

ETFs in Insurance General Accounts – 2021

Contributor

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INTRODUCTION

After a chaotic start to the year, U.S. insurance companies added USD 4 billion to exchange-traded funds (ETFs) to their general account portfolios in 2020. By year-end 2020, U.S. insurers increased their ETF AUM by 18% from 2019. Life companies, in particular, returned to the market and purchased large amounts of ETFs. In spite of, or because of, the volatility in the bond market, insurance companies had strong flows into Fixed Income ETFs, adding USD 5 billion in 2020.

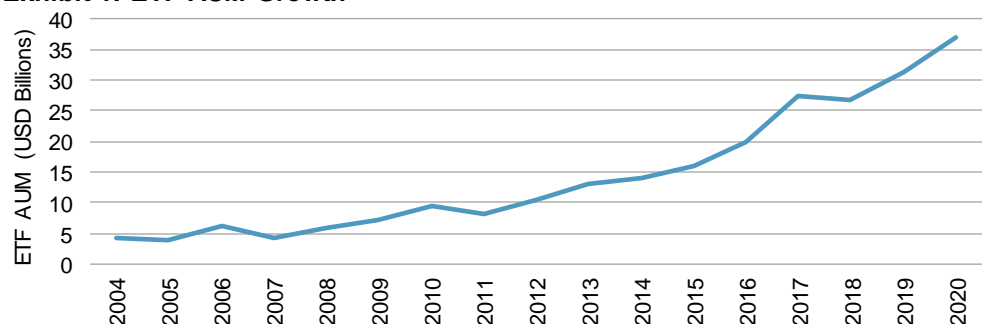
In our sixth annual study of ETF usage in U.S. insurance general accounts, for the first time we analyzed the trading of ETFs by insurance companies (see page 37) in addition to the holding analysis. In 2020, insurance companies traded USD 63 billion in ETFs, representing a 10% growth over 2019's trade volume. On average, insurance companies traded twice as many ETFs during the year as they held at the beginning of the year. Certain categories have substantially higher trade ratios. We also noted interesting observations about the size of insurance company trades.

HOLDING ANALYSIS

Overview

As of year-end 2020, U.S. insurance companies invested USD 36.9 billion in ETFs. This represented only a tiny fraction of the USD 5.5 trillion in U.S. ETF AUM and an even smaller portion of the USD 7.2 trillion in invested assets of U.S. insurance companies. Exhibit 1 shows the use of ETFs by U.S. insurance companies over the past 17 years.

Exhibit 1: ETF AUM Growth



Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

As of year-end 2020, U.S. insurance companies invested USD 36.9 billion in ETFs, a small portion of the USD 7.1 trillion in U.S. insurance assets.

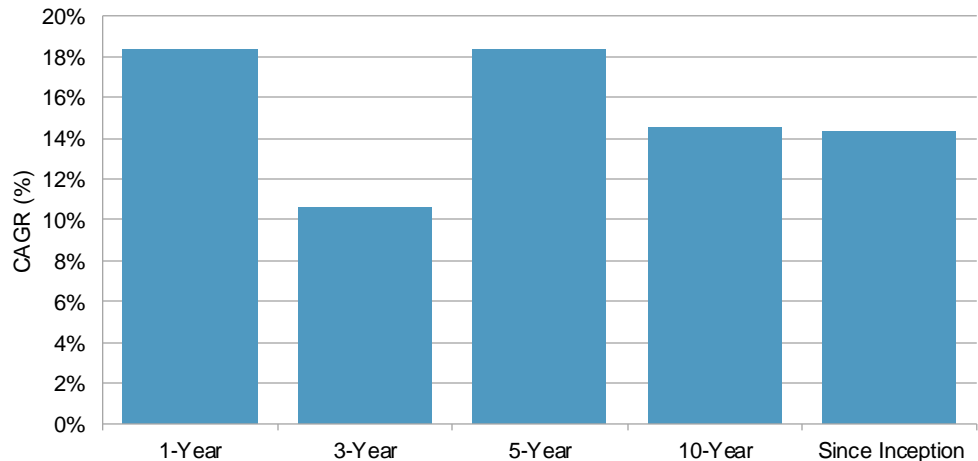
In 2020, ETF usage by insurance companies increased by 18.4%, slightly faster than the 16.0% rate in 2019.

The growth rate implies a doubling of ETF AUM roughly every four to five years.

In 2019, the number of ETF shares held by insurance companies declined for the first time in 12 years, but in 2020, it increased by 8.5%.

In 2020, ETF usage by insurance companies increased 18.4%; this is a slightly higher rate than the 16.0% increase in 2019. The growth rate has remained consistent since 2004, when insurance companies began investing in ETFs (see Exhibit 2). This growth rate implies a doubling of ETF AUM roughly every four to five years (see Exhibit 3).

Exhibit 2: CAGR of ETF AUM



Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

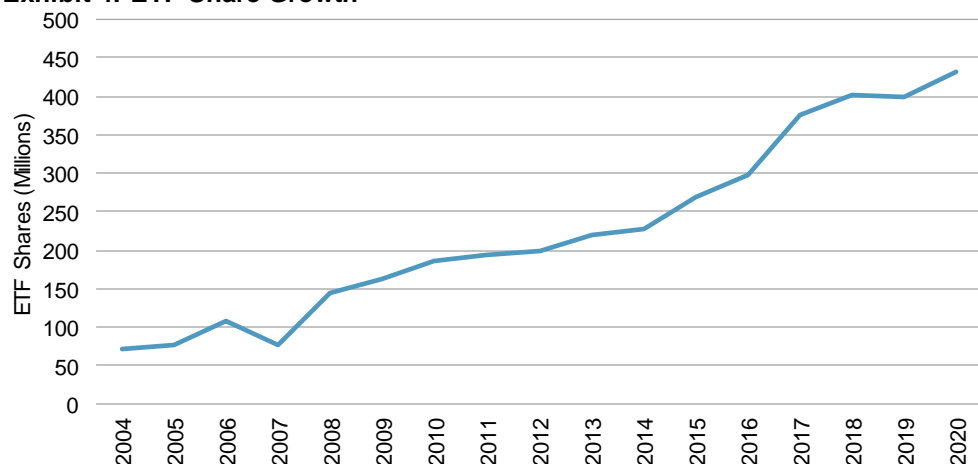
Exhibit 3: ETF AUM Doubling Period

CHARACTERISTIC	1-YEAR	3-YEAR	5-YEAR	10-YEAR	SINCE INCEPTION
CAGR (%)	18.4	10.6	18.4	14.6	14.4
Doubling Period	4.1	6.9	4.1	5.1	5.2

Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Table is provided for illustrative purposes.

In 2019, the number of ETF shares held by insurance companies declined for the first time in 12 years, but in 2020, the number of shares held increased by 8.5% (see Exhibit 4).

Exhibit 4: ETF Share Growth

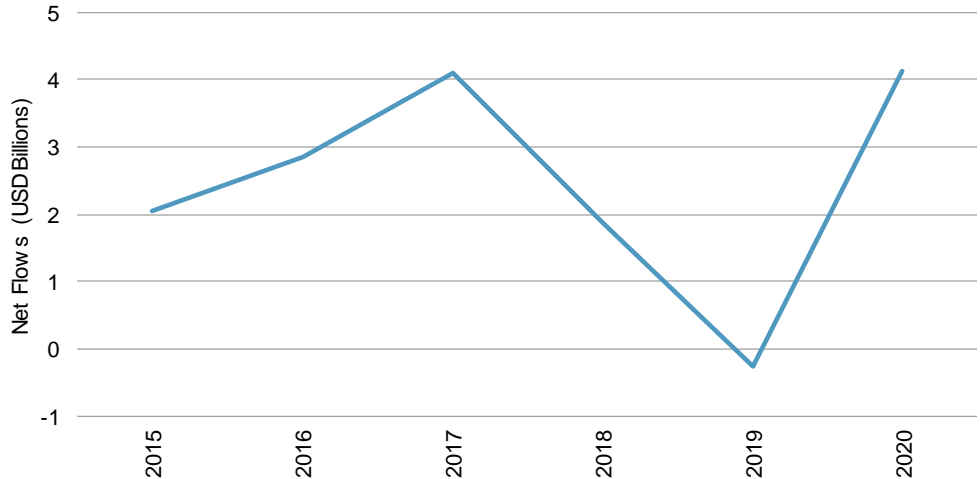


Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

For the first time, we also extracted trading data filed by insurance companies. Consistent with the numbers above, the trading analysis showed U.S. insurance companies added USD 4.1 billion to U.S. ETFs (see Exhibit 5).

