

# A Very Long Engagement:

## Asset Allocation Implications of U.S. Life Insurance Risk-Based Capital Changes

August 5, 2021

### Executive Summary

- The long-awaited modernization of RBC bond factors for U.S. life insurance companies was approved by the National Association of Insurance Commissioners (NAIC).
- Taken as a whole, U.S. life insurance industry capital charges will increase as a result of the more granular RBC bond factors, largely owing to significant increases in capital charges for single-A and mid-to-low BBB securities. The biggest “winners” were the at the highest quality (AAA and AA+) and some high yield ratings buckets (BB+, B+ and CCC+), which received capital relief relative to the prior regime.
- The updated portfolio adjustment factors and the newly approved reduction in RBC capital charges for real estate equity (REE) could be partial offsets to higher bond capital charges, particularly for life insurers that have meaningful exposure to the diversifying REE asset class.
- Going forward, we recommend that life insurers evaluate relative value on a more granular, capital adjusted yield basis using a breakeven framework to determine capital efficiency.
- There could be asset allocation implications as a result of the new RBC bond and REE factors: all else equal, compared to the prior RBC regime, high-quality structured finance, loans and real estate equity are more capital efficient, while private fixed income remains attractive given spread premiums to publics.

## A Brief History of the RBC Bond Proposal

The NAIC risk-based capital (RBC) system was implemented in 1991 after a series of insurance company insolvencies. While modest changes to the risk factors have been made since then, they are largely based on historical information from the 1970's and 1980's. Given that economic conditions, interest rates, credit loss experience and investment portfolio holdings have changed significantly since this time, it was prudent to modernize the RBC risk factors. In 2011, the NAIC began to review the current asset (C-1) risk structure and factors used in the RBC model, and by 2017, it proposed new and more granular C-1 risk charges for bonds in the life RBC formula. The proposal was to expand the bond risk factors from 6 to 20 designation categories which are based on NRSRO ratings (nationally recognized statistical rating organizations). Increasing the granularity of bond risk factors allows for more transparency into life insurers' credit risks and more accurately aligns capital charges with credit quality / risk by eliminating the capital "arbitrage" within the lower ratings in the current 6 designation structure. For example, under the existing RBC regime, in the Moody's ratings scale, Aaa and A3 rated bonds receive the same NAIC 1 designations yet are 6 ratings categories apart.

Both the American Academy of Actuaries (AAA) and later, Moody's, supported the NAIC initiative by providing statistical and modeling analysis, which served as a basis for their versions of the revised capital factors and portfolio adjustment factors. Moody's factors were based on default rates and correlations, and issuer diversification benefits observed empirically compared to the AAA's economic state model. Moody's also considered the life insurance industry's portfolio composition as part of the analysis. While both AAA and Moody's proposed higher bond capital factors overall, leading to increased capital requirements, Moody's impact was less punitive, particularly at the higher end of the ratings spectrum.

In June 2021, the NAIC Capital Adequacy Task Force approved the RBC bond factor proposal from Moody's. In conjunction with the bond proposal, the NAIC also approved the reduction in RBC capital charges for real estate equity (both direct and on Schedule BA) to reflect actual loss experience within this asset class. These investment-related RBC changes, in addition to insurance RBC adjustments, will be effective for year-end 2021 RBC reporting by life insurance companies.

## Major Changes on the Horizon from Prior RBC Factors

There are some material differences between the current and new pretax RBC bond factors and portfolio adjustment factors. We highlight the following key observations when examining Moody's factors versus the current RBC regime, as shown in the tables below:

- Highly rated securities (i.e., at the AAA/Aaa and AA+/Aa1 categories) receive material capital relief; in fact, AAA/Aaa (NAIC 1A) securities carry only 0.4x the RBC capital charge compared to the prior factors. Given their concentration in the highest ratings categories (AAA/Aaa and AA+/Aa1), structured finance and municipal securities are poised to see larger reductions from the lowering of the RBC capital factors, though we note that spreads and other factors come into play when evaluating the attractiveness of securities (see capital-adjusted yields section below).
- The largest increase in capital charges is at the A-/A3 (NAIC 1G) level; compared to the old factors, A-/A3 securities require 2.6x the amount of capital to be held compared to the old factors (+161% increase). Further, under the old regime, RBC capital charges for AAA/Aaa and A-/A3 were the same, and now A-/A3 is 6.4x higher (at 1.02% pretax).
- Within the BBB/Baa, category, BBB+/Baa1 (NAIC 2A) fares the best, with no change to the capital charge compared to the prior regime (at 1.26% pretax). In contrast, at 2.17%, the RBC factor for BBB-/Baa3 increased 72% or 1.7x compared to the prior regime.
- High yield receives some capital relief versus the prior regime; particularly at the higher quality of the ratings categories (BB+/Ba1, B+/B1 and CCC+/Caa1). At the BB+/Ba1 (3A) level, the RBC charge declined

29% from the prior regime (to 3.15% pretax), while the B+/B1 (4A) and CCC+/Caa1 (5A) both declined 24%, to 7.39% and 16.94% pretax, respectively.

- Even at the low end of the high yield ratings categories (BB-/Ba3, B-/B3 and CCC-/Caa3), the increase in capital charges is not as high as it is at the A-/A3 and BBB-/Baa3 ratings categories. The increases versus the prior regime are in the range of 28-35%, compared to the +161% at the A-/A3 and +72% at the BBB-/Baa3 levels.
- With no change to the RBC capital charges for mortgage loans, the RBC capital factors are more closely aligned with the new bond factors, compared to being higher under the prior regime. Specifically, the CM1 and CM2 pretax RBC charges for commercial and agricultural loans are 0.90% and 1.75%, respectively, which is relatively consistent with mid to low single A categories (NAIC 1F and 1G) and mid to low BBB/Baa categories (NAIC 2B and 2C).

