

# Market Briefing

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**Date:** May 10, 2022

**Subject:** U.S. Insurance Industry Invested Assets as of Year-End 2021

## Introduction

The COVID-19 Pandemic resulted in economic turmoil and substantial disruption to virtually every investment market in 2020. In many ways the recovery in the second half of 2020 and into 2021 was nearly as surprising to analysts. The areas of potential concern were overtaken by the end of 2021 by inflationary pressures. Rising measures of inflation were driven by supply chain problems and rising oil prices. Then, in February 2022, the Russian invasion of the Ukraine caused further economic disruptions and also led to significant economic sanctions imposed on Russia. In conjunction with an inflation rate that hit 8.5% in March 2022, there are now increasing concerns of a global recession. With all of this as a backdrop, U.S. insurance companies reported detailed information on their investments as of year-end 2021. This allows us to consider how investments may have changed for the different insurer types and how the continuing market volatility may have impacted those investments. It also gives us the opportunity to consider the year-end data in the context of what has happened to markets since then. *[The data for insurance company investments was all based on Financial Statement Data submitted to the NAIC and acquired via SNL, which is a unit of S&P Global. Market data was acquired via the Federal Reserve Bank of St. Louis.]*

## U.S. Insurer Invested Assets

	Combined		Life		P&C		Health	
	2020	2021	2020Y	2021Y	2020Y	2021Y	2020Y	2021Y
<b>SHORT TERM INVESTMENTS</b>								
ST Investments & Cash Equivalents	290,882,654	290,752,667	124,142,192	114,961,708	123,943,723	138,340,006	42,796,739	37,450,953
<b>LONG TERM INVESTMENTS</b>								
Corporate Bonds	2,497,235,565	2,628,433,364	2,015,202,618	2,113,160,412	418,180,762	443,446,513	63,852,184	71,826,439
Bank Loans	68,277,983	89,404,313	52,675,395	67,890,982	13,622,839	19,282,188	1,979,750	2,231,144
Government Bonds (incl Municipals)	838,314,828	878,300,744	393,579,519	404,389,709	401,490,185	425,922,268	43,245,124	47,988,766
Agency CMBS	79,170,465	74,655,167	49,278,572	44,502,016	27,503,726	28,236,918	2,388,168	1,916,233
Agency RMBS	261,611,391	234,410,067	145,041,573	126,525,987	92,728,663	86,118,316	23,841,156	21,765,765
Agency ABS	23,552,446	22,125,028	14,625,670	13,385,718	8,306,313	8,098,054	620,463	641,256
Non-Agency CMBS	193,415,391	209,037,343	142,146,837	151,501,433	43,949,231	48,298,182	7,319,322	9,237,729
Non-Agency RMBS	92,823,726	93,393,944	74,316,266	71,050,408	16,476,491	19,320,829	2,030,969	3,022,707
Non-Agency ABS	417,340,628	470,570,290	329,968,266	363,507,886	74,180,737	91,272,437	13,191,625	15,789,966
Hybrids	19,128,825	20,623,736	14,619,217	14,983,420	3,987,496	4,981,816	522,111	658,500
Approved Bond ETFs	14,117,319	14,038,508	6,066,450	3,182,263	4,554,518	6,584,454	3,496,352	4,271,791
<b>Subtotal Unaffiliated Bonds</b>	<b>4,504,988,567</b>	<b>4,734,992,505</b>	<b>3,237,520,383</b>	<b>3,374,080,235</b>	<b>1,104,980,959</b>	<b>1,181,561,974</b>	<b>162,487,225</b>	<b>179,350,295</b>
Preferred Stock	27,437,240	35,204,784	13,442,433	18,226,886	13,326,766	15,969,831	668,041	1,008,068
Common Stock	435,658,919	560,238,739	32,304,589	41,001,895	393,081,337	508,917,488	10,272,994	10,319,356
Funds reported as Common Stock	54,549,082	59,769,878	6,993,715	6,815,705	31,545,685	35,380,901	16,009,682	17,573,272
<b>Subtotal Unaffiliated Equity</b>	<b>517,645,241</b>	<b>655,213,401</b>	<b>52,740,737</b>	<b>66,044,486</b>	<b>437,953,787</b>	<b>560,268,220</b>	<b>26,950,717</b>	<b>28,900,695</b>
Commercial Mortgage Loans	541,979,962	571,440,221	520,779,280	547,324,164	21,020,775	23,793,542	179,907	322,515
Mezzanine Loans	10,343,103	10,264,068	9,667,870	9,529,625	675,233	734,443	-	-
Residential and Farm Mortgages	56,595,849	69,225,121	54,962,310	66,974,251	1,633,539	2,250,871	-	-
Problem Mortgages	2,754,211	2,964,427	2,306,846	2,611,689	447,365	352,738	-	-
Non-Insurer Occupied Real Estate	21,364,849	21,407,360	16,591,782	16,761,896	4,620,319	4,470,878	152,747	174,585
<b>Subtotal Real Estate Related</b>	<b>633,037,973</b>	<b>675,301,196</b>	<b>604,308,088</b>	<b>643,201,624</b>	<b>28,397,231</b>	<b>31,602,471</b>	<b>332,655</b>	<b>497,101</b>
Non-Conforming LT Assets	192,991,167	246,978,263	128,246,476	164,892,069	57,086,062	72,575,182	7,658,630	9,511,013
<b>Unaffiliated Long Term</b>	<b>5,818,839,393</b>	<b>6,281,871,829</b>	<b>4,022,815,683</b>	<b>4,248,218,414</b>	<b>1,628,418,039</b>	<b>1,846,007,847</b>	<b>197,429,225</b>	<b>218,259,104</b>
Affiliated Investments (incl Occupied RE)	817,024,404	882,850,524	292,578,333	339,795,129	484,498,575	499,561,706	39,947,496	43,493,689
<b>Grand Total - Long Term Investments</b>	<b>6,635,863,798</b>	<b>7,164,722,353</b>	<b>4,285,570,462</b>	<b>4,557,400,006</b>	<b>2,112,916,615</b>	<b>2,345,569,554</b>	<b>237,376,721</b>	<b>261,752,793</b>

In 2021, historic trends continued as long-term invested assets grew from \$6.6 trillion to \$7.2 trillion. Within that, unaffiliated long-term invested assets grew from \$5.8 trillion to \$6.3 trillion. Asset growth was represented in all three insurer types, Life, P&C and Health.