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Exhibit 5: ETF Net Flows

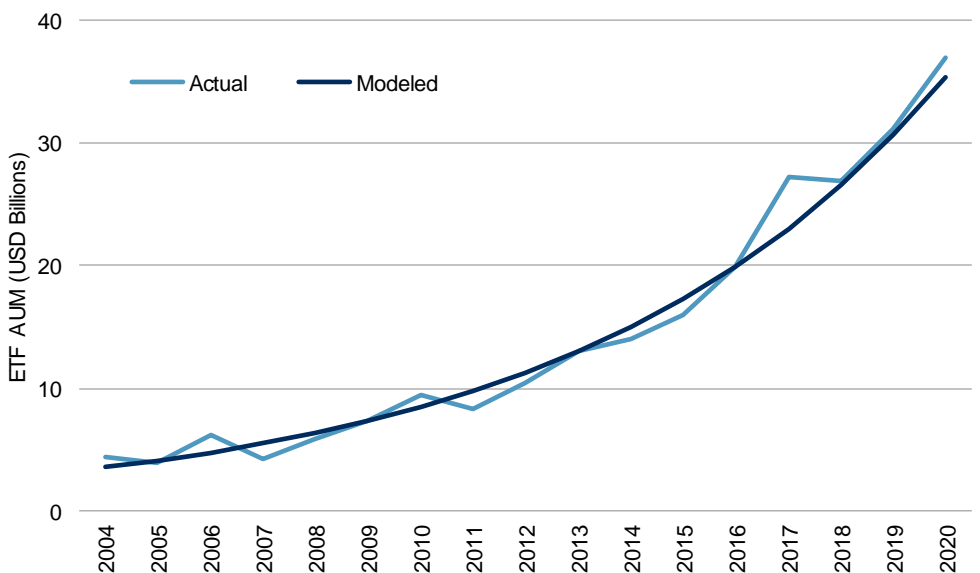


Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

We used linear regression to model the growth of ETF AUM and shares in insurance general accounts.

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Exhibit 6: Actual and Modeled ETF AUM

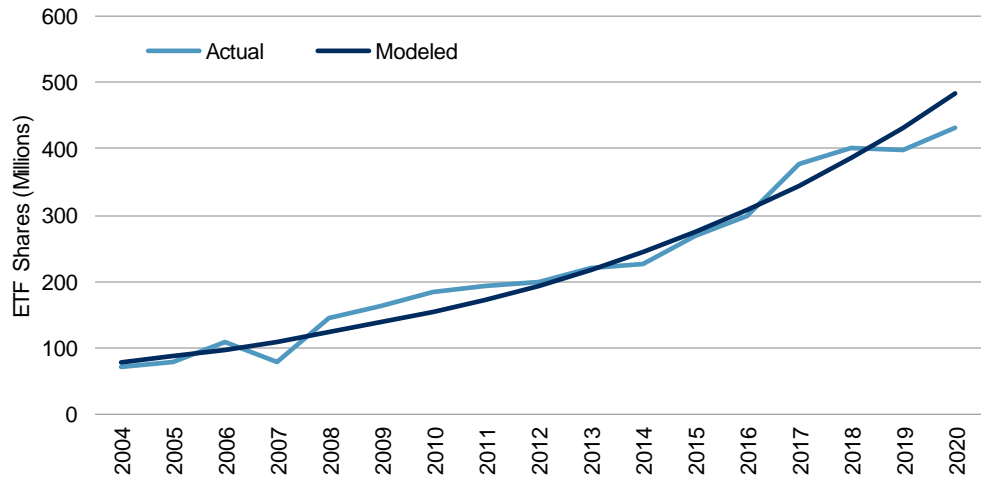


Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

These models accurately fit the historical growth of ETFs by insurance companies.

¹ See Appendix 2.

Exhibit 7: Actual and Modeled ETF Shares

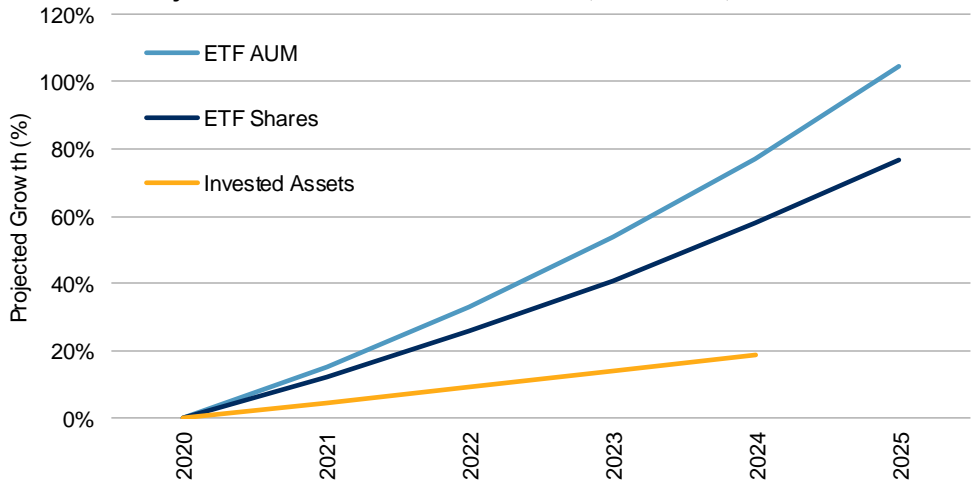


Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

If insurance companies continue to invest according to the trend, the use of ETFs by insurance companies could, once again, almost double in five years...

We used these regression models to estimate the trended growth of ETFs. If insurance companies continue to invest according to the trend, the use of ETFs by insurance companies could, once again, almost double in five years. This growth is substantially faster than the expected growth of invested assets² (see Exhibit 8).

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



Source: NAIC via S&P Global Market Intelligence and Cerulli Associates. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

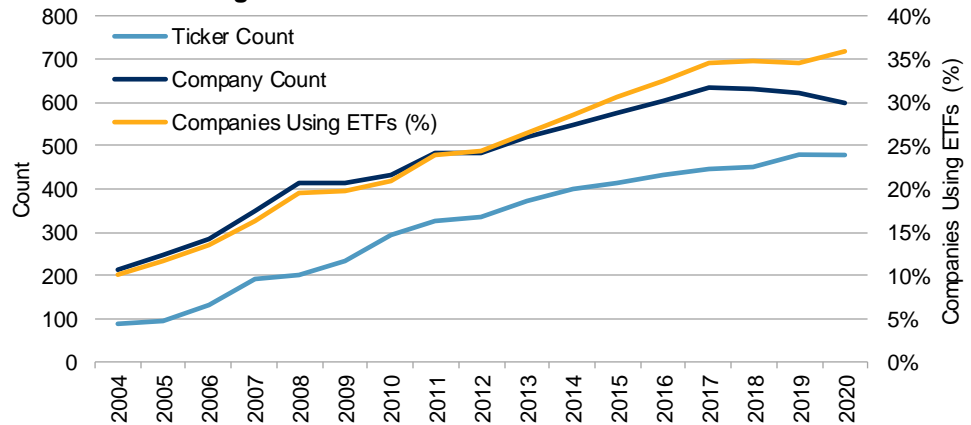
...which is substantially faster than the expected growth of invested assets.

² [“U.S. Insurance General Accounts 2020: Finding Solutions Outside the Core.”](#) Cerulli Associates, p. 35.

In 2020, insurance companies invested in 478 different ETFs. As the number of operating insurance companies has declined, the number of insurance companies using ETFs has also declined. However, as a percentage of operating companies, the number of insurers using ETFs increased to a record 36% (see Exhibit 9).

Exhibit 9: ETF Usage

As a percentage of operating companies, the number of insurers using ETFs increased to a record 36%.



Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

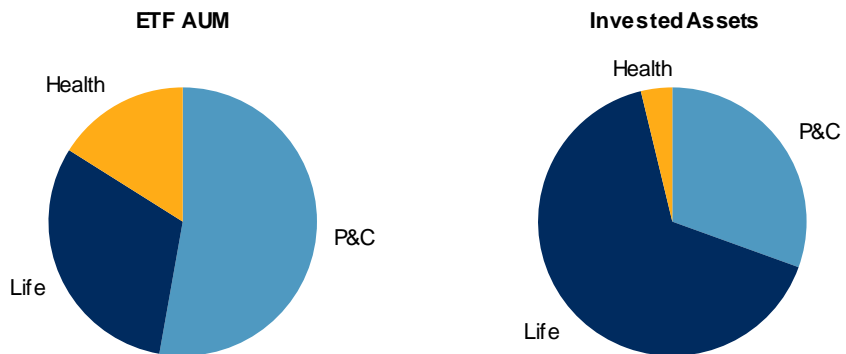
ANALYSIS BY COMPANY TYPE, SIZE, AND OWNERSHIP STRUCTURE

In this section, we analyzed the use of ETFs by different groupings of insurance companies. In particular, we looked at whether company size, type of insurance, or ownership structure affect the use of ETFs by insurance companies.³

Life companies had more invested assets, but P&C companies invested more in ETFs (see Exhibit 10).

Exhibit 10: ETF AUM and Invested Assets by Company Type

Life companies had more invested assets, but P&C companies invested more in ETFs.