### Exhibit 1 | Revised Capital Factors - Moody's vs. Current

Moody's	NAIC Designation Category		Life RBC C1 Base Capital Charges <sup>1</sup>		
	Current	Future	Current	Moody's Approved	% Difference
Aaa	1	1A	0.39%	0.16%	-59%
Aa1	1	1B	0.39%	0.27%	-31%
Aa2	1	1C	0.39%	0.42%	7%
Aa3	1	1D	0.39%	0.52%	34%
A1	1	1E	0.39%	0.66%	68%
A2	1	1F	0.39%	0.82%	109%
A3	1	1G	0.39%	1.02%	161%
Baa1	2	2A	1.26%	1.26%	0%
Baa2	2	2B	1.26%	1.52%	21%
Baa3	2	2C	1.26%	2.17%	72%
Ba1	3	3A	4.46%	3.15%	-29%
Ba2	3	3B	4.46%	4.54%	2%
Ba3	3	3C	4.46%	6.02%	35%
B1	4	4A	9.70%	7.39%	-24%
B2	4	4B	9.70%	9.54%	-2%
B3	4	4C	9.70%	12.43%	28%
Caa1	5	5A	22.31%	16.94%	-24%
Caa2	5	5B	22.31%	23.80%	7%
Caa3	5	5C	22.31%	30.00%	34%
Ca	6	6	30.00%	30.00%	0%

<sup>1</sup> Capital charges are pretax and pre-covariance  
Source: NAIC, MetLife Investment Management

## Portfolio Adjustment Factors Mute Bond Factor Changes

In addition to the bond factor changes, revisions were made to portfolio adjustment factors to reflect portfolio diversification in an individual's bond portfolio compared to the representative portfolio. The portfolio adjustment would decrease the base capital requirement based on the number of issuers in the insurer's portfolio. As shown in the table below, on an absolute basis, Moody's diversification factors are less stringent than the current factors at all issuer levels, meaning that the increase in absolute capital charges will be muted from the greater diversification benefits. The most meaningful difference between the current and Moody's portfolio adjustment factors is at the 200-400 issuer level, with Moody's at 85% of current. Within the Moody's scale, the absolute level of capital charges will be reduced once the issuer count exceeds approximately 500, with the greatest benefits from growing from a 500-issuer portfolio size, as shown in the differentials.

### Exhibit 2 | Portfolio Adjustment Factors - Moody's vs. Current

Bond Portfolio Size (# Issuers)	Portfolio Adjustment Factors		
	Current	Moody's	Moody's / Current
10	2.50	2.41	96%
100	1.90	1.63	86%
200	1.45	1.24	85%
300	1.30	1.11	85%
400	1.23	1.04	85%
500	1.16	1.01	87%
1,000	1.03	0.91	89%
1,500	0.99	0.88	89%
2,000	0.97	0.87	90%
2,500	0.95	0.86	90%
3,000	0.94	0.85	90%
3,500	0.94	0.85	90%
4,000	0.93	0.84	90%
4,500	0.93	0.84	90%
5,000	0.93	0.84	91%
Differentials	Current	Moody's	
500 to 1,500	-15%	-12%	
500 to 2,500	-18%	-15%	
500 to 3,500	-19%	-16%	
800 to 2,000	-9%	-7%	
800 to 3,000	-11%	-9%	
800 to 4,000	-12%	-10%	
1,000 to 2,000	-6%	-5%	
1,000 to 3,000	-8%	-7%	
1,000 to 4,000	-9%	-8%	

Source: NAIC, MetLife Investment Management

Exhibit 3 is a matrix that combines the pretax RBC capital factors and portfolio adjustment factors, showing the increase or decrease in factors relative to the current regime at various issuer levels. As the table shows, the greater number of issuers in the portfolio, the more muted the change in capital charge is, either on the positive or negative side. The heatmap shows the ratings categories that fared the best and worst under the new Moody's regime.

**Exhibit 3 | Delta Between Moody's and Current Capital Charges  
at Various Issuer Levels (Portfolio Adjustment Factors)**

	300	500	1,000	2,000	3,000	4,000
<b>Aaa</b>	-0.33%	-0.29%	-0.26%	-0.24%	-0.23%	-0.23%
<b>Aa1</b>	-0.21%	-0.18%	-0.15%	-0.14%	-0.14%	-0.14%
<b>Aa2</b>	-0.04%	-0.03%	-0.02%	-0.01%	-0.01%	-0.01%
<b>Aa3</b>	0.07%	0.07%	0.08%	0.08%	0.08%	0.08%
<b>A1</b>	0.22%	0.21%	0.20%	0.19%	0.19%	0.19%
<b>A2</b>	0.40%	0.37%	0.34%	0.33%	0.33%	0.32%
<b>A3</b>	0.62%	0.57%	0.53%	0.50%	0.50%	0.49%
<b>Baa1</b>	-0.24%	-0.19%	-0.15%	-0.12%	-0.12%	-0.11%
<b>Baa2</b>	0.05%	0.07%	0.09%	0.10%	0.11%	0.11%
<b>Baa3</b>	0.77%	0.72%	0.68%	0.66%	0.66%	0.65%
<b>Ba1</b>	-2.30%	-2.01%	-1.72%	-1.57%	-1.53%	-1.50%
<b>Ba2</b>	-0.77%	-0.61%	-0.45%	-0.37%	-0.35%	-0.33%
<b>Ba3</b>	0.87%	0.88%	0.90%	0.91%	0.91%	0.91%
<b>B1</b>	-4.42%	-3.83%	-3.25%	-2.96%	-2.87%	-2.82%
<b>B2</b>	-2.04%	-1.67%	-1.29%	-1.10%	-1.04%	-1.01%
<b>B3</b>	1.17%	1.24%	1.35%	1.41%	1.42%	1.43%

