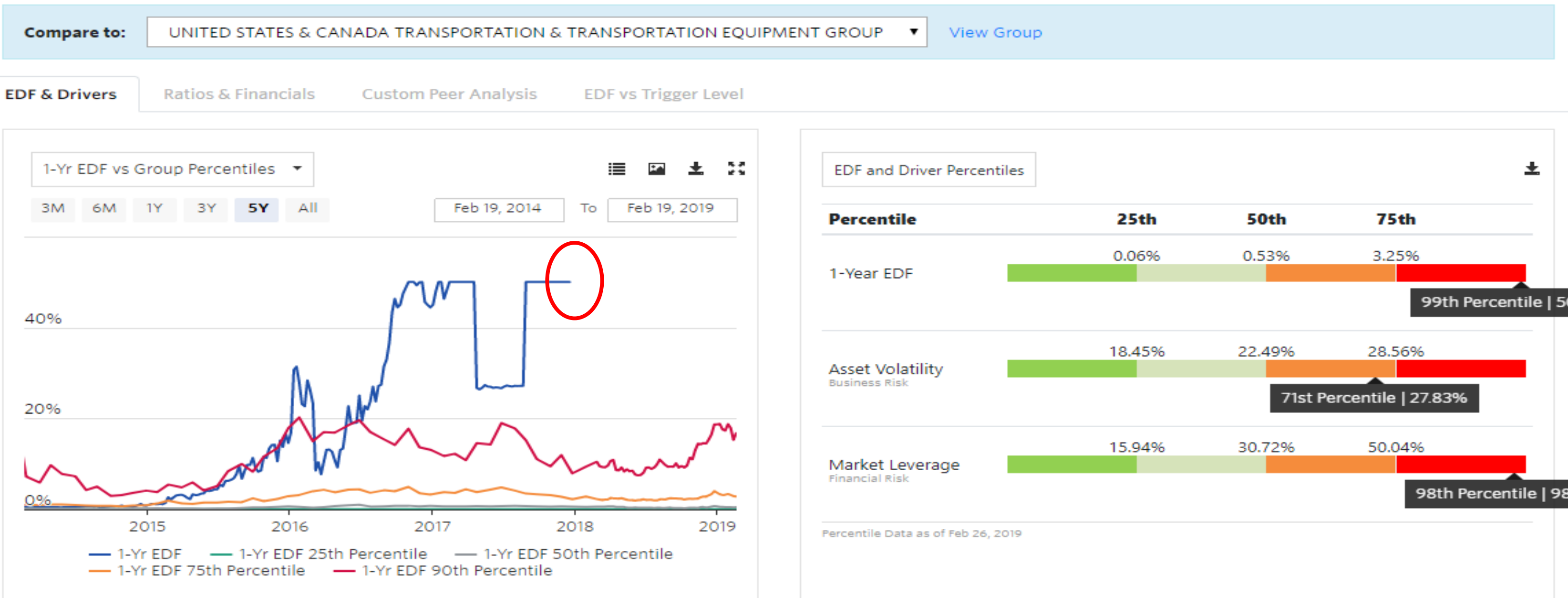
GulfMark Offshore breached its industry trigger level back in 2015, over two years prior to default



**Level above which firms have historically been at highest risk of default*

GulfMark's EDF rose above the 90th percentile of its peer group 16 months before default



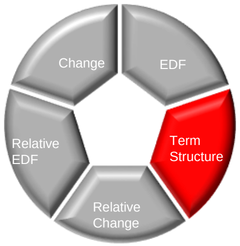


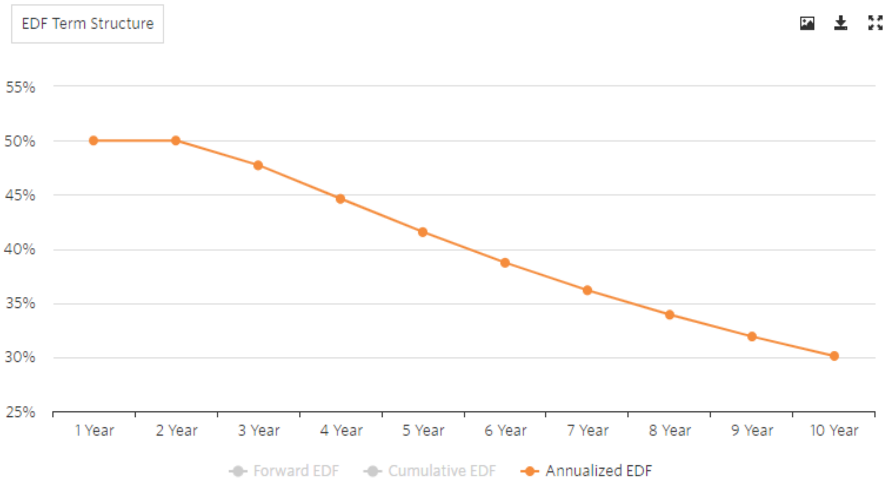
» Moody's Analytics research shows that a company is 10x more likely to default if its EDF is greater than the median of its peer industry group.

» GulfMark was trending near its peer group median in 2014, before rising above the 75th percentile in late-2014 and moving permanently above it from April 2015. It touched the 90th percentile in November 2015 and remained above the 90th percentile from mid-2016 through to its eventual default.

» At the time of its merger with Tidewater, GulfMark's EDF was 50% which was significantly above the 90th percentile of its peer group (US & Canada Transportation). Asset volatility was in line with the 71st percentile, while market leverage was in the riskiest 98th percentile.

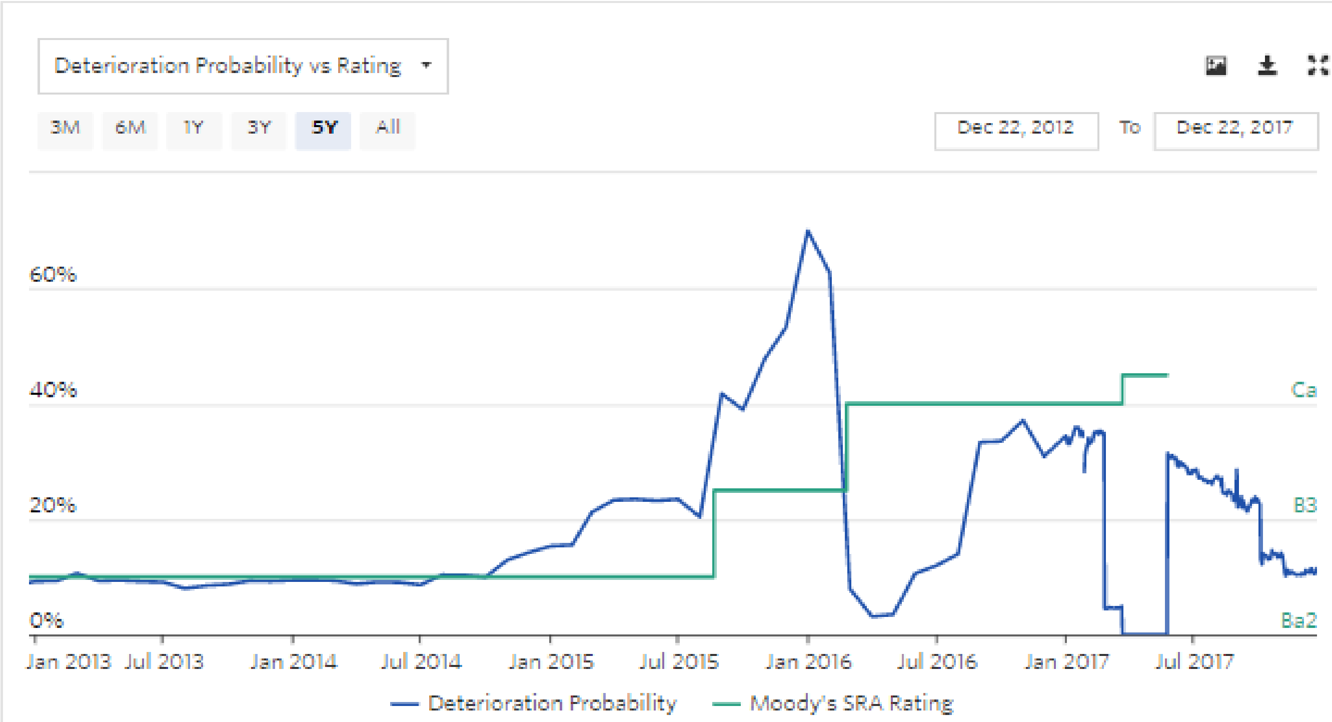
GulfMark Offshore Inc. term structure was inverted over 2 years prior to default





- A company's term structure tends to be upward-sloping during an economic expansion, unless it is in distress. Our research shows that firms that experience inverted term structures (1yr EDF > 5yr EDF) are 13x more likely to default than firms that experience a (normal) upward sloping term structure.
- GulfMark's 1-year EDF surpassed its 5-year EDF in July 2015 and stayed permanently above it since August 2015.