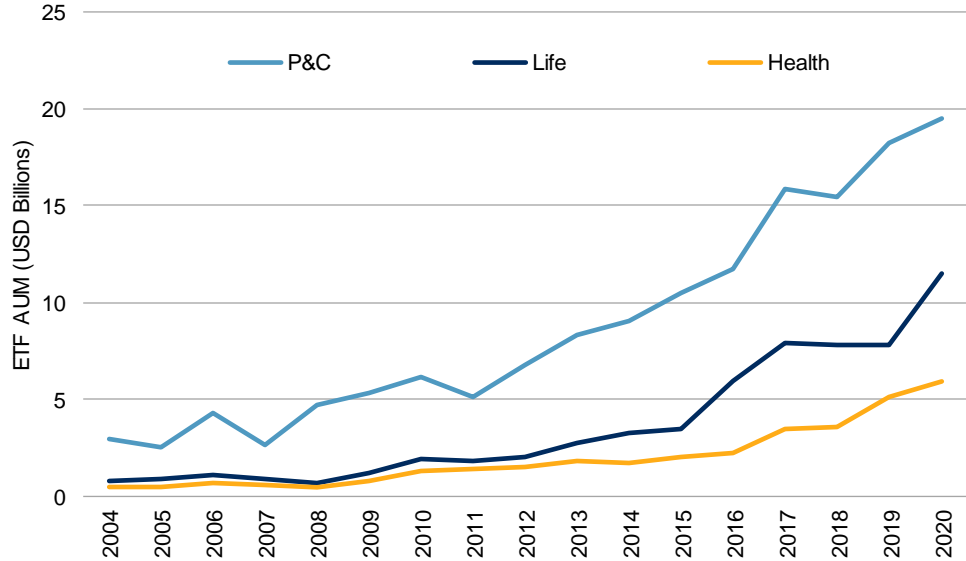
Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Charts are provided for illustrative purposes.

³ See Appendix 1.1 for definitions of size and ownership structure.

While all three types of insurance companies grew their ETF assets, Life companies grew their ETF holdings by almost 50% in 2020 (see Exhibit 11).

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Exhibit 11: ETF AUM Growth by Company Type

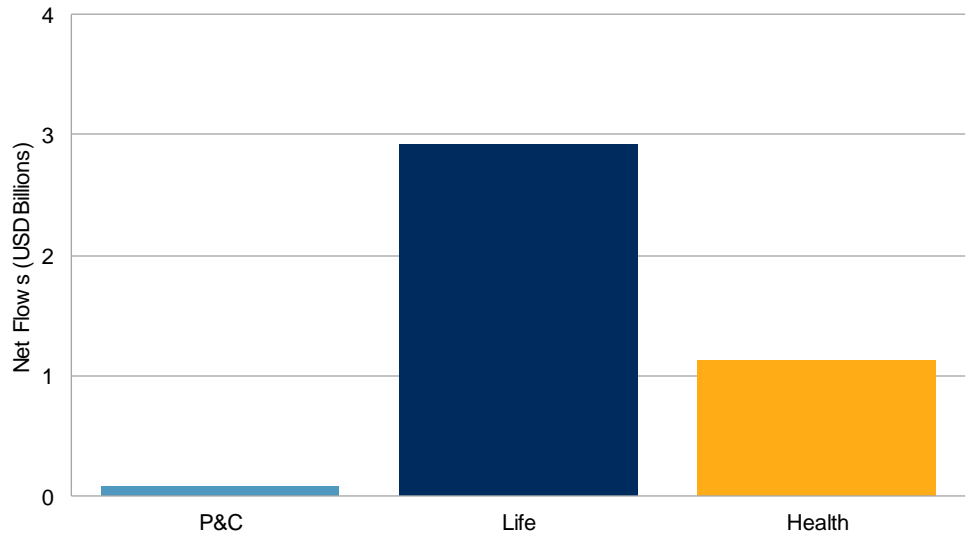


Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

An infusion of USD 2.9 billion by Life companies drove the increase in AUM (see Exhibit 12).

An infusion of USD 2.9 billion by Life companies drove the increase in ETF AUM.

Exhibit 12: Net Flows by Company Type

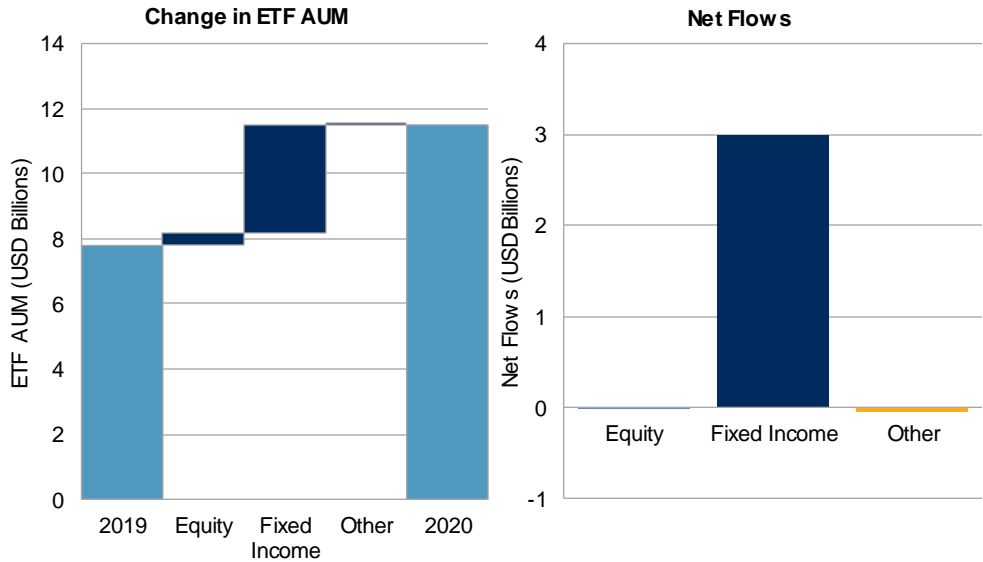


Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

In terms of the change in ETF AUM and net flows, the increase in Life ETF usage was concentrated in Fixed Income ETFs (see Exhibit 13).

Exhibit 13: Change in ETF AUM and ETF Net Flows by Life Companies

Fixed Income ETFs drove usage in Life insurance.

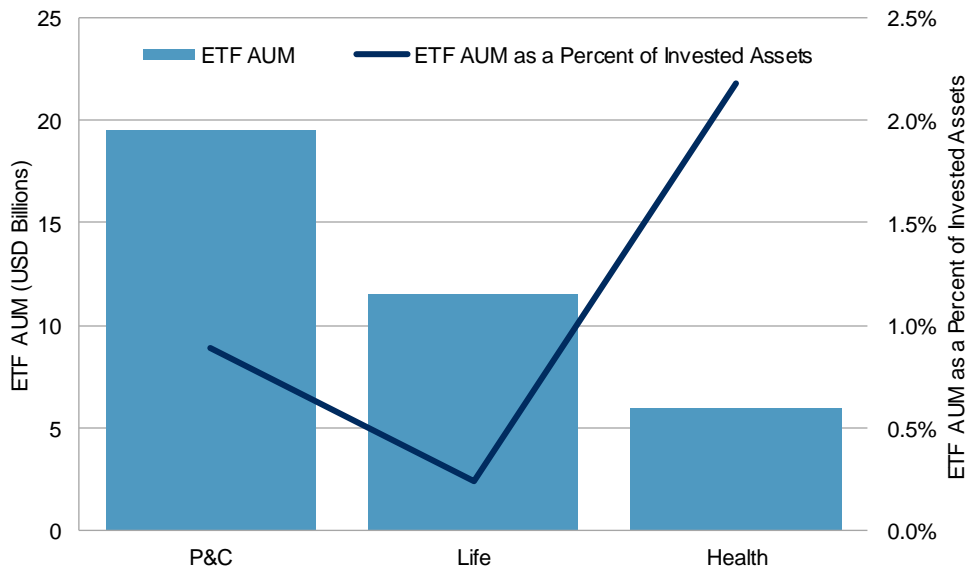


Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Charts are provided for illustrative purposes.

In spite of the increase in ETF usage by Life companies, Health companies still held the most ETFs as a percentage of invested assets (see Exhibit 14).

Exhibit 14: ETF AUM and ETF AUM as a Percentage of Invested Assets by Company Type

In spite of this ETF usage increase by Life companies, Health companies still held the most ETFs as a percentage of invested assets.

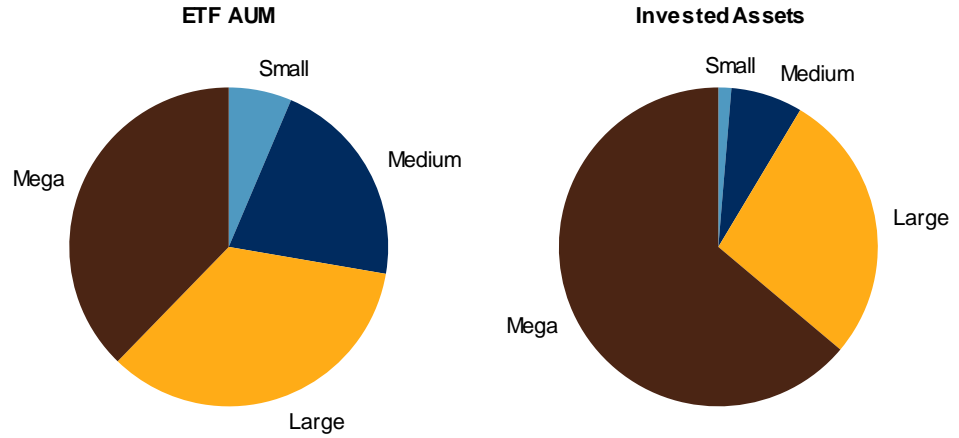


Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

Mega insurance companies owned most of the insurance invested assets but held only about one-third of the ETF AUM held by insurance companies (see Exhibit 15).