Capital charges are pretax and pre-covariance

Source: NAIC, MetLife Investment Management

## Higher Capital Requirements for Life Industry from Revised Bond Factors

On a standalone basis, the move to more granular RBC bond capital factors is expected to increase the overall capital requirements for the life insurance industry. Using year-end 2020 Schedule D holdings of the vast majority of life insurance companies, Moody's quantified the increase to the life industry capital requirements at +20%, to \$46.3B when applying the new RBC factors alone. Incorporating the new portfolio adjustment factors, the increase in life industry capital requirements is smaller, at +11% to \$41.8B. The increase in capital requirements mainly stems from the life industry's exposure to corporate bonds, which represent two-thirds (66%) of Schedule D holdings. Within corporates, the largest holdings are in BBB/Baa2, followed by BBB+/Baa1 and A-/A3. According to Moody's, capital requirements for corporate holdings increased 26% compared to the prior regime, or 16% including the portfolio adjustment factors. This is partially offset by the life industry's exposure to structured finance, which represents 23% of Schedule D bond holdings, with the vast majority held in AAA/Aaa securities where capital charges declined meaningfully. According to Moody's, capital requirements for structured finance holdings increase a modest 3% compared to the prior regime but decline 5% including the portfolio adjustment factors.



## Lowering of Real Estate Equity RBC Factors Could Serve as an Offset

In conjunction with the new RBC bond factors, the NAIC also approved an ACLI-sponsored proposal to reduce RBC factors for real estate equity (REE) investments, with the intent to reduce capital requirements backing this asset class. The proposal leveraged actual real estate sector performance data to demonstrate the historical risk of investing in the sector and recommended updated RBC factors based on this analysis. The revision includes a reduction in the C-1 capital charge that is assessed on wholly owned real estate assets reported on Schedule A from 15% to 11%, and a reduction in the charge on JV and fund real estate investments reported on Schedule BA from 23% to 13%. Life insurers' allocation to the real estate equity asset class varies by company, but based on peer analysis, is generally in the range of 0-5%. In light of these material favorable changes, REE may become more of a consideration in life insurance strategic asset allocation frameworks going forward (please refer to MIM's webinar titled, [NAIC's RBC Update and Implications for Real Estate Allocation Decisions](#)).

## Evaluating Capital-Adjusted Yields Under New RBC Framework: Breakeven Concept for Fixed Income Securities

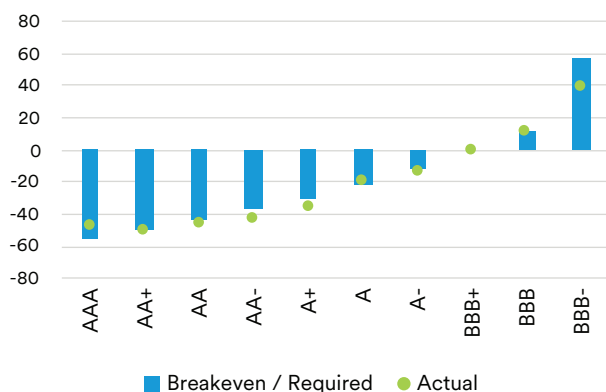
In addition to asset sector fundamentals and the macroeconomic outlook, relative value is an important input in the strategic and tactical asset allocation process for insurance companies. While absolute spreads and yields are factored in, we believe insurers should evaluate investments on a risk or capital-adjusted basis to: (1) screen which asset classes meet or exceed yield hurdles or bogeys; and (2) to determine the relative attractiveness of asset classes. Risk or capital-adjusted yields allow for comparability by asset class by incorporating differences in capital treatment and loss (default) experience, as well as additional spread premiums on private assets. Additional analysis and comparison can also be done on return on capital reflecting the differences in the absolute level of capital requirements. For our calculations of capital adjusted yields, we utilize the relevant index spreads (mostly from Bloomberg Barclays), historical default rates from Moody's and an assumed RBC ratio of 400% (i.e. 4x the amount of capital). While capital adjusted yields are calculated before tax, diversification and covariance, company-specific factors could lower the capital charge and relative attractiveness of the asset class (particularly for higher capital charge assets).

We believe under the new RBC regime, life insurance companies should evaluate capital-adjusted bond yields on a more granular basis (at the ratings notched level) given the meaningful differences in RBC capital charges within the NAIC ratings categories. To compare capital-adjusted yields, we introduce a breakeven yield concept as a framework for evaluating new asset purchases under the new RBC regime. On the S&P/Fitch scale, we use BBB+ rated corporates (at the respective part of the curve) as the starting point or anchor given that there was no change to the RBC capital charge at this ratings level and life insurance companies are large buyers of these rated securities. The remaining asset classes by ratings category are shown in relation to the BBB+ benchmark, providing the amount of additional or reduced spread required for each rating notch for the capital-adjusted yield to be equivalent to the benchmark, or in other words, where insurers would be indifferent purchasing a BBB+ rated corporate and the other security.

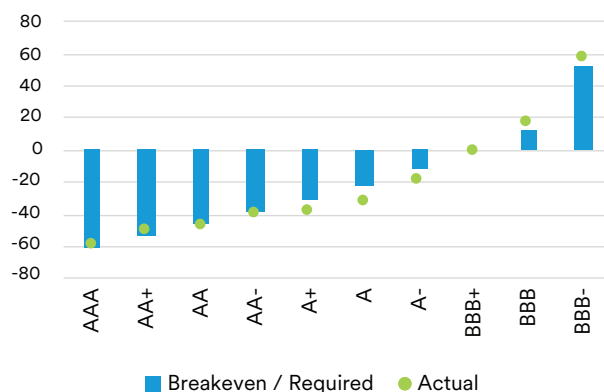
As shown in the Investment Grade (IG) Public Corporates graph below, at the 10-year point on the curve, BBB- rated corporate bonds require 58 bps of additional spread for capital-adjusted yields to be equivalent. Currently, BBB- corporates are trading 39 bps wider than BBB+ corporates, indicating that an investor is not being adequately compensated for the higher capital charges at the lower rated category. The current spread differential between BBB+ and A is 19 bps (i.e. A trading tighter than BBB+), compared to the 22 bps breakeven, demonstrating that the A rated corporate is more capital-efficient than the BBB+ security. At the 30-year part of the curve, current spread differentials of BBB and BBB- rated corporates are greater than the breakeven and required differentials, indicating that they are more capital efficient than BBB+ corporates.