GulfMark Offshore Inc. deterioration probability flagged downgrades more than 6 months before the move

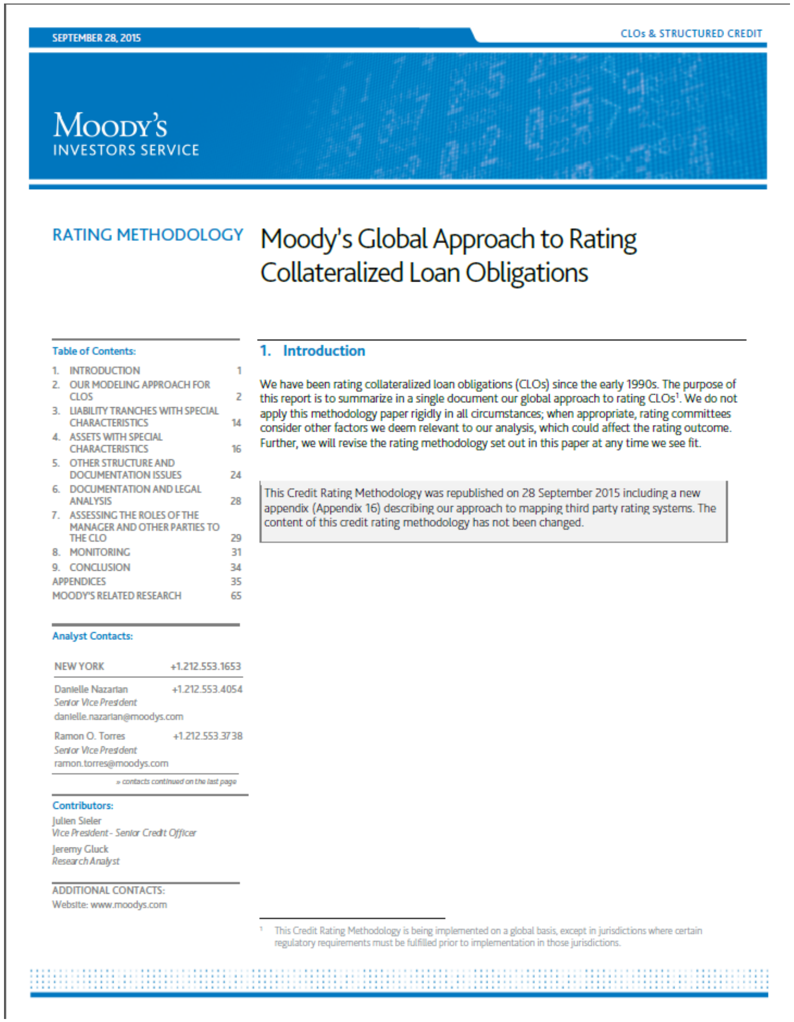


- A deterioration Probability above 14% suggest that a company may be at an elevated risk of downgrade and deterioration
- Screening issuers in the investment universe is an important element of CLO construction and monitoring

4

EDFs within CLOs

Moody's CLO Methodology – Excerpt


SEPTEMBER 28, 2015 — CLOs & STRUCTURED CREDIT

MOODY'S INVESTORS SERVICE

RATING METHODOLOGY

Moody's Global Approach to Rating Collateralized Loan Obligations

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1. **Introduction**

We have been rating collateralized loan obligations (CLOs) since the early 1990s. The purpose of this report is to summarize in a single document our global approach to rating CLOs[1]. We do not apply this methodology paper rigidly in all circumstances; when appropriate, rating committees consider other factors we deem relevant to our analysis, which could affect the rating outcome. Further, we will revise the rating methodology set out in this paper at any time we see fit.

This Credit Rating Methodology was republished on 28 September 2015 including a new appendix (Appendix 16) describing our approach to mapping third party rating systems. The content of this credit rating methodology has not been changed.

[1] This Credit Rating Methodology is being implemented on a global basis, except in jurisdictions where certain regulatory requirements must be fulfilled prior to implementation in those jurisdictions.

<u>SECTION 2.2.1.2. INSTRUMENTS WITHOUT RATINGS</u>

Moody's Investors Services has established a mapping of each .edf to a rating factor. MIS uses the rating factor to calculate the CLO's WARF

"When our rating, credit estimate, RiskCalc-based estimate, or bank mapping is not available, we use other rules to determine an asset's default probability…Regarding the credit risk of such assets, we have determined that an <u>*assumption of Caa3*</u> rating is appropriate when given a typical CLO's single-B average portfolio credit quality

CLO Methodology Continued – Appendix 11, Section 2

2. Model Runs and Mapping .edf Outputs to Rating Factors

RiskCalc-based rating factors are derived from five-year .edfs. To produce these .edfs, the RiskCalc model should be run in both financial statement only (FSO) mode and credit cycle adjusted (CCA) mode. In the CCA mode, the model inputs are based on current financial data and should be run for the current year, as well as for each of the previous four years (12, 24, 36, 48 months prior). The weakest .edf from these six runs will then be mapped to determine the obligor's rating factor.

Exhibit 11-1 should be used for mapping the resulting .edf to a rating factor, which will then be used to calculate the CLO's Weighted Average Rating Factor.

EXHIBIT 11-1

RiskCalc-Derived .edf	Moody's Rating Factor
Baa3.edf and above	1766
Ba1.edf	2720
Ba2.edf	2720
Ba3.edf	2720
B1.edf	2720
B2.edf	3490
B3.edf	3490
Caa.edf	4770

Source: Moody's Investors Service

CLO Methodology Continued – Appendix 11, Section 3

3. Limits, Recovery Rates, and Monitoring

Limits

Up to 20% of the portfolio can be assigned rating factors through the use of RiskCalc. However, an allowance can be made for portfolios in which existing RiskCalc-based rating factors exceed this maximum because of the portfolio's amortization.

For any single obligor that represents more than 3% of the portfolio, the RiskCalc-based rating factor would be subject to the same adjustments that apply to analyst-supplied credit estimates.[84]

[84] We will apply to RiskCalc-based rating factors the adjustments and stresses applicable to credit estimates that we describe in Updated Approach to the Usage of Credit Estimates in Rated Transactions, October 2009.

5

Leveraging loan-level EDF's to forecast CLO Cashflows and ECL's

Introducing: Structured Finance Portal

Moody's Analytics Structured Finance Portal sets the standard for data transparency, analysis, and reporting across structured finance. This premier web-based tool offers data and analytics across all structured finance asset classes with advanced reporting and time-saving data normalization and aggregation. It provides structured finance professionals with cashflows, regulatory metrics, comparative analytics, and data aggregation in one integrated platform.

Cash Flow Module	Monitoring Module	Regulatory Module
» Cash Flow Engine » Loan-Level Data » Deal Libraries » Pricing » Credit Models » Macroeconomic Scenarios	» Manager Style & Performance » Portfolio-Level Reporting » Benchmarking » Complete Asset Coverage	» Regulatory Metrics » OTTI, SSFA, ERBA, SEC-SA » IFRS9, CECL, SPPI » Advisory » Model Validation

Delivery Mechanisms

- Structured Finance Portal (Web)
- Application Programming Interfaces (APIs)
- Data Feeds
- Excel® Add-In

€CLO Equity Portfolio: Key Stats and Portfolio History

Moody's Analytics | Structured Finance Portal v19.3

Search for a deal, tranche, manager, loan...