	Change 2020 to 2021				Percentage Change			
	Combined	Life	P&C	Health	Combined	Life	P&C	Health
<b>SHORT TERM INVESTMENTS</b>								
ST Investments & Cash Equivalents	(129,987)	(9,180,484)	14,396,283	(5,345,786)	0.0%	-7.4%	11.6%	-12.5%
<b>LONG TERM INVESTMENTS</b>								
Corporate Bonds	131,197,800	97,957,794	25,265,751	7,974,255	5.3%	4.9%	6.0%	12.5%
Bank Loans	21,126,330	15,215,587	5,659,349	251,394	30.9%	28.9%	41.5%	12.7%
Government Bonds (incl Municipals)	39,985,915	10,810,190	24,432,084	4,743,642	4.8%	2.7%	6.1%	11.0%
Agency CMBS	(4,515,298)	(4,776,555)	733,192	(471,935)	-5.7%	-9.7%	2.7%	-19.8%
Agency RMBS	(27,201,324)	(18,515,586)	(6,610,347)	(2,075,391)	-10.4%	-12.8%	-7.1%	-8.7%
Agency ABS	(1,427,418)	(1,239,952)	(208,258)	20,792	-6.1%	-8.5%	-2.5%	3.4%
Non-Agency CMBS	15,621,952	9,354,595	4,348,950	1,918,406	8.1%	6.6%	9.9%	26.2%
Non-Agency RMBS	570,219	(3,265,857)	2,844,339	991,738	0.6%	-4.4%	17.3%	48.8%
Non-Agency ABS	53,229,662	33,539,620	17,091,700	2,598,341	12.8%	10.2%	23.0%	19.7%
Hybrids	1,494,911	364,203	994,320	136,389	7.8%	2.5%	24.9%	26.1%
Approved Bond ETFs	(78,811)	(2,884,186)	2,029,936	775,439	-0.6%	-47.5%	44.6%	22.2%
<b>Subtotal Unaffiliated Bonds</b>	<b>230,003,938</b>	<b>136,559,852</b>	<b>76,581,015</b>	<b>16,863,071</b>	<b>5.1%</b>	<b>4.2%</b>	<b>6.9%</b>	<b>10.4%</b>
Preferred Stock	7,767,544	4,784,452	2,643,065	340,027	28.3%	35.6%	19.8%	50.9%
Common Stock	124,579,820	8,697,307	115,836,151	46,362	28.6%	26.9%	29.5%	0.5%
Funds reported as Common Stock	5,220,796	(178,010)	3,835,216	1,563,589	9.6%	-2.5%	12.2%	9.8%
<b>Subtotal Unaffiliated Equity</b>	<b>137,568,160</b>	<b>13,303,749</b>	<b>122,314,433</b>	<b>1,949,978</b>	<b>26.6%</b>	<b>25.2%</b>	<b>27.9%</b>	<b>7.2%</b>
Commercial Mortgage Loans	29,460,259	26,544,884	2,772,767	142,608	5.4%	5.1%	13.2%	79.3%
Mezzanine Loans	(79,035)	(138,245)	59,210	-	-0.8%	-1.4%	8.8%	
Residential and Farm Mortgages	12,629,272	12,011,940	617,332	-	22.3%	21.9%	37.8%	
Problem Mortgages	210,216	304,843	(94,627)	-	7.6%	13.2%	-21.2%	
Non-Insurer Occupied Real Estate	42,511	170,114	(149,441)	21,838	0.2%	1.0%	-3.2%	14.3%
<b>Subtotal Real Estate Related</b>	<b>42,263,223</b>	<b>38,893,536</b>	<b>3,205,240</b>	<b>164,446</b>	<b>6.7%</b>	<b>6.4%</b>	<b>11.3%</b>	<b>49.4%</b>
Non-Conforming LT Assets	53,987,096	36,645,593	15,489,120	1,852,383	28.0%	28.6%	27.1%	24.2%
<b>Unaffiliated Long Term</b>	<b>463,032,436</b>	<b>225,402,730</b>	<b>217,589,808</b>	<b>20,829,879</b>	<b>8.0%</b>	<b>5.6%</b>	<b>13.4%</b>	<b>10.6%</b>
Affiliated Investments (incl Occupied RE)	65,826,120	47,216,796	15,063,131	3,546,194	8.1%	16.1%	3.1%	8.9%
<b>Grand Total - Long Term Investments</b>	<b>528,858,556</b>	<b>271,829,545</b>	<b>232,652,939</b>	<b>24,376,072</b>	<b>8.0%</b>	<b>6.3%</b>	<b>11.0%</b>	<b>10.3%</b>

Focusing on unaffiliated long-term invested assets, the increase of \$463.0 billion represented an 8.0% increase. This included \$225.4 billion (5.6%) among Life companies, \$217.6 billion (13.4%) for P&C, and \$20.8 billion (10.6%) for Health. While Bonds as a percentage of the total continues to drift down, the asset type continues to account for roughly 75% of the total. This percentage is a bit higher for Life companies at approximately 80% and Health at approximately 82%, while P&C is at 68%. With equity markets strong in 2021 as the S&P 500 index was up 27%, overall equity exposures increased by 26.6%. This was most significant among P&C companies which reported an increase in dollar exposure of \$122.3 billion. In addition to equities reported on Schedule D, the strong equity markets were also very likely the main contributor to growth in Investments Reported on Schedule BA as a large percentage of those investments were private equity funds and other equity like investments. Notwithstanding the growth in dollars, unaffiliated Investments Reported on Schedule BA still account for less than 4% of the total. There are a few noteworthy points to make for Affiliated Investments. In one respect, equity investments in various affiliates likely contributed to growth in 2021 along with improving valuation across equities. In addition to that, it has been noted that an increasing number of reported affiliated investments are investment affiliates whereby the affiliate is a conduit for market-related investments. Insurer-occupied real estate is also material within Affiliated Investments for Health insurers.

Within total Bonds, Bank Loan exposure continues to grow and now accounts for 1.4% of the total. Residential Mortgage-Backed Securities (RMBS) exposure has continued to decline. Commercial Mortgage-Backed Securities (CMBS) exposure continues to grow, but that growth has leveled off. Continued growth in Non-Agency Asset-Backed Securities (ABS) is notable increasing by \$53.2 billion (26.6%) in 2021 and now accounting for 7.5% of the total. Mortgage Loan investments increased in 2021 but at a slower rate than overall asset growth. Standing out from that were investments in Residential and Farm Loans which, while accounting for only \$69.2 billion, increased by 22.3% in 2021.

