ETFs in Insurance General Accounts – 2019

INTRODUCTION

In our last report, in 2017, insurance companies increased their use of exchange-traded funds (ETFs) by a significant amount (37% year-over-year). In 2018, insurance companies continued to increase their use of ETFs and, in spite of a market correction in the Q4 2018, held ETF assets in line with long-term growth trends. Furthermore, in 2018, the industry also displayed a divergence in their investment patterns—with companies that had previously been slow to adopt ETFs increasing their usage, and other companies, which in the past had grown ETF usage rapidly, retrenching. A divestment from Smart Beta ETFs, in particular, caused a drag on the overall share ownership and AUM of insurance companies invested in ETFs. In our fourth annual analysis of ETF usage in insurance general accounts, we explore the changing dynamics and current usage of over 1900 companies in this market.

OVERVIEW

As of year-end 2018, U.S. insurance companies had USD 26.2 billion invested in ETFs. This represents a tiny fraction of the USD 3.4 trillion of ETF assets under management (AUM) and an even smaller portion of the USD 6.3 trillion in admitted assets of U.S. insurance companies. Exhibit 1 shows the use of ETFs by U.S. insurance companies over the past sixteen years.

Exhibit 1: ETF AUM Growth


2 Please see Appendix 1 for a methodology of the analysis, including changes from prior reports.
While ETF AUM steadily increased over the prior six years, in 2018, the AUM of ETFs in the industry declined for the first time since 2011. In 2018, U.S. insurance company ETF AUM decreased by 3% from the prior year. However, usage still showed a double-digit compound annual growth rate (CAGR) over the 3-, 5-, and 10-year periods (see Exhibit 2).

Exhibit 2: CAGR of ETF AUM

Unlike AUM, the number of ETF shares used by insurance companies continued to increase in 2018.

The last quarter of 2018 had marked downturn in the equity and fixed income markets. The S&P 500 dropped 14% in the 4th quarter; a week before year-end the S&P 500 was off 20%3. On December 19th, 2018 the Federal Reserve increased the Fed Funds rate for a fourth and last time in 20184. And even though 10-year Treasury5 and corporate6 yields fell during the quarter, corporate spread increased by a larger amount in the Q4 20187. To test if market volatility in Q4 2018 depressed the year-end AUM numbers, we also looked at the number of shares held by insurance companies. Unlike AUM, the number of shares of ETFs used by insurance companies continued to increase in 2018 (see Exhibit 3).

Exhibit 3: ETF Share Ownership Growth

The long-term growth rate of shares has also been in the double digits, but with a slower pace than AUM growth (see Exhibit 4).

Exhibit 4: CAGR of ETF Shares

In spite of the decrease in AUM, the growth in ETF usage still greatly exceeded the growth rate of admitted assets over the long term (see Exhibit 5).

Exhibit 5: Historical Growth of Admitted and ETF Assets

The growth in ETF usage still greatly exceeded the growth rate of admitted assets over the long term.
We used a linear regression to model the growth of ETF AUM held by insurance companies. This model accurately fit the historical growth of ETFs in insurance companies (see Exhibit 6).

**Exhibit 6: Linear Regression of ETF AUM**

![Graph showing linear regression of ETF AUM](source)


A regression analysis of share usage led to a similar result (see Exhibit 7).

**Exhibit 7: Linear Regression of ETF Shares**

![Graph showing linear regression of ETF shares](source)


We used these regression models to estimate the trended growth of ETFs. If insurance companies continue to invest according to trend, the use of ETFs by insurance companies could almost double in five years—using both AUM and share trends.

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8 See Appendix 2.
both AUM and share trends. This is substantially faster than the expected growth of admitted assets\(^9\) (see Exhibit 8).

**Exhibit 8: Projected Growth of Admitted Assets, ETF AUM, and ETF Shares**

![Exhibit 8](image)


Until 2018, the number of ETFs used by insurance companies and the number of insurance companies using ETFs had steadily increased. These numbers decreased slightly in 2018 (see Exhibit 9).

**Exhibit 9: Growth in ETF Usage**

![Exhibit 9](image)


As of 2018, approximately 34% of insurance companies used ETFs. However, that varied greatly among companies (see Exhibit 10). As before, Property & Casualty (P&C) companies used ETFs more than Life or Health companies. Organizationally, Mutual companies were the biggest

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users of ETFs. This year, we saw larger-sized companies getting more comfortable using ETFs.

Exhibit 10: Percentage of Insurance Companies Using ETFs

In 2018, approximately 34% of insurance companies used ETFs.

P&C companies used ETFs more than Life or Health companies.

In 2018, we saw larger-sized companies getting more comfortable using ETFs.

In this section, we analyzed the use of ETFs by different groupings of insurance companies. In particular, we looked at whether size, ownership structure, or types of insurance underwritten affect the use of ETFs.\(^{10}\)

Mega insurance companies owned most of the assets belonging to insurance companies, but only held about one-third of the insurance ETF holdings (see Exhibit 11).

\(^{10}\) See Appendix 1.1 for definitions of size and ownership structure.
Mega insurance companies owned most of the admitted assets, but only held about one-third of the insurance ETF holdings.