Home | Menu | Workspace

PORTFOLIO .Euro CLO Mixed Equity

Tranche | 15   Owned Notional | EUR 30.00 Million   Risk Retention Compliance Status | Pass - 15 deals Fail - 0 deals N/a - 0 deals

Customize

Key Stats

Show 20 Items   Search

Deal	Tranche	Manager	Vintage	Reinv End Date	Next Pay Date	Deal Factor	WAL (yrs)	Principal Cash %	Junior OC Cushion %	Attach: MV	Detach: MV	MVNAV	MVOC	WARF	WARF Cushion	Diversity	% Defaulted	Suspected Defaulted %
Anchorage Capital Europe CLO 1 DAC	PS	Anchorage Capital Group LLC	2018	2022-07-15	2019-07-15	100.00	5.61	(3.71)	3.75%	(3.63)	7.28	66.73	96.50	2720	404	43.00	0.00%	0.96%
BlueMountain EUR CLO 2016-1 Designated Activity Company	PS	BlueMountain Capital Management LLC	2016	2022-04-25	2019-07-25	99.60	5.18	0.38	4.01%	(4.12)	7.00	62.93	96.04	2835	362	59.07	0.00%	0.63%
HAYFIN EMERALD CLO I DAC	PS	Hayfin Capital Management LLP	2018	2022-08-24	2019-06-06	100.00	6.04	(2.06)	4.28%	(3.45)	7.09	67.25	96.66	2851	340	46.00	0.00%	0.00%
BlackRock European CLO VI Designated Activity Company	PS	BlackRock Financial Management	2018	2023-04-17	2019-07-15	100.00	5.30	0.25	4.29%	(3.84)	6.27	62.01	96.30	2771	283	56.00	0.00%	0.50%
Contego CLO V Designated Activity Company	PS	Five Arrows Managers LLP	2018	2022-07-15	2019-07-15	100.00	5.45	(0.87)	4.33%	(3.75)	6.19	62.29	96.39	2754	188	53.00	0.00%	1.39%
Bilbao CLO I Designated Activity Company	PS	Guggenheim Investment Management LLC	2018	2022-09-26	2019-07-22	99.93	6.01	(2.04)	4.38%	(3.72)	5.89	61.29	96.41	2831	103	40.00	0.00%	0.00%
Avoca CLO XVII Designated Activity Company	PS	KKR Financial Advisors LLC	2016	2021-01-15	2019-07-15	100.00	5.06	0.18	4.50%	(4.39)	6.71	60.48	95.80	2816	76	50.00	0.00%	0.84%
Ares European CLO X B.V.	PS	Ares Management, LLC	2018	2023-04-17	2019-07-15	100.00	5.35	0.35	4.57%	(3.66)	5.94	61.85	96.47	2921	33	51.00	0.00%	1.11%
Dryden 39 Euro CLO 2015 B.V.	PS	PGIM	2015	2021-10-15	2019-07-15	98.72	5.37	0.20	4.61%	(3.07)	5.61	64.66	97.02	2923	100	57.00	0.00%	0.00%
St. Paul's CLO IV Designated Activity Company	PSR	Intermediate Capital Group plc	2017	2021-10-25	2019-07-25	99.48	5.20	0.25	4.65%	(3.12)	6.10	66.17	96.98	2973	161	58.00	0.00%	0.49%
BlackRock European CLO I Designated Activity Company	PS	BlackRock Financial Management	2016	2022-06-15	2019-06-17	100.00	5.19	2.36	4.67%	(4.13)	6.85	62.38	96.03	2804	323	59.00	0.00%	0.73%
Armada Euro CLO III Designated Activity Company	PS	Brigade Capital Management LLC	2018	2023-01-17	2019-07-15	100.00	5.69	1.35	4.69%	(3.74)	6.38	63.05	96.40	2784	214	44.00	0.00%	1.26%
Contego CLO II B.V.	PS	Five Arrows Managers LLP	2014	2018-11-15	2019-08-15	99.73	4.95	0.02	4.70%	(3.80)	7.06	65.00	96.34	2758	545	48.00	0.00%	1.05%
OZLME IV Designated Activity Company	PS	Och-Ziff Loan Management LP	2018	2022-10-27	2019-07-29	100.00	5.42	0.08	4.79%	(4.06)	6.23	60.55	96.10	2807	204	59.00	0.00%	0.62%
Contego CLO IV Designated Activity Company	PS	Five Arrows Managers LLP	2017	2021-07-23	2019-07-23	100.00	5.30	0.22	4.84%	(4.21)	6.59	61.05	95.96	2785	65	52.00	0.00%	1.60%

Historical Payments

Portfolio (CUSIP / ISIN)

Show 50 Items   Search

Year	Quarter	Begin Period Balance	Interest Payment	Principal Payment	Deferred Interest	Cumulative Deferred Interest	Total Payment
2015	Q2	2,000,000	103,669	0	0	0	103,669
2015	Q3	2,000,000	76,959	0	0	0	76,959
2015	Q4	2,000,000	76,769	0	0	0	76,769
2016	Q1	2,000,000	73,509	0	0	0	73,509
2016	Q2	4,000,000	324,556	0	0	0	324,556
2016	Q3	4,000,000	286,375	0	0	0	286,375
2016	Q4	8,000,000	560,812	0	0	0	560,812
2017	Q1	6,000,000	230,894	0	0	0	230,894
2017	Q2	8,000,000	496,356	0	0	0	496,356

€CLO Equity Portfolio: Composition (sub-selection)

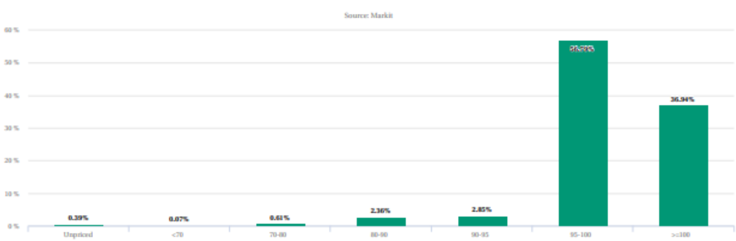
Biggest Industries

Industry	% of Portfolio	Portfolio Exposure(EUR)	WA Price
CORP - Healthcare & Pharmaceuticals	13.56	4,068,300	99.98
CORP - Services: Business	9.56	2,866,753	99.25
CORP - High Tech Industries	8.57	2,570,820	99.39
CORP - Chemicals, Plastics, & Rubber	7.29	2,187,304	99.23
CORP - Telecommunications	5.44	1,631,271	98.04
CORP - Hotel, Gaming & Leisure	5.07	1,521,824	99.95
CORP - Construction & Building	4.46	1,338,025	98.71
CORP - Retail	4.17	1,251,816	97.08
CORP - FIRE: Banking, Finance, Insurance & Real Estate	4.09	1,228,085	98.98
CORP - Services: Consumer	4.09	1,226,084	99.58

BIGGEST Caa/CCC ISSUERS

Issuer	% of Portfolio	Portfolio Exposure(EUR)	WA Price
ALTICE NV	1.53	450449.887425967030000	95.50
VERISURE MIDHOLDING AB	1.41	413607.852225234560000	99.57
EG GROUP LIMITED	1.21	354791.806458769310000	99.06
NIDDA BONDCO GMBH	1.17	344492.892466949650000	99.87
TECHEM VERWALTUNGSGESELLSCHAFT 674 MBH	0.94	276699.689718275160000	100.75
REFINITIV US HOLDINGS INC.	0.90	264585.184174253370000	99.75
BOXER PARENT COMPANY INC. (BMC)	0.78	228544.358407826740000	98.34
NOURYON FINANCE B.V.	0.76	222246.556627196170000	100.17
TMF GROUP HOLDCO B.V.	0.75	220544.765354840730000	95.79
DIVERSEY HOLDINGS, INC.	0.74	216666.531607855980000	87.26

