rrc risk®ulatory CONSULTING

Market Briefing

From: Edward Toy – Senior Manager, Investment Specialist (edward.toy@riskreg.com)

Date: April 26, 2021

Subject: U.S. Insurance Industry Invested Assets Following the Market Turmoil of 2020

Introduction

With the COVID-19 Pandemic and the resulting economic turmoil, 2020 was a very challenging year for investors in general, and that included U.S. insurance companies. With financial statement data available for year-end 2020, this is a good time to consider how investments may have changed for the different insurer types and how the market volatility during the year may have impacted those investments. By the end of the year, broad market indices had all recovered from the very dramatic downturn in March and April. However, the recovery was not across the board. Certain sectors and industries continued to struggle. Additional questions were also raised about longer-term prospects for others. In general, downgrades by rating agencies and defaults for bonds increased in 2020 in comparison with prior years, but not to the degree that some analysts feared. The same was true on the commercial real estate side, which is relevant given how the exposure has grown in recent years through commercial mortgage loans and investment real estate, particularly among Life insurers.

US Insurer Invested Assets

	Total Insurance Industry		Life Insurers		Property & Casualty Insurers		Health Insurers	
($000)	2019	2020	2019	2020	2019	2020	2019	2020
SHORT TERM INVESTMENTS								
ST Investments & Cash Equivalents	234,207,029	289,268,405	103,995,773	123,859,685	100,653,706	122,282,055	29,557,551	43,126,665
LONG TERM INVESTMENTS								
Corporate Bonds	2,297,854,079	2,493,529,290	1,871,517,729	2,016,375,234	371,946,857	413,432,448	54,389,492	63,721,608
Bank Loans	57,790,884	68,292,988	43,244,285	52,690,648	12,956,342	13,622,590	1,590,257	1,979,750
Government Bonds (incl Municipals)	810,733,807	831,119,580	380,143,385	393,040,630	392,440,487	394,948,673	38,149,936	43,130,277
Agency CMBS	79,010,434	78,056,027	50,472,186	49,147,036	26,426,681	26,527,754	2,111,567	2,381,237
Agency RMBS	283,498,724	260,317,344	164,959,870	144,877,922	96,489,182	91,648,334	22,049,673	23,791,088
Agency ABS	25,257,746	23,356,209	16,167,012	14,586,210	8,666,815	8,146,514	423,919	623,485
Non-Agency CMBS	185,536,782	193,025,773	139,058,304	142,078,403	40,539,962	43,694,484	5,938,516	7,252,886
Non-Agency RMBS	93,143,812	92,683,168	73,601,106	74,264,551	17,979,902	16,407,854	1,562,805	2,010,763
Non-Agency ABS	376,857,450	415,817,602	294,479,949	329,640,977	71,056,076	73,088,615	11,321,425	13,088,011
Hybrids	16,323,260	18,766,949	12,928,922	14,560,416	3,050,912	3,684,600	343,426	521,932
SVO Funds	8,685,414	14,088,321	3,219,718	6,055,922	2,767,122	4,502,047	2,698,573	3,530,352
Subtotal Unaffiliated Bonds	**4,234,692,392**	**4,489,053,251**	**3,049,792,465**	**3,237,317,949**	**1,044,320,339**	**1,089,703,914**	**140,579,588**	**162,031,389**
Preferred Stock	26,587,306	26,962,506	11,859,933	13,084,961	14,137,896	13,209,908	589,476	667,637
Common Stock	403,061,388	430,464,596	30,169,467	32,195,719	363,931,378	387,968,145	8,960,542	10,300,732
Funds reported as Common Stock	45,023,504	51,875,963	6,938,395	6,759,520	24,251,810	29,041,425	13,833,299	16,075,018
Subtotal Unaffiliated Equity	**474,672,197**	**509,303,065**	**48,967,796**	**52,040,200**	**402,321,084**	**430,219,479**	**23,383,317**	**27,043,387**
Commercial Mortgage Loans	521,655,332	541,882,684	501,712,901	520,715,772	19,759,577	20,987,004	182,854	179,907
Mezzanine Loans	10,400,921	10,343,103	9,400,998	9,667,870	999,922	675,233	-	-
Residential Mortgage Loans and Other	54,350,864	56,286,201	53,099,121	54,656,843	1,251,743	1,629,358	-	-
Problem Mortgages	1,472,695	2,753,695	1,304,874	2,306,348	167,822	447,347	-	-
Non-Insurer Occupied Real Estate	21,753,215	21,293,940	17,111,396	16,566,122	4,474,833	4,575,341	166,986	152,476
Subtotal Real Estate Related	**609,633,026**	**632,559,622**	**582,629,289**	**603,912,956**	**26,653,897**	**28,314,283**	**349,840**	**332,384**
Non-Conforming LT Assets	170,692,837	191,830,981	110,653,400	128,088,271	53,349,302	56,071,316	6,690,135	7,671,394
Affiliated Investments (incl Occupied RE)	742,668,851	809,826,720	272,062,892	292,129,511	434,130,612	477,778,577	36,475,347	39,918,632
Grand Total - Long Term Investments	**6,232,359,304**	**6,632,573,640**	**4,064,105,843**	**4,313,488,886**	**1,960,775,234**	**2,082,087,568**	**207,478,227**	**236,997,186**