## Exhibit 4 | Investment Grade (IG) Corporate Bonds Breakeven Analysis

10Yr IG Public Corporate Spreads



30Yr IG Public Corporate Spreads



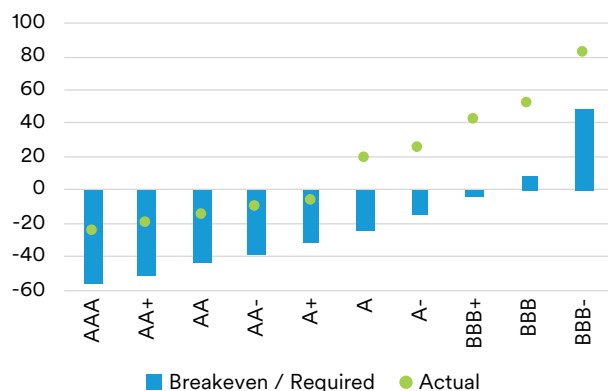
As of July 16, 2021.

Source: Bloomberg Barclays, BlackRock, NAIC, MetLife Investment Management

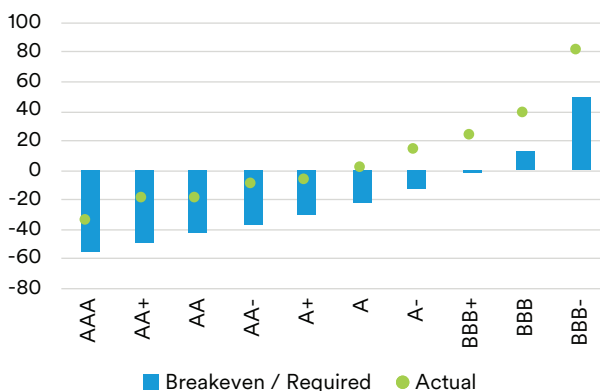
The Private Corporates graphs below show attractive relative value compared to BBB+ corporates as the actual spread differentials are above breakeven / required at all ratings categories at the 10 and 30-year parts of the curve, we believe reflecting typical spread premiums to public corporates. At the 10-year part of the curve, the greatest differential between actual and breakeven spreads are at the BBB+ and BBB ratings categories, with the smallest differential at the A+ level. At the 30-year part of the curve, differentials are lower than those at the 10-year part of the curve and are relatively consistent across the curve in the 21-31 bps range.

## Exhibit 5 | Private Corporates Breakeven Analysis

10Yr Private Corporates



30Yr Private Corporates



As of July 16, 2021.

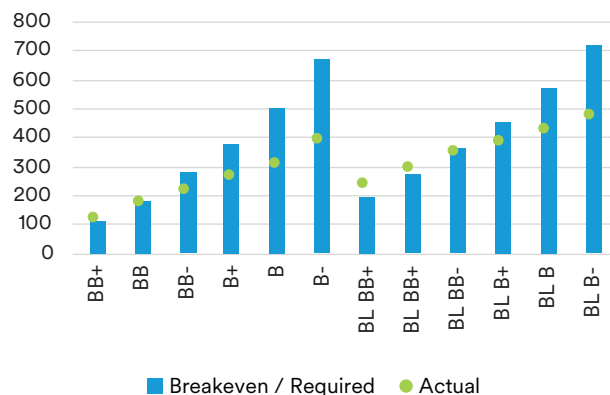
Source: Bloomberg Barclays, BlackRock, NAIC, MetLife Investment Management

Given the improvement in some capital charges, insurers may be considering new high yield purchases, particularly at the BB+ and B+ level. The High Yield graphs show that at the 5-year part of the curve, BB+ corporates are modestly more capital efficient relative to BBB+, with the current spread differentials (122 bps) above the breakeven level (112 bps). BB+ and BB rated bank loans are also capital efficient, and more so than BB+ corporates, with greater positive differentials relative to the BBB+ benchmark. The remaining

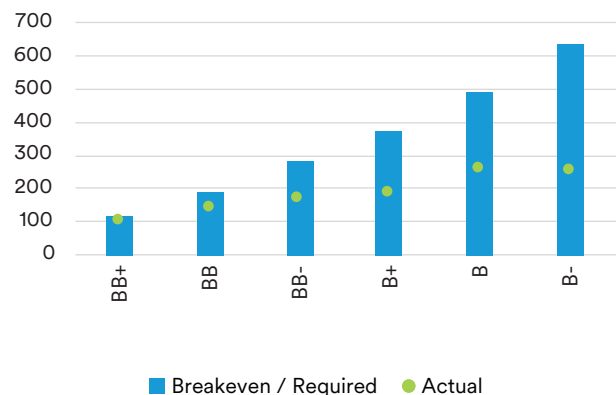
high yield and bank loan ratings in the 5-year part of the curve, and across all ratings in the 10-year part of the curve are not capital efficient relative to 10-year BBB+ corporates, which reflects recent material spread tightening in high yield over the last year given the risk-on market tone during the post-COVID-19 recovery. Insurers can evaluate high yield spreads and relative value to determine a potential attractive entry point, recognizing there are many investment considerations for high yield allocations and new money purchases. These can include tolerance for risk and volatility, among others as discussed in MIM's white paper, [High Yield for Insurance Companies: For Everything There is a Season](#).

## Exhibit 6 | High Yield (HY) Corporates Breakeven Analysis

5Yr High Yield / Bank Loan (BL) Spreads



10Yr High Yield Spreads



As of July 16, 2021.