ASSET PRICE DISTRIBUTION



BIGGEST ISSUERS

Issuer	% of Portfolio	Portfolio Exposure(EUR)	WA Price
LIBERTY GLOBAL PLC	1.56	458043.102057683510000	100.11
ALTICE NV	1.53	450449.887425967030000	95.50
VERISURE MIDHOLDING AB	1.41	413607.852225234500000	99.57
SIGMA HOLDCO BV	1.29	379212.059932642850000	97.37
EG GROUP LIMITED	1.21	354791.806458769310000	99.06
NIDDA BONDCO GMBH	1.17	344492.892466949650000	99.87
EIRCOM HOLDINGS IRELAND LIMITED	1.00	293299.888118069850000	99.86
PEER HOLDING III B.V.	0.99	291413.864978065420000	98.64
TECHEM VERWALTUNGSGESELLSCHAFT 674 MBH	0.94	276699.689718275210000	100.75
NETS TOPCO 3 S.A R.L.	0.92	271788.338512268210000	99.48

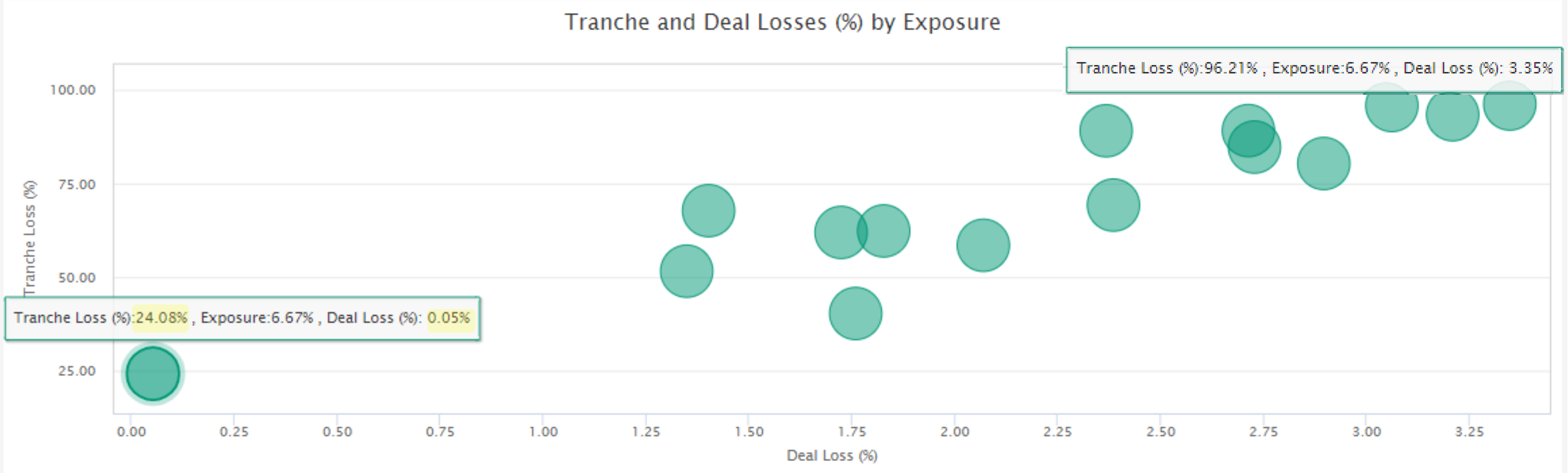
€CLO Equity Portfolio: Overlap Analysis

Overlap Matrix

	Anchorage Capital Europe CLO 1 DAC	Ares European CLO X BV	Armada Euro CLO III DAC	Avoca CLO XVII DAC	Bilbao CLO I DAC	BlackRock European CLO I DAC	BlackRock European CLO VI DAC	BlueMountain EUR CLO 2016-1 DAC	Contego CLO II BV	Contego CLO IV DAC	Contego CLO V DAC	Dryden 39 Euro CLO 2015 BV	Hayfin Emerald CLO I DAC	OZLME IV DAC	St. Pauls CLO IV DAC
Anchorage Capital Europe CLO 1 DAC	-	31.30%	33.85%	32.75%	39.16%	34.21%	35.15%	38.05%	33.40%	27.78%	32.17%	35.71%	29.26%	36.48%	28.03%
Ares European CLO X BV	31.30%	-	38.24%	40.59%	31.40%	39.94%	41.82%	42.60%	35.72%	36.63%	38.64%	36.34%	35.12%	43.88%	37.65%
Armada Euro CLO III DAC	33.85%	38.24%	-	34.30%	32.98%	37.61%	40.25%	40.90%	29.47%	31.17%	37.73%	30.60%	37.50%	42.69%	34.17%
Avoca CLO XVII DAC	32.75%	40.59%	34.30%	-	30.87%	43.69%	43.45%	44.34%	43.17%	41.85%	46.95%	44.91%	28.63%	43.47%	41.92%
Bilbao CLO I DAC	39.16%	31.40%	32.98%	30.87%	-	35.29%	37.09%	30.13%	32.12%	29.61%	37.14%	34.57%	38.24%	32.60%	25.99%
BlackRock European CLO I DAC	34.21%	39.94%	37.61%	43.69%	35.29%	-	79.75%	47.63%	34.55%	33.24%	38.01%	41.46%	29.31%	50.08%	38.64%
BlackRock European CLO VI DAC	35.15%	41.82%	40.25%	43.45%	37.09%	79.75%	-	46.00%	34.20%	33.83%	39.99%	40.64%	32.22%	50.03%	39.53%
BlueMountain EUR CLO 2016-1 DAC	38.05%	42.60%	40.90%	44.34%	30.13%	47.63%	46.00%	-	39.36%	38.66%	39.16%	40.59%	29.72%	47.39%	38.95%
Contego CLO II BV	33.40%	35.72%	29.47%	43.17%	32.12%	34.55%	34.20%	39.36%	-	71.34%	67.24%	35.19%	27.10%	35.13%	32.97%
Contego CLO IV DAC	27.78%	36.63%	31.17%	41.85%	29.61%	33.24%	33.83%	38.66%	71.34%	-	74.14%	36.39%	30.81%	37.53%	35.92%
Contego CLO V DAC	32.17%	38.64%	37.73%	46.95%	37.14%	38.01%	39.99%	39.16%	67.24%	74.14%	-	38.64%	33.81%	42.01%	40.45%
Dryden 39 Euro CLO 2015 BV	35.71%	36.34%	30.60%	44.91%	34.57%	41.46%	40.64%	40.59%	35.19%	36.39%	38.64%	-	27.90%	39.42%	36.94%
Hayfin Emerald CLO I DAC	29.26%	35.12%	37.50%	28.63%	38.24%	29.31%	32.22%	29.72%	27.10%	30.81%	33.81%	27.90%	-	34.99%	37.04%
OZLME IV DAC	36.48%	43.88%	42.69%	43.47%	32.60%	50.08%	50.03%	47.39%	35.13%	37.53%	42.01%	39.42%	34.99%	-	39.87%
St. Pauls CLO IV DAC	28.03%	37.65%	34.17%	41.92%	25.99%	38.64%	39.53%	38.95%	32.97%	35.92%	40.45%	36.94%	37.04%	39.87%	-