Exhibit 15: ETF AUM and Invested Assets by Company Size

Mega companies owned most of the insurance invested assets but held only about one-third of the ETF AUM held by insurance companies.

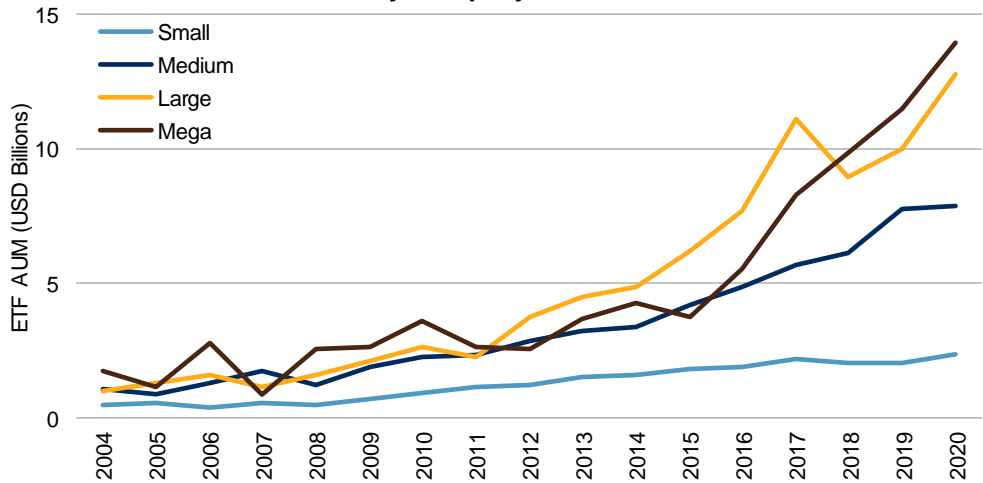


Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Charts are provided for illustrative purposes.

Since 2015, Mega insurance companies have steadily increased their allocation to ETFs. Over the past five years, they have increased ETF AUM by 30% each year (see Exhibits 16 and 17). While companies of all sizes have increased their use of ETFs, Medium companies added the least in 2020.

Exhibit 16: ETF AUM Growth by Company Size

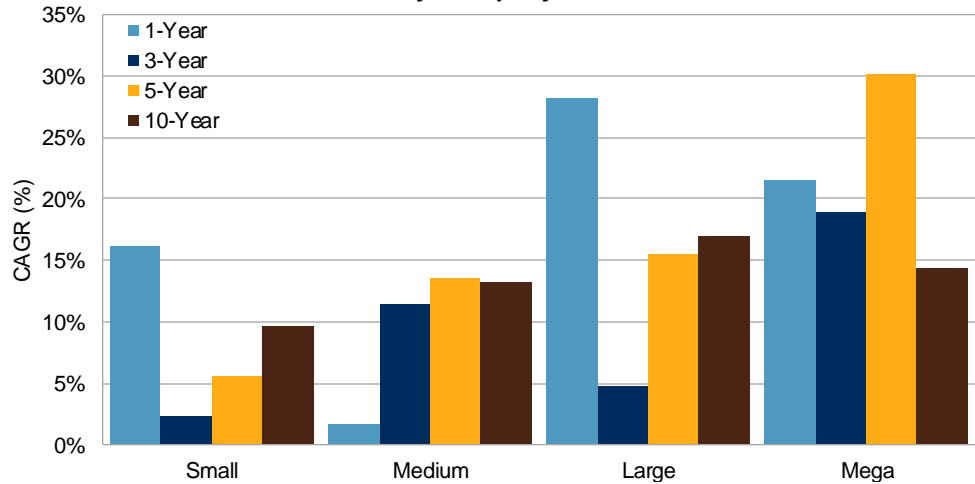
While companies of all sizes have increased their use of ETFs, Medium companies added the least in 2020.



Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

Exhibit 17: CAGR for ETF AUM by Company Size

Over the past five years, Mega insurance companies have increased ETF AUM by 30% each year.

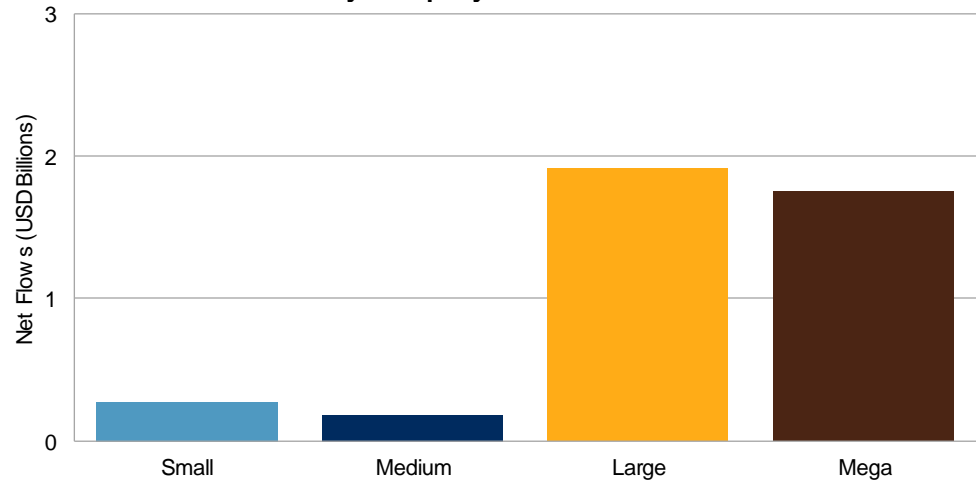


Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

Large net flows into ETFs from Large and Mega insurance companies drove the growth in ETF usage (see Exhibit 18).

Exhibit 18: ETF Net Flows by Company Size

Large net flows into ETFs from Large and Mega insurance companies drove the growth in ETF usage.

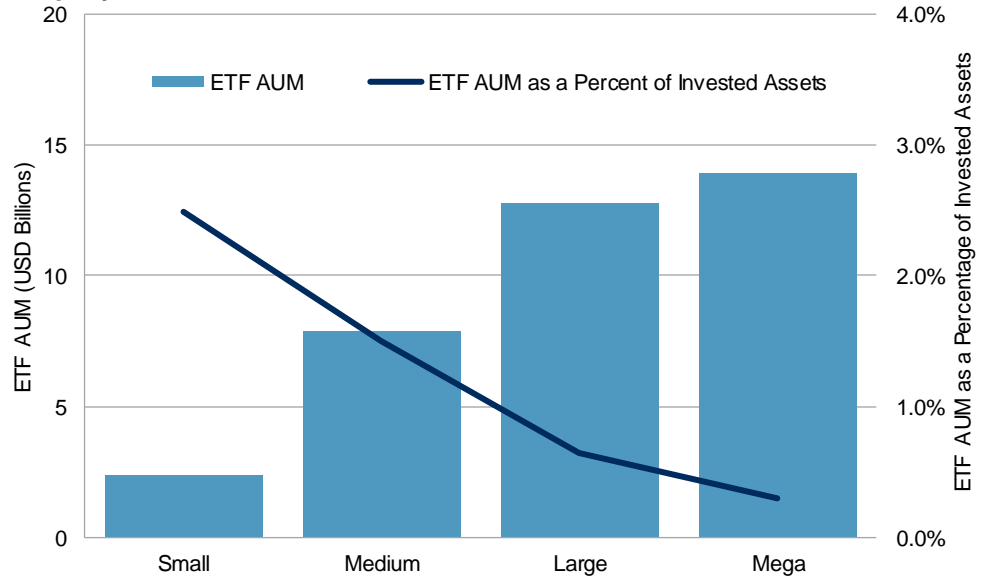


Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

In spite of the recent increase in ETF usage by Mega companies, Small companies held the most ETF AUM as a percentage of invested assets (see Exhibit 19).

Exhibit 19: ETF AUM and ETF AUM as Percentage of Invested Assets by Company Size

In spite of the recent increase in ETF usage by Mega companies, Small companies held the most ETF AUM as a percentage of invested assets.

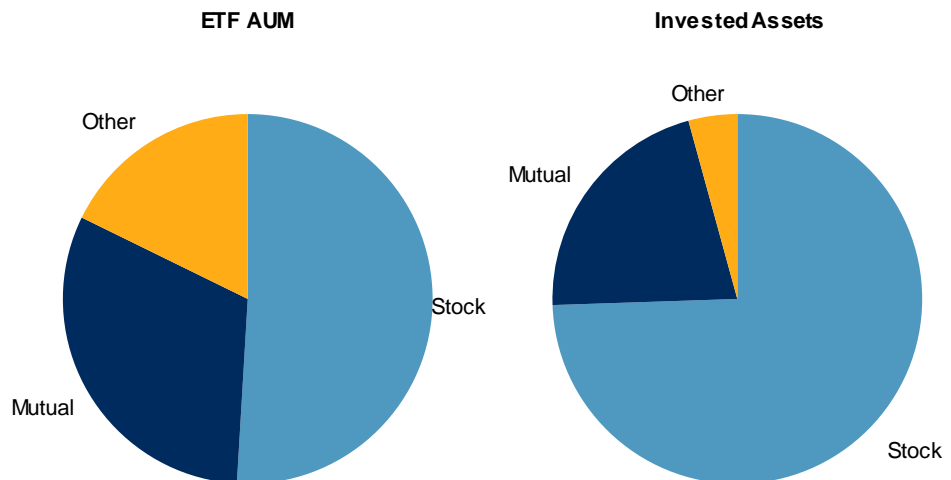


Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

Most of the insurance invested assets belonged to Stock companies; they also had about one-half of the ETF AUM held by insurance companies (see Exhibit 20).