However, these companies increased their AUM by 39% over 2017. Meanwhile, Large companies pulled back from ETF allocation. Large companies increased their ETF AUM by 54% in 2017 but decreased it by 25% in 2018. On ETF share and AUM bases, both Small and Large companies pulled back from their use of ETFs. Medium companies were relatively flat for the year in terms of AUM, but increased the number of ETF shares held by 15% (see Exhibits 12 and 13).

Mega companies increased their 2018 AUM by 39% over 2017 while Large and Small companies pulled back from ETF allocation.
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Exhibit 13: CAGR of ETF AUM and Shares by Company Size


While Large companies held the majority of insurance ETF assets, Mega companies were quickly reaching parity. However, Small companies continued to hold a higher portion of ETFs in their admitted assets. The proportion of admitted assets held in ETFs continued to decline with the size of the company (see Exhibit 14).

Exhibit 14: ETF AUM and ETFs as a Percentage of Admitted Assets by Company Size


In terms of ownership structure, Stock companies had the most admitted assets and ETF AUM (see Exhibit 15).
In terms of ownership structure, Stock companies had the most admitted assets and ETF AUM.

In 2018, Stock companies decreased their ETF AUM, while Mutual companies continued to increase their ETF assets (see Exhibit 16).

While Stock companies had the most ETF AUM, they also held the least amount as a proportion of their admitted assets (see Exhibit 17).
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Exhibit 17: ETF AUM and ETFs as a Percentage of Admitted Assets by Ownership Structure

While Stock companies had the most ETF AUM, they also held the least amount as a percentage of their admitted assets.


In 2017, Stock companies increased their usage of ETFs by 65%, but this year they reduced them by 8%. Mutual companies, on the other hand, increased ETF usage by nearly 10%. Interestingly, an analysis based on shares held indicates that all three types of companies actually increased the number of ETF shares they held (see Exhibit 18).

Exhibit 18: CAGR of ETF AUM and Shares by Ownership Structure

All three types of companies actually increased the number of ETF shares they held.


In terms of company type, Life companies had the most admitted assets, but P&C companies had the most ETF AUM (see Exhibit 19).
In terms of company type, Life companies had the most admitted assets, but P&C companies had the most ETF AUM.

However, as a proportion of admitted assets, Health companies were the largest users of ETFs (see Exhibit 20).

As a percentage of admitted assets, Health companies were the largest users of ETFs.

All three types of companies saw a slight decline in ETF AUM in 2018. However, only Life companies actually reduced the number of shares they owned (see Exhibits 21 and 22).
**Exhibit 21: ETF AUM by Company Type**


**Exhibit 22: CAGR of ETF AUM and Shares by Company Type**


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**P&C and Health Companies increased ETF share ownership in 2018.**

As of 2018, 447 P&C companies had USD 15 billion invested in 365 ETFs.
ANALYSIS BY BUSINESS FOCUS

To see if the use of ETFs varied by the type of underwriting done by an insurance company, we analyzed ETF investments by business focus.11

As of 2018, 447 P&C companies had USD 15 billion invested in 365 ETFs. Personal companies accounted for the majority of admitted assets (54%) and ETF AUM (61%) of P&C companies. While Personal companies had the highest amount of ETFs, Reinsurance companies had the largest portion of their admitted assets invested in ETFs (see Exhibit 23).

Exhibit 23: ETF AUM and ETFs as a Percentage of Admitted Assets by P&C Business Focus


In 2017, Personal lines had a significant increase in ETF usage. These companies, along with all the other carriers, trimmed their ETF AUM in 2018 (see Exhibit 24).

Exhibit 24: ETF AUM by P&C Business Focus


11 See Appendix 1.1 for definitions of business focus.
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While AUM growth declined, Personal and Commercial companies increased their ETF share ownership.

However, Reinsurance companies drastically reduced their ETF AUM and shares (see Exhibit 25).

Exhibit 25: CAGR of ETF AUM and Shares by P&C Business Focus


In Life insurance, 104 companies invested USD 7.7 billion in 189 ETFs. Annuity writers had the most admitted assets (44%), but they had 29% of the ETF AUM held by Life companies.

Exhibit 26: ETF AUM by Life Business Focus

Overall, Life companies trimmed their ETF AUM and shares by approximately 3.5%. However, the only major sellers were Life & Annuities companies (see Exhibit 27).

**Exhibit 27: CAGR of ETF AUM and Shares by Life Business Focus**

Overall, Life companies trimmed their ETF AUM and shares by approximately 3.5%. The only major sellers were Life & Annuities companies.

Comprehensive Health companies dominated both admitted assets and ETFs in the Health industry. In 2018, these companies continued to add to their ETF holdings, even as other types of Health companies reduced their holdings (see Exhibit 28).

**Exhibit 28: ETF AUM by Health Business Focus**

Overall, Life companies trimmed their ETF AUM and shares by approximately 3.5%. However, the only major sellers were Life & Annuities companies (see Exhibit 27).
In 2018, the softening in ETF AUM happened in all asset classes, with Equity AUM declining 2.48% and Fixed Income AUM declining 4.22% (see Exhibit 29). However, in terms of ETF shares, P&C and Life companies increased their share ownership in both Equity and Fixed Income (see Exhibit 30).

