

Case Study: PolyPaths integrates with Moody's Analytics to provide comprehensive analytical and stress testing tools for fixed income

The company chosen for this case study is the market leader in advanced solutions for fixed income analytics to meet the diverse needs of multiple users in financial organizations.



CHALLENGE

Being able to run custom stress scenarios and provide comprehensive analytics to customers on a single, integrated platform.



SOLUTION

PolyPaths is able to provide their clients with access to Moody's Analytics Structured Finance data via all PolyPaths platforms.



RESULTS

The integration gives PolyPaths clients the flexibility to carry out the tasks they need to fulfill via a single, integrated solution.

"Our partnership with Moody's Analytics exemplifies our continued commitment to delivering added benefits to our customers", said Kelli Sayres, PolyPaths Senior Managing Director. "This fully integrated solution allows clients to accurately perform comprehensive fixed income analytics for structured instruments using Moody's Analytics while streamlining risk management, portfolio and asset liability management process on PolyPaths' platform."

Comprehensive cash flow engine and analytical tools provide insights and customization

THE CHALLENGE

PolyPaths chose to partner with Moody's Analytics in order to provide their clients with a comprehensive, customizable, and integrated fixed income analytical tool to assist them in carrying out day-to-day tasks.

THE SOLUTION

Moody's Analytics Structured Finance cash flow and credit models are available seamlessly through any of PolyPaths' platforms including PolyCMO for single-security pre-trade analysis; AppPort for interactive pricing, valuation, and portfolio management; Batchcal for automated risk calculations and cash flow reporting; and ALM, an accounting and reporting tool used for book income and forward MV and balance sheet forecasts. Clients must license software with both PolyPaths and Moody's Analytics separately in order to access a single, integrated, seamless solution.

Asset classes covered within PolyPaths include Mortgages, MSRs, Structured products, Government and Agency Bonds, Muni's, Swaps, Credit Default Swaps and Swaptions, Options on futures, Eurodollar, Fed Fund, Treasury, Eris Swap futures, and Cross-currency derivatives. As a result, mutual clients can access the depth of Moody's Analytics advanced cash flow and credit modeling as part of a larger multi-asset class fixed income portfolio analysis within PolyPaths. Clients also have an option to use their own prepay/default assumptions or use third party models such as Black Knight or Andrew Davidson in combination with Moody's Analytics cash flow engine within PolyPaths. Moody's Analytics is available on PolyPaths Desktop, Distributed Processing, as well as PolyPaths Enterprise Solutions. Mutual clients can run pricing of different instruments, CCAR-type stress scenarios, or custom stress scenarios. They can also look at interest rate and credit risk.

THE RESULTS

By accessing a single, integrated solution, both PolyPaths and Moody's Analytics clients have the ability to carry out their day-to-day tasks without needing to access multiple systems. Moody's Analytics credit and economic models have added value in terms of coverage for securitized assets and operational efficiencies to the PolyPaths solution.

How It Works

When enabled, Moody's Analytics may be selected as a CMO Source:

The screenshot shows a software window titled "Add A Bond". It contains several input fields and a "Source" section at the bottom. The "Source" section has two radio buttons: "Intex" and "Moody's Analytics". The "Moody's Analytics" radio button is selected and is enclosed in a red rectangular box.

Users can interactively bulk load CUSIPs as well via CSV:

	A	B	C	D	E	F
1	Sec Type	Cusip	Orig Face	Price	Yield	Sprd/Swap
2	CMOMD	31381SJ94	41,000,000.00	98.87369		
3	CMOMD	31381VCF0	14,000,000.00	102.3616		
4	CMOMD	31381SMZ2	15,565,000.00			3
5	CMOMD	31381SPL0	21,475,000.00			3
6	CMOMD	31381R3T9	109,275,007.00			3
7	CMOMD	31381T4B3	11,200,000.00			3
8	CMOMD	31381TNX4	24,207,000.00			3
9	CMOMD	31381USV0	19,000,000.00			3
10	CMOMD	31381NU27	18,000,000.00			3
11	CMOMD	31381PGA0	39,668,927.00			3
12	CMOMD	31381QVY9	8,160,000.00			3
13	CMOMD	31381UZL4	20,500,000.00			3
14	CMOMD	31381S3Z3	88,000,000.00			3
15	CMOMD	31381SHM7	12,460,000.00			3
16	CMOMD	3137A1118	80,000,000.00			3