Source: Bloomberg Barclays, BlackRock, NAIC, MetLife Investment Management

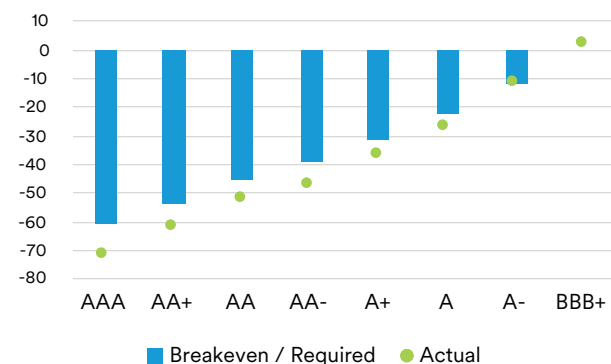
In the taxable municipals breakeven analysis, at the 10-year part of the curve, actual spread differentials are greater than breakeven / required across all ratings levels, indicating that municipals are capital efficient relative to BBB+ corporates. At the 30-year part of the curve, only BBB+ municipals are modestly more capital efficient than corporates.

## Exhibit 7 | Taxable Municipal Bonds Breakeven Analysis

10Yr Taxable Municipal Spreads



30Yr Taxable Municipal Spreads



As of July 16, 2021.

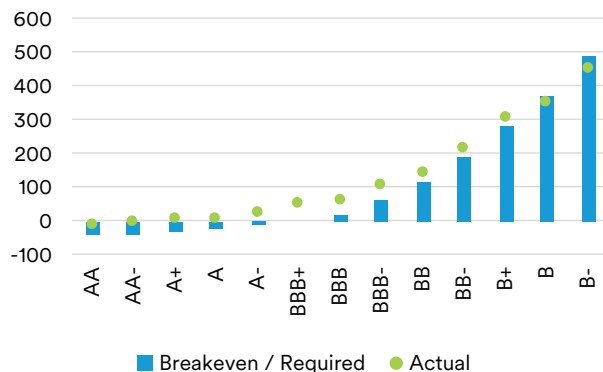
Source: Bloomberg Barclays, BlackRock, NAIC, MetLife Investment Management



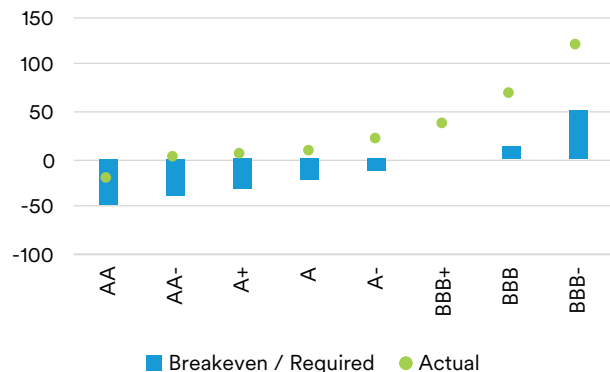
For emerging market debt, at the 10 and 30-year part of the curve, actual spread differentials are above the required across ratings, indicating the relative capital efficiency of the EM asset class compared to corporates.

### Exhibit 8 | Emerging Market Debt Breakeven Analysis

10Yr Emerging Market Debt Spreads



30Yr Emerging Market Debt Spreads



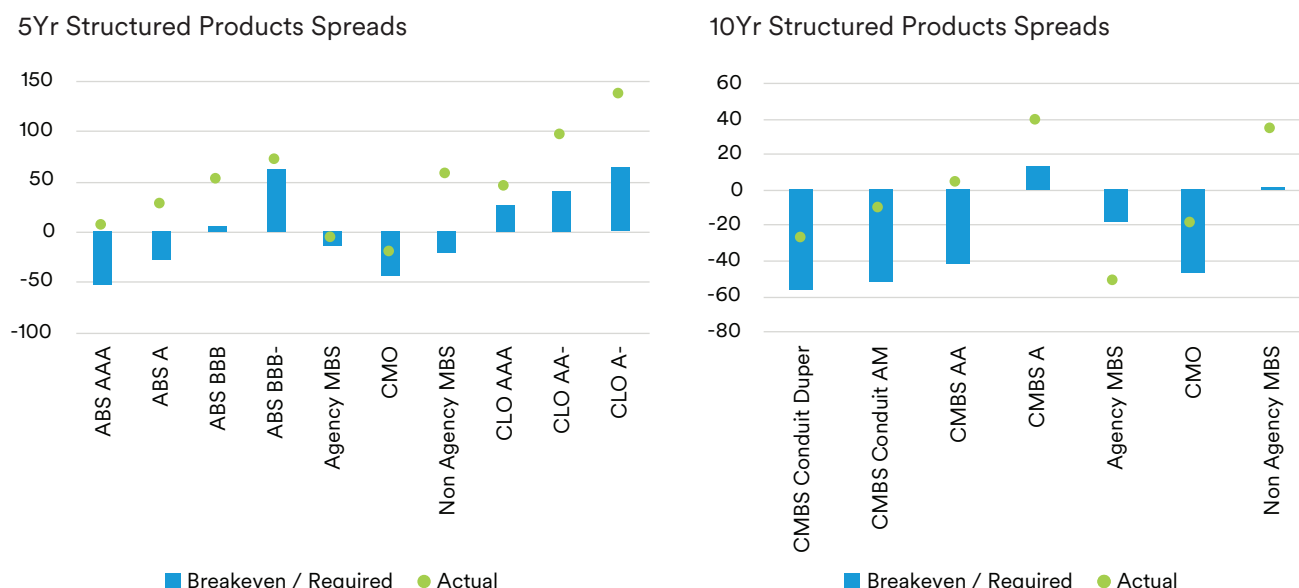
As of July 16, 2021.

Source: Bloomberg Barclays, BlackRock, NAIC, MetLife Investment Management

Within public structured products, given the high-quality bias of insurers' holdings and the corresponding capital relief provided under the new RBC regime, it is not surprising that various sectors are capital efficient relative to BBB+ corporates. The graph shows that at the 5-year part of the curve, the most capital efficient sectors relative to corporates are non-agency MBS, A- and AA- rated CLOs, and AAA and A rated ABS. At the 10-year part of the curve, the most capital efficient sectors are AA and Conduit AM CMBS. As discussed in [Changes to Investments Risk-Based Capital for U.S. Life Insurers: A Potential Positive for Public Structured Products](#), in addition to the more granular RBC charges by ratings category, the NAIC plans to eliminate the price breakpoints for modeled RMBS and CMBS securities. While the NAIC has not yet provided guidance for how the mapping to the NAIC categories will work for modeled securities, we believe that a large proportion of highly-rated RMBS and CMBS securities will qualify for the top designation in the NAIC's new RBC framework.