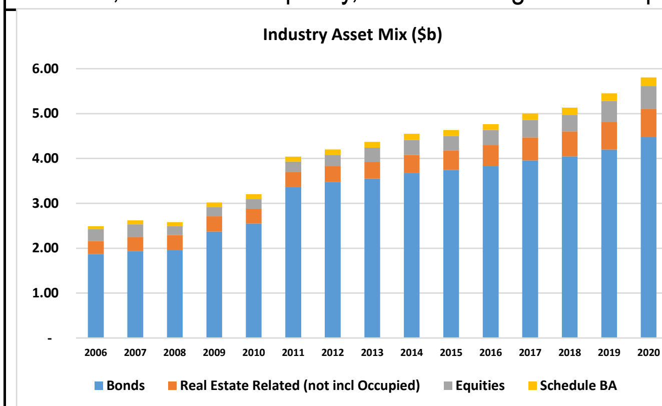
Notwithstanding the economic and market dislocations of 2020, it largely remained true that the insurance industry asset mix did not change much. Overall invested assets grew from $6.2 trillion to $6.6 trillion. Not counting affiliated investments, which as a general statement are not investments by insurers in market-based instruments, long term invested assets grew from $5.5 trillion to $5.8 trillion. Bonds continue to account for just slightly less than 75% of unaffiliated invested assets. Real estate related investments, primarily commercial mortgage loans held by Life

©Risk & Regulatory Consulting LLC - Not to be Duplicated Without Prior Consent

insurers increased by approximately $23 billion, but as a percentage of assets actually declined slightly (from 10.65% to 10.35%). Percentages increased for Cash and Short Term Investments, and increased slightly in the various equity lines and in Investments reported on Schedule BA, which are often also equity-related.

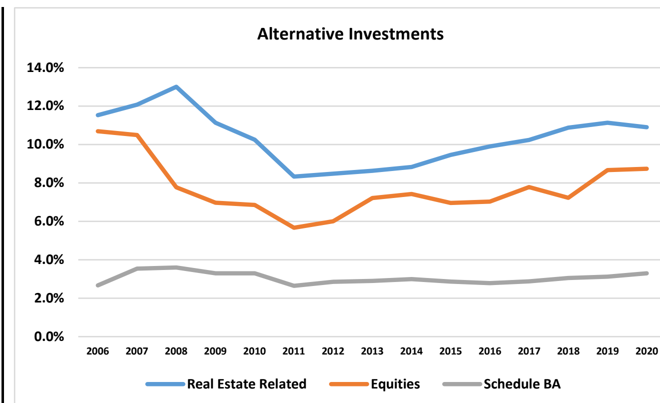
	Total Insurance Industry		Life Insurers		Property & Casualty Insurers		Health Insurers	
(as a pct of Unaffiliated Investments)	2019	2020	2019	2020	2019	2020	2019	2020
ST Investments & Cash Equivalents	4.09	4.73	2.67	2.99	6.19	7.08	14.74	17.95
Corporate Bonds	40.14	40.80	48.04	48.64	22.86	23.95	27.12	26.53
Bank Loans	1.01	1.12	1.11	1.27	0.80	0.79	0.79	0.82
Government Bonds (incl Municipals)	14.16	13.60	9.76	9.48	24.12	22.87	19.02	17.96
Agency CMBS	1.38	1.28	1.30	1.19	1.62	1.54	1.05	0.99
Agency RMBS	4.95	4.26	4.23	3.50	5.93	5.31	10.99	9.90
Agency ABS	0.44	0.38	0.41	0.35	0.53	0.47	0.21	0.26
Non-Agency CMBS	3.24	3.16	3.57	3.43	2.49	2.53	2.96	3.02
Non-Agency RMBS	1.63	1.52	1.89	1.79	1.10	0.95	0.78	0.84
Non-Agency ABS	6.58	6.80	7.56	7.95	4.37	4.23	5.64	5.45
Hybrids	0.29	0.31	0.33	0.35	0.19	0.21	0.17	0.22
SVO Funds	0.15	0.23	0.08	0.15	0.17	0.26	1.35	1.47
Subtotal Unaffiliated Bonds	**73.98**	**73.45**	**78.28**	**78.10**	**64.18**	**63.11**	**70.09**	**67.46**
Preferred Stock	0.46	0.44	0.30	0.32	0.87	0.77	0.29	0.28
Common Stock	7.04	7.04	0.77	0.78	22.36	22.47	4.47	4.29
Funds reported as Common Stock	0.79	0.85	0.18	0.16	1.49	1.68	6.90	6.69
Subtotal Unaffiliated Equity	**8.29**	**8.33**	**1.26**	**1.26**	**24.72**	**24.92**	**11.66**	**11.26**
Commercial Mortgage Loans	9.11	8.87	12.88	12.56	1.21	1.22	0.09	0.07
Mezzanine Loans	0.18	0.17	0.24	0.23	0.06	0.04	-	-
Residential Mortgage Loans and Other	0.95	0.92	1.36	1.32	0.08	0.09	-	-
Problem Mortgages	0.03	0.05	0.03	0.06	0.01	0.03	-	-
Non-Insurer Occupied Real Estate	0.38	0.35	0.44	0.40	0.27	0.26	0.08	0.06
Subtotal Real Estate Related	**10.65**	**10.35**	**14.95**	**14.57**	**1.64**	**1.64**	**0.17**	**0.14**
Non-Conforming LT Assets	2.98	3.14	2.84	3.09	3.28	3.25	3.34	3.19
Unaffiliated Invested Assets	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**