Exhibit 29: ETF AUM by Asset Type

Exhibit 30: CAGR of ETF AUM and Shares by Asset Type

In terms of company type, P&C companies invested mostly in Equity ETFs, but Life and Health companies evenly split their investments between Equity and Fixed Income (see Exhibit 31). However, only Life companies reduced their amount of ETF shares in 2018 (see Exhibit 32).
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P&C companies invested mostly in Equity ETFs, but Life and Health companies evenly split their investments.

Exhibit 31: ETF Asset Allocation by Company Type


Only Life companies reduced their amount of ETF shares in 2018.

Exhibit 32: One-Year Growth Rate for ETF Shares by Company Type


P&C companies haven’t materially allocated differently between the various business focuses, but that hasn’t been the case for Life companies. At one extreme, Annuity companies have almost exclusively invested in Fixed Income ETFs. At the other extreme, Life & Annuities companies invested mostly in Equity ETFs (see Exhibit 33). Life & Annuities companies have divested away from Equity ETFs (see Exhibit 34).

Exhibit 33: Asset Allocation by Life Business Focus


Annuity companies have almost exclusively invested in Fixed Income ETFs, while Life & Annuities companies invested mostly in Equity ETFs.
Exhibit 34: CAGR for Life & Annuities Companies by Asset Type


Stock companies owned a bit more Equity than the industry average, and Mutual companies owned a bit less than the average (see Exhibit 35).

Exhibit 35: Asset Allocation by Ownership Structure


Insurance companies did not exhibit a radical variation in asset allocation by size (see Exhibit 36). However, Mega companies increased the amount of Equity and Fixed Income ETF shares, and Medium companies added to Equity, while selling Fixed Income (see Exhibit 37).
Insurance companies have not exhibited a radical variation in asset allocation by size.

Mega companies increased the amount of Equity and Fixed Income ETF shares…

…and Medium companies added to Equity, while selling Fixed Income.

Analysis of Equity ETFs

With respect to market capitalization, U.S. insurers invested mostly in Large Cap ETFs (see Exhibit 38).

Exhibit 38: Equity ETF AUM by Market Capitalization


There has been little variation in allocation for company type or organizational structure. However, allocation to Large Cap ETFs increased with the size of the company (see Exhibit 39).

Exhibit 39: Market Capitalization Allocation by Company Type, Organizational Structure, and Company Size

Insurance companies mostly invested in Blend ETFs. Much like market capitalization, most of the investments were in one style. Also, smaller insurance companies showed more diversification (see Exhibits 40 and 41).

Exhibit 40: Equity ETF AUM by Style

Insurance companies have mostly invested in Blend ETFs.

Exhibit 41: Style Allocation by Company Type, Organizational Structure, and Company Size

Smaller insurance companies show more diversification.

As one would expect, most U.S. insurance companies invested mostly in U.S. Equity (see Exhibit 42).
However in terms of ETF AUM and shares, insurance companies have been selling Sector and U.S. Equity and adding to International Equity (see Exhibit 43).

Exhibit 43: CAGR of ETF AUM and Shares by Equity Category

Mega companies invested more in International Equity ETFs than other companies, but less in Sector ETFs. Large companies had the highest allocation to Sector ETFs. Life companies allocated less to International Equity ETFs than Health or P&C companies. Mutual and Stock companies invested roughly the same amount in U.S. Equity ETFs. Mutual companies...
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Mega companies have invested more in International Equity ETFs than other companies, but less in Sector ETFs. Large companies have the highest allocation to Sector ETFs.

Mutual companies have invested more in Sector Equity ETFs, while Stock companies were more likely to use International Equity ETFs.

Insurance companies have abandoned most of the sectors except for Communication Services.

invested more in Sector Equity ETFs, while Stock companies were more likely to use International Equity ETFs (see Exhibit 44).

Exhibit 44: Equity Allocation by Company Type, Organizational Structure, and Company Size


After increasing steadily since 2004, companies have reduced their Sector Equity allocations by 30% in the past two years. Insurance companies have abandoned most of the sectors within Sector Equity, except for Communication Services, which is also the least-allocated sector (see Exhibit 45).

Exhibit 45: ETF AUM by Equity Sectors

Analysis of Fixed Income ETFs

The U.S. Fixed Income ETF market consisted of 52% High Credit ETFs as of year-end 2018. However, a majority of the insurance Fixed Income ETF market was in Medium Credit (see Exhibit 46).

Exhibit 46: U.S. and Insurance Fixed Income ETF AUM by Fixed Income Credit


Most of the rise in Fixed Income ETF usage by insurance companies, which began in 2016, was in Medium Credit ETFs (see Exhibit 47).

Exhibit 47: Fixed Income ETF AUM by Fixed Income Credit


While the overall Fixed Income ETF AUM declined 4.2% among insurance companies in 2018, companies continued to add to Fixed Income ETFs—especially in Low Credit ETFs (see Exhibit 48).
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Life companies have invested substantially more in Medium credit ETFs than P&C or Health companies.

Medium companies had the most conservative credit profile, while Mega and Large companies invested mostly in Medium credit ETFs.

Unlike Equity, insurance companies take a more diversified approach in their investments in Fixed Income. Life companies invested substantially more in Medium Credit ETFs than P&C or Health companies did. In terms of organizational structure, Stock companies invest more in Medium Credit and Low Credit than others. Medium companies have had the most conservative credit profile, while Mega and Large companies invested mostly in Medium Credit ETFs (see Exhibit 49).

