

# COVID-19 and U.S. life insurers

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## IN BRIEF

- To determine life insurer allocations to asset classes most likely to experience losses or downgrades in the current economic downturn, we analyzed the balance sheets of the top 50 life insurers in the United States, which account for \$3.6 trillion in general account invested assets.<sup>A</sup>
- We classified their fixed income into the categories moderate concern (MC), high concern (HC) and very high concern (VHC), as well as identified exposures to equities and alternatives likely to experience carry value declines.
- We determined that life insurers have a huge range of risk exposures—allocations to very high concern fixed income, alternatives and equities range from 9.2% of assets for the median life insurer up to 26.1% of assets at the 95<sup>th</sup> percentile. As a percentage of statutory total adjusted capital (TAC), these numbers are 106% and 267%, respectively. So the median life insurer has more than 100% of its statutory capital invested in fixed income that we would consider very high concern, alternatives and equities.
- The median life insurer in our analysis has capital equal to 439% of required capital,<sup>B</sup> so it is in a strong starting position to handle a decline in asset values and increased capital requirements on downgraded assets. However, the extent and severity of these declines, as well as the recovery of the economy, are going to determine how many life insurers experience serious financial difficulties in the coming quarters.
- In upcoming research notes we will conduct stress tests on the industry and determine what RBC ratios would result under these stress tests.

<sup>A</sup> The data used in this analysis is based on an early version of YE2019 statutory financials. Every year there are invariably corrections that insurers make to their financials. Additionally, we are missing the financials of one late filing insurer, so we are really showing data for 50 of the 51 largest insurers.

<sup>B</sup> Here we refer to total company action level (CAL) risk-based capital (RBC).

**COVID-19 HAS CAUSED TREMENDOUS HUMAN SUFFERING AND TRAGEDY AROUND THE WORLD. WE ARE ALL IN DEBT TO THE MEDICAL PROFESSIONALS WHO HAVE RISKED THEIR OWN HEALTH TO TREAT THE SICK AND THOSE WHO HAVE CRITICAL JOBS NECESSARY TO KEEP SOCIETY FUNCTIONING WHILE MOST OF THE AFFECTED WORLD HAS ENGAGED IN SOME FORM OF SOCIAL DISTANCING OR QUARANTINE.**

In this note we look at YE2019 asset exposures in the U.S. life industry<sup>1</sup> that have a high likelihood of being impacted by the effects of and response to COVID-19. The industry is exposed to COVID-19 through mortality, morbidity and investment risks. We're focusing on investment risks, as we have neither the data nor the expertise to address the specific mortality and morbidity impacts of

<sup>1</sup> This note covers general account assets of U.S. statutory life insurance entities. We exclude non-U.S. insurance companies owned by U.S. insurers as well as assets in holding companies outside of regulated insurance companies. All separate assets, such as those associated with variable annuities and certain pension risk transfer deals, are excluded from the statistics shown in this note.

## GLOBAL INSURANCE STRATEGY & ANALYTICS GROUP

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COVID-19 on the U.S. life insurance industry. However, we note that increases in mortality are not universally bad for the solvency of life insurers, and the morbidity exposure of the life insurance industry should not result in significant claims related to COVID-19<sup>2</sup>. In the long term, if sustained low interest rates materialize as a consequence of the damage wrought by COVID-19, it will cause balance sheet deterioration and reductions in GAAP earnings for life insurers. To some extent, U.S. life insurers measure this risk with statutory cash flow testing; however, the low rate scenarios may not be sufficiently extreme. Though we're not in a position to do all of the relevant analysis precisely, we would venture that the biggest near-term risk to life insurance companies from COVID-19 is related to general account investment risks and the potential decline in the value of assets if elevated downgrades and impairments materialize in credit markets alongside comparable drawdowns in equity-like investments. This will be the focus of the rest of this note<sup>3</sup>.

<sup>2</sup> Elevated mortality could have a negative, neutral or positive impact on any given line of business for a life insurer. Relevant factors are the type of insurance or annuity product, the guarantees associated with the product and the age of the insured. Legacy whole life and universal life (UL) products with high minimum guarantees may be challenging to maintain in a low interest rate environment and elevated mortality may be beneficial to a small number of life insurers. Long-term care insurance is similar in this regard. Our understanding is that much of the morbidity exposure of the life industry is related to extended absences from work for medical reasons, and COVID-19 is unlikely to generate these types of claims.

<sup>3</sup> We are not going to address variable annuities (VAs) and other equity-linked general account annuities. This is outside of our area of expertise. Post-2008, many insurers switched to short-term volatility hedging programs for VAs. These likely worked quite well for insurers who stuck to them diligently up until the latest market troubles. As for general account annuities, ongoing elevated implied volatility could lead to higher costs for options to provide requisite market exposures to policyholders. Based on our knowledge, we do not believe that these issues will threaten the financial condition of insurers in the same way that declines in general account asset values will.

The situation in financial markets is fluid right now, and fixed income sectors not mentioned in this note could certainly emerge as problems for U.S. life insurers. Additionally, we could have reasonably included additional sectors in this note such as autos, metals, aircraft manufacturers, and REIT debt. Our analysis determined that these exposures were either relatively immaterial or already well captured by our treatment of BBB and BBB- fixed income. In the coming weeks, we intend to publish on specific stress tests and how these might impact life insurance balance sheets and earnings.