€CLO Equity Portfolio: EDF-driven CLO Tranche ECL

Scenario Cashflows



Tranche/Collateral Summary

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Credit Model	Deal	Tranche	ISIN	Orig Balance	Curr Balance	Current Exposure	Owned %	Collateral Losses	Collateral Loss %	Tranche Loss	Tranche Loss %	Average Life	Par Duration	Par Mod Duration	Par Convexity	Collateral Average Life
EDF	Bilbao CLO I DAC	PS	XS1804148945	38,200,000	38,200,000	2,000,000	5.24	19,710,956	2.37	34,019,522	89.06	3.76	5.05	5.30	0.48	5.35
EDF	BlueMountain EUR CLO 2016-1 DAC	PS	XS1319815111	44,200,000	44,200,000	2,000,000	4.52	13,626,305	1.83	27,522,459	62.27	4.84	4.43	4.36	0.34	5.18
EDF	Contego CLO V DAC	PS	XS1830004203	39,400,000	39,400,000	2,000,000	5.08	21,834,500	2.72	35,104,070	89.10	3.42	4.39	4.58	0.38	5.24
EDF	Dryden 39 Euro CLO 2015 BV	PS	XS1258567301	42,500,000	42,500,000	2,000,000	4.71	16,738,200	2.07	24,829,143	58.42	4.45	3.62	3.47	0.23	5.01
EDF	Contego CLO II BV	PS	XS1080607515	37,500,000	37,500,000	2,000,000	5.33	6,088,633	1.76	15,067,551	40.18	4.63	4.83	4.91	0.33	2.51
EDF	Ares European CLO X BV	PS	XS1859496561	42,900,000	42,900,000	2,000,000	4.66	31,416,195	3.06	41,102,597	95.81	2.99	4.35	4.65	0.39	5.84
EDF	OZLME IV DAC	PS	XS1829324182	40,800,000	40,800,000	2,000,000	4.90	26,382,149	3.21	38,084,485	93.34	3.06	4.39	4.66	0.40	5.43
EDF	St. Pauls CLO IV DAC	PSR	XS1852567152	43,410,000	43,410,000	2,000,000	4.61	24,831,628	2.90	34,858,492	80.30	3.71	4.03	4.09	0.31	4.88
EDF	BlackRock European CLO I DAC	PS	XS1346695353	50,000,000	50,000,000	2,000,000	4.00	12,306,579	1.40	33,842,437	67.68	4.89	4.22	4.11	0.31	5.55
EDF	Armada Euro CLO III DAC	PS	XS1913265127	40,400,000	40,400,000	2,000,000	4.95	23,913,097	2.73	34,218,185	84.70	4.06	5.24	5.49	0.49	6.00
EDF	Avoca CLO XVII DAC	PS	XS1506482899	49,500,000	49,500,000	2,000,000	4.04	16,416,057	2.39	34,244,283	69.18	4.94	5.90	6.14	0.54	4.14
EDF	Hayfin Emerald CLO I DAC	PS	XS1860202271	42,050,000	42,050,000	2,000,000	4.76	438,110	0.05	10,124,043	24.08	6.34	5.36	5.15	0.41	5.70
EDF	Contego CLO IV DAC	PS	XS1614210141	37,500,000	37,500,000	2,000,000	5.33	8,130,927	1.35	19,311,438	51.50	5.27	5.27	5.27	0.44	4.44
EDF	BlackRock European CLO VI DAC	PS	XS1854560130	40,100,000	40,100,000	2,000,000	4.99	28,890,031	3.35	38,580,524	96.21	2.72	4.12	4.42	0.37	5.85
EDF	Anchorage Capital Europe CLO 1 DAC	PS	XS1846664727	43,500,000	43,500,000	2,000,000	4.60	13,479,989	1.73	26,915,161	61.87	5.31	5.13	5.10	0.43	5.56

€CLO Equity Portfolio: EDF-driven CLO Tranche Cashflows

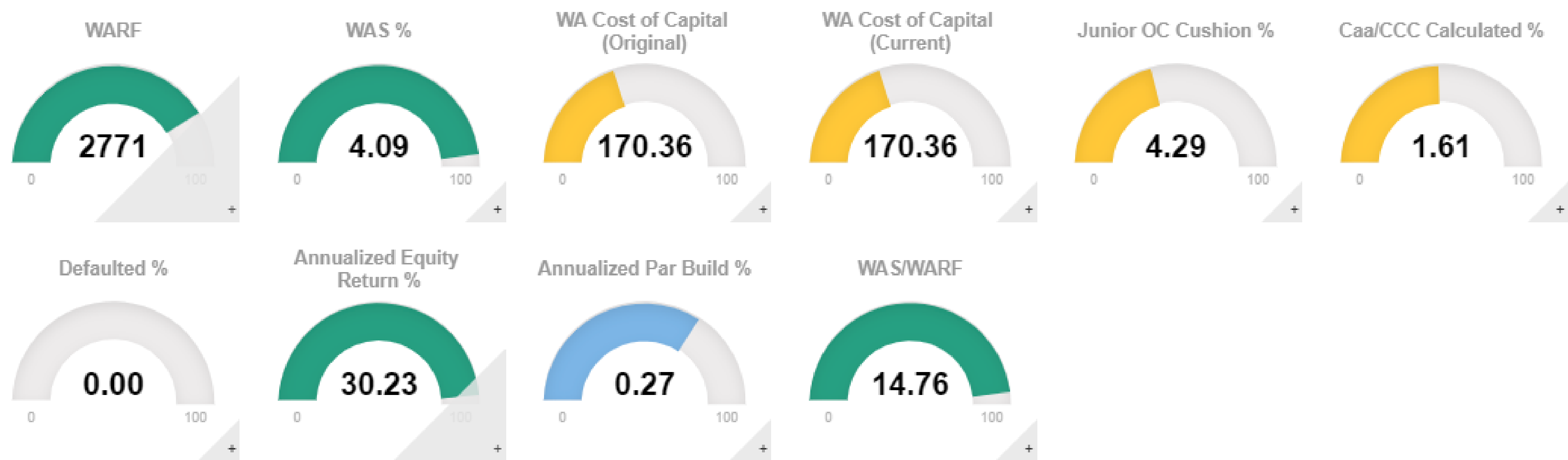
Date	Balance	Collat Defaulted	Collat Recovered	Collat Interest	Collat Principal Losses	Interest	Scaled Balance	Scaled Interest	CPR1M	CDR1M	SEV1M	Attach	Detach
2019-04-15	40,100,000.00	0.00	0.00	0.00	0.00	0.00	2,000,000.00	0.00	0.000000	0.000000	0.000000	0.000000%	7.277821%
2019-05-15	40,100,000.00	698,408.05	0.00	1,201,564.78	0.00	0.00	2,000,000.00	0.00	29.893096	2.258676	0.000000	0.000000%	7.277821%
2019-06-15	40,100,000.00	592,226.99	0.00	1,113,210.58	0.00	0.00	2,000,000.00	0.00	29.902007	1.998195	0.000000	0.000000%	7.277821%
2019-07-15	40,100,000.00	699,157.14	0.00	1,261,256.18	0.00	1,446,045.29	2,000,000.00	72,121.96	29.903814	1.891963	0.000000	0.000000%	7.277821%
2019-08-15	40,100,000.00	793,738.24	0.00	1,450,807.93	0.00	0.00	2,000,000.00	0.00	29.898821	2.099724	0.000000	0.000000%	7.277821%
2019-09-15	40,100,000.00	567,382.02	0.00	1,110,829.09	0.00	0.00	2,000,000.00	0.00	29.897657	2.041669	0.000000	0.000000%	7.277821%
2019-10-15	40,100,000.00	746,290.11	0.00	1,489,285.84	0.00	1,546,046.08	2,000,000.00	77,109.53	29.902696	1.839268	0.000000	0.000000%	7.277821%
2019-11-15	40,100,000.00	597,852.98	0.00	1,108,755.62	0.00	0.00	2,000,000.00	0.00	29.902901	2.104496	0.000000	0.000000%	7.277821%
2019-12-15	40,100,000.00	499,185.78	0.00	958,225.35	0.00	0.00	2,000,000.00	0.00	29.902582	2.002464	0.000000	0.000000%	7.277821%
2020-01-15	40,100,000.00	868,191.74	0.00	1,661,673.76	0.00	1,781,665.61	2,000,000.00	88,861.13	29.906610	1.858127	0.000000	0.000000%	7.277821%
2020-02-15	40,100,000.00	681,350.37	0.00	1,260,484.92	0.00	0.00	2,000,000.00	0.00	29.896539	2.146205	0.000000	0.000000%	7.277821%
2020-03-15	40,100,000.00	478,346.34	0.00	940,337.69	0.00	0.00	2,000,000.00	0.00	29.898265	2.027819	0.000000	0.000000%	7.277821%
2020-04-15	40,100,000.00	910,121.56	0.00	1,721,403.22	0.00	1,472,745.21	2,000,000.00	73,453.63	29.903187	1.832402	0.000000	0.000000%	7.277821%
2020-05-15	40,100,000.00	813,140.93	0.00	1,006,898.17	0.00	0.00	2,000,000.00	0.00	29.856101	3.148660	0.000000	0.000000%	7.277821%
2020-06-15	40,100,000.00	663,043.72	0.00	855,742.08	0.00	0.00	2,000,000.00	0.00	29.849402	2.989674	0.000000	0.000000%	7.277821%
2020-07-15	40,100,000.00	1,552,693.04	0.00	1,838,040.45	0.00	1,740,188.80	2,000,000.00	86,792.46	29.851811	2.914992	0.000000	0.000000%	7.277821%
2020-08-15	40,100,000.00	948,693.94	488,885.64	1,129,629.39	209,522.42	0.00	2,000,000.00	0.00	29.848135	3.234334	30.000000	0.000000%	7.277821%
2020-09-15	40,100,000.00	618,087.60	401,770.46	797,563.07	190,456.53	0.00	2,000,000.00	0.00	29.845474	3.057557	32.159381	0.000000%	7.277821%
2020-10-15	40,100,000.00	1,599,022.56	489,410.00	1,959,862.53	209,747.14	1,460,265.33	2,000,000.00	72,831.19	29.849155	2.799237	30.000000	0.000000%	7.136691%
2020-11-15	40,100,000.00	682,027.84	555,616.77	837,795.75	238,121.47	0.00	2,000,000.00	0.00	29.857160	3.189900	30.000000	0.000000%	7.136691%
2020-12-15	40,100,000.00	560,897.79	385,590.82	694,688.16	181,791.19	0.00	2,000,000.00	0.00	29.850370	3.015740	32.040351	0.000000%	7.136691%
2021-01-15	40,100,000.00	1,757,843.61	531,832.20	2,156,658.11	228,451.16	1,664,949.93	2,000,000.00	83,039.90	29.864245	2.726423	30.000000	0.000000%	6.986146%
2021-02-15	40,100,000.00	814,853.71	408,701.81	949,358.34	175,157.92	0.00	2,000,000.00	0.00	29.832497	3.527581	30.000000	0.000000%	6.986146%
2021-03-15	40,100,000.00	522,672.21	338,950.47	676,099.08	160,235.31	0.00	2,000,000.00	0.00	29.846510	3.043333	32.099334	0.000000%	6.986146%
2021-04-15	40,100,000.00	1,798,085.95	609,022.51	2,199,430.33	262,144.31	1,485,963.80	2,000,000.00	74,112.91	29.861692	2.634678	30.000000	0.000000%	6.846969%
2021-05-15	40,100,000.00	722,485.85	474,862.70	730,632.89	203,512.59	0.00	2,000,000.00	0.00	29.812814	4.030712	30.000000	0.000000%	6.846969%
2021-06-15	40,100,000.00	573,670.80	325,355.92	636,714.84	152,990.42	0.00	2,000,000.00	0.00	29.823677	3.475394	31.983190	0.000000%	6.846969%
2021-07-15	40,100,000.00	2,253,377.07	674,932.35	2,306,009.80	290,909.50	1,580,508.26	2,000,000.00	78,828.34	29.822932	3.461080	30.000000	0.000000%	6.695705%
2021-08-15	40,100,000.00	884,202.82	566,154.14	894,055.51	242,637.49	0.00	2,000,000.00	0.00	29.819688	3.909836	30.000000	0.000000%	6.695705%
2021-09-15	40,100,000.00	538,895.66	547,929.22	587,335.23	250,160.53	0.00	2,000,000.00	0.00	29.816214	3.615815	31.344912	0.000000%	6.695705%
2021-10-15	40,100,000.00	2,319,321.44	1,099,351.83	2,500,166.20	474,459.42	1,480,653.27	2,000,000.00	73,848.04	29.830528	3.169715	30.000000	0.000000%	6.468793%
2021-11-15	40,100,000.00	592,844.90	643,678.89	622,416.96	275,862.38	0.00	2,000,000.00	0.00	29.814179	4.040469	30.000000	0.000000%	6.468793%
2021-12-15	40,100,000.00	467,671.09	476,639.71	507,382.39	218,118.62	0.00	2,000,000.00	0.00	29.829304	3.467341	31.394891	0.000000%	6.468793%
2022-01-15	40,100,000.00	2,444,417.63	1,128,013.40	2,611,907.30	487,378.16	1,452,350.19	2,000,000.00	72,436.42	29.838491	3.268349	30.000000	0.000000%	6.237442%
2022-02-15	40,100,000.00	764,113.71	464,119.43	771,818.28	198,908.33	0.00	2,000,000.00	0.00	29.795722	4.249079	30.000000	0.000000%	6.237442%
2022-03-15	40,100,000.00	403,156.64	441,825.26	470,343.16	201,853.52	0.00	2,000,000.00	0.00	29.827118	3.427227	31.359356	0.000000%	6.237442%