Many descriptive fields are automatically populated, and below is a sample portfolio view with descriptive data:

Description	Sector	SSFA Kg	Coupon	Maturity	WAC (Coll)	Delinq Rate 30D	Delinq Rate 60D	Delinq Rate 90D	Avg Loan Size	Sub Type
Moody's_SamplePF			1.319278		3.857	1.642	0.895	2.420	16,134,584.15	
VSAC_2013-1 A	Student_Loan_FFELP	0.017900	1.526110	04/28/2035	5.638	3.187	1.228	2.338	192,444.28	SENIOR-FLT
ESI212001 A	Student_Loan_FFELP	0.017900	1.921110	09/25/2040	5.671	3.681	2.320	6.765	151,780.35	SENIOR-FLT
BACCMT A1502	Credit_Card	0.080319	1.360000	09/15/2020	0.000	0.468	0.345	0.797	34,074,106.60	SENIOR
CHAIT A1307	Credit_Card	0.080235	1.197220	09/15/2020	0.000	0.343	0.260	0.587	43,492,392.40	SENIOR-FLT
CHL06010 1A15	MBS_Prime	0.070194	6.000000	05/25/2036	5.051	3.278	0.000	5.367	71,078.57	SENIOR
BHEA10001 A1	Student_Loan_FFELP	0.017900	1.824830	05/25/2029	3.950	2.852	1.095	3.161	491,556.69	SENIOR-FLT
NTHEA12001 2012-1	Student_Loan_FFELP	0.017900	1.771110	12/01/2034	5.043	3.171	1.681	5.145	236,618.42	SENIOR-FLT
AF13001 A	Student_Loan_FFELP	0.017900	1.271110	02/25/2036	7.304	2.925	1.311	3.710	203,247.80	SENIOR-FLT
WD2015-B A2A	Auto	0.080043	0.960000	07/15/2019	4.130	2.023	0.518	0.108	610,708.41	SENIOR
WD2015-B A2A	Auto	0.080043	0.960000	07/15/2019	4.130	2.023	0.518	0.108	610,708.41	SENIOR
WD2015-B A2A	Auto	0.080043	0.960000	07/15/2019	4.130	2.023	0.518	0.108	610,708.41	SENIOR

Users can then assign pricing and prepayment assumptions and run valuation:

Description	Price	Yield	Sprd/ UST	CF Dur	30-day Total Net Carry	10YR Equiv	OAS	OA Dur	OA Cvx	Total OA DV01	Total OA Cvx01
Moody's_SamplePF	98.877054	1.5305	11.6	3.18	36,503,820.70	19,996,329,272.01	333.28	0.12	0.01	626,346.347	506.660
Agency	102.361610	2.5193	45.6	6.42	1,240,572.87	691,994,359.77	41.59	2.47	-0.04	224,337.376	-40.594
AGENCY POOL	105.146927	2.0000	18.5	4.13	75,923.87	19,164,725.17	5.23	4.13	0.21	16,169.099	8.037
AGENCY POOL	102.360416	2.0000	5.7	4.69	20,488.91	7,613,394.27	-2.45	4.69	0.26	6,419.782	3.589
AGENCY POOL	105.557593	2.0000	18.6	4.11	32,744.39	8,027,838.17	5.32	4.11	0.20	6,772.904	3.363
AGENCY POOL	104.636031	2.0000	18.2	4.15	38,538.01	10,102,741.41	5.08	4.15	0.21	8,523.796	4.244
AGENCY POOL	98.689497	2.0000	97.5	1.51	54,378.71	17,346,794.05	115.39	0.08	0.00	817.142	0.094
AGENCY POOL	104.349521	2.0000	9.9	4.47	19,917.22	5,966,689.93	0.41	4.47	0.24	5,032.229	2.695
AGENCY POOL	104.258499	2.0000	13.4	4.34	41,018.84	11,856,500.07	2.27	4.34	0.23	10,001.131	5.204
AGENCY POOL	103.538491	2.0000	6.8	4.61	29,666.50	9,839,834.17	-1.43	4.60	0.25	8,297.580	4.570
AGENCY POOL	104.216213	2.0000	40.8	3.27	35,601.78	6,769,094.81	19.27	3.27	0.13	5,717.069	2.279
AGENCY POOL	106.007179	2.0000	35.6	3.45	86,290.29	15,470,849.73	15.85	3.45	0.15	13,062.818	5.495
AGENCY POOL	107.974216	2.0000	26.4	3.78	19,989.11	3,625,509.51	10.40	3.78	0.17	3,059.928	1.402
AGENCY POOL	103.500511	2.0000	4.0	4.80	32,916.89	11,583,023.85	-4.07	4.80	0.27	9,765.341	5.598
AGENCY POOL	104.649173	2.0000	13.5	4.33	176,511.33	47,338,302.33	2.40	4.33	0.22	39,929.631	20.746
AGENCY POOL	105.100471	2.0000	18.6	4.12	25,320.22	6,415,037.47	5.25	4.12	0.20	5,412.290	2.690
3708C FB	100.568340	2.7108	28.0	8.05	5,608.23	9,090,932.96	28.64	0.36	-0.22	339.781	-2.128
3702F FC	100.748230	2.8316	28.5	9.83	6,703.13	12,551,969.84	29.45	0.62	-0.39	670.517	-4.154
11-092B FA	100.910560	2.8480	27.4	10.45	9,534.74	21,240,586.63	27.85	0.75	-0.43	1,294.565	-7.438
3807G FM	100.259060	2.9463	39.0	10.01	167,692.74	251,959,959.51	39.86	0.63	-0.42	13,378.492	-90.174

Tranche and Collateral Cash Flow Reports are available, via our user interface or in an automated fashion for bulk reporting:

Date	Balance	Principal	Interest	Total	Index	Coupon	Int Shortfall	Attachment Points	Detachment Points	SSFA W	SSFA Ka	SSFA Kesfa	SSFA Rw
04/17/2017	1,000,000.00	0.00	5,357.93	5,357.93	1.030000	2.143170	0.00	35.49	100.00	0.000000	0.080000	0.000064	0.200000
05/17/2017	1,000,000.00	0.00	0.00	0.00	1.040000	2.150000	0.00	35.49	100.00	0.000000	0.080000	0.000064	0.200000
06/17/2017	1,000,000.00	0.00	0.00	0.00	1.130000	2.150000	0.00	35.49	100.00	0.000000	0.080000	0.000064	0.200000
07/17/2017	1,000,000.00	0.00	5,434.72	5,434.72	1.131075	2.150000	0.00	35.49	100.00	0.000000	0.080000	0.000064	0.200000
08/17/2017	1,000,000.00	0.00	0.00	0.00	1.131075	2.251075	0.00	35.49	100.00	0.000000	0.080000	0.000064	0.200000
09/17/2017	1,000,000.00	0.00	0.00	0.00	1.131075	2.251075	0.00	35.49	100.00	0.000000	0.080000	0.000064	0.200000
10/16/2017	1,000,000.00	89,861.63	5,690.22	95,551.85	1.131075	2.251075	0.00	37.67	100.00	0.000000	0.080000	0.000039	0.200000
11/17/2017	910,138.37	0.00	0.00	0.00	1.131075	2.251075	0.00	37.67	100.00	0.000000	0.080000	0.000039	0.200000
12/17/2017	910,138.37	0.00	0.00	0.00	1.131075	2.251075	0.00	37.67	100.00	0.000000	0.080000	0.000039	0.200000

Moody's Analytics Credit Model is supported for applicable structured finance deals within the Moody's Analytics deal library. Instrument-Level Moody's Analytics Credit Scen field allows users to view all the available pre-canned scenarios:

Sec Type	Cusip	Orig Face	Description	Price	Moody's Credit Scen
1	PORT	58,242,487,256.000		99.054464	
2	CMOMD	78447AAA2	SLM20123 A	96.625960	Fed Baseline Scenario (CCAR 2015)
3	CMOMD	78446CAA9	SLM2013-2 A	97.133660	Fed Baseline Scenario (CCAR 2015)
4	CMOMD	78445XAA4	SLM20101 A	97.951800	Fed Adverse Shock Scenario (CCAR 2015)
5	CMOMD	928667AC8	VCAMOT 1401-A1	98.827670	Fed Severely Adverse Shock Scenario (CCAR 2015)
7	CMOMD	78445UAA0	SLM20113 A	100.203800	Next-Cycle Recession (November 2011)
8	CMOMD	78446YAA1	SLM20122 A	97.523180	Client Scenario 2
					EU Baseline Scenario (2014)

Users may utilize the Custom Credit Scen field to reference their own custom scenarios:

Value	Settle Date	Factor Date	Yield	CF Dur	Sector	Moody's Credit Scen	Custom Credit Scen
	09/16/2014	05/01/2014			CMBS		CreditScen 1
	09/16/2014	05/01/2014			CMBS		CreditScen 2
	09/16/2014	05/01/2014			CMBS		\\Somepath\SomeDir\Credit1.csv

Custom Credit Scen files can be imported flexibly via text file format and may include FACTOR, REGION, and VALUES:

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
# PA scenario																			
YEAR	2014	2014	2014	2014	2015	2015	2015	2015	2016	2016	2016	2016	2017	2017	2017	2017	2018	2018	2018
QUARTER	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3
UNEMPLOYMENT	7.85	7.77	7.56	7.67	7.42	7.39	7.31	7.26	7.29	7.33	7.28	7.25	7.17	7.21	7.19	7.14	7.03	7.01	6.88
HPI	2.98	3.59	4.12	4.46	4.02	4.13	4.19	4.35	4.67	4.95	4.97	5.23	5.69	6.19	8.48	10.13	13.11	14.01	18.63
GDP	1.34	1.77	1.98	2.09	2.43	2.53	2.69	3.16	3.87	4.05	5.11	6.19	9.67	13.42	15.55	16.95	18.34	23.39	29.66
TSY10Y	2.34	2.39	2.44	2.59	2.48	2.41	2.37	2.43	2.57	2.64	2.83	2.96	3.24	3.35	3.81	3.49	3.67	4.22	4.53
LIBOR6MSPREAD	7.85	7.77	7.56	7.67	7.42	7.39	7.31	7.26	7.29	7.33	7.28	7.25	7.17	7.21	7.19	7.14	7.03	7.01	6.88

Cash Flows, Valuations, and Risk may be run across user-defined stress scenarios.

Alternatively, users may leverage the Moody's Analytics cash flow engine in combination with their own or a third-party prepayment and loss model.

About Moody's Analytics

Moody's Analytics provides financial intelligence and analytical tools supporting our clients' growth, efficiency and risk management objectives. The combination of our unparalleled expertise in risk, expansive information resources, and innovative application of technology helps today's business leaders confidently navigate an evolving marketplace. We are recognized for our industry-leading solutions, comprising research, data, software and professional services, assembled to deliver a seamless customer experience. Thousands of organizations worldwide have made us their trusted partner because of our uncompromising commitment to quality, client service, and integrity.

Moody's Analytics is a subsidiary of Moody's Corporation (NYSE: MCO). MCO reported revenue of \$4.2 billion in 2017, employs approximately 11,900 people worldwide and maintains a presence in 41 countries. Further information about Moody's Analytics is available at www.moodyanalytics.com.

About PolyPaths

PolyPaths provides advanced fixed income analytical solutions to help clients effectively manage portfolio risk, fine tune asset liability management, and capitalize on profitable opportunities.

Our solutions employ cutting-edge interest rate models and analytical modeling rigor and are used for pre- and post-trade analysis, pricing, valuation, value at risk, portfolio risk measurement, asset liability management, and extensive customizable reporting. The user interface is flexible, intuitive, and easy to use and PolyPaths' Distributed Processing system allows clients to scale to their needs and execute large demanding routines quickly. Renowned for our focus on customer service, our clients have entrusted us for their fixed income analytical needs for over 20 years.

For further information, please email us at sales@polypaths.com, or call us at (212) 332-6288.

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