	Combined		Life		P&C		Health	
	2020Y	2021Y	2020Y	2021Y	2020Y	2021Y	2020Y	2021Y
Bond Portfolio Maturity Score	12.19	12.49	13.95	14.38	7.95	8.02	7.36	7.74
1 or less	10.45%	9.72%	7.75%	6.89%	16.76%	16.67%	19.19%	15.16%
1 to 5	30.48%	30.12%	25.83%	25.29%	41.54%	41.07%	44.43%	45.56%
5 to 10	28.60%	28.18%	28.08%	27.33%	30.18%	30.29%	27.70%	29.69%
10 to 20	14.37%	15.24%	17.29%	18.35%	7.65%	8.17%	4.29%	5.34%
greater than 20	16.10%	16.75%	21.05%	22.15%	3.87%	3.80%	4.40%	4.25%
Greater than 10 year	30.47%	31.99%	38.33%	40.50%	11.52%	11.97%	8.68%	9.59%

Bond maturities are not a direct measure of duration but generally are an indicator of possible interest rate risk. In 2021, all three insurer types reported modest upticks on average bond maturities. This trend is a continuation for Life companies but is a slight reversal for P&C and Health companies. Most significant were the increases in Bonds held that had maturities of greater than ten years.

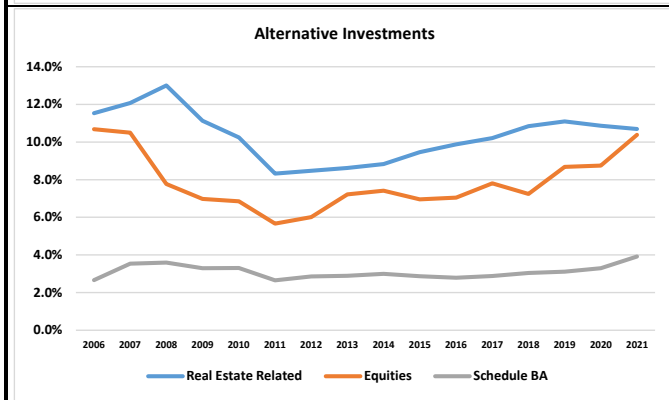
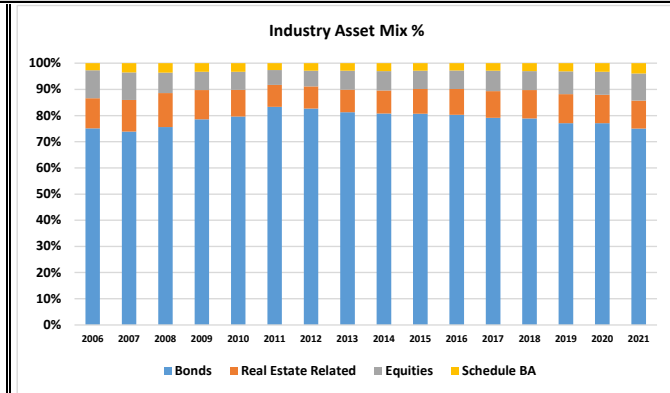
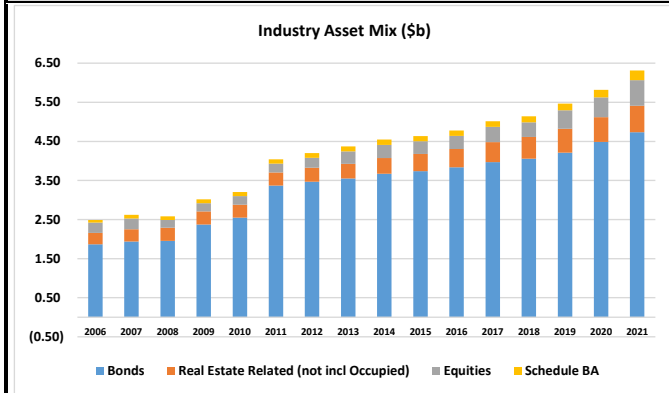
	Combined		Life		P&C		Health	
	2020Y	2021Y	2020Y	2021Y	2020Y	2021Y	2020Y	2021Y
Bond Portfolio Credit Score	1.46	1.46	1.52	1.52	1.31	1.32	1.34	1.38
NAIC 1	63.01%	62.58%	57.33%	56.79%	77.25%	76.88%	74.43%	72.31%
NAIC 2	31.09%	31.64%	36.49%	37.33%	17.60%	17.77%	19.69%	20.66%
NAIC 3	3.65%	3.53%	4.02%	3.78%	2.64%	2.73%	3.46%	4.21%
NAIC 4	1.68%	1.70%	1.57%	1.52%	1.91%	2.08%	2.09%	2.51%
NAIC 5	0.49%	0.41%	0.51%	0.42%	0.47%	0.43%	0.24%	0.20%
NAIC 6	0.09%	0.14%	0.07%	0.15%	0.13%	0.12%	0.09%	0.11%
Below Investment Grade	5.90%	5.79%	6.18%	5.88%	5.14%	5.35%	5.88%	7.03%

From the standpoint of credit risk in the Bond portfolio, 2021 metrics were not significantly different from 2020. There had been increases in exposure to below investment grade bonds in 2020 due to rating downgrades. In 2021, Life insurer exposure decreased slightly, while P&C and Health companies continued recent increases. Health insurers, in particular, reported exposure to below investment grade Bonds increasing from 5.88% of Bonds to 7.03%. In addition, there were increases for all three insurer types for investments with a NAIC 2 Designation as opposed to a NAIC 1 Designation.