## HOW INVESTMENT RISK IMPACTS LIFE INSURERS

Investment risks to U.S. life insurance companies can be measured in many ways. We can look in terms of declines in total adjusted capital (TAC), increasing risk-based capital (RBC) requirements, declines in RBC ratios, risks to long-term solvency and, for public companies, near-term decreases in GAAP net income. These are summarized in **EXHIBIT 1**.

## HOW MUCH CAN A LIFE INSURER AFFORD TO LOSE?

U.S. life insurance company portfolios are typically composed of 90%-95% investment-grade fixed income and high-quality mortgage loans. Investment leverage taken by life insurers varies widely, and there are many reasonable ways that one may define leverage. For solvency purposes, the leverage measure we prefer is the book-adjusted carry value (BACV) of statutory invested assets as a percentage of TAC. For mutual insurers, this number is typically around eight times levered, while public life insurers are often 10

EXHIBIT 1: REVIEW OF WAYS THAT ASSET RISKS MAY IMPACT U.S. LIFE INSURERS

	Fixed Income		Sch BA Alts/Equity decline in fair value
	Impairments	Downgrades	
<b>Total Adjusted Capital (TAC)</b>	Typically will result in a dollar-for-dollar reduction in TAC.	No impact, though downgrades are typically accompanied by impairments.	Changes in fair value generally result in direct reductions in carry value, which impact TAC dollar-for-dollar.
<b>Risk-Based Capital (RBC)</b>	If impaired, the lower carry value will reduce RBC requirements on downgraded fixed income (but this will typically not offset the increase in RBC from the downgrade).	Very large increases in required RBC can result from downgrades, especially downgrades to below investment grade.	Assets are typically carried at fair value. Lower carrying values reduce RBC requirements.
<b>RBC ratios</b>	The combined effects of impairments and downgrades could have a drastic impact on life insurance RBC ratios. Stress scenarios consistent with the likely fallout from COVID-19 result in RBC ratios for some life insurers falling from 500% to under 300%.		Reduction in RBC (required capital) does not offset decrease in TAC, so impact is to lower RBC ratio.
<b>Long-Term Solvency</b>	Large impairment losses could lead to near-term insolvency or impact the ability to generate sufficient income to support the business in the long term.	Downgrades could lead to such a large increase in required capital that solvency is imperiled, though this will depend significantly on the overall impact to the economy.	Large decreases in carry value could lead to near-term insolvency or impact the ability to generate sufficient income to support the business in the long term.
<b>GAAP net income</b>	Dollar-for-dollar reduction in GAAP earnings for almost all insurers who do not elect mark-to-market treatment for fixed income.	No impact.	Fair value changes typically impact earnings directly, so insurers with large allocations will see commensurate declines in quarterly earnings.

Source: Financial Accounting Standards Board (FASB), National Association of Insurance Commissioners (NAIC), J.P. Morgan Asset Management.

to 14 times levered. Assuming a hypothetical insurer is 10 times levered, it would lose half of its TAC if its statutory assets fell by 5% in value. Presumably this fall in value would be accompanied by downgrades, which would increase RBC requirements and further lower RBC ratios. Given this, we can say that most life insurers would experience more than a 50% reduction in their RBC ratios if they had statutory assets decrease in value by 5%. However, we hasten to point out that most fixed income—primarily bonds and commercial mortgage loans—is carried at amortized cost on the statutory balance sheet unless an impairment is recognized. So temporary mark-to-market fluctuations will not necessarily impact the BACV of statutory assets. The focus on creditworthiness and potential impairments as well as the capital impacts from rating migration are the key differences between life insurance investors and short-term total return investors.

Stepping away from our focus on statutory metrics, we would be remiss in not pointing out that mark-to-market declines in asset values—even in the absence of impairments—can result in downgrades under various rating agency models. In our forthcoming research we will estimate this impact.

## RISK CLASSIFICATIONS

In the following sections, we classify fixed income as moderate concern (MC), high concern (HC) or very high concern (VHC). These categories reflect both the likelihood of a decline in asset value as well as the impact of credit migration that would lead to much higher regulatory capital charges. Given the uncertainty about absolute losses in this environment, the categories are meant to convey relative risk. Unless otherwise noted, our fixed income risk classifications are done for whole categories of bonds or loans. For example, we classify all BBB- rated corporates as high concern. We note that life insurers generally have very low issuer caps for BBB corporates (usually under 25bps and often much less), so if there are widespread downgrades of BBB- bonds, security selection is unlikely to help any life insurer that has significant BBB- exposure. The low issuer caps in the industry are the reason why sector/rating-level risk classifications are generally sufficient. The exception to this is the energy sector, where our rankings are based on issuer-level analysis.

We keep equities and alternatives in categories separate from bonds and loans given the difference in accounting treatment and the ratings-based capital impact for bonds and loans. For equities, we are just looking at the changes in market value as a proxy for

how insurers will be impacted. Private equity is the dominant alternative investment held by U.S. life insurers. Declines in private equity impact life insurers on a lag, but we use typical betas to public equity to approximate how private equity will likely be impacted given a decline in public equity.

## FIXED INCOME RISKS BY CREDIT QUALITY

Below we focus on BBB credits and all below-investment-grade (BIG) exposures. Broadly speaking, bonds rated BBB- to BBB+ are NAIC 2 risk exposures and have a pre-tax RBC charge of 1.3%. If these bonds get downgraded to NAIC 3 (roughly, BB- to BB+), there is a cliff effect where the RBC charge increases to 4.6%. So with BBB bonds, the risk is less one of impairment losses given downgrades and more that required capital charges<sup>4</sup> could increase given widespread downgrades. A single downgrade from NAIC 2 to NAIC 3 is a small problem for a life insurer, but given the large exposure to NAIC 2 bonds that many life insurers have, some life insurers may be in for a lot of small problems.