As has always been important to remember, the asset mix varies depending on the insurer type. Differences are significant between Life and Property & Casualty (P&C) insurers, while Health insurers look relatively close to P&C. P&C insurers have much larger exposures to equities, though an important qualification to that statement is that some of that is driven by the equities exposure at a relatively small number of very large P&C insurers. Taking those larger entities out of the equation reduces the percentage of assets exposure to just a bit higher than 10%. That is still significantly higher than at Life insurers, but not the nearly 25% shown in the overall insurer type data. The overall equity exposure for P&C insurers has increased, from 21.7% of long term uanffiliated assets in 2006 to 26.8% in 2020, and as a percent of surplus from 29.9% in 2006 to 38.0% in 2020. Life insurers, on the other hand, have significant investments in real-estate related assets, mostly in commercial mortgage loans. As was the case with P&C insurers and equities, commercial mortgage loans are also particularly heavy at the larger Life companies. The larger Life insurers have been investors in commercial mortgage loans for decades and have been able to report solid performance. Even with the difficulties of 2020, reported problem loans were only 0.4% of the industry portfolio. Neither of the two tables above show differences in asset mix by size of insurer. As with equity exposure at P&C insurers, smaller insurers tend to be more conservative in their investments for all three of the basic risk parameters of credit, market and liquidity, than their larger counterparts.

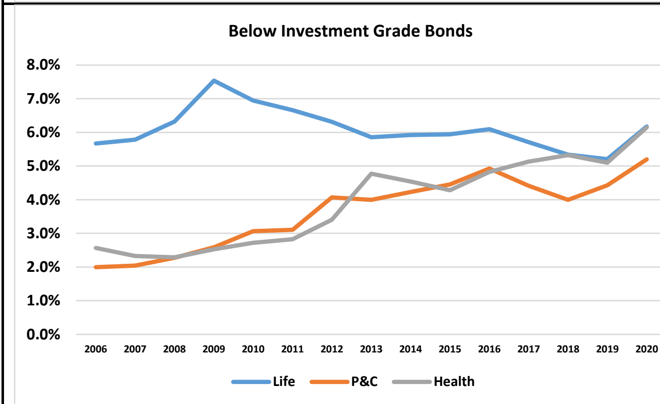


Taking the longer-term view, U.S. insurance industry assets have grown to the current level from roughly $2.5 trillion in 2006. That is an annualized growth rate of 6.2%. The major groupings have all grown at comparable rates: bonds at 6.4%, real estate related assets at 5.8% and equities at 4.7%. The fastest growing segment is also the smallest: Investments reported on Schedule BA, which has grown at 7.4%, but still only accounts for 3.14% of invested assets.

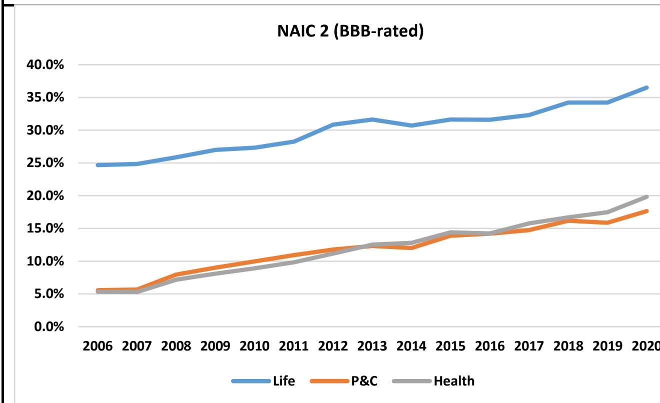
©Risk & Regulatory Consulting LLC - Not to be Duplicated Without Prior Consent



While bonds represent a dominant share of invested assets, analysts often focus on the increases in what could be termed "alternative investments" with the notion that these represent increases in different measures of investment risk that are in some sense not traditional. There are many different definitions of "alternative investments". Tracking the three groupings already mentioned, real estate related assets peaked in 2008 and has been increasing gradually since 2011. Equities followed a similar track. Investments reported on Schedule BA have been relatively static at about 3%.