Exhibit 20: ETF AUM and Invested Assets by Ownership Structure

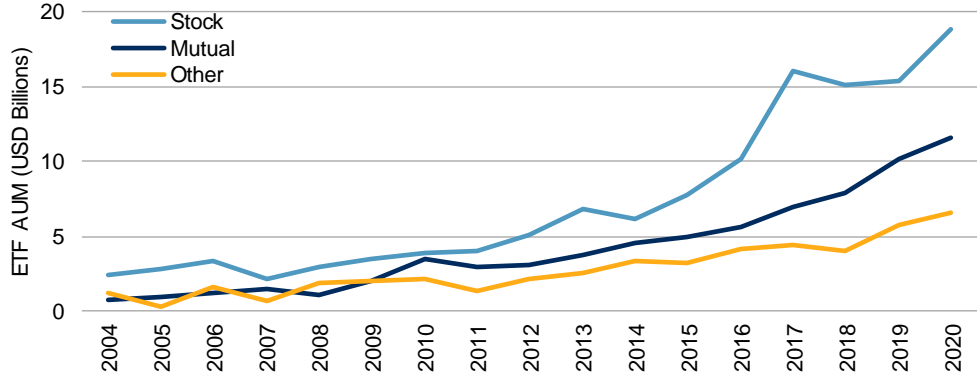
Most of the insurance invested assets belonged to Stock companies; they also had about one-half of the ETF AUM held by insurance companies.



Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Charts are provided for illustrative purposes.

After a two-year pause in ETF AUM growth, Stock companies increased their ETF usage by 23% in 2020. Mutual and Other companies have been more consistent in the growth of their ETF usage (see Exhibits 21 and 22).

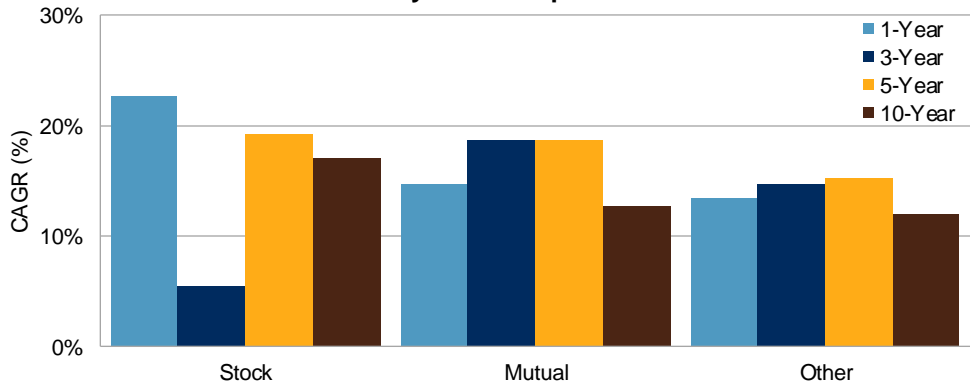
Exhibit 21: ETF AUM Growth by Ownership Structure



After a two-year pause in ETF AUM growth, Stock companies increased their ETF usage by 23% in 2020.

Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

Exhibit 22: CAGR for ETF AUM by Ownership Structure

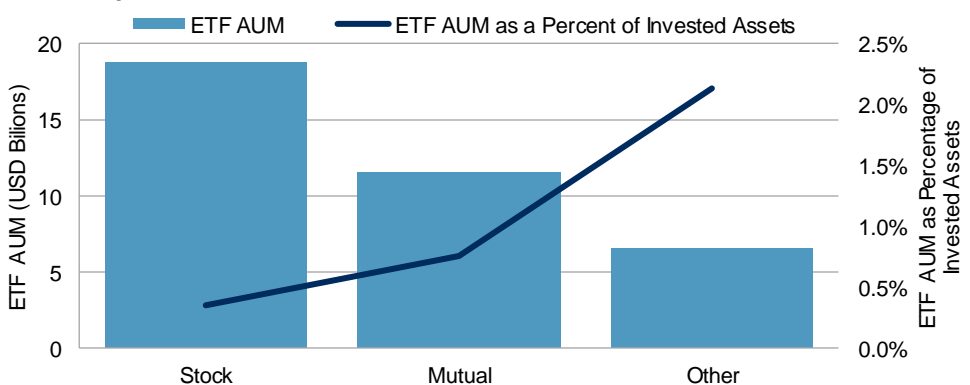


Mutual and Other companies have been more consistent in the growth of their ETF usage.

Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

Stock companies had the least ETF AUM as a percentage of invested assets (see Exhibit 23).

Exhibit 23: ETF AUM and ETF AUM as a Percentage of Invested Assets by Ownership Structure



Stock companies had the least ETF AUM as a percentage of invested assets.

Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

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.

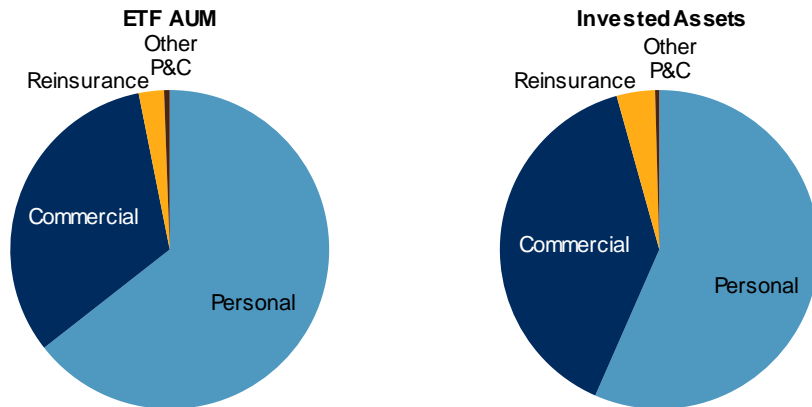
ANALYSIS BY BUSINESS FOCUS

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.

P&C companies invested in ETFs roughly in proportion with invested assets (see Exhibit 24).

Exhibit 24: ETF AUM and Invested Assets by P&C Business Focus

P&C companies invested in ETFs roughly in proportion with invested assets.

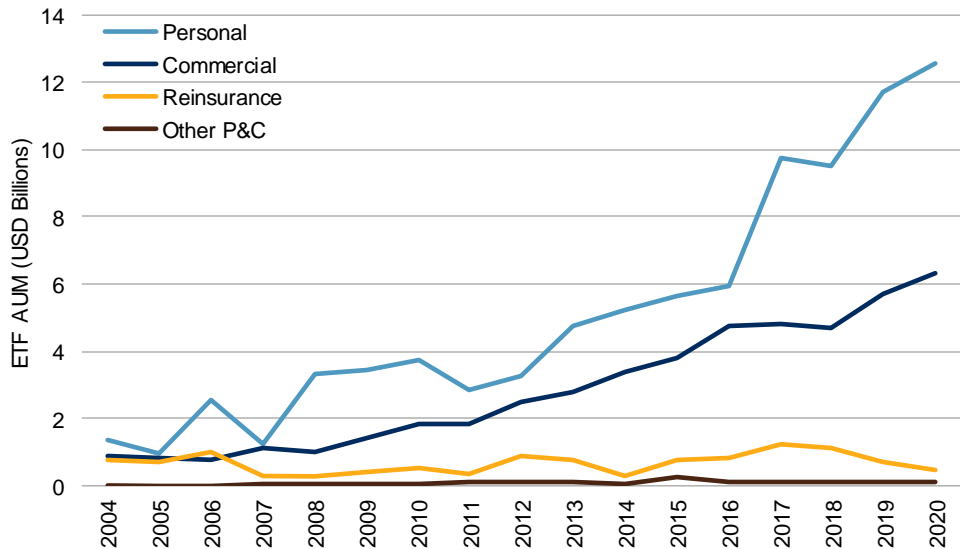


Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Charts are provided for illustrative purposes.

While Personal and Commercial writers increased their ETF allocation, Reinsurance and Other P&C companies have reduced their ETF usage every year since 2017 (see Exhibit 25).