BIG bonds are more likely to experience capital losses and impairments than BBB bonds. And downgrades result in even more severe RBC charge increases. Downgrades to NAIC 4 (B- to B+) or NAIC 5 result in RBC charges of 10% and 23%, respectively. The mitigating factor is that for most life insurers, exposures to BIG fixed income are quite modest.

## BBB corporate debt: Public and private

Although the increase in required capital for a bond downgraded from NAIC 2 to NAIC 3 is significant, the key issue with BBB exposures is the large amount held on insurance company balance sheets. **EXHIBIT 2** (next page) summarizes below BBB exposures for the 50 largest U.S. life insurers, as measured by U.S. statutory general account invested assets. Exhibit 2 shows that the median BBB corporate exposure (public and private) is 25.1% of invested assets for U.S. life insurers. At the 95<sup>th</sup> percentile, this goes up to 36.8% of invested assets. Significant downgrades of BBB corporate bonds would have a massive impact on RBC ratios. In Exhibit 2, we show public and private bonds separately (we include 144As in the public classifications). What we call private bonds are primarily

<sup>4</sup> Total capital requirements are complicated by several factors. Life insurers hold multiples of required capital. In good times, life insurers often hold four to five times company action level (CAL) RBC. Each life insurer has its own fixed income diversification benefits, which depend on other parts of its business. And capital charges are tax adjusted.

EXHIBIT 2: BBB CORPORATE DEBT AS OF YE2019 (% OF ASSETS)

	Percentile								
	Min	5 <sup>th</sup>	10 <sup>th</sup>	25 <sup>th</sup>	50 <sup>th</sup>	75 <sup>th</sup>	90 <sup>th</sup>	95 <sup>th</sup>	Max
(MC) Corp BBB (Prvt)	0.0	0.5	1.4	2.9	5.8	7.9	12.5	15.1	20.4
(MC) Corp BBB+ (Public)	0.4	2.8	3.4	5.5	6.8	8.6	9.9	10.8	11.1
(HC) Corp BBB (Public)	1.2	3.3	4.3	6.5	9.0	11.0	13.1	15.8	17.1
(HC) Corp BBB- (Public)	0.8	0.9	1.3	2.0	3.5	5.1	6.1	7.2	7.8
<b>Corp BBB (Public+Prvt)</b>	<b>10.0</b>	<b>13.6</b>	<b>15.5</b>	<b>20.6</b>	<b>25.1</b>	<b>30.2</b>	<b>35.4</b>	<b>36.8</b>	<b>43.4</b>
Corp BBB, BBB- (Public)	2.4	4.4	5.8	8.6	12.9	16.4	18.5	22.5	24.1
Corp all BBB (Public) <sup>5</sup>	2.8	7.6	9.5	14.6	19.9	24.1	29.2	32.4	34.6

Source: Bloomberg, S&P/SNL Financial, J.P. Morgan Asset Management.

Regulation D private placements. We only have NAIC ratings for private bonds, so we are unable to split the private bond category into BBB+ and BBB-.<sup>5</sup> One of the arguments for private bonds is that there is an expectation of better performance in a downturn, and this will certainly be tested in the coming year.

In later sections we will break out specific Corporate BBB securities and sector exposures that we classify as VHC as opposed to just HC.

Lastly, we note that some insurers have for years systematically tilted their portfolios toward the widest spread bonds for a given NAIC rating. In the Life Insurance Search for Yield paper (<https://am.jpmorgan.com/us/institutional/library/the-life-insurance-search-for-yield>), we analyzed this behavior with a particular focus on low-quality energy issuers. Over the next year it should become clear if the capital efficient earnings boost in prior years was worth this incremental risk.

### Below-investment-grade fixed income

For the same amount of dollar exposure, BIG fixed income will likely have a much larger impact on insurance company balance sheets through impairments and credit migration that increases capital

<sup>5</sup> A small amount of NAIC 2 public corporates that we do not have NRSRO ratings for is excluded from this calculation.

EXHIBIT 3: BELOW INVESTMENT GRADE AS OF YE2019 (% OF ASSETS)

	Percentile								
	Min	5 <sup>th</sup>	10 <sup>th</sup>	25 <sup>th</sup>	50 <sup>th</sup>	75 <sup>th</sup>	90 <sup>th</sup>	95 <sup>th</sup>	Max
(VHC) BB Corp	0.0	0.2	0.4	0.7	1.4	1.9	2.5	3.9	5.8
(VHC) B or lower Corp	0.0	0.0	0.1	0.2	0.4	0.6	1.7	2.0	2.6
(VHC) Bank Loans	0.0	0.0	0.0	0.0	0.2	0.6	1.5	1.7	1.9
<b>Public Corp HY</b>	<b>0.1</b>	<b>0.5</b>	<b>0.6</b>	<b>1.4</b>	<b>2.2</b>	<b>3.3</b>	<b>4.5</b>	<b>6.3</b>	<b>8.6</b>
(VHC) Private HY	0.0	0.1	0.1	0.3	0.8	1.4	2.4	3.2	9.2
(VHC) CLOs NAIC 3-6	0.0	0.0	0.0	0.0	0.0	0.1	0.2	1.1	1.9
(VHC) All Other NAIC 3-6 (EMD, ABS, etc)	0.0	0.0	0.0	0.1	0.4	0.8	1.1	1.3	1.6
<b>All Below Investment Grade</b>	<b>0.5</b>	<b>1.1</b>	<b>1.5</b>	<b>2.6</b>	<b>3.7</b>	<b>5.5</b>	<b>6.8</b>	<b>9.2</b>	<b>15.1</b>

Source: Bloomberg, S&P/SNL Financial, J.P. Morgan Asset Management.

charges. However, exposures to BIG fixed income are much smaller than BBB corporate exposures. While we label BIG exposure as VHC and BBB as only MC to HC, it is important to note that the significantly different sizes of the allocations will likely mean that BBB exposures will have a more significant overall impact for most insurers.

