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

**A**s 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 levels. The analysis should include plans as 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 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.

### Additional Information

#### Criteria:

Understanding BCAR for Life/Health Insurers

Insurance Holding Company and Debt Ratings

Analyzing Insurance Holding Company Liquidity

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### Key Liquidity Measures for Life Companies

- **Current Liquidity** – Measures the proportion of liabilities (excluding asset valuation reserve [AVR], 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.
- **Non-Investment Grade Bonds to Capital** – Sum of NAIC Class 3, 4, 5 and 6 bonds as a percentage of capital and surplus funds.
- **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 real estate owned via foreclosure 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 capital and surplus funds (including AVR).



## Exhibit 1

### A.M. Best's Liquidity Model for U.S. Life Insurers – Asset Factors

	Short Term (30 days)	Longer Term (6-12 months)
Cash	100%	100%
Cash Equivalents	100	100
U.S. Government Securities	100	100
Investment-Grade Corporate Bonds Public excl. Affiliates	75	90
Investment-Grade Corporate Bonds Private excl. Affiliates	45	65
Class 3 Category Public excl. Affiliates	0	20
Class 3 Category Private excl. 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	15
Other	0	0
Residential Mortgage-Backed Securities	40	50
Commercial Mortgage-Backed Securities	70	80
Other Loan-Backed and Structured Securities	60	70
Unaffiliated Common Stock Public incl. Mutual Funds	70	70
Investment-Grade 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

Source: A.M. Best's proprietary liquidity model.

### Importance to the Rating Process

A.M. Best's Liquidity Model for U.S. Life Insurers (AMBLM) is one of A.M. Best's tools to review U.S. statutory operating companies' 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. Due to their greater potential liquidity needs, A.M. Best's 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 finan-

cial 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 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 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.

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. Life insurers with significant exposure to single-premium deferred annuities, putable funding agreements or GICs are subject to stress liquidity events. For this reason, A.M. Best monitors 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, as well as prepare for potential credit events impacting assets. 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 includes the AMBLM in its liquidity ratio analysis, is therefore a factor in evaluating a company's financial 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 also can raise liquidity risk.

### Exhibit 2 A.M. Best's Liquidity Model for U.S. Life Insurers – Liability Factors

	Short Term (30 days)	Longer Term (6-12 months)
Life Policy Claims	100%	100%
Net Ordinary Life Reserves	15	40
Total (Individual and Group, Accident & Health [A&H] Premium Stabilization Reserves)	30	50
Individual A&H Unearned Premium Reserves	10	50
Group A&H UPR	10	50
Credit UPR	5	25
Health Claim Reserves	15	100
General Account Annuities & Deposits (excluding GICs and FAs)	50	75
GICs & Funding Agreements	25	25
Additional Charge for Putable GICs & Funding Agreements	25	25
Reinsurance Payable	100	100
Policyholders' Dividends & Coupons – Due & Unpaid	100	100
Experience Rating Refunds Payable	8	100

Source: A.M. Best's proprietary liquidity model.

## Functionality of the Model

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 its non-public annual A.M. Best Supplemental Rating Questionnaire (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 time frame. The longer term scenario measures "stressed" liquidity over a period as long as 12 months. While higher asset credits are given for the longer term scenario, significantly higher liability needs arise, producing lower liquidity ratios than under the short-term scenario. 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 longer term 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 short and longer term 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. Residential mortgage-backed securities remain under pressure as the housing market continues on a gradual path to recovery, resulting in lower short-term and longer term credits (40%, 50%) when compared with commercial and other loan-backed securities. Delinquency rates on commercial mortgage-backed securities have been modest over the past several years and are well below rates experienced during the early 1990s, warranting higher short-term and longer term credits (70%, 80%). Other loan-backed and structured securities include home equity lines of credit, student loans and collateralized debt obligations that experienced difficulty during the financial crisis and continue to face challenges. Offsetting these loans are auto loans and credit card loans, which are currently well performing. Thus, these assets

receive lower short-term and longer term credits of 60% and 70% respectively. 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 term scenario and 80% in the short-term 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 (including mutual funds) in the short and longer term scenarios. Unaffiliated, investment-grade preferred stocks also are given 70% credit, but only in the longer scenario, as A.M. Best's short-term credit is 60%. No credit is given to below-investment-grade preferred stocks.

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 in the longer term and 10% credit in the short-term scenario.

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.

## 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. As part of the annual rating review, A.M. Best will analyze significant changes in the company's asset and/or liability profile that may impact liquidity ratios. 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.





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## Methodology

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