Exhibit 49: Fixed Income Credit Allocation by Company Type, Organizational Structure, and Size

Approximately one-half of the Fixed Income ETFs held by insurance companies had a high sensitivity to interest rate movements. This is in contrast to 22% for the overall U.S. ETF market (see Exhibit 50).

**Exhibit 50: U.S. and Insurance Fixed Income ETF AUM by Interest Rate Sensitivity**

[Chart showing U.S. and Insurance Fixed Income ETF AUM by Interest Rate Sensitivity]


Except for ETFs with Limited interest rate sensitivity, AUM for all interest rate sensitivity levels declined in 2018 (see Exhibit 51).

**Exhibit 51: Fixed Income ETF AUM by Interest Rate Sensitivity**

[Chart showing Fixed Income ETF AUM by Interest Rate Sensitivity]


In spite of the decline, insurance companies continued to add shares of Fixed Income ETFs (see Exhibit 52).
In spite of the decline, insurance companies continued to add shares to Fixed Income ETFs.

By company type, Life companies had much more ETF interest rate risk than P&C or Health companies. Similarly, Stock companies had more interest rate risk in their ETFs than other companies. Mega and Large companies invested in more ETFs with Extensive interest rate risk, while Medium and Small companies were more conservative in their Fixed Income ETF investments (see Exhibit 53).

In terms of bond categories, almost all of the holdings by insurance companies remain in Corporate Fixed Income ETFs (see Exhibit 54).
These results did not vary materially by company type, size, or organizational structure.

**Exhibit 54: Fixed Income ETF AUM by Bond Category**

Systematic valuation (SV) is a book-value-like accounting treatment that has the potential to reduce income volatility in statutory filings. In 2018, 32% of companies opted to use SV for their Fixed Income ETF holdings (see Exhibit 55).

**Exhibit 55: SV Election for Fixed Income ETFs**

By bond category, 95% of all SV holdings were Corporate Fixed Income ETFs. However, only 34% of Corporate Fixed Income ETFs had an SV designation—almost the same percentage as Government ETFs (see Exhibit 56).
By bond category, only 34% of Corporate Fixed Income ETFs had an SV designation.

46% of all Medium credit ETFs had an SV designation.

By credit quality, Medium Credit ETFs had most of the assets, and about 46% of all Medium Credit ETFs had an SV designation (see Exhibit 57).

By interest rate sensitivity, ETFs with Extensive sensitivity had the highest percentage of SV holdings (see Exhibit 58).
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Exhibit 58: SV Election for Fixed Income ETFs by Interest Rate Sensitivity


Looking at these from a company perspective, we note that Life companies had most of the SV designation. Similarly, by organizational structure, Stock companies held most of the SV-designated ETFs. However, when it comes to size, companies exhibited a broader diversification in SV selection (see Exhibits 59-61).

Exhibit 59: SV Election for Fixed Income ETFs by Company Type

We also note that the use of Fixed Income ETFs and the designation of Fixed Income ETFs as SV were limited to a few states (see Exhibits 62 and 63).
ETFs in Insurance General Accounts – 2019

Exhibit 62: Geographic Distribution of Fixed Income ETFs


The use of Fixed Income ETFs and the designation of Fixed Income ETFs as SV were limited to a few states.

Exhibit 63: Geographic Distribution of Fixed Income ETFs with SV Designation

ANALYSIS OF SMART BETA ETFS

The majority of ETF investments by U.S. insurance companies were Traditional market-weighted ETFs. While about 20% of the U.S. total market invested in Smart Beta ETFs, only 12% of AUM was allotted to these alternative strategies by insurance companies (see Exhibit 64).

Exhibit 64: U.S. and Insurance ETF AUM by Smart Beta


In terms of size, Small and Medium companies invested more in Smart Beta than Large or Mega companies. P&C companies used, proportionally, twice as many Smart Beta ETFs as Life & Health companies. Similarly, the proportional use of these ETFs by Other companies is much larger than that of Stock or Mutual companies (see Exhibit 65).

Exhibit 65: Smart Beta Allocation by Company Type, Organizational Structure, and Company Size


See Appendix 1.2 for definition of Smart Beta.
While the broader U.S. market preferred the Value and Growth Smart Beta ETF categories, insurance companies preferred Dividend and Value (see Exhibit 66).

Exhibit 66: U.S. and Insurance ETF AUM by Smart Beta Category

While the broader U.S. market preferred Value and Growth Smart Beta ETFs, insurance companies preferred Dividend and Value ETFs.

Companies have significantly pulled back from the use of Smart Beta ETFs.

Absent the decline in Smart Beta ETFs, the use of ETFs by insurance companies grew on ETF AUM and share bases.

However, companies have significantly pulled back from the use of Smart Beta ETFs. In fact, absent the decline in Smart Beta ETFs, the use of ETFs by insurance companies grew on both an AUM and share basis (see Exhibit 67).

Exhibit 67: CAGR of Insurance ETF AUM and Shares by Smart Beta

Absent the decline in Smart Beta ETFs, the use of ETFs by insurance companies grew on ETF AUM and share bases.