Exhibit 25: ETF AUM Growth by P&C Business Focus

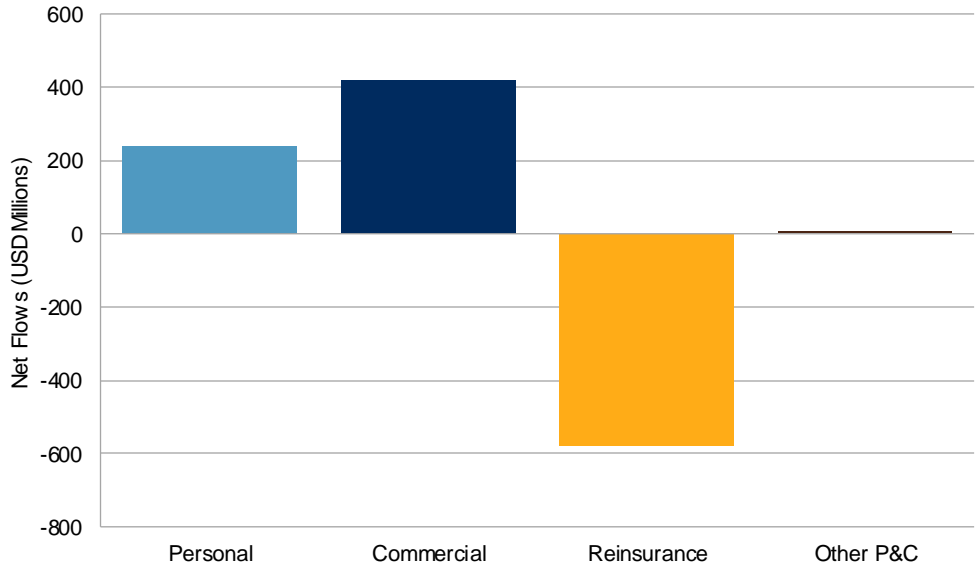
Personal and Commercial writers have increased their ETF allocation.



Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

The ETF net flows from P&C insurers was relatively flat in 2020. While Commercial and Personal companies added, Reinsurance companies took out almost as much from their ETF allocation (see Exhibit 26).

Exhibit 26: ETF Net Flows by P&C Business Focus

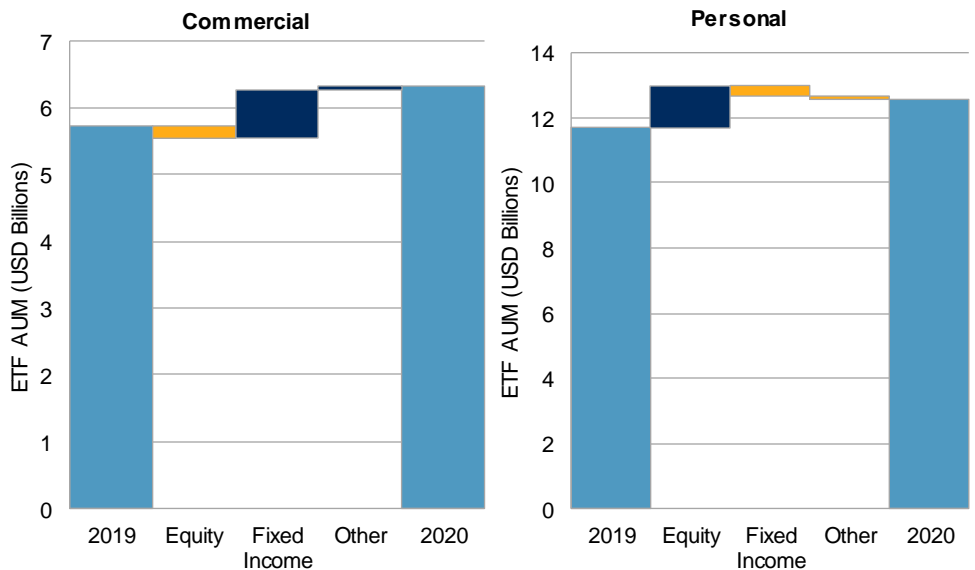


The ETF net flows from P&C insurers was relatively flat in 2020.

Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

While Commercial and Personal companies added to ETFs, Commercial companies added to Fixed Income ETFs and sold off in Equity ETFs; Personal companies did the opposite (see Exhibit 27).

Exhibit 27: Change in ETF AUM for Commercial and Personal Insurance Companies



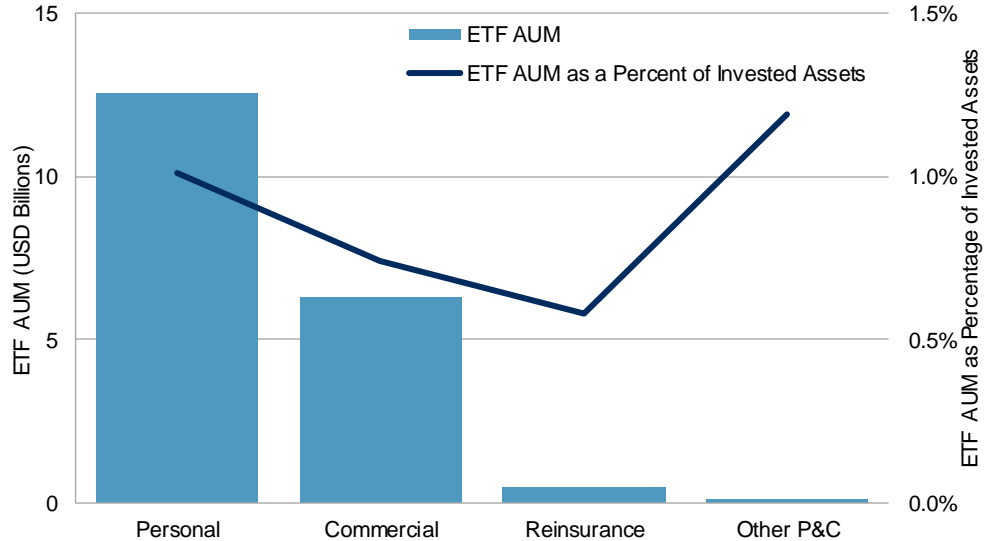
Commercial companies added to Fixed Income ETFs and sold off in Equity, whereas Personal companies did the opposite.

Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Charts are provided for illustrative purposes.

Because of the sustained retreat from ETFs, Reinsurance companies had the lowest allocation as a percentage of invested assets (see Exhibit 28).

Exhibit 28: ETF AUM and ETF AUM as a Percentage of Invested Assets by P&C Business Focus

Reinsurance companies had the lowest allocation as a percentage of invested assets.



Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

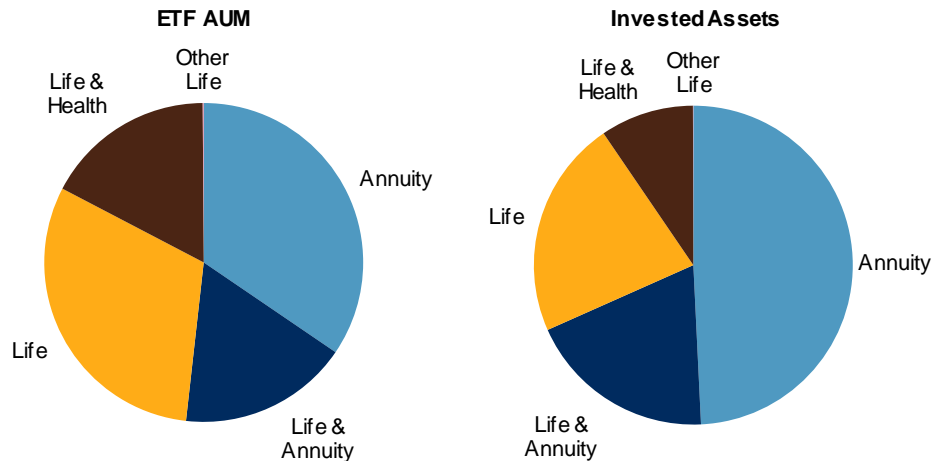
Even though compared to P&C companies, Life insurers had more invested assets and invested less in ETFs, they had more concentrated ETF investments.

As shown in Exhibits 10 and 11, even though Life insurers had more invested assets, they invested less in ETFs than P&C companies; however, they increased ETF usage greatly in 2020. Life companies had more concentrated ETF investments. Where the average investment by a P&C company was USD 44 million, the average investment by a Life company (that invests in ETFs) was USD 124 million.

While Annuity companies had almost one-half of the invested assets of Life insurers, Life companies had more diversification in their ETF holdings (see Exhibit 29).

Exhibit 29: ETF AUM and Invested Assets by Life Business Focus

Life companies had more diversification in their ETF holdings.