With interest rates and investment yields low, investors in general have had to look for ways to increase portfolio yields. Besides alternatives, one avenue frequently cited is increasing credit risk with below investment grade bonds. As a percent of total bonds, below investment grade exposure for Life insurers peaked in 2009 with the financial crisis and the resulting rating agency downgrades. There was a similar uptick in 2020, from 5.2% to 6.2%. P&C and Health insurers reported similar increases in 2020, but this was following gradually increasing numbers since 2006 when exposure with those insurer types were more generally in the 2.0% to 2.5% range.



While still considered investment grade, bonds with a NAIC 2 Designation (BBB-rated) have also increased as a percentage of total bonds since 2006. Within investment grade bond holdings, these are most at risk of downgrade to below investment grade. This increase in exposure is also market driven as BBB-rated bonds have grown to represent 50% or more of the overall corporate bond investment grade market. For Life insurers, the exposure as a percent of total bonds has increased from 24.7% in 2006 to 36.5% in 2020. P&C and Health have seen incrementally larger increases, from 5.6% to 17.6% and from 5.4% to 19.8%, respectively.

Beginning in 2020, the NAIC adopted new reporting guidance, adding granularity to the six NAIC Designations. This additional granularity is expected to be followed in 2021 with new, and more granular, Risk-Based Capital factors. As a first view of this new data, each of the groupings for A, BBB and BB were divided into the subcategories. Those in the lower end minus subcategory would be most at risk of downgrade to the next level. On an industry wide basis, there is no apparent weighting to A-minus or BBB-minus bonds. A

©Risk & Regulatory Consulting LLC - Not to be Duplicated Without Prior Consent

downgrade to below investment grade would likely impact fair market values significantly.

Bond Portfolio Average Maturity (years)

Using a simple measure weighting different bond maturities by carrying value of holdings, Life insurers have been gradually increasing the average maturity of the bond portfolios, to about 14 years, after a slight dip in 2008. P&C and Health insurers have overall seen gradual decline in the average maturity of their bond portfolios. While other factors impact the actual interest rate sensitivity of bonds, bond maturities are an indicator of overall direction of duration.

Bond Maturities Greater Than Ten Years (pct of total)

The most interest rate sensitive bonds will be those with the longest maturities, and likely the longest durations. Mirroring the data for average maturities is the percentage of bond portfolios with maturities greater than ten years. As interest rates have declined even further in 2020 with action taken by the Federal Reserve, bond coupons are lower which increases the interest rate sensitivity of bonds, all other factors being the same. At the longest end, an increase of 100 basis points in interest rates can negatively impact fair market values by 15 to 20 points.

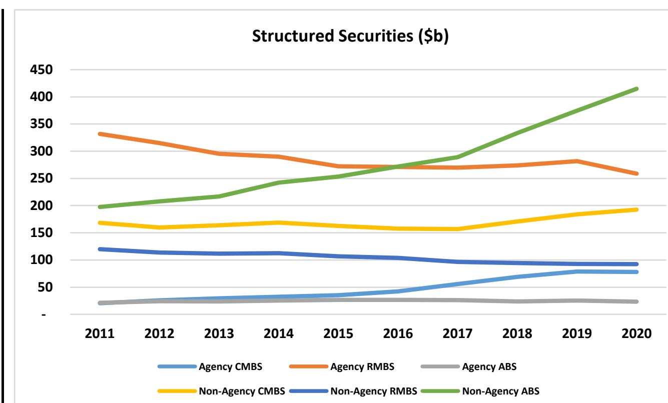
Cash & Short Term Investments (pct of Unaffiliated Investments)

On the other end of the spectrum, with the market volatility of 2020, and some ongoing economic uncertainty, the three different insurer types modestly increased their holdings of cash and short term investments as a percent of total unaffiliated investments. This was after declines in all three of the percentages since 2008. Anecdotally, many insurers significantly increased their liquidity in the spring of 2020, with the height of uncertainty about the pandemic, through various means. As the uncertainty waned towards the end of the year, the incremental liquidity declined.