Within public structured products, various sectors are capital efficient given the high-quality bias of insurers' holdings and the corresponding capital relief provided under the new RBC regime.

## Exhibit 9 | Structured Products Breakeven Analysis



As of July 16, 2021.

AAA ABS is mix of student loans, A ABS is auto, BBB is franchise, BBB- is mix of consumer/franchise

Source: Bloomberg Barclays, BlackRock, NAIC, MetLife Investment Management

The breakeven methodology is one input in the relative value process; however, it does not take into account views on where we are in the credit cycle, sector and company fundamentals, or the potential for downgrade (and fallen angel) risk, nor does it take into account any asset-liability management or liquidity needs, or any other company-specific priorities. Going forward, life insurers will need to pay greater attention to the risk of more frequent NAIC ratings migration, which could have both asset allocation and capital implications, particularly in times of stress, given that capital charges will more easily change under a regime with 19 rating cross over points instead of just five under the prior 6 category regime.

## Potential Life Insurance Asset Allocation Implications

Life insurance companies are likely to incorporate the new RBC framework in their strategic and tactical asset allocation framework, and we expect some shifts on the margin as a result of the changes. As discussed above, individual fixed income securities may be evaluated for capital efficiency given the sometimes-material differences in capital charges at the granular ratings category. On a broader asset class level, there are some shifts in the relative attractiveness as a result of the changes to RBC capital charges. The tables below show the top 10-15 asset class buckets at the 10 and 30-year parts of the curve ranked by capital adjusted yield, pre and post the RBC change. The lists are not all inclusive of all available asset classes, thus ones lower on the list may meet yield hurdles and be attractive for insurers to invest in. Additionally, using index data can skew yields when there are limited data points within an individual rating level.

In general, private asset classes still screen as being capital efficient given the spread premiums to publics; in particular private structured credit, mortgage loans and corporate private placements (BBB and BBB+ rated). Mortgage loans are incrementally more compelling as capital charges did not change, while bond charges increased on balance. Specifically, the revised bond capital factors for NAIC 1 and NAIC 2 are now comparable to the corresponding CM1 and CM2 capital charges for commercial mortgages (particularly at the A / BBB levels), whereas under the prior capital regime bonds had meaningfully lower capital charges. Real estate equity also ranks high in terms of capital efficiency in the longer-dated, 30-year bucket given the meaningful reduction in capital charges.

Within Public Fixed Income, notable is the improvement in certain structured products sectors, including 10-year AA CMBS and junior AAA. 10-year BBB+ rated municipals and private corporates also improved their capital efficiency rankings. In the 30-year space, there were no material changes in rankings, but emerging markets capital-adjusted yields are efficient at multiple ratings categories.

### Exhibit 10 | Capital-Adjusted Yields by Asset Class – Old and New RBC Regime

New Rank	Old Rank	Change in Rank	Asset Class Bucket	10-Yr Capital Adjusted Yield	New Rank	Old Rank	Change in Rank	Asset Class Bucket	30-Yr Capital Adjusted Yield
1	1	0	Private Structured Credit	3.10%	1	11	-10	Real Estate Equity*	4.17%
2	4	-2	Commercial Mortgage Loans	2.48%	2	1	1	Emerging Markets BBB-	3.33%
3	10	-7	CMBS AA	2.27%	3	2	1	Emerging Markets BBB	3.23%
4	11	-7	Private Corporates BBB+ and BBB	2.26%	4	3	1	Emerging Markets BBB+ and higher	2.99%
5	5	0	Private Corporates A and A-	2.22%	5	4	1	Private Corporates BBB- and higher	2.94%
6	7	-1	Emerging Markets BBB+ to BBB-	2.22%	6	6	0	Public Corporates BBB+ to BBB-	2.72%
7	14	-7	CMBS Junior AAA	2.22%	7	8	-1	Taxable Municipals BBB+	2.72%
8	15	-7	Taxable Municipals BBB+	2.16%	8	5	3	Taxable Municipals A-	2.69%
9	3	6	Private Corporates BBB-	2.15%	9	9	0	Agency CMO	2.69%
10	6	3	Non Agency MBS	2.13%	10	10	0	Taxable Municipals AAA+ to A	2.62%
11	8	2	Taxable Municipals A-	2.12%	11	7	4	Public Corporates A- and higher	2.61%
12	2	9	Emerging Markets B-	2.12%					
13	17	-4	Private Corporates AAA to A+	2.09%					
14	18	-4	CMBS AAA	2.09%					
15	16	-1	Agency CMO	2.09%					

As of July 16, 2021.

\*Real estate equity represents a blend of strategy/structure (core/opportunistic and joint venture/wholly-owned)