**EXHIBIT 3** summarizes BIG exposures for the 50 largest U.S. life insurers, as measured by U.S. statutory general account invested assets. Here we combine public corporate debt, private debt and other types of BIG exposures. We show percentiles as well as the minimums and maximums for the top 50 life insurers in the industry. Balance sheet reporting machinations by some companies make it difficult to identify all high yield exposures, but we do our best to provide accurate total exposures and note where we may have gaps.

Exhibit 3 shows that the median allocation to BIG fixed income is only 3.7% of invested assets. However, the range in allocations is very large, with BIG fixed income making up 9.2% of invested assets for the insurer at the 95<sup>th</sup> percentile.

The first two rows of Exhibit 3 are corporate bonds split by rating and the third row is bank loans. Together we subtotal these three categories to get total public corporate BIG. The median allocation

to public corporate high yield is only 2.2%. Life insurers tend to have broadly diversified public HY exposures with much lower issuer caps than the market as a whole. These very low issuer caps serve the industry well in normal times through diversification of idiosyncratic issuer risk, but given the likelihood of systematic defaults across certain industries and elevated defaults generally, this diversification likely will not provide the protection against large impairments that it normally does.

What we generically refer to in Exhibit 3 as private high yield (Private HY) is harder to identify and total than public high yield. Our classification is based on information in statutory financials and inferences we make based on asset descriptions<sup>6</sup>, and what we come up with is an estimate of the total exposure to high yield direct lending, real estate and corporate mezzanine debt and hedge funds specializing in distressed securities. The major category that we are missing is investment-grade notes where the underlying assets are high yield direct lending, but an investment-grade rating was achieved by selling off some equity to take initial losses. Given the skepticism about the rigor of these ratings, the classification of these notes as investment grade is tenuous and time will tell how they perform. We do not have good information on the sector exposures of this high yield private credit, but anecdotally we know that some private credit managers were overweight to energy relative to public market averages. To the extent that energy suffers a disproportionate share of downgrades and impairments during this downturn that would be problematic for insurers who have invested heavily in private credit. Variations in allocation to private HY are modest between the median and 95<sup>th</sup> percentiles (.8% to 3.2%). However, few insurers have large allocations to private HY. This is

<sup>6</sup> To be precise, the category includes (i) real estate mezzanine debt funds that we identify on Schedule BA and direct loans and participations on Schedule B that are classified as mezzanine debt by insurers, (ii) corporate mezzanine as indicated by insurers, (iii) hedge funds classified as holding distressed securities on Schedule BA and (iv) holdings on Schedule D that are rated NAIC 3-6 and have non-standard CUSIPs.

driven by a combination of corporate mezzanine debt on Schedule BA and real estate mezzanine debt on Schedules B and BA.

The last two categories in Exhibit 3 are CLOs rated NAIC 3-6 and Other NAIC 3-6 fixed income. The latter category consists of NAIC 3-6 emerging market debt (EMD), as well as various non-CLO securitized assets and municipal bonds.

## SECTORS IMPACTED BY THE RESPONSE TO COVID-19

When we analyze how COVID-19 will impact life insurance company portfolios, it's helpful to isolate certain sectors of fixed income and mortgage lending that may be seriously impacted. Below we summarize exposures to energy, CLOs, retail and aviation. For each of these sectors, we classify certain categories as MC, HC or VHC. Categorizations for these sectors supersede the risk classifications based on ratings.

In the sub-sections below, we break out specific exposures, but it's important to note that these exposures are also included in Exhibits 2 and 3. When we total HC and VHC exposures at the end of this note, we make sure not to double count exposures.

### Energy: Corporate credit exposure

In the case of corporate credit exposure to the energy sector, we classify individual issuers that were investment grade as of this writing based on the likelihood of near-term downgrades. For example, in **EXHIBIT 4A** the category "BIG Risk-High Prob" represents current investment-grade energy issuers that have a high probability of an imminent downgrade. We classify these as VHC exposures. The category "BIG at YE2019" represents energy issuers that were BIG at YE2019, and this is also a VHC exposure. The median energy exposure is 3.9% of invested assets, and the median exposure to VHC issuers is .6%, so the typical life insurer has

EXHIBIT 4A: ENERGY EXPOSURES AS OF YE2019 (% OF ASSETS)

	Percentile								
	Min	5 <sup>th</sup>	10 <sup>th</sup>	25 <sup>th</sup>	50 <sup>th</sup>	75 <sup>th</sup>	90 <sup>th</sup>	95 <sup>th</sup>	Max
IG at YE2019, likely to stay	0.0	0.6	0.9	1.2	1.8	2.2	2.5	2.8	3.6
(MC) NAIC1 to NAIC2 Risk	0.0	0.0	0.1	0.1	0.2	0.4	0.5	0.5	0.6
(MC) BIG Risk-Low Prob	0.0	0.1	0.3	0.5	0.7	1.0	1.4	1.6	1.7
(HC) BIG Risk-Med Prob	0.0	0.1	0.2	0.3	0.5	0.8	1.0	1.3	1.7
(VHC) BIG Risk-High Prob	0.0	0.1	0.1	0.3	0.4	0.6	0.7	0.8	1.9
(VHC) BIG at YE2019	0.0	0.0	0.1	0.1	0.2	0.4	0.7	0.8	1.1
<b>All Energy</b>	<b>0.1</b>	<b>1.4</b>	<b>1.9</b>	<b>2.9</b>	<b>3.9</b>	<b>4.9</b>	<b>6.5</b>	<b>7.5</b>	<b>8.2</b>
VHC Energy	0.0	0.1	0.2	0.5	0.6	0.9	1.3	1.7	2.2

Source: Bloomberg, S&P/SNL Financial, J.P. Morgan Asset Management.