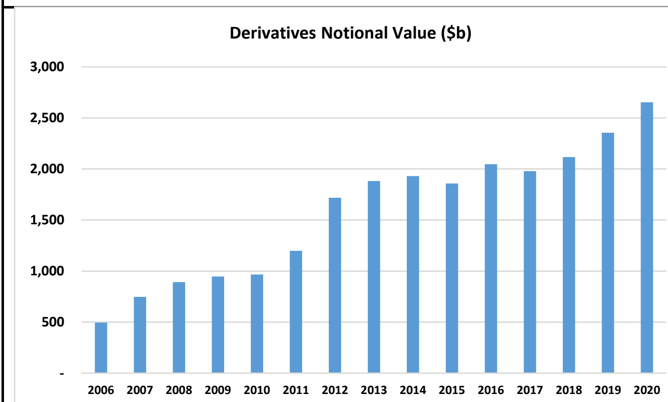
Bond Categories

Within Bonds, the mix has fluctuated some between corporate issues (both bonds and loans), government bonds and structured securities. Most notable is a significant decline in government bond holdings as a percentage of the total from 2016 to 2019. With generally lower credit risk, government bonds tend to be considered a secondary source of liquidity. The decline in government bonds was mostly taken up by a net increase in different kinds of structured securities in the same period. While still not significant, there has been an increase in the other category which includes Bond Exchange Traded Funds (ETFs).

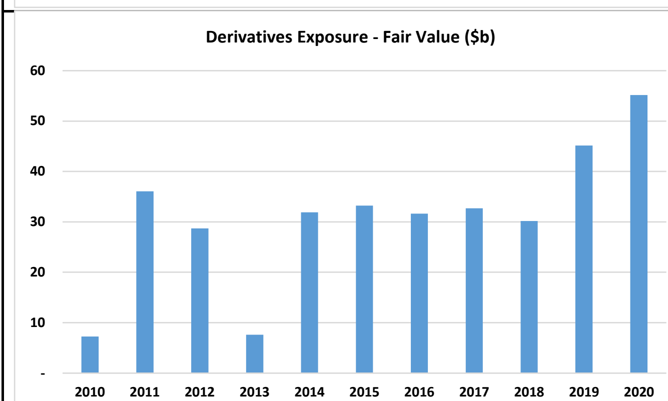
©Risk & Regulatory Consulting LLC - Not to be Duplicated Without Prior Consent



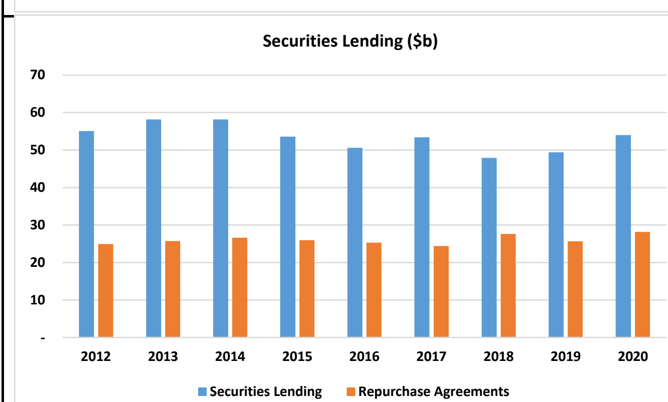
Over the last ten years, U.S. insurer investments in structured securities have increased from $859 billion in 2011 to $1.1 trillion in 2020, an overall increase of 23%. That growth has been entirely in non-agency asset-backed securities (ABS), as both agency and non-agency residential mortgaged-backed securities (RMBS) have declined. The $360 billion in RMBS still may present some concerns with prepayment variability. There has been some growth in commercial mortgage-backed securities, which is mostly non-agency. The growth in non-agency ABS has been a focus as it is driven by investments in collateralized loan obligations (CLOs).



Derivatives notional value is not a good measure of actual risk, and the NAIC has made some changes over the years for what U.S. insurers should be reporting as notional value. Notwithstanding, as a general measure of the level of activity, insurers have continued to grow in their use of derivatives, in 2020 going over $2.65 trillion in notional value. Of that, $2.63 trillion is at Life insurers. U.S. insurers also continue to use derivatives almost entirely for hedging purposes, though a relatively small percentage is deemed to be Hedge-Effective for accounting purposes.