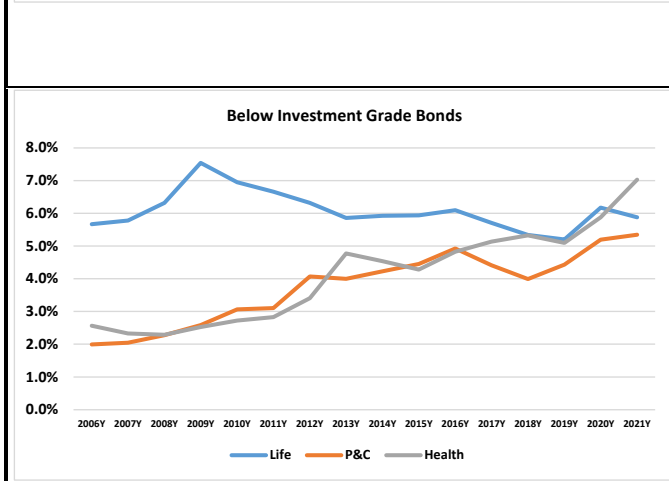
	Combined		Life		P&C		Health	
	2020Y	2021Y	2020Y	2021Y	2020Y	2021Y	2020Y	2021Y
Derivatives								
Carrying Value	41,146,717	37,736,738	41,382,017	37,746,812	(236,221)	(5,318)	921	(4,755)
Fair Value	55,114,958	49,650,980	55,429,177	49,719,960	(256,255)	(22,753)	(57,963)	(46,227)
Private Placements % of Bonds	36.84	39.20	41.34	43.42	25.61	29.01	23.49	26.98
Foreign Bonds % of Bonds	14.52	14.95	17.00	17.51	8.21	8.63	7.83	8.57
Securities Lending	82,435,655	96,263,551	72,826,090	83,317,252	7,900,165	10,245,889	1,709,400	2,700,410
Assets Pledged as Collateral	222,156,069	238,946,787	180,345,443	199,441,890	36,932,156	33,093,330	4,878,469	6,411,568

Other data points that we have continued to focus on are derivatives exposures, private bonds as a percent of the total, and foreign bonds as a percent of the total. For each of these, recent trends have continued. Securities Lending activity (including Repurchase Agreements) saw a fairly significant jump in 2021 and was its highest point since detailed reporting on the activity was enhanced in 2010. Another metric worth considering is Assets Pledged as Collateral. Representing a category within reported Restricted Assets, this may reflect on actual liquidity of invested assets. These assets are not freely tradeable while they are pledged and oftentimes they represent some of the more liquid and least volatile assets in an investment portfolio. This category increased to \$238.9 billion in 2021.

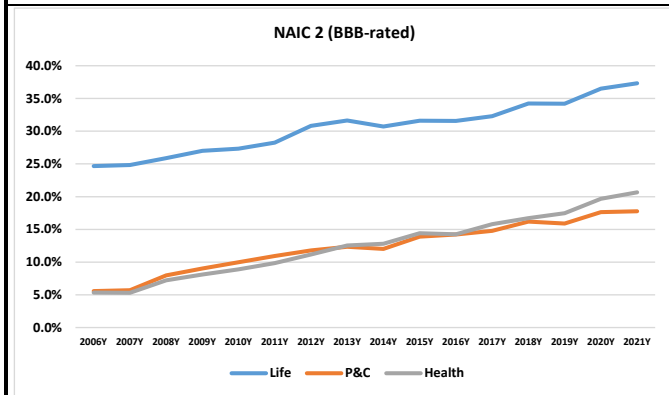
### Historic Trends



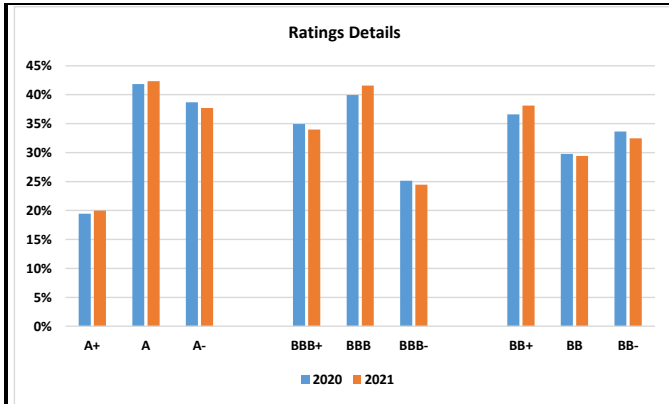
Total insurance industry invested assets trends have been consistent through 2021. This is true for general growth in assets as well as percentages for each major asset type. Highlighting Alternative Investments, which we define as Real Estate Related, Equities and Investments Reported on Schedule BA, the most significant point to note is the continued growth in Equities. This shift has been driven by strong equity markets, which as previously mentioned, also accounted for some of the growth in Investments Reported on Schedule BA. Investments Reported on Schedule BA also include Collateral Loans, which has seen significant growth since 2011.



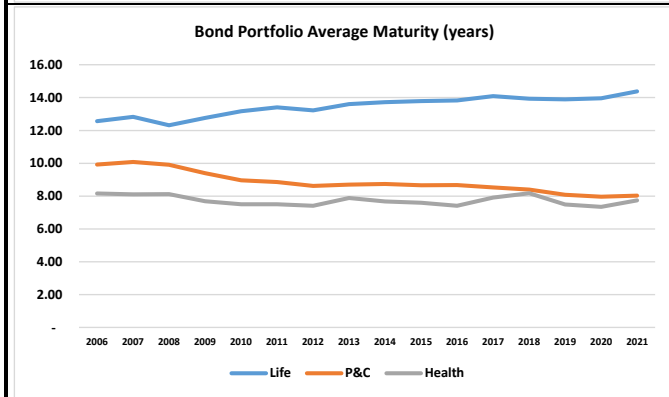
It has generally been the expectation that Life insurers have significant credit risk exposure as represented by below investment grade bonds. As a percent of total Bonds, the Life industry exposure has been relatively static since 2006 with some obvious upticks with the Great Financial Crisis and in 2020. Also, very apparent has been the continued increasing trend for P&C and Health insurers. As a percent of total Bonds, P&C is almost comparable to Life, and Health, for the first time, actually exceeds Life. This is a significant change from the earlier data when exposure for those two insurer types was only around 2%.



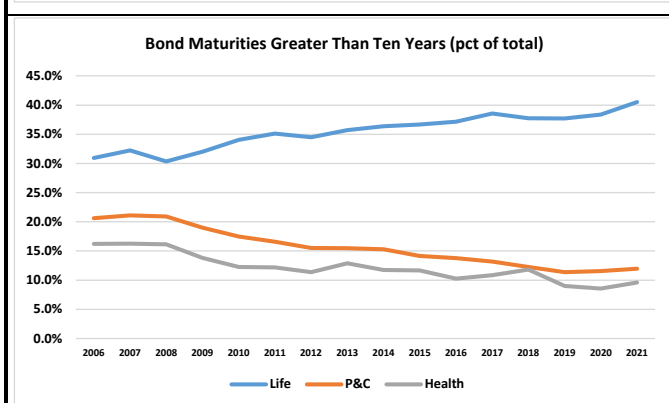
Complementing the exposure to below investment grade bonds are those with a NAIC 2 Designation, which indicates a BBB-rating. There have been very consistent increases for all three insurer types as this part of capital markets has grown. Analysis by rating agencies has generally noted that BBB-rated bonds account for roughly 50% of the investment grade bond market. The increased exposure to BBB-rated bonds may be material as it represents the Bonds at greatest risk of downgrade to below investment grade.