EXHIBIT 4B: RETAIL EXPOSURES AS OF YE2019 (% OF ASSETS)

	Min	Percentile							
		5 <sup>th</sup>	10 <sup>th</sup>	25 <sup>th</sup>	50 <sup>th</sup>	75 <sup>th</sup>	90 <sup>th</sup>	95 <sup>th</sup>	Max
(MC) AAA/AA	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.4	0.6
(HC) Other NAIC 1	0.0	0.0	0.0	0.1	0.2	0.3	0.6	0.7	0.9
(VHC) NAIC 2	0.0	0.1	0.2	0.4	0.6	0.8	1.1	1.3	2.0
(VHC) NAIC 3	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
(VHC) NAIC 4-6	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2
(HC) Retail CMLs	0.0	0.0	0.6	1.4	2.4	3.7	4.5	5.3	7.9
<b>All Retail</b>	<b>0.5</b>	<b>0.8</b>	<b>1.3</b>	<b>2.5</b>	<b>3.4</b>	<b>4.6</b>	<b>5.6</b>	<b>5.8</b>	<b>10.8</b>
All Retail ex-CMLs	0.0	0.1	0.4	0.7	1.0	1.4	1.9	2.2	2.9
All Retail NAIC 3-6	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2

Source: Bloomberg, S&P/SNL Financial, J.P. Morgan Asset Management.

avoided much of the energy sector with the worst near-term prospects. At the 95<sup>th</sup> percentile, the allocation to VHC energy issuers is only 1.7% of invested assets. So put another way, roughly 19 in 20 large U.S. life insurers have no more than 1.7% of their invested assets in what we would deem VHC energy exposures.

We classify issuers with a low probability of BIG risk as MC. Issuers that are deemed NAIC 1 to NAIC 2 risks are also classified as MC because a downgrade to NAIC 2 will result in increased capital requirements.

## Retail: Corporate credit and mortgage loan exposure

EXHIBIT 4B shows that the largest exposure to retail risk is via commercial mortgage loans (CMLs). The median allocation to retail CMLs was 2.4% of invested assets, but the largest exposure among the top 50 life insurers was 7.9% of invested assets<sup>7</sup>. If and when impairments on mortgage loans will be taken is quite uncertain. The Statutory Accounting Principles Working Group of the National

<sup>7</sup> There are some life insurers outside of the top 50 that have much larger exposures to retail CMLs.

Association of Insurance Commissioners (NAIC) released draft guidance<sup>8</sup> on March 26 indicating that insurers will be encouraged “to work with borrowers who are unable to, or may become unable to, meet their contractual payment obligations because of the effects of COVID-19.” So impairments to retail CMLs are likely to be delayed, if they do in fact materialize. We note the possibility that the impacts of COVID-19 could push some already struggling retailers out of business permanently, in which case impairments are likely to eventually be realized on retail CMLs. Because of this forbearance, we are classifying retail CMLs as HC, as shown in Exhibit 4B, though this may be understating this risk.

Life insurers have very little exposure to retail outside of CMLs. The row “All Retail ex-CMLs” in Exhibit 4B shows that the median exposure to retail debt for the industry is 1% of invested assets. BIG exposures, shown as “All Retail NAIC 3-6”, are modest. We classify these BIG exposures as well as NAIC 2 retail exposures as VHC.

<sup>8</sup> See INT 20-04T: Mortgage Loan Impairment Assessment Due to COVID-19 at <https://content.naic.org/exposure-drafts>

EXHIBIT 4C: CLO EXPOSURES AS OF YE2019 (% OF ASSETS)

	Min	Percentile							
		5 <sup>th</sup>	10 <sup>th</sup>	25 <sup>th</sup>	50 <sup>th</sup>	75 <sup>th</sup>	90 <sup>th</sup>	95 <sup>th</sup>	Max
CLO AAA	0.0	0.0	0.0	0.0	0.4	1.8	3.7	4.2	6.3
(MC) CLO AA	0.0	0.0	0.0	0.0	0.5	1.1	2.5	3.8	4.3
(HC) CLO A	0.0	0.0	0.0	0.0	0.2	0.7	2.7	3.7	8.2
(HC) CLO Other NAIC 1	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.5	2.5
(VHC) CLO NAIC 2	0.0	0.0	0.0	0.0	0.0	0.3	2.0	5.4	19.2
(VHC) CLO NAIC 3	0.0	0.0	0.0	0.0	0.0	0.0	0.2	1.1	1.9
(VHC) CLOs NAIC 4-6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2
All CLOs	0.0	0.0	0.0	0.4	2.1	6.3	8.7	12.8	26.7
CLOs A and Below	0.0	0.0	0.0	0.0	0.4	1.2	6.3	11.8	25.6
CLOs NAIC 2 and Below	0.0	0.0	0.0	0.0	0.0	0.3	2.6	6.4	20.3

Source: Bloomberg, S&P/SNL Financial, J.P. Morgan Asset Management.

