

A.M. Best's Liquidity Model For U.S. Life Insurers

As part of its standard analytical review of all companies, A.M. Best has detailed discussions about management of liquidity risk. A.M. Best believes that the measurement of a company's liquidity is one of the most important factors in determining a life insurer's financial strength. Fundamentally, the liquidity profile of a company can be assessed by reviewing the nature and duration of its assets and liabilities, which in turn drives the inherent nature of the liquidity risk. A.M. Best's liquidity analysis includes a holistic and comprehensive approach that examines liquidity at both the operating and holding company/consolidated level and also includes a detailed review of company-provided liquidity analysis. This company-provided plan should incorporate a response to how the company would react in a stressed scenario of immediate and material cash demands.

A review of liquidity resources (sources and uses of cash) at the holding company is fundamental. Since the insurance entities are often the primary sources for debt servicing at the holding company, liquidity analysis is already part of A.M. Best's process of assigning issuer credit and debt ratings. Liquidity triggers, such as material adverse change clauses, covenants or other restrictions, also are examined and factored into the overall liquidity analysis. At the operating company level, A.M. Best historically has published current and quick liquidity ratios, which were common means of assessing a company's liquidity. These ratios appear in a variety of A.M. Best's publications but represent just a small sample of the measures used in assessing liquidity.

Over the past several years, the complexity of insurance products has grown, and insurers have continued to stretch for yield in a prolonged low-interest-rate environment. This increased appetite for higher-yielding assets

may conflict with the need for adequate liquidity to cover the liabilities for which these assets are matched. "Puttable" features have become common in variable annuities, while the ongoing use of "bonus" rates entices consumers to surrender policies early to gain better near-term crediting rates on fixed annuities. Products such as guaranteed investment contracts (GICs) and puttable funding agreements, while not as prominent as they once were, can represent a significant portion of an insurer's liabilities. As a result, A.M. Best has continued to look for ways to refine its liquidity analysis to reflect these concerns.

Importance to The Rating Process

A.M. Best's Liquidity Model for U.S. Life Insurers (AMBLM) is A.M. Best's newest tool to enhance its review of liquidity. Using statutory data, the AMBLM quantitatively measures a company's short-term (30 days) and longer-term (six-to-12 months) cash needs positions under stressed scenarios. The model allows for conservative, standardized comparisons to be calculated and determines whether a company's calculated liquidity is within the range of its peers relative to its size and type of business. A.M. Best's initial analysis has focused on companies with a preponderance of interest-sensitive liabilities (i.e. annuities). As A.M. Best recognizes the shortcomings of statutory reporting in this analysis, it views the liquidity model only as a tool, not the sole predictor of future financial performance. Hence, the AMBLM is not intended as a substitute for a comprehensive review of an organization's liquidity.

While there are different levels of liquidity management, the AMBLM focuses on a life insurer's three major cash sources:

- 1) the portfolio's level of cash and short-term investments;
- 2) the portfolio's level of readily saleable securities that can be converted quickly to cash; and
- 3) the cash flow from operations that is

Further questions about A.M. Best's Liquidity Model for U.S. Life Insurers can be directed to George Hansen or Stephen Irwin, both of the life/health division of A.M. Best Co.



available to meet policyholder obligations, reinvestment or repayment of debt at the operating company.

However, A.M. Best continues to monitor other sources of liquidity available to the company, such as its access to the capital markets, holding company resources and back-up lines of credit. Since debt at the holding-company level can play a key role in an operating company's liquidity profile, ample consideration already is given to the holding-company sources and uses of funds in the qualitative rating analysis. Although these additional avenues for liquidity are factored into the entire liquidity analysis used in determining a rating, they are not considered in this stand-alone model.

Observations of Liquidity Management and Issues

A.M. Best views the management of liquidity as a continuing challenge for life insurers that is more pronounced for companies with interest-sensitive products. When assessing liquidity risk, A.M. Best evaluates the liquidity profile from an enterprise perspective. However, for purposes of this model, the asset and liability stress analysis is performed only at a statutory operating company level.