Specific to the risk of downgrade to below investment grade is a more granular detail of each rating grouping. Greater detail has been available since 2020 and new, more granular, Risk-Based Capital (RBC) factors became effective in 2021. Overall, the industry does not appear to be overweighted in any of the sub-categories that are most at risk of downgrade to the next category (A-minus to BBB, BBB-minus to BB and BB-minus to B). This is, of course, broad industry data and some individual insurers may have been significantly overweighted.

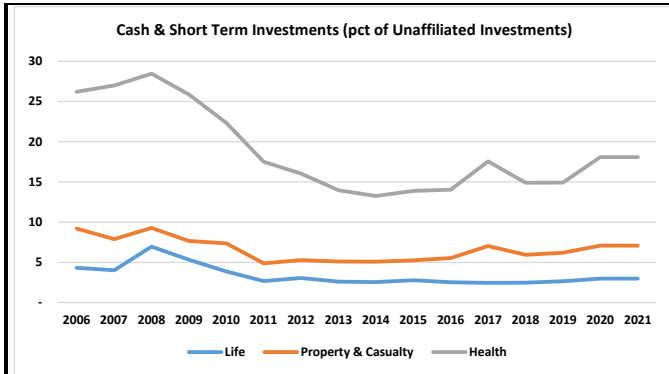


While there have been significant swings in interest rates over the last 15 years, the Bond maturity profile of the three insurer types has not changed significantly. There have often been concerns expressed that insurers may be taking on significantly greater interest rate risk in a search for yield. The long-term trends would seem to indicate otherwise, at least on an industry-wide basis. Life companies have been lengthening maturities, but very gradually. And notwithstanding an uptick in 2021, P&C and Health companies have generally been trending downward.

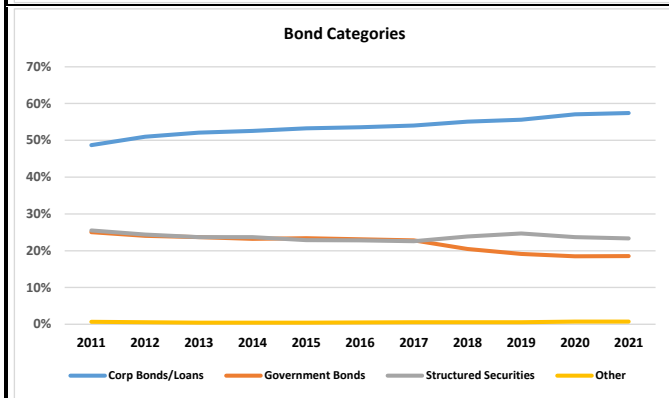


Most significant for longer maturities and the possibility of increased interest rate risk are bonds with maturities of longer than ten years. These percentages generally mirror the average maturities graph. For the Life industry, the percent of bonds with a maturity greater than ten years crossed the 40% threshold in 2021. While there are other variables besides maturity that impact actual duration, a ten-year bond is likely to have a duration of around eight years, and a 30-year bond will have a duration of as high as twenty years.

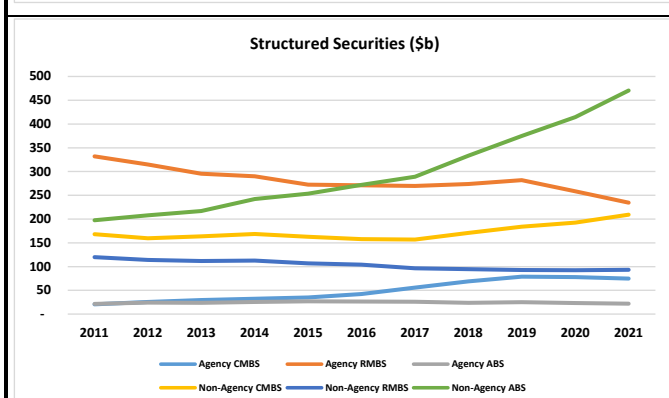
It is important to consider the various metrics for maturity or duration of an insurer's bond portfolio in the context of that company's liabilities. For Life insurers, the gradual lengthening of maturities may be appropriate, as liabilities have historically been longer in duration than what is available for invested assets. While a duration of twenty years means a 100 basis points increase in market yields will result in a decline in fair market value of as much as 20%, this may not be an issue or concern if the insurer can hold the bond until maturity. P&C and Health companies are expected to keep shorter duration portfolios. Their shorter duration, and somewhat less predictable liability needs, mean there is less of an ability to absorb market value volatility.



Cash and Short-Term Investments as a percent of total invested assets declined for all three insurer types through 2012. This trend reversed somewhat, especially for Health insurers, most likely due to liquidity concerns that may have arisen with the COVID-19 Pandemic. This trend held relatively unchanged in 2021 from 2020.



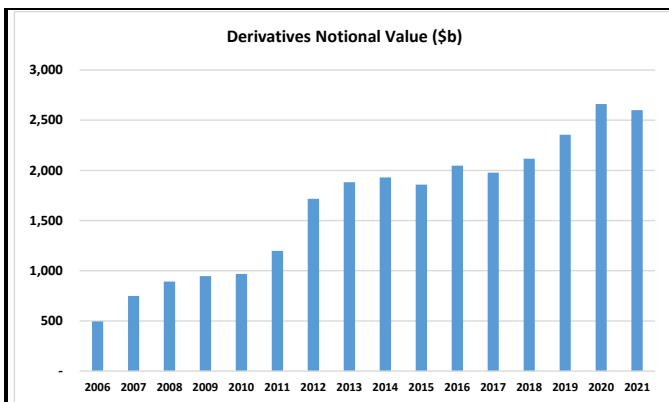
The historical trend for U.S. insurers has been a decline in Government Bonds, offset by an increase in Structured Securities. This shift may also be considered in conjunction with the previously noted decline in Cash and Short-Term Investments as the market value stability of Government Bonds allows those investments to be a reasonable source of additional liquidity. Due to their potential complexity and smaller market, Structured Securities are generally considered somewhat less liquid. Other, which includes Hybrid structures and Approved Bond ETFs, remains an immaterial percentage.