EXHIBIT 4D: AVIATION AND LODGING EXPOSURES AS OF YE2019 (% OF ASSETS)

		Percentile								
		Min	5 <sup>th</sup>	10 <sup>th</sup>	25 <sup>th</sup>	50 <sup>th</sup>	75 <sup>th</sup>	90 <sup>th</sup>	95 <sup>th</sup>	Max
(MC)	Airlines AAA/AA	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
(HC)	Airlines Other NAIC 1	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.3
(VHC)	Airlines NAIC 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1
(VHC)	Airlines NAIC 3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
(VHC)	Airlines NAIC 4-6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
(VHC)	ABS Aircraft	0.0	0.0	0.0	0.0	0.0	0.3	0.8	1.6	2.5
(HC)	Lodging CMLs	0.0	0.0	0.0	0.0	0.3	0.6	1.2	2.0	4.6
<b>All Airline/Aircraft/Lodging</b>		<b>0.0</b>	<b>0.0</b>	<b>0.1</b>	<b>0.2</b>	<b>0.6</b>	<b>1.1</b>	<b>2.3</b>	<b>3.0</b>	<b>4.7</b>

Source: Bloomberg, S&P/SNL Financial, J.P. Morgan Asset Management.

### CLOs: Exposure by quality

Collateralized loan obligations (CLOs) have been a moderately polarizing asset class in the U.S. life industry since the 2008 financial crisis. During the financial crisis many insurance companies recognized impairments or sold CLO debt at a loss. These lingering memories left many life insurers slow to reinvest in the asset class after the financial crisis, while backers of the asset class pointed to the fact that no investment-grade CLO debt has experienced actual default losses. **EXHIBIT 4C** shows that at the 10<sup>th</sup> percentile, the exposure to CLO debt was 0%, so a significant minority of U.S. life insurers do not invest in CLO debt at all. Exhibit 4C may look odd to some because the 25<sup>th</sup> percentile exposure by rating is 0% across the board, while the 25<sup>th</sup> percentile total allocation to CLOs is .4%. This just reflects that among CLO investors, many only invest in AAA or AA debt. Based on stress tests we have run, we are classifying NAIC 2 and lower CLO debt as VHC, while we classify A-rated debt and "Other NAIC 1" as HC. The last row of Exhibit 4C shows NAIC 2 and below CLOs. The median allocation is 0%, though at the 95<sup>th</sup> percentile and maximum the allocations are, respectively, 6.4% and 20.3% of total invested assets. The insurers that made these allocations are significant outliers in the industry.

### Aviation and lodging: Airline corporate credit, airplane ABS and lodging exposure

**EXHIBIT 4D** shows that the industry has very modest exposure to airlines via corporate credit. One area that may emerge as

problematic for a small number of insurers is ABS with aircraft as the underlying collateral. Exhibit 4D shows that the 95<sup>th</sup> percentile exposure to Aircraft ABS is 1.6% of invested assets. We did not analyze potential losses on these bonds, but we did mark the asset class broadly as VHC given the issues the industry is facing and some data showing these bonds trading at significant discounts. The last category is CMLs related to lodging. We only mark this as HC given potential for government relief and the comments on potential revisions to CML impairment methodologies that we mentioned previously.

### SO WHAT'S THE CONCERN (WITH FIXED INCOME)?

In the previous section we categorized some fixed income as high concern (HC) and very high concern (VHC). To sum up, we classified as VHC all below investment-grade fixed income (including private credit such as mezzanine debt and direct lending), NAIC 2 CLOs, corporate energy exposure deemed to be at high risk for downgrade to below investment grade, NAIC 2 airlines and retail, and aircraft ABS. Additionally we classified as high concern (HC) fixed income all NAIC 1 CLOs, corporate energy exposure deemed to be at medium risk for downgrade to below investment grade, NAIC 1 airlines and retail, and all other debt rated BBB and BBB- that is not otherwise classified as VHC. **EXHIBIT 4E** shows the distribution of exposures to these categories of fixed income.

EXHIBIT 4E: TOTAL EXPOSURES TO HC AND VHC FIXED INCOME AS OF YE2019 (% OF ASSETS)

		Percentile								
		Min	5 <sup>th</sup>	10 <sup>th</sup>	25 <sup>th</sup>	50 <sup>th</sup>	75 <sup>th</sup>	90 <sup>th</sup>	95 <sup>th</sup>	Max
	HC	6.3	7.6	8.6	10.5	14.6	19.5	22.6	24.2	29.2
	VHC	2.0	2.0	3.0	4.3	5.3	7.2	11.8	16.3	23.3
	<b>HC and VHC</b>	<b>9.0</b>	<b>11.7</b>	<b>13.4</b>	<b>15.9</b>	<b>21.3</b>	<b>26.6</b>	<b>30.4</b>	<b>33.0</b>	<b>39.5</b>

Source: Bloomberg, S&P/SNL Financial, J.P. Morgan Asset Management.