Key Liquidity Measures for Life Companies

- **Current Liquidity**—Measures the proportion of liabilities (excluding asset valuation reserve, conditional reserves and separate account liabilities) covered by cash and unaffiliated holdings, excluding mortgages and real estate.
- **Quick Liquidity**—Measures the proportion of liabilities (excluding AVR, conditional reserves and separate account liabilities) covered by cash and investments that can be converted quickly to cash.
- **Operating Cash Flow**—Cash revenue items less cash expenses and benefits paid.
- **Delinquent and Foreclosed Mortgages to Capital**—The sum of long-term mortgages upon which interest is overdue more than three months, in process of foreclosure and foreclosed to real estate as a percentage of capital and surplus funds (including AVR).
- **Affiliated Investments to Capital**—Affiliated investments (including home office property) as a percentage of capital and surplus funds (including AVR).
- **Mortgages/Credit Loans/Real Estate to Invested Assets**—Mortgage loans, credit tenant loans and real estate as a percentage of invested assets.

While reviewing day-to-day and ongoing cash management is important, A.M. Best believes that it is the stress liquidity risk that can jeopardize a company's financial viability and could lead to insolvency. The "run-on-the-bank" scenario, such as the General American Life Insurance Co. event in the late 1990s, is a perfect example of stressed liquidity. Life insurers with significant exposure to single-premium deferred annuities, puttable funding agreements or GIC's are subject to stress liquidity events. For this reason, A.M. Best moni-

tors a company's issuance of institutional spread-based products relative to its total general account reserves.

The lessons learned from past events have helped life insurers with highly liquid, easily surrenderable liabilities to insulate themselves from an unpredictable "run-on-the-bank" event. Strong liquidity management should enable the daily operations of a life insurer to run smoothly and should substantially lessen the potential need to liquidate assets prematurely. Management may choose to reduce liquidity risk by restructuring its investment portfolio; reducing any asset/liability mismatch; or de-emphasizing the sale of a particular product line. Review of liquidity is viewed by A.M. Best as an integral part of a company's overall enterprise risk management (ERM) process.

A.M. Best's liquidity review of a given company, which now will include the AMBLM in its liquidity ratio analysis, is therefore a key factor in evaluating a company's financial

A.M. Best Co. Methodology

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The Insurance Information Source

strength. Both the profile of the liabilities and availability of liquidity from assets remain a financial balancing act. As this model captures a conservative, stand-alone view of a company's overall liquidity, A.M. Best has refrained from incorporating the other sources and uses of liquidity of the holding company in this model.

A.M. Best has observed that liquidity risks have evolved over time as policyholders and contract holders become more sophisticated in managing their financial exposures with life insurance companies. Several types of spread-managed or interest-sensitive products being offered in the marketplace expose a company to liquidity risk as a result of a changing interest-rate environment, credit and default risks, and the embedded optionality in the products. On the asset side, the issues that create liquidity risk come from the ability to sell assets quickly without incurring unacceptable losses. Market movements such as sharp interest-rate changes or general market corrections can trigger such scenarios. A company's appetite for higher yield from investments such as mortgage loans and certain structured securities can also raise liquidity risk.

Functionality of the Model

For modeling purposes, A.M. Best has used statutory information as of Dec. 31, 2005 for a population of companies whose reserve composition is represented primarily by annuities and deposit liabilities. This population includes members of many large insurance groups, as well as smaller companies with a preponderance of interest-sensitive products. The AMBLM incorporates liquidity factors and exposures covering both institutional and retail products, taking into account their unique, embedded risk characteristics. Generally, when the resulting ratio is greater than 100%, a higher comfort level exists that a company's exposure to liquidity risk is acceptable. When the resulting ratio is less than 100%, a more detailed analysis will need to be performed to understand the driving factors and the potential rating impact.