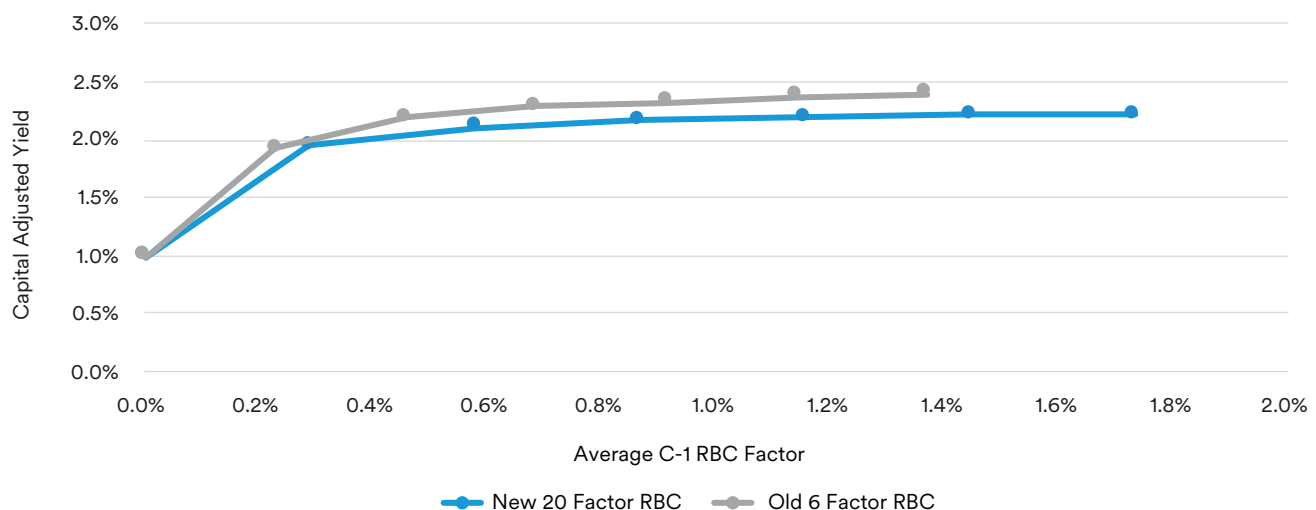
Source: Bloomberg Barclays, NAIC, MetLife Investment Management

When we run a simple optimization to create an efficient frontier of life insurance investment portfolios that seek to maximize capital-adjusted yields at varying C-1 capital requirements under the prior and new RBC capital regime, the findings are as follows:

- As expected, the new efficient frontier shifts down and flattens; capital adjusted yields decline by approximately 10 bps on average across most of the curve as a result of higher overall bond charges. Additionally, as insurers go further out on the risk spectrum, there is less opportunity to increase capital adjusted yield under the new regime, which reflects the incrementally higher capital charges at a granular notching level.
- Across most of the efficient frontier portfolios, there are no material changes to the allocation preferences by asset class under the new RBC regime versus the prior regime. Private assets are still favored by the optimizer; in particular, private corporates and commercial mortgage loans, as well as public emerging market debt. At the lower risk portfolios, there is the ability to diversify away from U.S. Treasuries, which provides opportunities to pick up yield for insurers that are seeking to reduce investment capital requirements.
- Within the asset classes, however, there are meaningful shifts in the ratings preferences under the new RBC regime versus the old. Across most efficient portfolios, under the new RBC regime, there are allocations to AAA and AA rated securities (mostly structured finance), and no allocation to A- bonds, in sharp contrast to the prior RBC regime where A- was the largest recommended exposure. Under the new regime, there is a blend of BBB exposure (BBB+ to BBB-), compared to only BBB- securities under the prior regime. Under both regimes, there is little exposure to high yield, which reflects relatively tight spreads and low yields at present.
- Note that the optimization includes only traditional fixed income and loan asset classes which comprise the bulk of life insurers' investment portfolios, as allocations to equities and alternatives are also predicated on liability profile, risk appetite and firm objectives.

## Exhibit 11 | Portfolio Optimization Efficient Frontier

Capital Adjusted Yield Efficient Frontiers



As of July 16, 2021.

Source: Bloomberg Barclays, BlackRock, NAIC, MetLife Investment Management

## Conclusion

Within the risk-based capital (RBC) framework, the long-awaited update to life insurance RBC bond factors will occur at year-end 2021, in addition to a reduction in the real estate equity RBC factors, and updates to CMBS modeling and longevity. The overall impact of the investment and insurance RBC changes at year-end 2021 will vary materially across balance sheets depending on an individual life insurer's investment portfolio size and positioning and liability profile. Within life insurance strategic and tactical asset allocation frameworks, we expect life insurers to evaluate relative value on a more granular, capital adjusted yield basis given some material changes to RBC capital factors. Further, there could be some shifts in asset allocation preferences that occur as a result, including in certain asset classes that benefited from lower capital charges such as high-quality structured finance and municipals, as well as high-quality high yield and real estate equity. Our expectation is that changes in overall asset allocation will be gradual and will mainly be predicated by additional factors, including capital considerations from ratings migration. While the current landscape with relatively tight credit spreads may limit investment opportunities in some public sectors at present, we expect life insurers to evaluate these RBC changes within the context of market developments, as well company-specific objectives and constraints when making future investment decisions.

## Authors



### **LARA DEVIEUX, CFA**

*Head of Insurance Advisory & Solutions*

Lara Devieux is the Head of Insurance Advisory & Solutions within MetLife Investment Management's Insurance Asset Management group. In this capacity, she is responsible for MIM's global insurance advisory offerings and insurance thought leadership, as well as partnering closely with MIM's Institutional Client Group to build and strengthen insurance client relationships worldwide. Prior to this role, from 2016 through 2019, Lara served as the Chief of Staff to MetLife's Chief Investment Officer and President of MetLife Investment Management.

From 2000 through 2016, Lara was an equity and credit research analyst covering the property & casualty, life and health insurance sectors. She has experience as both a buy side and sell-side insurance analyst, including at MetLife Investment Management, Goldman Sachs, hedge fund Fontana Capital, Wells Fargo (formerly Wachovia Securities) and ABN Amro.

Lara received a BS from The Wharton School at the University of Pennsylvania. She holds the Chartered Financial Analyst (CFA) designation, and is a member of the CFA Institute and New York Society of Security Analysts.



### **VLADIMIR KOVALERCHIK**

*Portfolio Manager - Insurance Asset Management*

Vladimir Kovalerchik is an AVP in Insurance Asset Management group within MetLife Investment Management. He is the lead portfolio manager for corporate and other business segment overseeing approximately \$70B of AUM with equity affiliates for surplus, holding companies, collateral as well as Non-Japan Asia and Middle East USD portfolios. Prior to his role in asset management Vladimir worked in MetLife's Portfolio Strategies group. Vladimir joined MetLife in 2006 after graduating with a B.S. in Finance from Rutgers University, and completed his MBA degree in Finance from NYU in 2012.