This is in stark contrast to the non-insurance U.S. ETF market, where growth rates for AUM and shares of Smart Beta ETFs have outperformed those of market-weighted ETFs (see Exhibit 68).
Nor does it seem that a particular part of the industry discriminates against Smart Beta. In Exhibit 69, we see that all types of insurance companies reduced their use of Smart Beta ETFs in the past year. A similar analysis for organizational structure or size would yield similar results.

We also see that the insurance industry is moving from Smart Beta in all categories except for those with the least allocation (see Exhibit 70). Reasons why the insurance industry behaves differently from the broader U.S. ETF market deserves further industry analysis.
We see that the insurance industry is moving from Smart Beta in all categories except for those with the least allocation.

<table>
<thead>
<tr>
<th>SMART BETA CATEGORY</th>
<th>2017 AUM</th>
<th>ONE-YEAR GROWTH (%)</th>
<th>2018 AUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dividend</td>
<td>1,216,640,021</td>
<td>-21.03</td>
<td>960,812,606</td>
</tr>
<tr>
<td>Value</td>
<td>925,372,212</td>
<td>-21.45</td>
<td>726,859,047</td>
</tr>
<tr>
<td>Multi-Factor</td>
<td>615,231,284</td>
<td>-58.04</td>
<td>258,161,760</td>
</tr>
<tr>
<td>Growth</td>
<td>560,014,821</td>
<td>-22.49</td>
<td>434,072,294</td>
</tr>
<tr>
<td>Risk-Oriented</td>
<td>428,945,853</td>
<td>-34.88</td>
<td>279,341,639</td>
</tr>
<tr>
<td>Fundamentals</td>
<td>389,630,465</td>
<td>-22.27</td>
<td>302,842,663</td>
</tr>
<tr>
<td>Momentum</td>
<td>74,943,987</td>
<td>3.97</td>
<td>77,920,199</td>
</tr>
<tr>
<td>Quality</td>
<td>11,586,502</td>
<td>719.71</td>
<td>94,975,796</td>
</tr>
<tr>
<td>Other</td>
<td>191,190,094</td>
<td>-66.51</td>
<td>64,024,667</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>4,413,555,239</strong></td>
<td><strong>-27.52</strong></td>
<td><strong>3,199,010,671</strong></td>
</tr>
</tbody>
</table>

Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2018. Table is provided for illustrative purposes.

**MISCELLANEOUS ANALYSIS**

U.S. insurance companies barely invested in any ETFs tagged as Sustainable by Morningstar (see Exhibit 71). However, they did invest 0.41% in Sustainable ETFs versus 0.16% for the U.S. ETF market—2.5 times more.

**Exhibit 71: Sustainable ETF Investments**

U.S. insurance companies barely invested in any ETFs tagged as Sustainable by Morningstar.

Overall, the use of ETFs by insurance companies remained concentrated in several states. Five states held the majority of insurance ETF AUM. However, the use of ETFs is more geographically diversified than before. The only state with no insurance companies using ETFs was New Mexico (see Exhibit 72).

Exhibit 72: Geographic Distribution of ETF Investments

The use of ETFs varied by type of insurance company, as well as type of ETF (see Exhibits 73 and 74).
Geographic distribution of ETF investments also varied by company type.

<table>
<thead>
<tr>
<th>ASSET CLASS</th>
<th>GEOGRAPHIC DISTRIBUTION OF ETF INVESTMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equity</td>
<td>![Map of Equity distribution]</td>
</tr>
<tr>
<td>Fixed Income</td>
<td>![Map of Fixed Income distribution]</td>
</tr>
<tr>
<td>Other</td>
<td>![Map of Other distribution]</td>
</tr>
</tbody>
</table>


Geographic distribution varied by asset class.
APPENDIX 1: METHODOLOGY

The National Association of Insurance Commissioners (NAIC) requires all U.S. insurance companies to file an annual statement with state regulators. This filing includes a detailed holdings list of all securities held by insurance companies. S&P Global Market Intelligence (SPGMI) compiles this data from the NAIC and makes it available in a usable format. We use this database to extract all insurance ETF holdings, both current and historical. In addition, Morningstar, an ETF data and analytics company, provides a list of U.S. ETFs, as well as characteristics of each ETF—such as asset class, stock strategy, bond credit quality, etc. We combine Morningstar ETF classifications with SPGMI statutory filing data to gain insight into how insurance companies use ETFs.

Appendix 1.1: S&P Global Market Intelligence Data

For all U.S. insurance companies, we used NAIC data as compiled by SPGMI. U.S. insurance companies filed the data with the NAIC at the end of February 2019. SPGMI retrieved the data and loaded it into its database. The completeness of the database depended on the timeliness of SPGMI receiving the data from the NAIC and the amount of quality control SPGMI performs. To get timely yet complete information, we retrieved the data for this analysis on April 15, 2019.

The SPGMI database contains data on operating companies, as well as acquired or defunct companies. In prior reports, we analyzed data on only companies active as of the year’s end. For this report, we also analyzed data for historical entities. We changed our methodology to see if any companies that are no longer operating held ETFs in the past.

The SPGMI database contains 7,448 individual companies, of which 4,498 are currently operating. Most of these individual companies were part of a larger group. However, 3,121 of these companies were standalone companies. The remaining 4,327 companies belonged to one of 622 groups. For the purpose of this analysis, we referred to “companies” as the combination of stand-alone companies and the groups. This provided a universe of 3,743 companies, of which 1,950 are currently operating (see Exhibit 75).