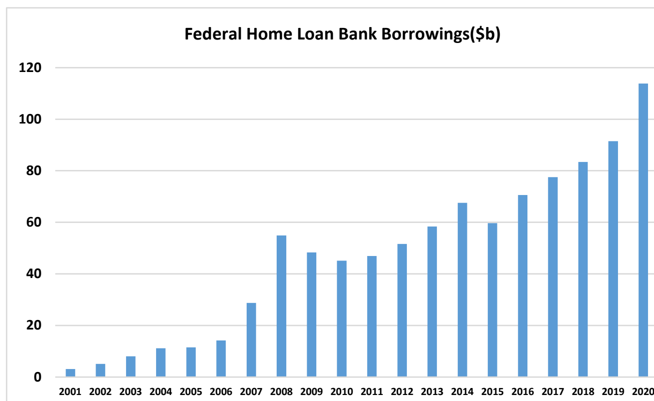


From the standpoint of risk assessment, still an imperfect measure, but something close to real exposure is the fair value of the U.S. insurance industry's derivatives positions which ended 2020 at $55.2 billion. There was also a net increase in this measure from 2018 to 2019, and again from 2019 to 2020. This is mostly, but not entirely, reflected in carrying value since any derivative not deemed to be Hedge-Effective for accounting purposes is carried at fair value. While the $55.2 billion also represents gross counterparty exposure, it is also collateralized by assets pledged to the insurer.



An issue that gained much noteriety with the 2008 financial crisis was the duration mismatch experienced by some insurers in securities lending activity, along with the economically similar repurchase agreements. With significantly enhanced disclosures, we can see that both securities lending and repurchase agreements activity have been relatively static in total since 2012.

©Risk & Regulatory Consulting LLC - Not to be Duplicated Without Prior Consent



Since the 2008 financial crisis, there has also been a dramatic growth in U.S. insurer membership with one of the Federal Home Loan Banks (FHLBs). In total, 57 insurer members grew to 528 members in 2020. Life insurers have tended to use the access to FHLB funding for spread investing, while P&C and Health have mostly joined to have access to FHLB for short term liquidity. This was after short term funding markets in many cases failed in 2008. Borrowing from FHLBs was one of the sources of additional liquidity previously mentioned in early 2020. Overall borrowings have increased from $3.1 billion in 2001 to $113.8 billion in 2020. Borrowings from FHLBs are required to be collateralized and the advance rate depends on the quality and liquidity of the collateral.

Markets

The focus of this Market Briefing has been on U.S. insurer asset mix, changes in 2020 from 2019 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. A relatively low interest rate environment, coupled with a flat yield curve, was already a significant challenge to investors in general and insurers in particular. With the COVID-19 Pandemic, the Federal Reserve took extraordinary action to drive interest rates even lower. This included not just lowering short term interest targets, but also a $10 trillion buying program for longer dated bonds across many different asset classes.

Default rates on all types of fixed income investments were expected to increase dramatically with the economic shutdown in 2020, which would also be reflected in the downgrade of bonds by rating agencies. All of that did come to pass, but not to the degree that some feared. Rating agencies expect defaults and downgrades to moderate but continue well into 2021 and perhaps into 2022.

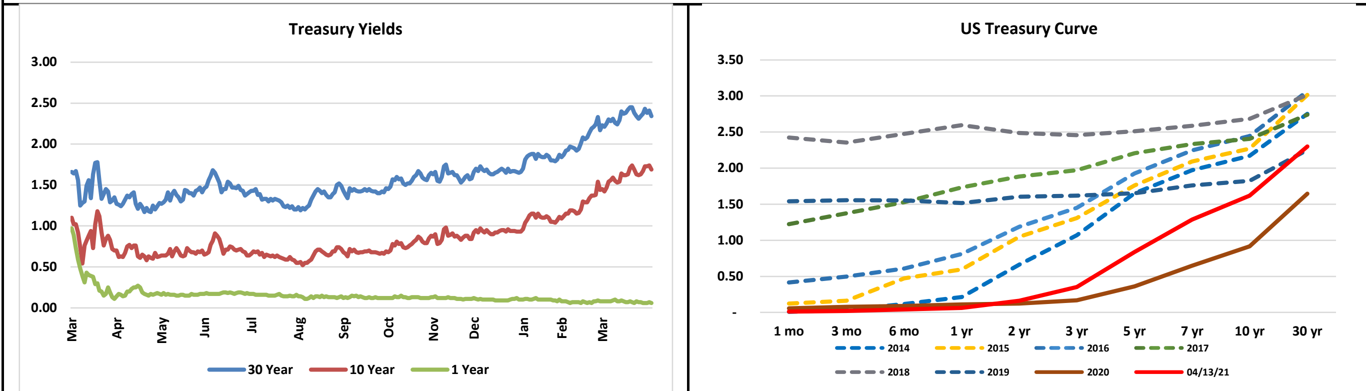
Equity markets in general dropped precipitously in the spring of 2020, by 30% in six weeks. This is compared with the 2008 financial crisis when equity markets declined a more significant 45%, but doing that over 18 months. Since the 2020 downturn, broad equity market indices recovered entirely by the end of the year, but the recovery was not across all industries and sectors. Those more affected by the economic shutdown, like travel and leisure, continued to struggle. Financial institutions, including insurance companies, also did not fully recover by year-end due to concerns about elevated defaults and lower portfolio yields with the lower interest rate environment. Thus far in the first quarter of 2021, the track of recovery in markets has continued and some of the previously lagging sectors have begun to catch up.