€ CLO Single-Deal Analysis: Benchmark / MV Overview

Key Differentiators

Cohort: Same Asset Class/Vintage/Currency

View Cohort



Capital Structure

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Class	Currency	Original Balance	Current Balance	Moody's Orig/Current Ratings	Coupon Type	Index	Spread/Coupon (bps)	MV OC	MV Coverage	MV NAV	MV Attach	MV Detach	Avg Life (yrs)	Duration (yrs)	Breakeven CDR
A1	EUR	235,600,000	235,600,000	Aaa / Aaa	Floating	Three month EURIBOR	87	160.0%	100.0%	160.0%	37.5%	100.0%	5.48	5.35	99.05
A2	EUR	12,400,000	12,400,000	Aaa / Aaa	Fixed	-	130	160.0%	100.0%	160.0%	37.5%	100.0%	5.48	5.28	99.05
B1	EUR	25,150,000	25,150,000	Aa2 / Aa2	Floating	Three month EURIBOR	165	139.3%	100.0%	402.3%	28.2%	37.5%	7.53	7.06	42.42
B2	EUR	11,850,000	11,850,000	Aa2 / Aa2	Fixed	-	215	139.3%	100.0%	402.3%	28.2%	37.5%	7.53	6.95	42.42
C	EUR	28,500,000	28,500,000	A2 / A2	Floating	Three month EURIBOR	215	126.6%	100.0%	392.5%	21.0%	28.2%	8.35	7.62	22.27
D	EUR	24,000,000	24,000,000	Baa3 / Baa3	Floating	Three month EURIBOR	310	117.6%	100.0%	347.4%	15.0%	21.0%	9.12	7.91	16.09
E	EUR	22,500,000	22,500,000	Ba2 / Ba2	Floating	Three month EURIBOR	544	110.2%	100.0%	263.8%	9.3%	15.0%	10.63	8.04	4.92
F	EUR	12,000,000	12,000,000	B2 / B2	Floating	Three month EURIBOR	727	106.7%	100.0%	307.2%	6.3%	9.3%	12.48	8.33	0.55
PS	EUR	40,100,000	40,100,000	N/R / N/R	N/A	-	Residual	96.3%	62.0%	62.0%	(3.8%)	6.3%	5.05	4.83	0.00

€ CLO Single-Deal Analysis: Composition (sub-selection)

Biggest Defaulted Assets

Asset	Current Face	Moody's Rating	Market Price	Price Depth
No data to display.				