The process of determining the liquidation value of assets and liabilities involves giving a "haircut" to the book values or fair values of assets and liabilities, which are obtained from an operating company's publicly available statutory annual statement and nonpublic annual A.M. Best Supplemental Rating Ques-

tionnaire (SRQ). Since the data are from a statutory perspective, most assets in the model (except common stock, which is reported at market value) are valued at amortized cost. The rationale for developing and applying a liquidity "haircut" is to estimate potential cash available to fund cash demands during short- and longer-term scenarios. In addition, under the scenario testing for this model, it is assumed that no new business is sold.

The short-term scenario is indicative of a "stressed" situation in which a company encounters a severe and unexpected liquidity event resulting in withdrawals and surrenders within a 30-day timeframe. This scenario likely would result in a lower score, as the factors are more onerous under this more immediate scenario. The longer-term scenario measures "stressed" liquidity over a period as long as 12 months. Because of the longer time frame, asset disposition is assumed to be easier than under the short-term scenario and is reflected in the higher asset credit given in many cases. A.M. Best will evaluate each of these two scenarios and give more weight in its analysis to the scenario that presents potentially greater liquidity risk.

By their nature, cash on hand, including cash equivalents and U.S. government-issued securities, receive full credit in both the short and long scenarios, as these assets are considered highly liquid. Based on their higher credit quality, unaffiliated, investment-grade, public corporate bonds receive a substantial level of credit in the long and short scenarios. However, private investment-grade bonds receive lower levels of liquidity credit. A.M. Best's model gives a range of credit, from little (in the longer scenario) to none (in the short scenario) for NAIC class 3 issues because of potential credit- or market-driven factors that may hinder the liquidity of non-investment-grade securities.

Since mortgage-backed securities (MBS) and collateralized mortgage obligations (CMO) have diverse investment tranches and react differently under various interest-rate scenarios, A.M. Best differentiates among them for purposes of the liquidity model. Agency and non-agency pass-through MBS, whether public or private, receive significant credit in the longer-term scenario but no credit for private issues in the short-term scenario. Multiclass commercial and residential MBS receive from

60% to 90% credit longer term and from 50% to 80% credit in the short term. The more tightly structured CMO tranches—very accurately defined maturities (VADM), planned amortization classes (PAC) and targeted amortization classes (TAC)—receive 90% credit in the longer scenario and 80% in the short scenario. Less-liquid CMO tranches receive varying degrees of credit, from 80% to zero. Since the CMO distribution is derived from the SRQ, if no data are received, default industry levels will be used for individual CMO classes.

Although unaffiliated, publicly-traded common stocks are fairly liquid, and a company may be able to liquidate most of its equity portfolio to raise cash quickly, the potential exists for marketplace shocks and resulting declines in stock-market values. Therefore, A.M. Best's model conservatively gives 70% credit to unaffiliated, publicly-traded common

stocks in the short and longer scenarios. Unaffiliated preferred stocks also are given 70% credit, but only in the longer scenario, as A.M. Best's short-term credit is 60%.

Residential, farm and commercial mortgage loans in good standing receive only 10% credit in the longer-term scenario and zero credit in the short-term scenario, because they are not readily marketable assets. Finally, amounts recoverable from reinsurers and amounts receivable under reinsurance contracts are given 50% credit longer term and 10% credit short term.

Liquidity factors also are applied to the major liability items used in A.M. Best's model. Various life and accident and health claims reserves, premium stabilization and unearned premium reserves and general account annuities and deposit reserves are charged based on their liquidity and withdrawal characteristics. Because of their nature, general account annuities are considered to be subject to significant withdrawal risk, while life insurance policies are less likely to surrender, especially under an immediate scenario. Those annuities with market-value adjustments and/or significant surrender protection are given a higher degree of liquidity credit.