<table>
<thead>
<tr>
<th>TYPE OF COMPANY</th>
<th>INDIVIDUAL COMPANIES</th>
<th>STAND-ALONE COMPANIES</th>
<th>COMPANIES PART OF GROUP</th>
<th>GROUPS OF COMPANIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health</td>
<td>1,787</td>
<td>590</td>
<td>1,197</td>
<td>152</td>
</tr>
<tr>
<td>Life</td>
<td>1,698</td>
<td>815</td>
<td>883</td>
<td>148</td>
</tr>
<tr>
<td>P&amp;C</td>
<td>3,963</td>
<td>1,716</td>
<td>2,247</td>
<td>322</td>
</tr>
<tr>
<td>Total</td>
<td>7,448</td>
<td>3,121</td>
<td>4,327</td>
<td>622</td>
</tr>
</tbody>
</table>

Total Stand-Alone Companies Plus Groups 3,743
Operating Stand-Alone Companies Plus Groups 1,950

Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2018. Table is provided for illustrative purposes.

It is possible that some companies have not filed their financials, or that the NAIC has not reported these to SPGMI, or that data had not made it into the SPGMI database by April 15, 2019. To test for completeness of the data, we compared the assets screened for companies that reported assets in 2017 but did not have assets in 2018. Of the 4,498 operating companies in the database, 51 companies reported assets in 2017 but not in 2018. These represent only 0.07% of total admitted
assets\textsuperscript{13} (see Exhibit 76). Thus, we concluded that the database fully represents the holdings of the industry.

<table>
<thead>
<tr>
<th>TYPE OF COMPANY</th>
<th>NUMBER OF COMPANIES</th>
<th>ADMITTED ASSETS (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health</td>
<td>22</td>
<td>0.01</td>
</tr>
<tr>
<td>Life</td>
<td>5</td>
<td>0.03</td>
</tr>
<tr>
<td>P&amp;C</td>
<td>24</td>
<td>0.03</td>
</tr>
<tr>
<td>Total</td>
<td>51</td>
<td>0.07</td>
</tr>
</tbody>
</table>

Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2018. Table is provided for illustrative purposes.

As of December 2018, the U.S. insurance industry had USD 6.3 trillion in admitted assets. While the amount in non-operating companies in 2018 was trivial, these companies represented up to 15\% of total assets in 2003 (see Exhibit 77).

<table>
<thead>
<tr>
<th>Year</th>
<th>Operating</th>
<th>Historical</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003</td>
<td></td>
<td>0.7</td>
<td>0.7</td>
</tr>
<tr>
<td>2004</td>
<td>3.2</td>
<td>3.2</td>
<td>3.2</td>
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</tr>
<tr>
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<td>7.2</td>
<td>7.2</td>
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<tr>
<td>2018</td>
<td>8.4</td>
<td>8.4</td>
<td>8.4</td>
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</tbody>
</table>


For the insurance industry, admitted assets grew by 1.2\% in 2018. This is a slightly lower annual growth rate than those over longer periods (see Exhibit 78).

\textsuperscript{13} We pulled admitted assets from Page 2, Row 12, Column 3 of statutory filings. This is defined as the sum of lines relating to bonds, stocks, mortgage loans on real estate, real estate, cash-related investments, contract loans, invested assets, write-ins, and receivable for securities. Excludes any valuation allowance. Net admitted assets exclude assets for which the state does not allow the company to take credit.
Exhibit 78: CAGR of Admitted Assets


SPGMI classifies companies in various ways. For companies that are members of a group, we classify all companies the same way as a group. For example, if a group contains individual companies of various ownership structures (Stock, Reciprocal Exchange, Lloyd’s Syndicate, etc.), the group might be classified as a Stock company. For this analysis, we assign the ownership structure of the parent organization to all the subsidiaries. This is a change from prior years.

However, there is one exception. SPGMI will not combine companies across different types of business. Thus, a large multi-national company that has both Life and P&C business will be given a separate listing for the Life group and the P&C group by SPGMI.

We segregated the companies by size, based on their admitted assets, as of Dec. 31, 2018.

- Small: Admitted Assets < USD 500 million
- Medium: USD 500 million ≤ Admitted Assets < USD 5 billion
- Large: USD 5 billion ≤ Admitted Assets < USD 50 billion
- Mega: Admitted Assets ≥ USD 50 billion

Over the past 16 years, admitted assets have been concentrated in Mega companies. As of 2018, Mega companies represented 62% of all the industry’s admitted assets (see Exhibit 79).

Exhibit 79: Admitted Assets by Company Size


SPGMI classifies the ownership of each company in 16 different ways; we condensed this into three ownership types.
- Stock: Stock Companies
- Mutual: Mutual Companies
- Other: BC/BS Not for Profit; BC/BS Stock; Fraternal; Hospital, Medical, and Dental Service or Indemnity Corp; Limited Liability Corporation; Lloyd’s Organization; Non-Profit; Partnership (All Types); Proprietorship; Reciprocal Exchange; Risk Retention Group; Syndicate; U.S. Branch of Alien Insurer; Other

Stock companies held the vast majority of admitted assets with Mutual companies holding just 22% of admitted assets (see Exhibit 80).