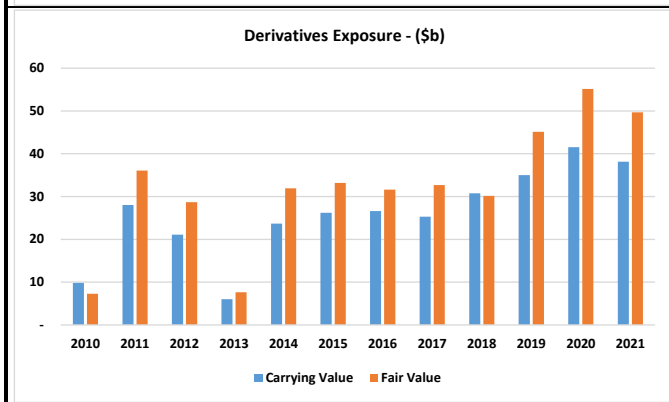
Within Structured Securities, the dollar amount for Non-Agency ABS continues to grow. As a result, the Non-Agency ABS represents 42.6% of the industry's Structured Securities, an increase from 23.0% in 2011 and from 39.1% in 2020. The most significant declines in percentages were Agency-Backed RMBS (21.2% in 2012 versus 38.6% in 2011) and Non-Agency RMBS (8.5% in 2021 and 13.9% in 2011). While there a variety of different asset types that fall under ABS, the main driver of growth has been in Collateralized Loan Obligations (CLOs).

The growth in the CLO market generally has drawn significant regulatory attention in recent years along with growth in the Bank Loan market which also represents the underlying assets within CLOs. Regulatory concerns reflect on the risk of loosening underwriting standards of Bank Loans. The various structural complexities of different CLO tranches have also led to questions of whether investors have an adequate understanding of the risks. For the insurance industry's investments, the majority of holdings are either AAA-rated senior classes or AA-rated mezzanine classes, which significantly mitigates these concerns. With the increasing investments, a focus on exposure to lower-rated subordinate classes and the experience and expertise of insurers with Structured Securities in general is warranted.

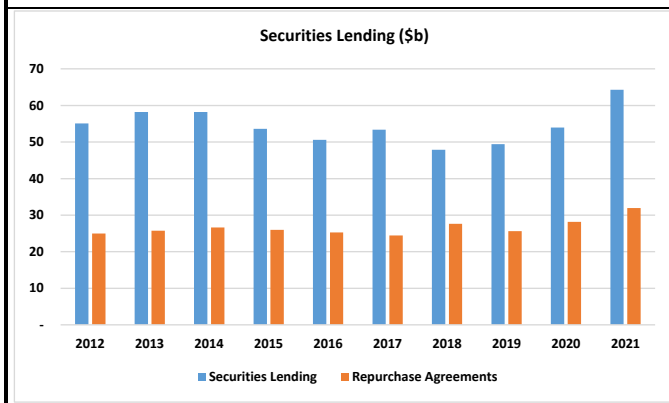




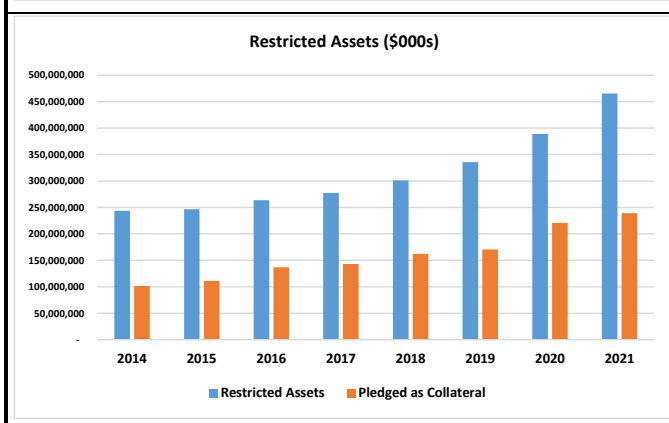
The U.S. insurance industry’s derivatives activities, which are mostly among Life insurers, peaked at a little more than \$2.5 trillion in notional value in 2020 before drifting downward slightly in 2021. While a significant metric of activity, this does not represent a measure of risk or exposure. The vast majority of activity is also used for hedging purposes, although only a small percentage is deemed to be Hedge Effective for Statutory Accounting purposes.



More meaningful measures of derivatives exposure are the reported carrying value and fair value estimates. Fair value estimates have increased significantly since 2018 but declined somewhat in 2021. The reported carrying values followed a similar, but less pronounced, trend. Increased volatility in markets will materially impact valuations. Historically, interest rate related derivatives have been the most significant use of derivatives, but equity-related derivatives have seen significant increases in usage. As interest rates have begun to rise, this shift will not only drive changes in valuations but will likely also lead to changes in interest rate hedging strategies.



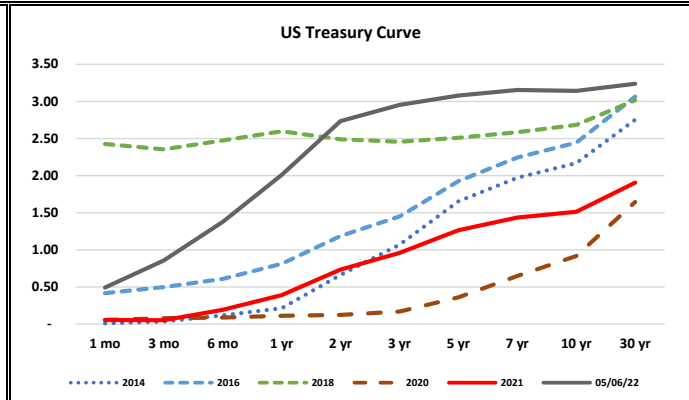
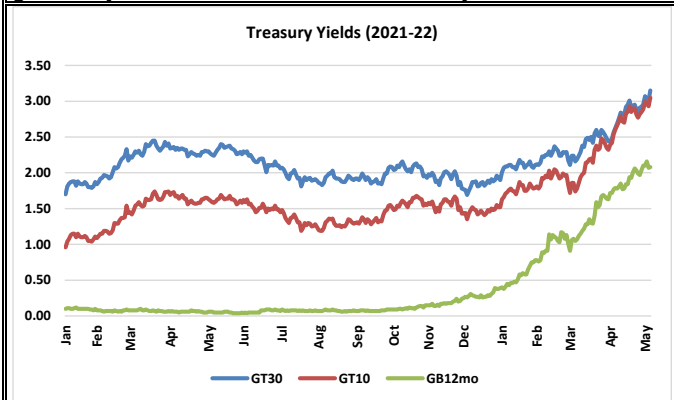
Securities Lending activity has seen gradual growth since hitting a low in 2018. Repurchase Agreements, which are economically similar transactions, have also seen some modest growth in recent years. Relative to the overall size of these markets, insurance industry participation is relatively small. The principal recognized risk is the potential for a duration mismatch between the Reinvested Cash Collateral and the tenor of the Securities Lending agreements. Following the disruptions from the 2008 Financial Crisis, the mismatch has generally been controlled.