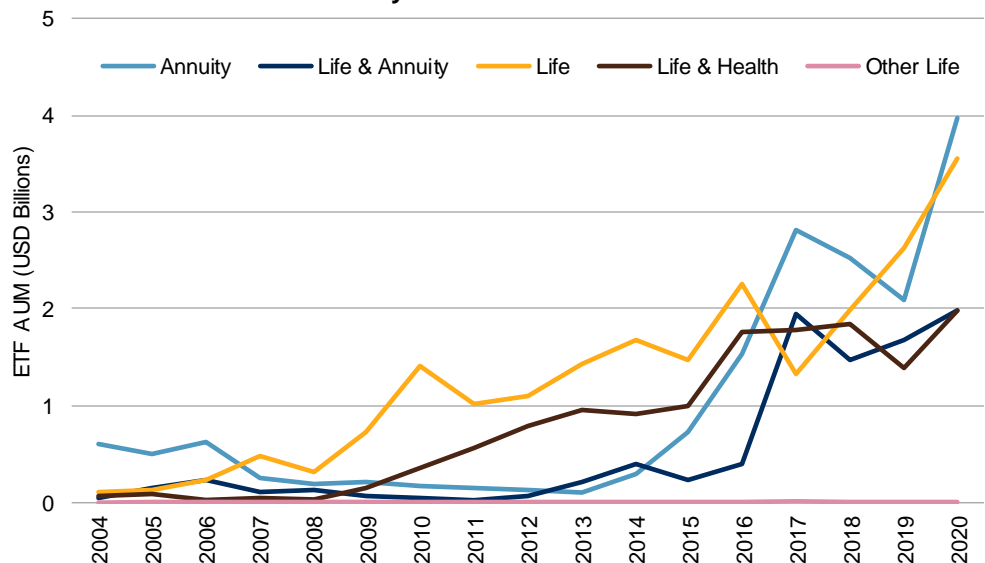


Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Charts are provided for illustrative purposes.

Annuity companies greatly increased their ETF usage from 2013 to 2017, but then pulled back. In 2020, they re-entered the ETF market and became once again the largest type of Life insurance company investing in ETFs. Life companies have been more consistent in their ETF AUM growth. The use of ETFs by other types of Life companies seems to have plateaued (see Exhibit 30).

Exhibit 30: ETF AUM Growth by Life Business Focus

In 2020, Annuity companies reentered the ETF market and became once again the largest type of Life insurance company investing in ETFs.

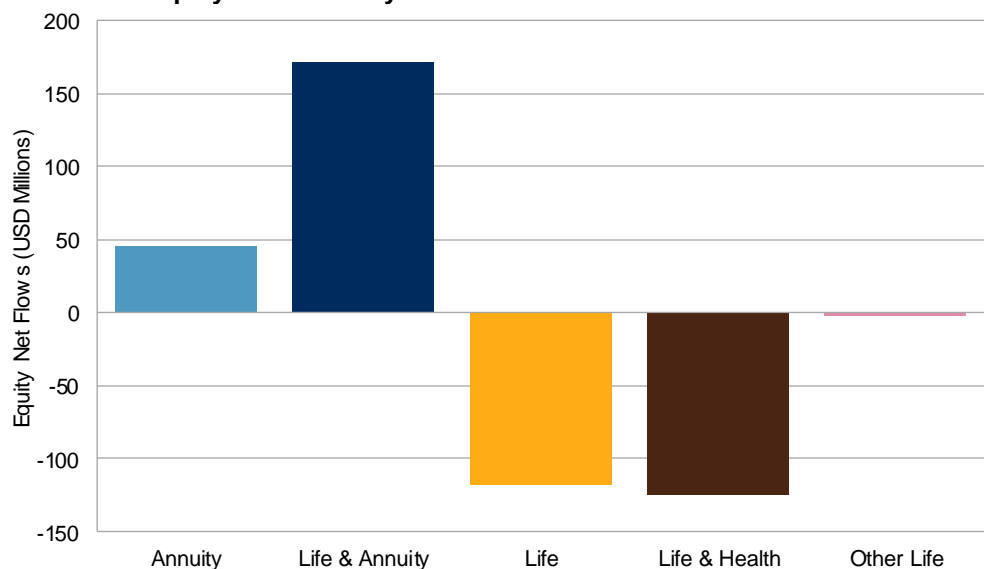


Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

While all types of Life companies added to ETFs in 2020, they did so differently. All of them added to Fixed Income ETFs, but only two types sold Equity ETFs, while two added to Equity ETFs (see Exhibit 31).

Exhibit 31: Equity Net Flows by Life Business Focus

While all types of Life companies added to Fixed Income ETFs, only two types sold Equity ETFs, while two added to Equity ETFs.

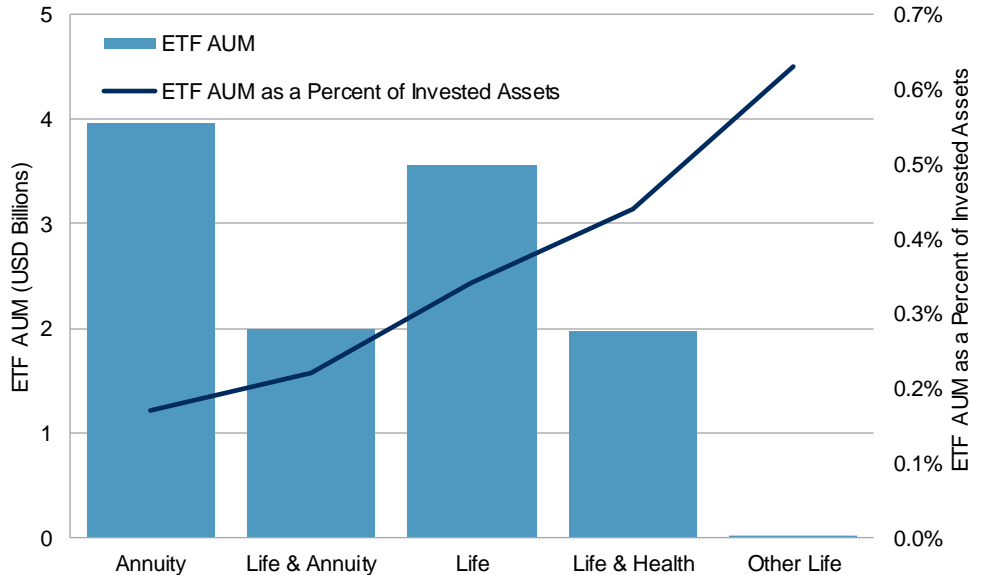


Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

Even after the substantial growth in ETF usage in 2020, Annuity companies still had the least amount invested as a percentage of invested assets (see Exhibit 32).

Exhibit 32: ETF AUM and ETF AUM as Percentage of Invested Assets by Life Business Focus

Even after the substantial growth in ETF usage in 2020, Annuity companies still had the least amount invested as a percentage of invested assets.

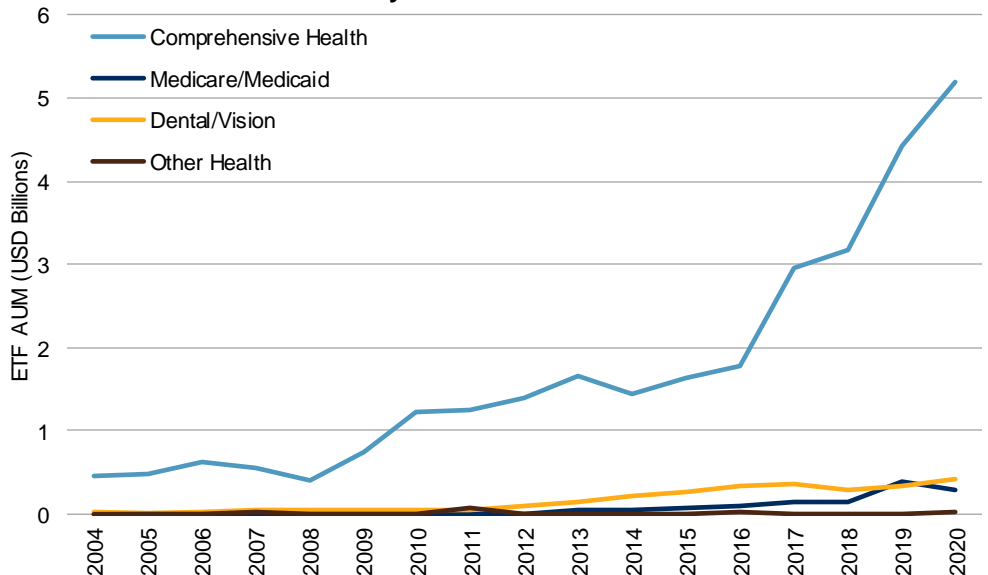


Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

In Health insurance, all ETF usage has been concentrated in Comprehensive Health companies (see Exhibit 33).

Exhibit 33: ETF AUM Growth by Health Business Focus

In Health insurance, all ETF usage has been concentrated in Comprehensive Health companies.



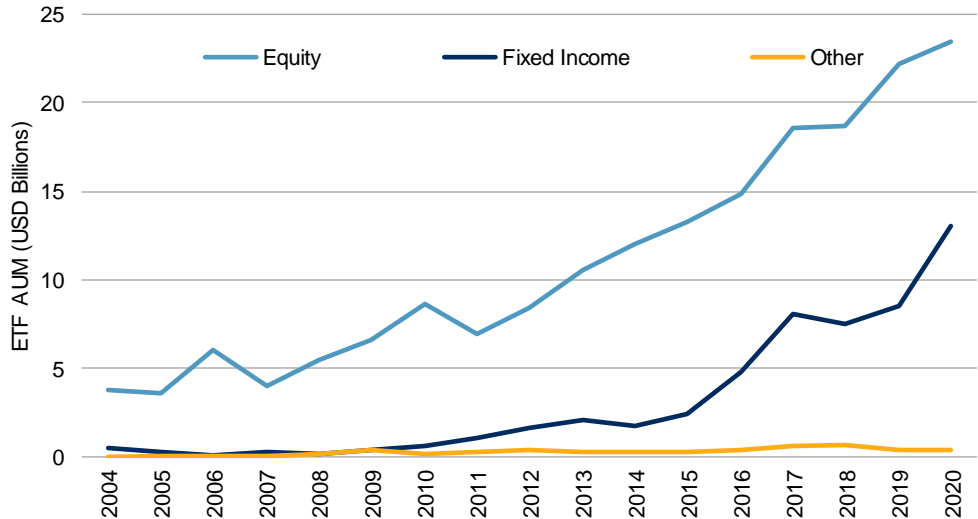
Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

ANALYSIS BY ASSET CLASS

In 2020, insurance companies pumped almost USD 5 billion into Fixed Income ETFs,⁴ increasing the allocation to an all-time high of USD 13 billion (see Exhibit 34).