Exhibit 1

Asset Factors	Short Term (30 days)	Long Term (6-12 months)
Cash	100%	100%
Cash Equivalents	100%	100%
U.S. Government Securities	100%	100%
Investment-grade Corporate Bonds Public Excluding Affiliates	75%	90%
Investment-grade Corporate Bonds Private Excluding Affiliates	45%	65%
Class 3 Category Public Excluding Affiliates	0%	20%
Class 3 Category Private Excluding Affiliates	0%	10%
Public Pass-through	90%	95%
Private Pass-through	0%	70%
CMO:		
VADM, PAC, TAC	80%	90%
Sequentials	70%	80%
Z Tranches	0%	35%
Other	0%	0%
Other Multi-class Residential MBS Total	50%	60%
Defined Multi-class Commercial MBS/ABS Total	80%	90%
Other Multi-class Commercial MBS/ABS Total	70%	80%
Unaffiliated Common Stock - Public	70%	70%
Total Unaffiliated Preferred Stock	60%	70%
Mortgage Loans in Good Standing:		
Residential	0%	10%
Farm	0%	10%
Commercial	0%	10%
Reinsurance:		
Amounts Recoverable from Reinsurers	10%	50%
Other Amounts Receivable under Reinsurance Contracts	10%	50%

Exhibit 2

Liability Factors	Short Term (30 days)	Long Term (6-12 months)
Life Policy Claims	100%	100%
Net Ordinary Life Reserves	15%	40%
Total (Group Life & Health)		
Premium Stabilization Reserves	30%	50%
Individual A&H UPR	10%	50%
Group A&H UPR	10%	50%
Credit UPR	5%	25%
Health Claim Reserves	15%	100%
General Account Annuities:		
Annuities & Deposits	50%	75%
GICs & Funding Agreements	25%	25%
Reinsurance Payable	100%	100%
Policyholders' Dividends & Coupons		
- Due & Unpaid	100%	100%
Experience Rating Refunds Payable	8%	100%

Conclusion

The management of liquidity risk remains an ongoing challenge for life insurers. Additionally, A.M. Best believes that competitive pressures drive companies to engineer more complex products and invest in more sophisticated assets, some of which may be illiquid.

A.M. Best will monitor all of its liquidity ratios on an ongoing basis and anticipates that the liquidity ratios derived from this new model will be updated annually through a special report published in the second half of each year. During the annual rating review, A.M. Best will analyze any material deviations from the year-end model results that may result from a significant change in the company's asset and/or liability

profile or market conditions, and will factor that change into its rating analysis. The AMBLM itself will be revised periodically to reflect new asset and liability classes as well as for methodology enhancements.

Going forward, A.M. Best may incorporate additional data obtained from the annual SRQ, targeted surveys and internal data already collected. A.M. Best notes that the AMBLM, like the Best's Capital Adequacy Ratio (BCAR), is just one of many tools used in the rating process. Assessment of all factors that impact an insurer's overall balance-sheet strength, operating performance and business profile is necessary in evaluating and determining an insurer's long-term financial strength.

GUIDE TO BEST'S CREDIT RATINGS

A Best's Credit Rating is an independent opinion based on a comprehensive quantitative and qualitative evaluation of a company's balance sheet strength, operating performance and business profile and, where appropriate, the specific nature and details of a rated debt security. Best's Credit Ratings are not a warranty of a company's ability to meet its ongoing financial obligations.

Financial Strength Ratings

A **Best's Financial Strength Rating (FSR)** is an opinion as to an insurer's financial strength and ability to meet its ongoing obligations to policyholders.

	Rating	Descriptor
Secure	A++, A+	Superior
	A, A-	Excellent
	B++, B+	Good
Vulnerable	B, B-	Fair
	C++, C+	Marginal
	C, C-	Weak
	D	Poor
	E	Under Regulatory Supervision
	F	In Liquidation
	S	Suspended

A **Best's Long-Term Issuer Credit Rating (ICR)** is an opinion as to the ability of the issuer to meet its ongoing senior financial obligations. A.M. Best also assigns Issuer Credit Ratings to insurance companies using its Long-Term Credit Rating Scale. The definitions applied to insurance companies that are assigned a long-term Issuer Credit Rating are as follows: (aaa) - Exceptional; (aa) - Superior; (a) - Excellent; (bbb) - Good; (bb) - Fair; (b) - Marginal; (ccc and cc) - Weak; (c) - Poor; (rs) - Regulatory Supervision/Liquidation. The (nr) designation may be assigned to insurers that were previously rated.