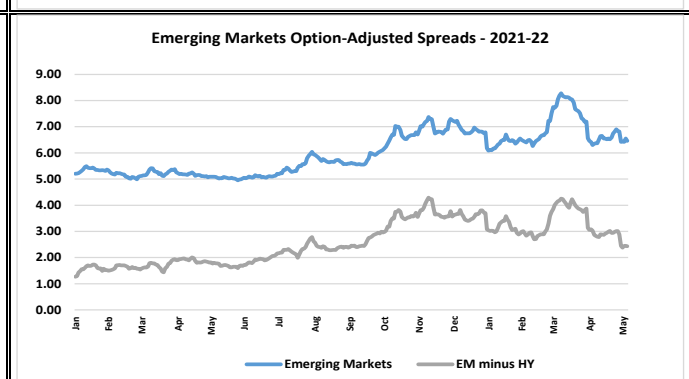
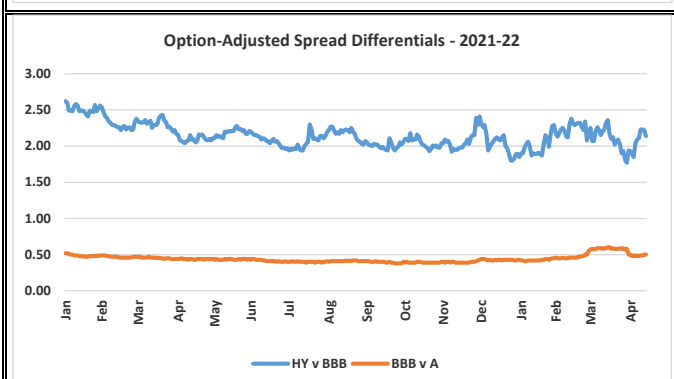
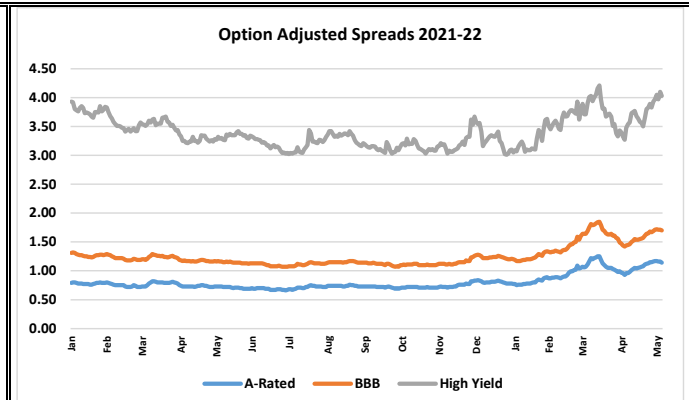
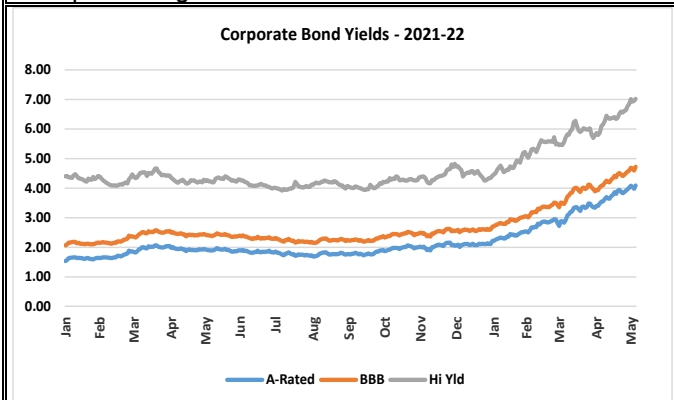
Restricted Assets, which includes Assets Pledged as Collateral, have increased significantly since 2017. This may impact basic measures of liquidity and affect liquidity management within insurers. Assets Pledged as Collateral include margin requirements for derivatives and will be impacted by increased volatility for different positions. Also included are assets pledged to Federal Home Loan Banks as Life insurers have increasingly used these borrowings to fund spread investing programs. This trend represents a leveraging of assets that, similar to Securities Lending, should not add materially to risk if it is tightly monitored and managed by insurers.

**Markets** (through May 6, 2022)

The focus of this Market Briefing has been on U.S. insurer asset mix, changes in 2021 from 2020, and a longer term view over the last ten to fifteen years. Insurance company invested assets of course must be taken in the context of the overall market. With the COVID-19 Pandemic, the Federal Reserve Board of Governors (Fed) took extraordinary action to drive interest rates even lower from where they were. By the end of 2021, market dynamics had changed, leading the Fed to be concerned about inflation and deciding to increase interest rates. Investment markets had also generally recovered but market volatility has returned with the Russian invasion of the Ukraine.