Following along with equity markets, credit spreads widened substantially in the second quarter of 2020. Also following equity markets, the broad bond market indices have also recovered. This has been more pronounced for now in the higher credit quality parts of the market. Lower credit quality bonds have also recovered substantially, but there remains a slightly wider differential between investment grade and below investment grade bonds. This is especially the case with structured securities as the credit support has diminished having a more significant impact on non-senior tranches.

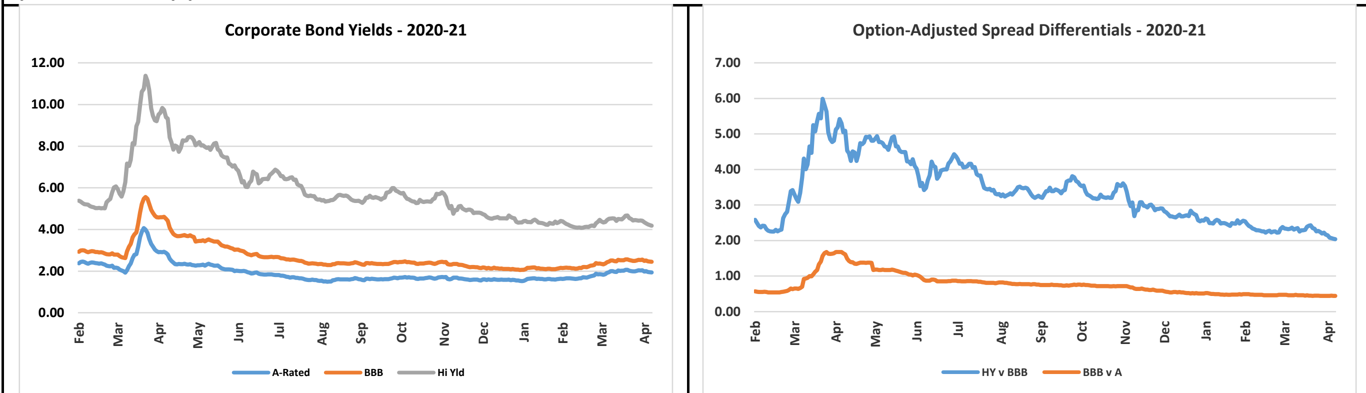
Also worth highlighting is the the impact of the economic turmoil of 2020 on commercial real estate performance and values. The data available in 2020 to make a reasonable judgment on the impact was initially very sparse and not deemed entirely reliable. That has been improving significantly, though the overall assessments have not changed that much. Commercial real estate properties as an asset class remains rather idiosyncratic by nature, property by property, property-type by property-type and location by location. There does continue to be reasonable

©Risk & Regulatory Consulting LLC - Not to be Duplicated Without Prior Consent

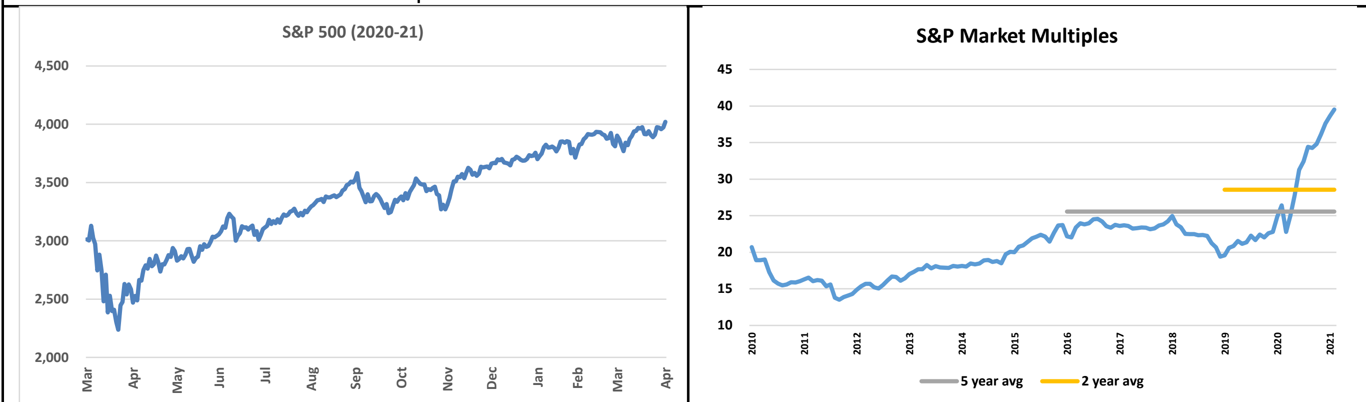
comfort with the apartment/multifamily sector. Retail, which was already struggling prior to 2020, took a substantial hit. Estimates for some parts of the retail sector were declines of as much as 45% in value and generally a decline of 20 to 25%. Office property values have seen a modest decline so far, but there are concerns about the longer-term prospects as work-from-home programs may take a hold, especially in major metropolitan areas, which would reduce the need for office space in many cases.