### **MICHAEL RAGUSA**

*Associate Director*

Michael Ragusa is an Associate Director - Manager in the Portfolio Strategies group. He is responsible for new business pricing and portfolio optimization. Prior to his role in investments, Michael worked in MetLife's Asset Liability Management group. Michael joined MetLife in 2014 after graduating with a B.A. in Economics and Statistics from the University of Virginia. He is an Fellow of the Society of Actuaries.

# About MetLife Investment Management

MetLife Investment Management (MIM),<sup>1</sup> which had over \$642.4 billion in total assets under management as of March 31, 2021,<sup>2</sup> serves institutional investors by combining a client-centric approach with deep and long-established asset class expertise. Focused on managing Public Fixed Income, Private Capital and Real Estate assets, we aim to deliver strong, risk-adjusted returns by building tailored portfolio solutions. We listen first, strategize second, and collaborate constantly as we strive to meet clients' long-term investment objectives. Leveraging the broader resources and 150-year history of the MetLife enterprise helps provide us with deep expertise in navigating ever changing markets. We are institutional, but far from typical.

For more information, visit: [investments.metlife.com](https://investments.metlife.com)

## Disclosure

This material is intended solely for Institutional Investors, Qualified Investors and Professional Investors. This analysis is not intended for distribution with Retail Investors.

This document has been prepared by MetLife Investment Management ("MIM") solely for informational purposes and does not constitute a recommendation regarding any investments or the provision of any investment advice, or constitute or form part of any advertisement of, offer for sale or subscription of, solicitation or invitation of any offer or recommendation to purchase or subscribe for any securities or investment advisory services. The views expressed herein are solely those of MIM and do not necessarily reflect, nor are they necessarily consistent with, the views held by, or the forecasts utilized by, the entities within the MetLife enterprise that provide insurance products, annuities and employee benefit programs. The information and opinions presented or contained in this document are provided as the date it was written. It should be understood that subsequent developments may materially affect the information contained in this document, which none of MIM, its affiliates, advisors or representatives are under an obligation to update, revise or affirm. It is not MIM's intention to provide, and you may not rely on this document as providing, a recommendation with respect to any particular investment strategy or investment. Affiliates of MIM may perform services for, solicit business from, hold long or short positions in, or otherwise be interested in the investments (including derivatives) of any company mentioned herein. This document may contain forward-looking statements, as well as predictions, projections and forecasts of the economy or economic trends of the markets, which are not necessarily indicative of the future. Any or all forward-looking statements, as well as those included in any other material discussed at the presentation, may turn out to be wrong.

All investments involve risks including the potential for loss of principle and past performance does not guarantee similar future results.

In the **U.S.** this document is communicated by MetLife Investment Management, LLC (MIM, LLC), a U.S. Securities Exchange Commission registered investment adviser. MIM, LLC is a subsidiary of MetLife, Inc. and part of MetLife Investment Management. Registration with the SEC does not imply a certain level of skill or that the SEC has endorsed the investment advisor.

This document is being distributed by MetLife Investment Management Limited ("MIML"), authorised and regulated by the UK Financial Conduct Authority (FCA reference number 623761), registered address Level 34 One Canada Square London E14 5AA United Kingdom. This document is only intended for, and may only be distributed to, investors in the EEA who qualify as a Professional Client as defined under the EEA's Markets in Financial Instruments Directive, as implemented in the relevant EEA jurisdiction. The investment strategy described herein is intended to be structured as an investment management agreement between MIML (or its affiliates, as the case may be) and a client, although alternative structures more suitable for a particular client can be discussed.

**For investors in the Middle East:** This document is directed at and intended for institutional investors (as such term is defined in the various jurisdictions) only. The recipient of this document acknowledges that (1) no regulator or governmental authority in the Gulf Cooperation Council ("GCC") or the Middle East has reviewed or approved this document or the substance contained within it, (2) this document is not for general circulation in the GCC or the Middle East and is provided on a confidential basis to the addressee only, (3) MetLife Investment Management is not licensed or regulated by any regulatory or governmental authority in the Middle East or the GCC, and (4) this document does not constitute or form part of any investment advice or solicitation of investment products in the GCC or Middle East or in any jurisdiction in which the provision of investment advice or any solicitation would be unlawful under the securities laws of such jurisdiction (and this document is therefore not construed as such).

**For investors in Japan:** This document is being distributed by MetLife Asset Management Corp. (Japan) ("MAM"), 1-3 Kioicho, Chiyoda-ku, Tokyo 102-0094, Tokyo Garden Terrace KioiCho Kioi Tower 25F, a registered Financial Instruments Business Operator ("FIBO") No. 2414.

**For Investors in Hong Kong:** This document is being issued by MetLife Investments Asia Limited ("MIAL"), a part of MIM, and it has not been reviewed by the Securities and Futures Commission of Hong Kong ("SFC").

**For investors in Australia:** This information is distributed by MIM LLC and is intended for "wholesale clients" as defined in section 761G of the Corporations Act 2001 (Cth) (the Act). MIM LLC exempt from the requirement to hold an Australian financial services license under the Act in respect of the financial services it provides to Australian clients. MIM LLC is regulated by the SEC under US law, which is different from Australian law.

1 MetLife Investment Management ("MIM") is MetLife, Inc.'s institutional management business and the marketing name for subsidiaries of MetLife that provide investment management services to MetLife's general account, separate accounts and/ or unaffiliated/third party investors, including: Metropolitan Life Insurance Company, MetLife Investment Management, LLC, MetLife Investment Management Limited, MetLife Investments Limited, MetLife Investments Asia Limited, MetLife Latin America Asesorias e Inversiones Limitada, MetLife Asset Management Corp. (Japan), and MIM I LLC.

2 At estimated fair value. Includes MetLife general account and separate account assets and unaffiliated/third party assets managed by MIM.

L0821015541[exp0823][All States] L0821015544[exp0823][All States] L0821015534[exp0823][All States] L0821015618[exp0823][All States]