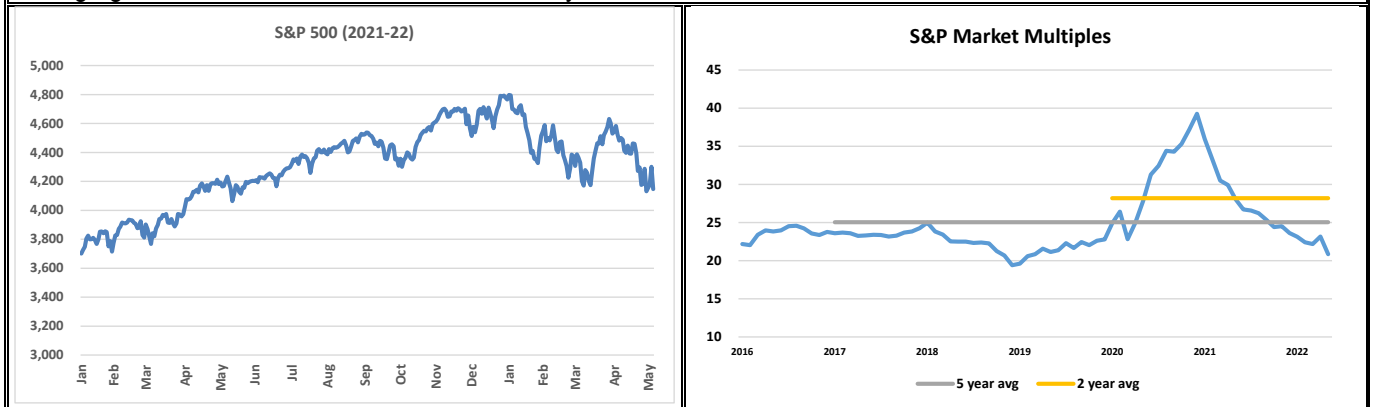
Fed monetary policy began to increase interest rates, most recently with announced actions at the March and May 2022 meetings. Interest rates on the shorter end of the yield curve have risen significantly as a result. While longer term Treasury yields have also risen, the relative change has not followed the same line, resulting in a significant flattening of the yield curve beyond the two-year point. This flattening is driven by market concerns and expectations for a possible global economic recession.



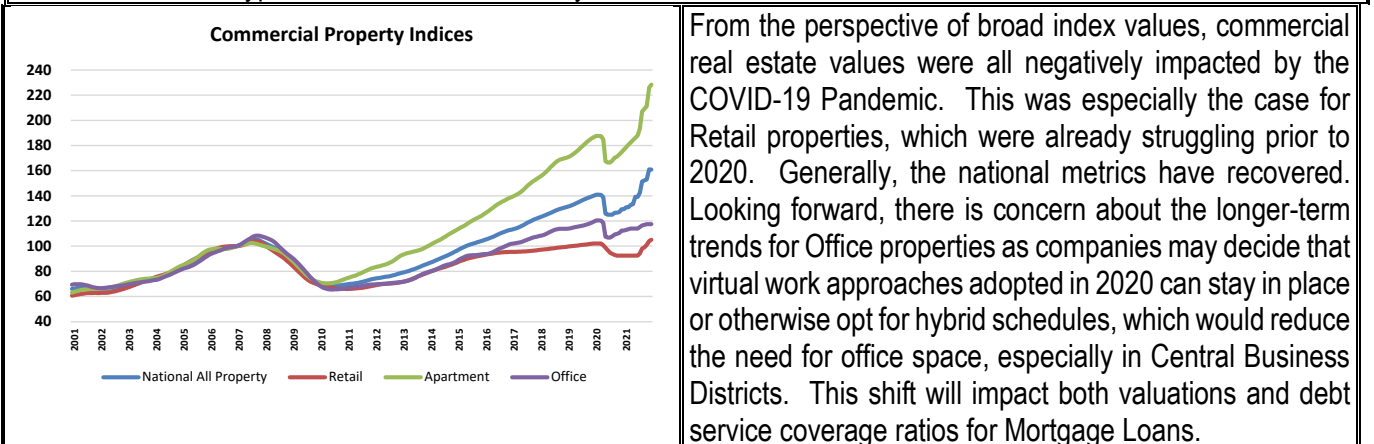
Corporate bond yields are a function of Treasury yields and option-adjusted spreads. Both of these were relatively stable through 2021. Yields have increased with the Fed activity since the end of 2021 and option-adjusted spreads have varied with concerns that the Russian invasion of the Ukraine may lead to economic problems that then could



increase defaults. In particular, the differential between spreads on high yield bonds and BBB-rated bonds, and with emerging markets bonds reflects this uncertainty.



Overall, the S&P 500 index ended 2021 up 27.0%, following on a 16.5% increase in 2020. In 2022, equity markets have been more volatile and generally taking on a negative tone. Continuing supply chain issues along with economic impacts from the Russian invasion of the Ukraine could put significant pressure on insurers' earnings. The S&P 500 has, on occasion, dropped by more than 10% from its recent peak indicating what is usually referred to as a "correction" (i.e., recovered somewhat, only to drop back down). Estimates of market multiples are generally subject to revisions as new earnings are announced, but with the recent downtick in valuations, S&P market multiples have declined to a more typical level over the last ten years.



From the perspective of broad index values, commercial real estate values were all negatively impacted by the COVID-19 Pandemic. This was especially the case for Retail properties, which were already struggling prior to 2020. Generally, the national metrics have recovered. Looking forward, there is concern about the longer-term trends for Office properties as companies may decide that virtual work approaches adopted in 2020 can stay in place or otherwise opt for hybrid schedules, which would reduce the need for office space, especially in Central Business Districts. This shift will impact both valuations and debt service coverage ratios for Mortgage Loans.

### A Few Remaining Words

The economic and market disruptions in 2020 had a negative impact on all investors including insurance companies. Thankfully, the market recovery in many respects was almost as quick as the initial downturn. Default rates among bonds and mortgage loans were not nearly as severe as initially expected. However, the recovery is now faced by different headwinds. Supply chain issues pushed inflation measures to levels not seen since the 1980's. While inflationary pressures are not likely to have any direct impact on investments, Fed action to raise interest rates will lead to downward pressure on valuations. There are also increasing concerns about the possibility of a recession in the next year or two.

Insurance industry investments in 2021 continued what have been long-term trends. Much of this is due to changing dynamics in the capital markets. Some is due to individual insurance companies searching for additional yield in the face of what had been a prolonged period of low interest rates. But low interest rates are no longer a phenomenon. The insurance industry weathered the disruptions of 2020 with a minimal increase in default experience and only a small increase in downgrades of bond holdings. Mortgage loan portfolios needed to be managed more carefully with

requests for payment deferrals and some restructurings. For the most part, those are back in full payment mode. Additionally, equity investments generally have done well.

However, volatility in valuations continue to be concern. Liquidity management is also taking on greater importance. As Cash and Short-Term Investments have declined as a percentage of assets, the percentage of long-term investments that are either less liquid, or more complex, or both, have increased. Restricted Assets and Assets Pledged as Collateral have also increased. The U.S. insurance industry, especially Life companies, has always benefited from a long-term time horizon and the ability to absorb short-term volatility. The question is if this historical activity as a prediction of future activity is still a valid premise with what has changed in the market and what has changed in insurers' portfolios.