EXHIBIT 5: SCHEDULE BA ALTERNATIVES AND COMMON/PREFERRED EQUITIES EXPOSURES AS OF YE2019 (% OF ASSETS)

		Percentile								
		Min	5 <sup>th</sup>	10 <sup>th</sup>	25 <sup>th</sup>	50 <sup>th</sup>	75 <sup>th</sup>	90 <sup>th</sup>	95 <sup>th</sup>	Max
(VHC)	Sch BA Alts (ex-Mezz)	0.0	0.0	0.2	1.5	2.7	4.4	8.2	10.7	11.6
(VHC)	Equities	0.0	0.1	0.1	0.3	0.5	1.0	3.5	5.9	10.1
<b>Sch BA Alts+EQ</b>		<b>0.1</b>	<b>0.4</b>	<b>0.6</b>	<b>1.6</b>	<b>3.6</b>	<b>5.3</b>	<b>11.6</b>	<b>13.2</b>	<b>15.0</b>

Source: Bloomberg, S&P/SNL Financial, J.P. Morgan Asset Management.

The median allocation to VHC is 5.3%, but the overall range is large and the 95<sup>th</sup> percentile allocation is 16.3%. The median allocation to combined HC and VHC is 21.3%. In order to exist and make money, the life insurance industry must take credit risk and the exposures shown in Exhibit 4E are a reflection of that.

## EQUITIES AND ALTERNATIVES EXPOSURES AND RISKS

Given that fixed income (bonds and loans) is by far the largest allocation for life insurers, we have thus far focused on credit risks. However, many life insurers have material exposures to equities and alternative assets that are carried at fair value on the statutory balance sheet<sup>9</sup>. **EXHIBIT 5** summarizes exposures to these assets. For many alternatives holdings, carry values reflect a one-quarter lag due to delays in valuations, so the value declines associated

<sup>9</sup> In our presentation we elect to remove affiliated Schedule D equity investments, which are typically holdings in subsidiary insurance companies or affiliated asset managers. However, we include affiliated Schedule BA alternative assets, which are often fund vehicles set up to invest in private equity, private credit, infrastructure or real estate. There is no perfect way to make these classifications, but this convention best achieves our goal of representing exposures for general account invested assets and not the capital structure of the insurers. We removed mezzanine debt exposures from the Schedule BA alternative category because these are accounted for in the previous section on private credit. If you are an insurer, please note that this definition differs from what you will see in our year-end peer analysis where we include mezzanine debt in Schedule BA alternatives.

with current market turmoil will not be recognized until the end of the second quarter. Equity holdings are very small for most U.S. life insurers<sup>10</sup>, though we summarize those too.

## COMBINING ALL INVESTMENT RISKS

**EXHIBIT 6** combines VHC fixed income exposures from Exhibit 4E with the combined Schedule BA alternatives and equity exposures from Exhibit 5. If insurers were selectively taking either equity or credit risk, then we would see that percentiles from the upper end of these distributions would not be additive. However, that is not what we see. The 95<sup>th</sup> percentile exposure to VHC fixed income is 16.3% of invested assets, while at the same percentile the exposure to alternatives and equities is 13.2% of invested assets. For the combined categories, the exposure at the 95<sup>th</sup> percentile is 26.1%, meaning that the same companies that are taking large amounts of credit risk also have large exposures to equities and alternative assets.

<sup>10</sup> It is easy to overstate allocations to equities if one is not careful. Some of what is classified as equity on Schedule D is actually equity in a branch of the Federal Home Loan Bank (FHLB) system or exchange-traded funds (ETFs), which may be invested in high-quality fixed income even though they are classified as equity. We remove these. And as mentioned in the previous footnote, we remove affiliated equity. What is left is all common stock on Schedule D, which is primarily public equity but includes some equity in REITs and LLCs, as well as preferred stock.

EXHIBIT 6: VHC FIXED INCOME, SCHEDULE BA ALTS AND COMMON/PREFERRED EQUITIES EXPOSURES AS OF YE2019 (% OF ASSETS)

		Percentile								
		Min	5 <sup>th</sup>	10 <sup>th</sup>	25 <sup>th</sup>	50 <sup>th</sup>	75 <sup>th</sup>	90 <sup>th</sup>	95 <sup>th</sup>	Max
	VHC	2.0	2.0	3.0	4.3	5.3	7.2	11.8	16.3	23.3
	Sch BA Alts+EQ	0.1	0.4	0.6	1.6	3.6	5.3	11.6	13.2	15.0
<b>VHC+Sch BA Alts+EQ</b>		<b>2.5</b>	<b>3.3</b>	<b>4.2</b>	<b>6.9</b>	<b>9.2</b>	<b>13.2</b>	<b>22.1</b>	<b>26.1</b>	<b>29.4</b>

Source: Bloomberg, S&P/SNL Financial, J.P. Morgan Asset Management.



EXHIBIT 7: VHC FIXED INCOME, SCHEDULE BA ALTERNATIVES AND EQUITIES (EQ) EXPOSURES AS OF YE2019 (% OF TAC)

	Percentile								
	Min	5 <sup>th</sup>	10 <sup>th</sup>	25 <sup>th</sup>	50 <sup>th</sup>	75 <sup>th</sup>	90 <sup>th</sup>	95 <sup>th</sup>	Max
VHC	11	22	29	39	61	90	161	198	248
Sch BA Alts+EQ	1	6	10	19	31	64	103	130	137
<b>VHC+Sch BA Alts+EQ</b>	<b>38</b>	<b>43</b>	<b>48</b>	<b>64</b>	<b>106</b>	<b>163</b>	<b>199</b>	<b>267</b>	<b>383</b>

Source: Bloomberg, S&P/SNL Financial, J.P. Morgan Asset Management.