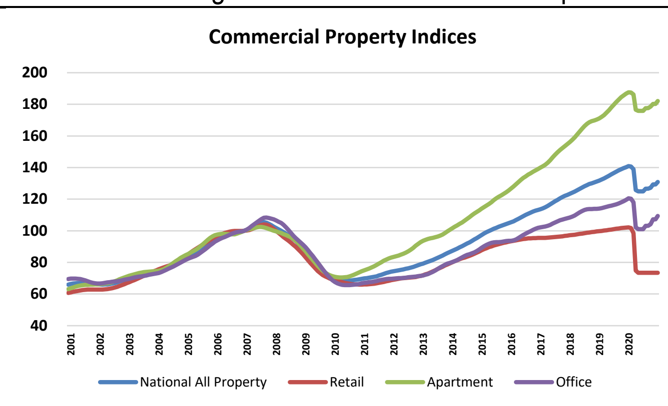
The Federal Reserve actions initially pushed interest rates down by 100 basis points or more across the entire yield curve. Since then, the 10-year and 30-year Treasury yields have been inching up. However, the current 1.6% yield on the the 10-year Treasury is significantly lower than any recent year-end data point. At year-end 2013, the 10-year Treasury yield was 3.03%.



Corporate bond yields are a function of Treasury yields and option-adjusted spreads. With the spike in credit spreads in March 2020, yields climbed notwithstanding the drop in Treasury yields. Since then, credit spreads have moderated, and the still lower Treasury yields mean that corporate bond yields are currently lower than where they were at the beginning of 2020 before the pandemic. As interest rates begin to rise, corporate bond yields will also rise, which will negatively impact the fair market value of bond holdings. With a focus on the lower credit qualities and non-senior classes of bonds, there may also be some concern that those credit spreads may widen again if default rates do not continue to improve.



Overall, the S&P 500 index ended 2020 up 16.5% for the year, notwithstanding the tremendous drop in March 2020. An equity index of financial institutions was, however, down 4.2% for the year. From year-end 2020 so far this year, the S&P is up around 10% and financial institutions are doing somewhat better, up 18%, as default rates continue to moderate and longer-term interest rates have been improving. The dramatic recovery in broad equity market indices is outpacing recovery in earnings, which suffered dramatically with the economic shutdown and still higher unemployment rates. The estimated earnings multiple of nearly 40 times is far above any historic norm. While equity valuations should be more focused on forward looking earnings, the trend in the graph above that is based on current earnings is unmistakeable and does point to some potential vulnerability in equity markets.



As noted already, data supporting commercial real estate indices has been improving, but continues to be somewhat less robust than before 2020. Various debt deferral and rent relief programs were instituted in 2020 and have been gradually winding down. Property sales on which appraisals rely for comparative analysis are fewer. Based on the available data, it does appear that values have largely recovered on the apartment-multifamily and office sectors. Retail continues to be down significantly, dragged down mainly by values for larger and older malls.

The (Totally Not) Final Word

The economic and market disruptions in 2020 had a negative impact on all investors, including insurance companies. On an industry-wide basis, and insurer-type by insurer-type, the impact does not appear to have been that significant. Taken in the context of the longer history, there was also nothing seen in the 2020 data that was substantially out of step. Many of the general trends prior to 2020 continued. Having said that, however, some individual companies are likely to have seen more of a negative impact. Those would be insurers that had more exposure to certain segments of the market. Examples of this would be: (a) larger below investment grade holdings that have gone or are at risk of going into default, (b) larger exposure to BBB-rated bonds, especially BBB-minus rated bonds, that got or are at risk of being downgraded to below investment grade, (c) larger equity exposures with sector concentrations that are still recovering, (d) higher risk investments in commercial real estate (those with lower debt service coverage ratios and higher loan-to-values before 2020), especially exposures to retail, (e) non-senior classes of structured securities that have seen their credit support permanantly diminished or had payments blocked due to over-collateralization triggers, and (f) investments reported on Schedule BA, like private equity funds, that have experienced a disruption in sometimes complex investment strategies. Periods of economic and market disruption like that experienced in 2020 require a more granular analysis of the investment holdings of individual company portfolios.

©Risk & Regulatory Consulting LLC - Not to be Duplicated Without Prior Consent