**Exhibit 80: Admitted Assets by Company Type**

![Chart illustrating admitted assets by company type]


SPGMI data also allows us to classify companies by business focus. For compactness, we grouped the data differently from SPGMI.

**Exhibit 81: Number of Companies by Business Focus**

<table>
<thead>
<tr>
<th>LIFE COMPANIES</th>
<th>NUMBER OF COMPANIES</th>
<th>P&amp;C COMPANIES</th>
<th>NUMBER OF COMPANIES</th>
<th>HEALTH COMPANIES</th>
<th>NUMBER OF COMPANIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annuity Focus</td>
<td>269</td>
<td>Personal Lines Focus</td>
<td>1075</td>
<td>Comprehensive Health</td>
<td>786</td>
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<tr>
<td>Individual Life Focus</td>
<td>229</td>
<td>P&amp;C Minimum NPW</td>
<td>585</td>
<td>Medicare Provider</td>
<td>239</td>
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<tr>
<td>Specialty Accident &amp; Health (A&amp;H) Focus</td>
<td>147</td>
<td>Commercial Lines Focus</td>
<td>534</td>
<td>Dental/Vision</td>
<td>205</td>
</tr>
<tr>
<td>Life Minimum NPW</td>
<td>136</td>
<td>Commercial Property Focus</td>
<td>469</td>
<td>Health Minimum NPW</td>
<td>184</td>
</tr>
<tr>
<td>Group A&amp;H Focus</td>
<td>122</td>
<td>Commercial Medical Malpractice Focus</td>
<td>234</td>
<td>Medicaid Provider</td>
<td>176</td>
</tr>
<tr>
<td>Life and Annuities Focus</td>
<td>103</td>
<td>Commercial Workers Compensation Focus</td>
<td>225</td>
<td>Health-Other Focus</td>
<td>53</td>
</tr>
<tr>
<td>Life Insurance Focus</td>
<td>84</td>
<td>Commercial General Liability Focus</td>
<td>131</td>
<td>Other Health</td>
<td>144</td>
</tr>
<tr>
<td>Credit Insurance Focus</td>
<td>56</td>
<td>Commercial Financial Lines Focus</td>
<td>119</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Individual Life and A&amp;H Focus</td>
<td>49</td>
<td>Large Reinsurance Focus</td>
<td>84</td>
<td></td>
<td></td>
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<tr>
<td>Annuity and A&amp;H Focus</td>
<td>32</td>
<td>Accident &amp; Health Lines Focus</td>
<td>21</td>
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<tr>
<td>Life and A&amp;H Focus</td>
<td>12</td>
<td>Reinsurance Focus</td>
<td>19</td>
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<tr>
<td>Other Life</td>
<td>459</td>
<td>Personal Property Focus</td>
<td>1</td>
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<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other P&amp;C</td>
<td>466</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1698</strong></td>
<td><strong>Total</strong></td>
<td><strong>3963</strong></td>
<td><strong>Total</strong></td>
<td><strong>1787</strong></td>
</tr>
</tbody>
</table>

Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2018. Table is provided for illustrative purposes.
As Exhibit 81 shows, SPGMI has 12 classifications for Life companies; we collapsed these into five groups:

- **Annuity**: Annuity Focus and Annuity and A&H Focus
- **Life**: Individual Life Focus, Life Insurance Focus, and Life Minimum NPW
- **Life & Health**: Life and A&H Focus, Group A&H Focus, Specialty A&H Focus, and Individual Life and A&H Focus
- **Life & Annuities**: Life & Annuities Focus
- **Other**: Credit Insurance Focus and Other Life

For Life insurance companies, Annuity companies have approximately one-half of the admitted assets (see Exhibit 82).

**Exhibit 82: Life Admitted Assets by Business Focus**

SPGMI has 13 classifications for P&C companies (see Exhibit 81). We collapsed these into four groups:

- **Commercial**: Commercial Financial Lines Focus, Commercial General Liability Focus, Commercial Lines Focus, Commercial Medical Malpractice Focus, Commercial Property Focus, and Commercial Workers Compensation Focus
- **Personal**: Personal Lines Focus and Personal Property Focus
- **Reinsurance**: Large Reinsurance Focus and Reinsurance Focus
- **Other**: Accident & Health Lines Focus, P&C Minimum NPW, and Other P&C

Commercial and Personal companies have approximately the same amount of assets (see Exhibit 83).
Exhibit 83: P&C Admitted Assets by Business Focus

As shown in Exhibit 81, Health companies had seven areas of business focus, which we collapsed into four groups.

- **Comprehensive Health:** Comprehensive Health
- **Dental/Vision:** Dental/Vision
- **Medicaid/Medicare:** Medicaid Provider and Medicare Provider
- **Other:** Health-Other Focus, Health Minimum NPW, and Other Health

Comprehensive Health companies had a clear majority of the Health admitted assets (see Exhibit 84).

Exhibit 84: Health Admitted Assets by Business Focus

From the SPGMI database, we extracted a list of all ETFs held by insurance companies. We did this by matching both the tickers and CUSIP numbers of the holdings against a master ETF list. Where the
CUSIP and ticker numbers do not both match exactly, we employed a manual method to identify the correct ETF. In spite of error-checking, insurance companies did not always file complete or correct information. In as much as the underlying data had errors, this analysis contains errors.