Biggest Caa/Ccc Assets

Asset	Current Face	Moody's Rating	Market Price	Price Depth
Altice Finco SA - 4.75% - 01/2028.	3,000,000 EUR	Caa1	83.60	-
Sapphire Bidco BV - Second Lien Facility	2,475,000 EUR	Caa2	94.25	3
Banff Merger Sub Inc - 8.375% - 09/2026	1,000,000 EUR	Caa2	94.45	-

Highest Priced Performing Assets

Asset	Current Face	Moody's Rating	Market Price	Price Depth
TIM S.P.A. - 4% - 04/2024	619,000 EUR	Ba1	104.70	-
Rossini Sarl - Float - 10/2025	4,000,000 EUR	B3	102.51	-
Burgerking France SAS - Float - 05/2023	3,383,000 EUR	B3	101.87	-
Telecom Italia SPA - 3.625% - 05/2026	1,500,000 EUR	Ba1	101.47	-
Guala Closures SPA - Float - 04/2024	2,280,000 EUR	B1	101.31	-
Gamenet Group spa - Float - 04/2023	1,167,000 EUR	B1	101.26	-
BVI Medical Inc - Closing Date Term Loan	1,250,000 EUR	B2	101.06	4
Nexi Capital SPA - Float - 05/2023	2,742,000 EUR	Ba3	101.00	-
Schumann Spa - 7% Fixed- 07/2023	1,500,000 EUR	B1	100.95	-
Generale De Sante - Facility B2	2,000,000 EUR	Ba3	100.79	3

Lowest Priced Performing Assets

Asset	Current Face	Moody's Rating	Market Price	Price Depth
GARFUNKELUX HOLDCO 3 SA - Float - 09/2023	1,000,000 EUR	B3	80.82	-
GARFUNKELUX HOLDCO 3 SA - Float - 09/2023	2,000,000 EUR	B3	83.50	-
Altice Finco SA - 4.75% - 01/2028.	3,000,000 EUR	Caa1	83.60	-
Keter Group BV - Facility B3A	2,000,000 EUR	B3	86.39	9
GARFUNKELUX HOLDCO 3 SA - 7.5% - 08/2022	1,000,000 EUR	B3	87.03	-
Klockner Pentaplast of America Inc - Euro Term Loan	2,000,000 EUR	B3	87.88	10
Diamond (BC) BV - Initial Euro Term Loan	1,984,925 EUR	B1	89.03	8
Tele Columbus AG - 3.875% - 05/2025	2,000,000 EUR	B2	89.28	-
Tele Columbus AG - Facility A2	2,000,000 EUR	B2	90.59	8
Prophylaxis BV - Facility B	2,500,000 EUR	B1	91.25	2

Biggest Industries

Industry	% of Deal	Deal Exposure	WA Price
CORP - High Tech Industries	12.38	49,648,439	99.03
CORP - Healthcare & Pharmaceuticals	12.26	49,159,450	99.74
CORP - Services: Business	9.00	36,090,995	99.30
CORP - Telecommunications	7.61	30,517,820	96.31
CORP - Chemicals, Plastics, & Rubber	7.29	29,229,232	98.69
CORP - Hotel, Gaming & Leisure	6.00	24,059,133	99.90
CORP - Capital Equipment	5.99	24,027,711	99.40
CORP - Containers, Packaging & Glass	5.95	23,865,037	99.14
CORP - FIRE: Banking, Finance, Insurance & Real Estate	5.53	22,181,500	96.70
CORP - Retail	4.67	18,720,029	99.44

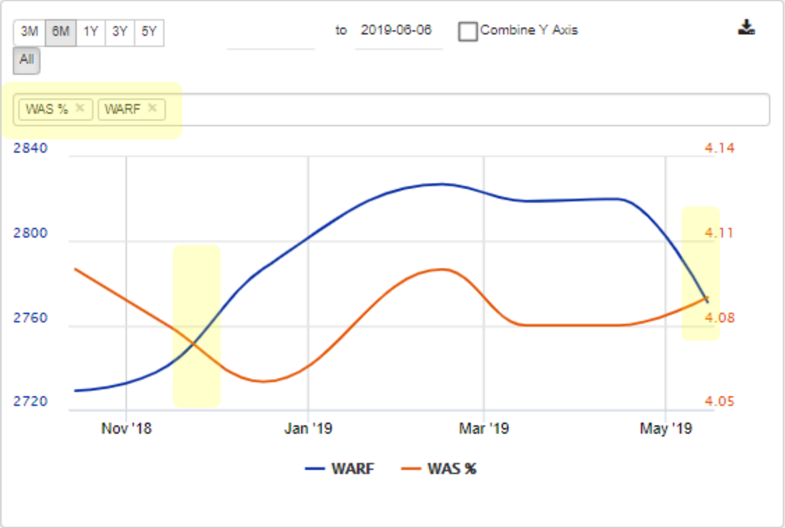
*Note: Any positive cash balances are included in the calculation.

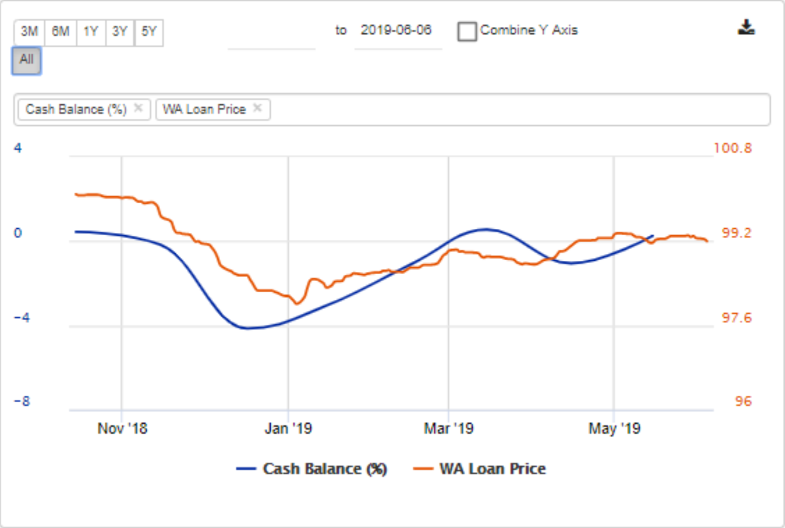
Biggest Issuers

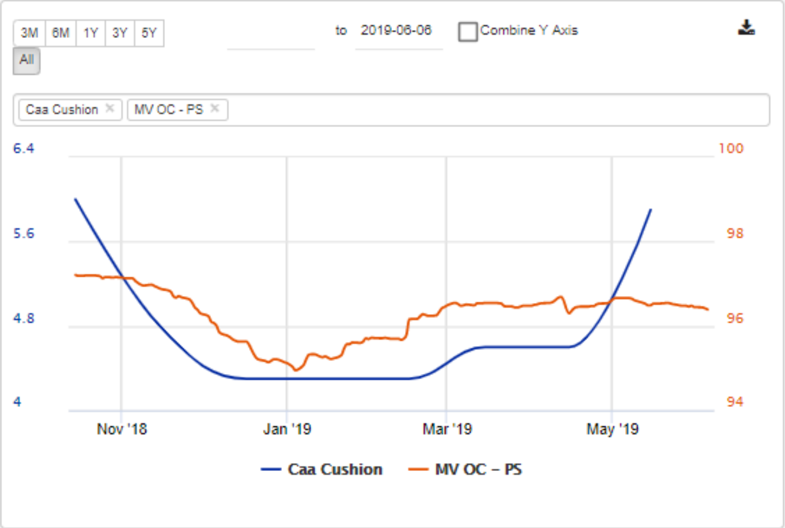
Issuer	% of Deal	Deal Exposure	WA Price
ALTICE NV	2.23	8,942,065	92.23
LIBERTY GLOBAL PLC	1.75	7,000,000	99.73
PROMOTORA DE INFORMACIONES, S.A.	1.31	5,264,784	98.98
POWER SOLUTIONS	1.25	5,000,000	99.83
WEENER PLASTICS HOLDING BV	1.25	5,000,000	99.81
ZEPHYR MIDCO 2 LIMITED	1.25	5,000,000	99.61
CALDIC HOLDCO B.V.	1.25	5,000,000	98.81
AURIS LUXEMBOURG II S.A.	1.17	4,700,000	100.78
EUROPCAR MOBILITY GROUP S.A.	1.16	4,666,667	99.85
HURTIGRUTEN GROUP AS	1.13	4,533,000	98.68

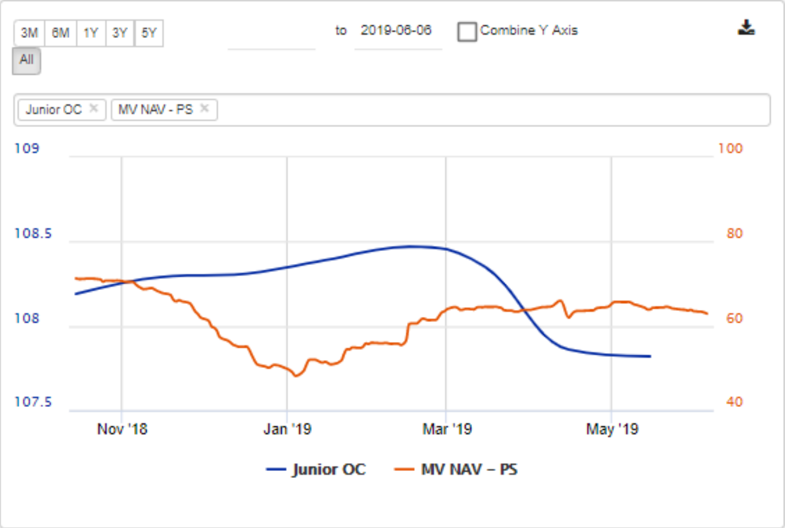
*Note: Any positive cash balances are included in the calculation.