The data in Exhibit 6 appears concerning. However, when we look a little bit closer, we see that in many cases it is better capitalized companies that are taking more risk. Many of the companies on the upper end of the investment risk spectrum are mutual insurers that have relatively low leverage. In **EXHIBIT 7** we switch the denominator to be statutory TAC. Exhibit 7 indicates that the median insurer has 106% of its TAC invested in VHC fixed income, Schedule BA alternatives or equities. Given that TAC is effectively capital in excess of liabilities, this chart should provide some comfort regarding the fate of the median insurer. For most life insurers, TAC is in the neighborhood of four times total RBC. Even significant declines in assets and increases in RBC associated with credit migration would still leave the median insurers in somewhat battered, but sound financial condition. However, at the 90<sup>th</sup> percentile, we show that these imperiled assets make up 199% of TAC. At the 95<sup>th</sup> percentile, the number is nearly 267% of TAC, and plausible declines in asset values could result in nearly all of TAC in this insurer being eliminated. After painting this dire scenario, we would be remiss in not pointing out that some insurers have alternative sources of capital or a better financial position than what appears on their balance sheets. We removed one insurer from the calculation for Exhibit 7 because it is known to have much of its capital in Bermuda and not shown on its U.S. statutory balance sheet. To the extent that

other insurers are in this situation, we are overstating their leverage, and thus the numbers in Exhibit 7 would be lower if we knew the full amount of capital that each insurer has globally. Some U.S. insurers also have access to the resources of parent companies that may provide capital injections in a time of distress. Those qualifications aside, the numbers on the right in Exhibit 7 are cause for concern.

Exhibit 7 should not be a surprise to anyone who follows the industry. In our annual peer analysis, we show that “risk assets”—which we define as alternatives, public and private high yield and equity investments—are typically between 60% and 130% of TAC for most life insurers. Exhibit 7 includes a lot of investment-grade fixed income, so the assets shown are broader than our definition of risk assets.

**EXHIBIT 8** and **EXHIBIT 9** are similar to Exhibits 6 and 7, but we include our HC fixed income in the totals as well. Exhibit 8 indicates that the median insurer has 26.6% of assets in HC or VHC fixed income, Schedule BA alternatives or equities.

Exhibit 9 changes the denominator to percentage of TAC. The median insurer has allocation to HC or VHC fixed income, Schedule BA alternatives or equities that accounts for 280% of TAC—that is, the sum of these assets is nearly three times TAC.

EXHIBIT 8: HC AND VHC FIXED INCOME, SCHEDULE BA ALTERNATIVES AND EQUITIES (EQ) EXPOSURES AS OF YE2019 (% OF ASSETS)

	Percentile								
	Min	5 <sup>th</sup>	10 <sup>th</sup>	25 <sup>th</sup>	50 <sup>th</sup>	75 <sup>th</sup>	90 <sup>th</sup>	95 <sup>th</sup>	Max
HC	6.3	7.6	8.6	10.5	14.6	19.5	22.6	24.2	29.2
VHC	2.0	2.0	3.0	4.3	5.3	7.2	11.8	16.3	23.3
Sch BA Alts+EQ	0.1	0.4	0.6	1.6	3.6	5.3	11.6	13.2	15.0
<b>HC+VHC+Sch BA Alts+EQ</b>	<b>13.2</b>	<b>14.9</b>	<b>17.7</b>	<b>20.6</b>	<b>26.6</b>	<b>30.8</b>	<b>34.8</b>	<b>41.2</b>	<b>48.4</b>

Source: Bloomberg, S&P/SNL Financial, J.P. Morgan Asset Management.

EXHIBIT 9: HC AND VHC FIXED INCOME, SCHEDULE BA ALTS AND EQUITIES (EQ) EXPOSURES AS OF YE2019 (% OF TAC)

	Percentile								
	Min	5 <sup>th</sup>	10 <sup>th</sup>	25 <sup>th</sup>	50 <sup>th</sup>	75 <sup>th</sup>	90 <sup>th</sup>	95 <sup>th</sup>	Max
HC	33	42	66	89	168	257	358	441	465
VHC	11	22	29	39	61	90	161	198	248
Sch BA Alts+EQ	1	6	10	19	31	64	103	130	137
<b>HC+VHC+Sch BA Alts+EQ</b>	<b>94</b>	<b>114</b>	<b>143</b>	<b>206</b>	<b>280</b>	<b>366</b>	<b>544</b>	<b>682</b>	<b>755</b>

Source: Bloomberg, S&P/SNL Financial, J.P. Morgan Asset Management.

## CONCLUSIONS

Our analysis shows that as long as appropriate government intervention avoids the total collapse of the economy (and the associated decline in investment assets), the vast majority of U.S. life insurers will weather this storm. The industry is well capitalized and, for the most part, takes a modest amount of investment risk. However, we did identify 5%-10% of life insurers (or more depending on how things turn out) that likely have too much investment risk given their available capital and what is unfolding in financial markets. For these insurers, downgrades of fixed income could lead

to unsustainable capital requirements coupled with impairments that reduce adjusted capital. The fates of these insurers will be dictated by the speed of the economic recovery and how this impacts the credit quality of BBB corporate debt, CLOs and various forms of private credit. Another important factor is whether there will be temporary modifications in capital requirements that will provide relief to insurers invested in certain asset classes. We saw this after the financial crisis and may well see it again.

In the coming weeks, we will publish additional analysis on how this current financial turmoil is impacting the U.S. insurance industry.

### FOR MORE INFORMATION

If you work at an insurance company and are interested in further discussion or more detailed analysis, please contact your J.P. Morgan Asset Management insurance client advisor or email [Insurance.Strategy.and.Analytics@jpmorgan.com](mailto:Insurance.Strategy.and.Analytics@jpmorgan.com).

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