

Case Study: ZM Financial Systems partners with Moody's Analytics to model CMO cash flows and loan defaults

The financial software company chosen for this case study is one of the fastest growing in the U.S., with a focus on advanced Asset Liability Management (ALM).

CHALLENGES



- » Cost of accurately predicting CMO cash flows for smaller institutions with smaller portfolios
- » Creating defensible loss estimates to support DFAST/CCAR and CECL

SOLUTION



Banks and credit unions access Moody's Analytics libraries directly through ZM Financial Systems. The solutions are tightly integrated such that cash flow and credit modeling are transparent to users, although sophisticated multi-dimensional lookups are being performed behind the scenes.

RESULTS



Moody's Analytics gives ZM Financial Systems clients more accurate and flexible predictions with less involvement and manipulation. CMO cash flows are generated for any economic scenario a client desires, and industry average experience can be applied to loan default projections used to derive CECL and stress tests such as DFAST.

"We've successfully partnered with Moody's Analytics to provide CMO cash flows for over a decade, so they were a natural fit to partner with for credit modeling and stress testing." - Jerry Clark, Senior Vice President & Director, Sales & Marketing, ZM Financial Systems

Accuracy and transparency delivered via dependable and affordable solutions

THE CHALLENGES

Many financial institutions purchase small numbers of CMOs for their portfolios, and options for correctly modeling CMO cash flows are limited and expensive. By partnering with Moody's Analytics, ZM Financial Systems offers cash flows on a per CUSIP basis to clients that could otherwise not afford accurate risk modeling, so they are able to see the impact of their decisions on liquidity and forecasts.

From a credit perspective, many financial institutions struggle with having access to accurate and/or sufficient data to support detailed economic modeling for DFAST/CCAR and CECL. By partnering with Moody's Analytics, ZM Financial Systems clients can fill in gaps and benchmark assumptions to gain confidence in loss projections.

THE SOLUTION

CMO cashflows are accessed interactively in ZM Financial Systems' cloud solutions by checking an option, then processing desired scenarios. For on-premise platforms, libraries or individual CUSIPs can be purchased, downloaded, and integrated directly into the model. These are combined with other investments, loans, and deposits to see the entire organization. Clients use the results generated for portfolio analytics, liquidity, sensitivity, stress testing, forecasting, planning, budgeting, and regulatory reporting.

Moody's Analytics default projections based on industry averages can be licensed through ZM Financial Systems and used directly in either ZM Financial Systems' cloud or on-premise solutions. In both cases, the default assumptions are applied to cashflows and used to refine loss estimates, provisioning, CECL, etc. Those ultimately impact the same types of analyses noted above (liquidity, sensitivity, etc.).

THE RESULTS

Moody's Analytics integrations offer ZM Financial Systems' clients accurate and affordable options for proper modeling of complex instrument characteristics. Clients receive dependable results with minimal effort. Transparency is delivered via audit trails, screens, and reports to assist with validation and proper application of these models.

Default model integration with ZM Financial Systems

Moody's Analytics default models can be assigned directly inside of ZMdesk at a product or instrument level. Parameters, formulas, and other techniques are used to derive economic-based loss projections.

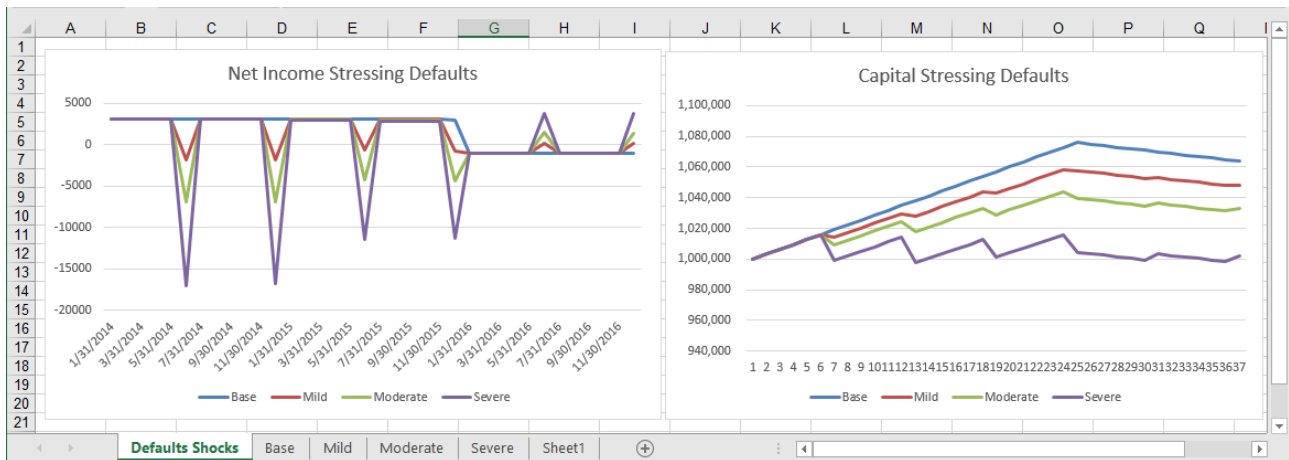
Constant:

Unit:

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ModelName:



CMO integration with ZM Financial Systems

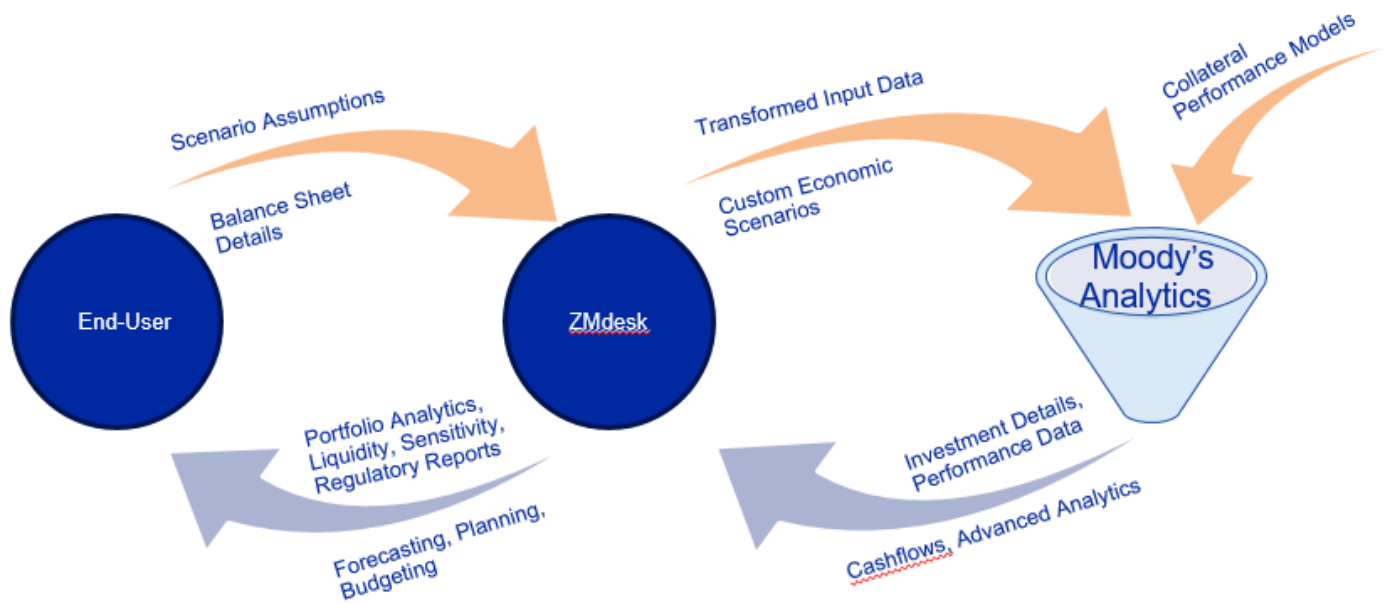
By using the CUSIP template, ZMFS' cloud solution (Online ALM) dynamically accesses the Moody's Analytics cash flow library...

... and OnlineALM automatically generates cash flows for the scenario(s) chosen.

	A	B	C	D	E	F	K	L	S	T	U
1	VersionNum	ID Key	ID Name	Shift ID	CurrNotional	ValuationDate	PmtFreq	Accrued	BookYld		
2	1913	141016247	3136A3DK4	04_Up Steep	1,499,707.00	3/31/2017	30	0.14097	1.605		
3											
4	Cnt	Date	Time	DiscFactor	BeginBal	CPR	WAC	Reference	PrnPmt	IntPmt	TotalPmt I
5	0	07/25/2017	0.31944	0.99182571	1424345.55	10.00	3.976	3.863	25119.67	2077.17	27196.84
6	1	08/25/2017	0.40278	0.98949626	1399225.88	9.80	3.976	3.987	24575.59	2040.54	26616.13
7	2	09/25/2017	0.48611	0.98714828	1374650.29	9.58	3.976	4.113	24027.95	2004.70	26032.64
8	3	10/25/2017	0.56944	0.98478478	1350622.35	9.17	3.976	4.241	23264.06	1969.66	25233.72
9	4	07/25/2017	0.31944	0.99182571	1424345.55	10.00	3.976	3.863	25119.67	2077.17	27196.84
10	5	08/25/2017	0.40278	0.98949626	1399225.88	9.80	3.976	3.987	24575.59	2040.54	26616.13
11	6	09/25/2017	0.48611	0.98714828	1374650.29	9.58	3.976	4.113	24027.95	2004.70	26032.64
12	7	10/25/2017	0.56944	0.98478478	1350622.35	9.17	3.976	4.241	23264.06	1969.66	25233.72

The Integration Process

Moody's Analytics structured finance data and cashflow APIs integrate with ZMdesk by supplying securities master data, terms & conditions, collateral characteristics, performance and cashflow analytics data for structured finance securities, while incorporating user-supplied input scenarios and running assumptions.



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 ZM Financial Systems

ZM Financial Systems believes financial institutions must have access to stronger analytics to perform confidently in an uncertain world. From securities and fixed-income analytics, credit-adjusted ALM and liquidity to risk management, budgeting and funds transfer pricing, our models allow you to analyze potential outcomes for many different scenarios...and sleep better at night knowing you have defensible decisions. Founded in 2003 on the belief that institutions needed access to strong analytics, ZMFS is a privately held corporation headquartered in Cary, N.C. In addition to the 25 percent of our staff who have PhD's in the advanced quantitative field, our development and product support teams all have experience in the finance arena. This means our clients can have stronger confidence in their bottom line and balance sheet decisions, knowing the tools they are using reduce their risk while increasing capital. Discover why more than 2,000 institutions have implemented our integrated systems to neutralize the effects of economic uncertainty.

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