€CLO Single-Deal Analysis: Performance Analysis









€CLO Single-Deal Analysis: EDF / Deterministic Cashflows

Assumptions — Scen 1 to 1

	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5
Analytics Assumptions					
Cashflow Settings					
Run	☑	☑	☐	☐	☐
Scenario Type	MA Baseline	User Defined	User Defined	User Defined	User Defined
Calculate First Loss	☐	☐	☐	☐	☐
Settles Date	2019-06-06	2019-06-06	2019-06-06	2019-06-06	2019-06-06
Cashflow Output	Payment Dates				
	*Note: For MA scenarios, cashflow output is always monthly.				
Price/Yield Settings					
Method	Step Size				
Input	Yield for Fixed/DM fo				
Mid-Point	9				
Step Size (bps)	100				
Interest Rate Assumptions					
Forward Curve		Moody's	Moody's	Moody's	Moody's
Collateral Assumptions					
Basic Settings					
Prepay Rate		30	30	30	30
Prepay Type		CPR	CPR	CPR	CPR
Default Rate		2	2	2	2
Default Type		CDR	CDR	CDR	CDR
Loss Rate		30	30	30	30
Loss Type		Loss %	Loss %	Loss %	Loss %
Loss Rate (non-performing)					
Rec Lag (months)		6	6	6	6
Apply Stratification	☐	☑	☐	☐	☐
Advanced Settings					
Reinvest Price		100	100	100	100
Reinvest Price Type		User Defined	User Defined	User Defined	User Defined
Reinvest Spread (%)			3.25	3.25	3.25
Reinvest Term			72	72	72
Reinvest Pool		Pool 1	Basic	Basic	Basic
Reinvest Default Lockout (months)		0	0	0	0
Intra/Post Reinvest Rules		Basic	Basic	Basic	Basic
Deal Assumptions					
Call Options					
Call Option		User Defined	Maturity	Maturity	Maturity
Call Date		2022-07-15			
Call Price Type		Market Value	Par	Par	Par
Call Price					

Cashflows — Tranche Flows — Scen 1

Show 20 Items

Month	Date	End Balance	Interest	Principal
0	4/15/2019	40,100,000.00	0.00	
1	5/15/2019	40,100,000.00	0.00	
2	6/15/2019	40,100,000.00	0.00	
3	7/15/2019	40,100,000.00	1,446,045.29	
4	8/15/2019	40,100,000.00	0.00	
5	9/15/2019	40,100,000.00	0.00	
6	10/15/2019	40,100,000.00	1,546,046.08	
7	11/15/2019	40,100,000.00	0.00	
8	12/15/2019	40,100,000.00	0.00	
9	1/15/2020	40,100,000.00	1,781,665.61	
10	2/15/2020	40,100,000.00	0.00	
11	3/15/2020	40,100,000.00	0.00	
12	4/15/2020	40,100,000.00	1,472,745.21	

Cashflows — Deal Flows — Scen 1

Dates		Class A1 - /XS1854556294	
Period	Date	End Balance	Interest
0	4/15/2019	235,600,000.00	0.00
1	5/15/2019	235,600,000.00	0.00
2	6/15/2019	235,600,000.00	0.00
3	7/15/2019	235,600,000.00	518,320.00
4	8/15/2019	235,600,000.00	0.00
5	9/15/2019	235,600,000.00	0.00
6	10/15/2019	235,600,000.00	523,032.00
7	11/15/2019	235,600,000.00	0.00
8	12/15/2019	235,600,000.00	0.00
9	1/15/2020	235,600,000.00	523,032.00
10	2/15/2020	235,600,000.00	0.00
11	3/15/2020	235,600,000.00	0.00
12	4/15/2020	235,600,000.00	518,320.00

Cashflows — Collateral Flows — Scen 1

Show 20 Items

Month	Date	End Balance	Interest	Scheduled Principal	Unscheduled Principal	Principal Payment	Defaulted Balance	Unrecovered Losses	Recovered Principal
20	12/15/2020	389,525,278.62	694,688.16	0.00	5,133,412.04	5,133,412.04	560,897.79	181,791.19	385,590.82
21	1/15/2021	399,940,421.55	2,156,658.11	0.00	16,935,451.24	(10,643,594.10)	1,757,843.61	228,451.16	531,832.20
22	2/15/2021	394,537,524.35	949,358.34	0.00	5,227,739.28	5,227,739.28	814,853.71	175,157.92	408,701.81
23	3/15/2021	389,383,651.84	676,099.08	0.00	4,993,637.21	4,993,637.21	522,672.21	160,235.31	338,950.47
24	4/15/2021	399,342,884.02	2,199,430.33	0.00	17,456,511.74	(10,221,376.49)	1,798,085.95	262,144.31	609,022.51
25	5/15/2021	394,854,760.78	730,632.89	0.00	4,284,610.65	4,284,610.65	722,485.85	203,512.59	474,862.70
26	6/15/2021	390,471,629.39	636,714.84	0.00	4,230,140.97	4,230,140.97	573,670.80	152,990.42	325,355.92
27	7/15/2021	398,695,471.51	2,306,009.80	1,323,901.80	17,688,918.67	(8,514,751.62)	2,253,377.07	290,909.50	674,932.35
28	8/15/2021	393,615,462.49	894,055.51	0.00	4,837,371.53	4,837,371.53	884,202.82	242,637.49	566,154.14
29	9/15/2021	388,145,716.08	587,335.23	883,695.58	4,335,890.30	5,219,585.88	538,895.66	250,160.53	547,929.22
30	10/15/2021	397,728,214.07	2,500,166.20	0.00	18,778,587.87	(10,056,957.41)	2,319,321.44	474,459.42	1,099,351.83
31	11/15/2021	393,691,913.56	622,416.96	0.00	3,760,438.12	3,760,438.12	592,844.90	275,862.38	643,678.89
32	12/15/2021	388,091,004.57	507,382.39	1,807,181.40	3,575,608.97	5,382,790.37	467,671.09	218,118.62	476,639.71
33	1/15/2022	396,746,854.90	2,611,907.30	0.00	19,379,050.18	(9,143,228.49)	2,444,417.63	487,378.16	1,128,013.40
34	2/15/2022	391,842,676.59	771,818.28	1,115,882.13	3,589,387.86	4,705,269.99	764,113.71	198,908.33	464,119.43
35	3/15/2022	387,149,831.45	470,343.16	1,065,824.01	3,425,167.60	4,490,991.61	403,156.64	201,853.52	441,825.26
36	4/15/2022	395,796,738.03	2,676,501.55	985,072.48	19,777,008.00	(9,196,261.60)	2,486,400.81	549,355.03	1,271,080.50

Thank you for listening

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Best ESG Solution

Insurance Asset Management Awards 2017
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Economic Scenario Generation Product of the Year Category Winn
Solvency II Product of the Year Category Winner
Regulatory Reporting Product of the Year Category Winner

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Ranked 19th in the Overall Top 100 Rankings

AsiaRisk Technology Rankings 2017
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