A.M. Best may also assign Short-Term Issuer Credit Ratings to certain insurance companies using its Short-Term Credit Rating scale.

Long-Term Issuer Credit, Bank Deposit and Debt Ratings

A.M. Best uses its long-term credit rating scale when assigning:

- **Debt Ratings** (an opinion as to the issuer's ability to meet its financial obligations to security holders when due);
- **Issuer Credit Ratings** (an opinion as to the ability of the issuer to meet its ongoing senior financial obligations) and
- **Bank Deposit Ratings** (an opinion as to a bank's ability to meet its ongoing obligations to depositors).

	Rating	Descriptor
Investment Grade	aaa	Exceptional
	aa	Very Strong
	a	Strong
	bbb	Adequate
Non-Investment Grade	bb	Speculative
	b	Very Speculative
	ccc, cc, c	Extremely Speculative
	d	In Default

Ratings from "aa" to "ccc" may be enhanced with a "+" (plus) or "-" (minus) to indicate whether credit quality is near the top or bottom of a category, and a "u" modifier for Under Review.

Ratings prefixed with an ("i") denote indicative ratings. Issuer Credit Ratings may also be assigned a "pd" modifier, which indicates that a company does not subscribe to A. M. Best's interactive rating process. A.M. Best may also assign the "rs" designation, which indicates that a company is under regulatory supervision or liquidation.

Short-Term Issuer Credit and Debt Ratings

A.M. Best uses its short-term credit rating scale when assigning:

- **Debt Ratings** (an opinion as to the issuer's ability to meet its obligations having maturities generally less than one year) and
- **Issuer Credit Ratings** (an opinion as to the ability of the issuer to meet its senior financial commitments on obligations maturing in generally less than one year).

	Rating	Descriptor
Investment Grade	AMB-1+	Strongest
	AMB-1	Outstanding
	AMB-2	Satisfactory
	AMB-3	Adequate
Non-Investment Grade	AMB-4	Speculative
	d	In Default

A company's Short-Term Credit Rating also may be assigned an Under Review modifier ("u") that generally is event-driven (positive, negative or developing) and indicates that the company's Best's Rating opinion is under review and may be subject to near-term change. Ratings prefixed with an ("i") denote indicative ratings.

Not Rated (nr)

The nr designation may be assigned to issuers or issues that were previously rated.

Rating Modifiers

Rating Modifiers	Affiliation Codes
"u" Under Review	"g" Group
"pd" Public Data	"p" Pooled
"s" Syndicate	"r" Reinsured

Not Rated Categories (NR)

NR-1	Insufficient Data
NR-2	Insufficient Size and/or Operating Experience
NR-3	Rating Procedure Inapplicable
NR-4	Company Request
NR-5	Not Formally Followed

Rating Outlook

Best's Credit Ratings (A++ to D, aaa to c) are assigned a Rating Outlook that indicates the potential direction of a company's/issue's rating for an intermediate period, generally defined as the next 12 to 36 months. A.M. Best does not assign Public Data Ratings to Bank Deposit or Debt Ratings. Financial Strength and Issuer Credit Public Data Ratings are not assigned an Outlook. Rating Outlooks are as follows:

Positive	Indicates a company's financial/market trends are favorable, relative to its current rating level, and if continued, the company has a good possibility of having its rating upgraded.
Negative	Indicates a company is experiencing unfavorable financial/market trends, relative to its current rating level, and if continued, the company has a good possibility of having its rating downgraded.
Stable	Indicates a company is experiencing stable financial/market trends and that there is a low likelihood that its rating will change in the near term.



Founded in 1899, A.M. Best Company is a full-service credit rating organization dedicated to serving the financial services industries, including the banking and insurance sectors. For more information, visit www.ambest.com or contact one of our offices.

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