**Appendix 1.2: Morningstar Data**

In prior years, we used First Bridge as a source of data about ETFs. This year, we changed data providers to Morningstar. This is the third major change in the analysis from prior years. To the extent that some of the data is different between the two sources, the analyses have inconsistencies. As before, we assume accuracy and completeness of the data from Morningstar. This database, as of year-end 2018, contained 2,319 ETFs representing USD 3.398 trillion. We note that U.S. insurance companies did not invest in a vast majority of these ETFs.

The U.S. ETF market grew consistently since the financial crisis, but for the first time since 2008, ETF AUM declined. However, the number of ETF shares continued to increase (see Exhibit 85).

**Exhibit 85: U.S. ETF AUM and Shares**

As we see in Exhibit 86, except for the one-year period, the CAGR for AUM exceeded the growth rate of shares for all time periods.
Often, Morningstar data is more granular than required for this analysis. In the field “Global Broad Category Group,” Morningstar contains six asset classes. For this analysis, we kept Fixed Income and Equity and combined Asset Allocation, Alternative, and Commodities in Other. Most of the AUM and ETFs in the U.S. market are currently in Equity funds (see Exhibit 87).

**Exhibit 87: Equity ETFs by Asset Class**


Using Morningstar’s U.S. category, we classified the Equity ETFs into three groups (see Exhibit 88).
Morningstar also produces an iconic grid classifying funds by market cap and investment style. As expected, most of the assets are Large Cap and Blend (see Exhibit 89).

Morningstar classifies sector funds into 18 buckets. We mapped these into the standard S&P 500® sectors:

- Communication Services: Communications
- Consumer Discretionary: Consumer Cyclical
- Consumer Staples: Consumer Defensive
- Energy: Domestic Energy, World Energy
- Financials: Domestic Financial, World Financial
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- Health Care: Health Care
- Industrials: Industrials
- Information Technology: Technology
- Materials: Materials, Precious Metals, Commodities Agriculture
- Real Estate: Domestic Real Estate, Foreign Real Estate, Infrastructure, World Real Estate
- Utilities: Utilities

Exhibit 90 shows the allocation of the U.S. market for these ETFs.

**Exhibit 90: Sector ETF AUM by Sector Category**


For fixed income, Morningstar has 25 categories. We compressed these into four types:


As shown in Exhibit 91, most of the Fixed Income ETF AUM was in Corporate ETFs.
Exhibit 91: Fixed Income ETFs by Category


Morningstar also has a matrix for Fixed Income with credit and interest rate sensitivity as the axes. As we see in Exhibit 92, most of the fixed income ETF AUM was in high credit and moderate interest rate risk.

Exhibit 92: Fixed Income ETFs by Credit and Interest Rate Sensitivity


Even though the overall AUM number declined, we see that Fixed Income ETF AUM actually increased in 2018. On a share basis, all asset types increased in 2018 and all other rolling periods (see Exhibit 93).
Most ETFs, in number and AUM, are market-capitalization weighted. Index providers and ETF sponsors have created new indices and ETFs that formulaically model some of the methodology of active managers. The earliest attempt classified stocks by their price to earnings (P/E) ratio. A “Value” bucket contained low P/E stocks, while a “Growth” bucket contained stocks with a high P/E ratio. The industry called these new classifications “Smart Beta,” or “Strategic Beta” in Morningstar terminology.

Fortunately, Morningstar has a field to identify Smart Beta ETFs. About 20% of U.S. ETF AUM is Smart Beta. This also shows that most of the Smart Beta funds are Equity funds (see Exhibit 94).

In prior reports, we constructed a Smart Beta measure using various inputs. Going forward, we will use Morningstar classifications. Exhibit 95 shows the various classifications of Smart Beta. Morningstar
has 11 Smart Beta classifications. We combined Fixed Income, Commodities and Other into a single “Other” classification.

Exhibit 95: ETF AUM by Smart Beta Group


Morningstar also identifies ETFs with a sustainable investment mandate. However, only 0.16% of U.S. ETFs have a Sustainability tag (see Exhibit 96).

Exhibit 96: ETF AUM by Sustainability

APPENDIX 2: LINEAR REGRESSION OF ETF AUM GROWTH & SHARE GROWTH

To model the growth of ETF AUM, we applied a linear regression to the data (see Exhibit 97).

Exhibit 97: Linear Regression of ln(ETF AUM)


Based on the data, the following equation shows the trend of ETF AUM as a function of year.

\[ \ln(\text{ETF AUM}) = 0.1383 \times \text{Year} - 255.0386 \]

This model had a coefficient of determination of 95.16%. The coefficient of determination explains how well the model explains the actual results. This value can range from 0% to 100%. A value of 0% implies that the independent variable (year) cannot explain the dependent variable (AUM). A value of 100% implies that the model explains the dependent variable exactly. Using this model, we can estimate future AUM, assuming the growth continues according to the historical trend.

We performed a similar exercise with the number of shares held by insurance companies (see Exhibit 98).

Exhibit 98: Linear Regression of ln(ETF Shares)


Based on the data, the following equation shows the trend of ETF shares as a function of year.

\[ \ln(\text{ETF Shares}) = 0.1331 \times \text{Year} - 255.9009 \]

This model has a coefficient of determination of 95.52%. We can use this model to estimate future share growth, assuming growth continues according to its historical trend.
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