Exhibit 34: ETF AUM by Asset Class

In 2020, insurance companies pumped almost USD 5 billion into Fixed Income ETFs, increasing the allocation to an all-time high of USD 13 billion.

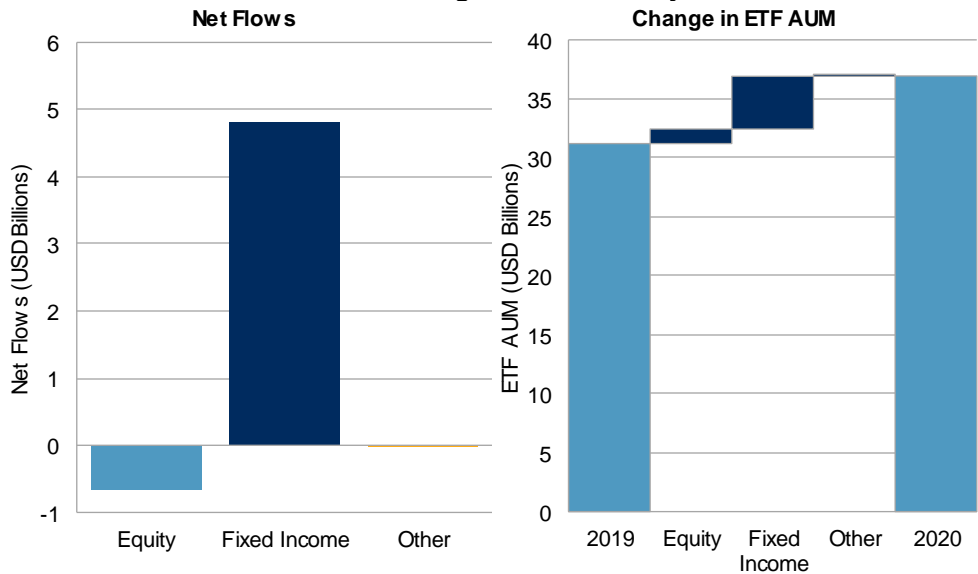


Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

While adding to Fixed Income, companies also took a bit of money out of Equity. Nevertheless, Equity AUM increased by USD 1.2 billion (see Exhibit 35).

Exhibit 35: ETF Net Flows and Change in ETF AUM by Asset Class

Equity AUM increased by USD 1.2 billion.



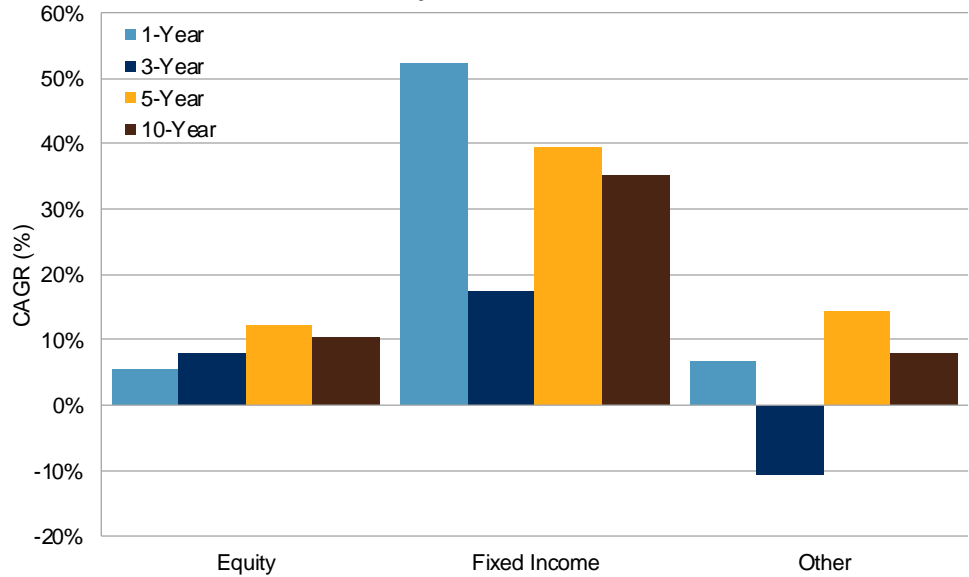
Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Charts are provided for illustrative purposes.

⁴ See Appendix 1.2 for definitions of asset classes.

Fixed Income ETF AUM grew by 52% in 2020 and because of the sustained increase in Fixed Income ETF usage, the percentage of Fixed Income ETFs used by insurance companies exceeded that of the U.S. ETF market (see Exhibits 36 and 37).

Exhibit 36: CAGR for ETF AUM by Asset Class

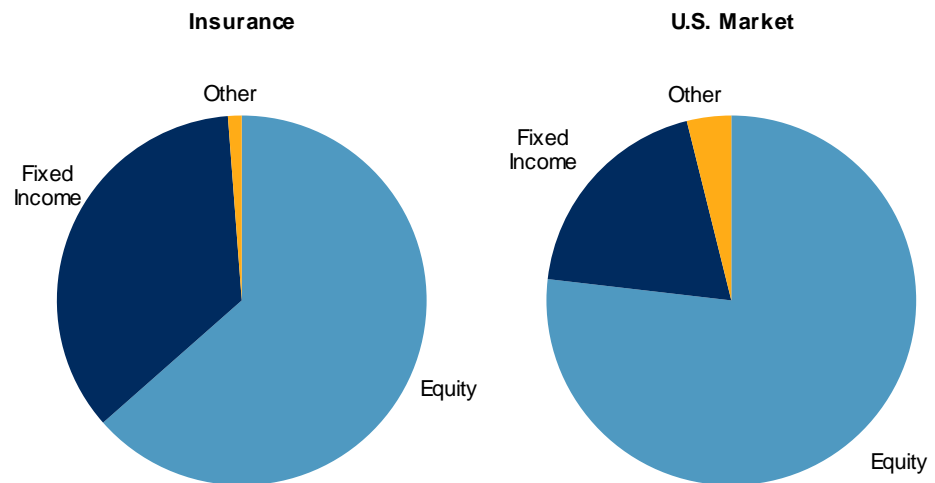
Fixed Income ETF AUM grew by 52% in 2020.



Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

Exhibit 37: Insurance and U.S. Market ETF AUM by Asset Class

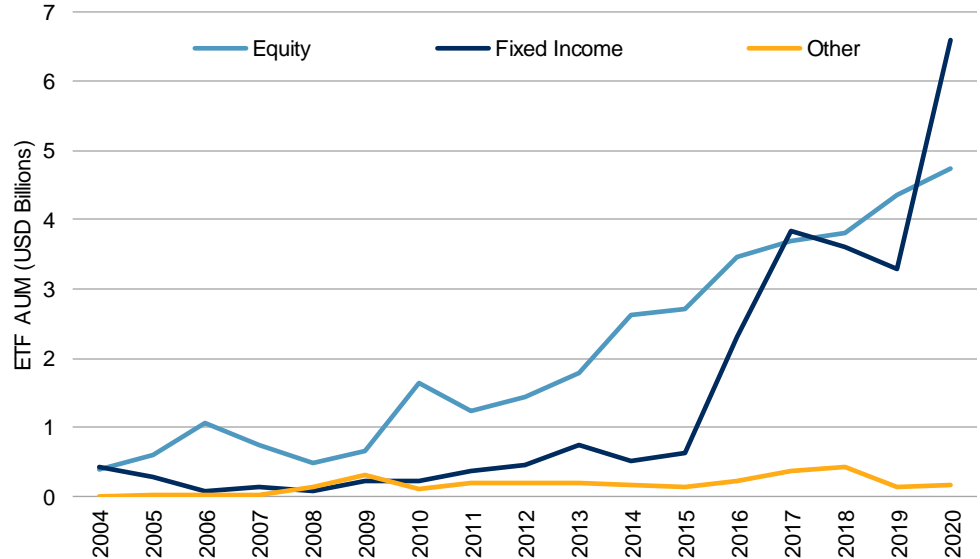
The percentage of Fixed Income ETFs used by insurance companies exceeded that of the U.S. market.



Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Charts are provided for illustrative purposes.

After decreasing their ETF usage for two years, Life companies added USD 3 billion to Fixed Income ETFs and doubled allocation from USD 3.3 billion to USD 4.7 billion (see Exhibit 38).

Exhibit 38: ETF AUM Growth by Asset Class for Life Companies



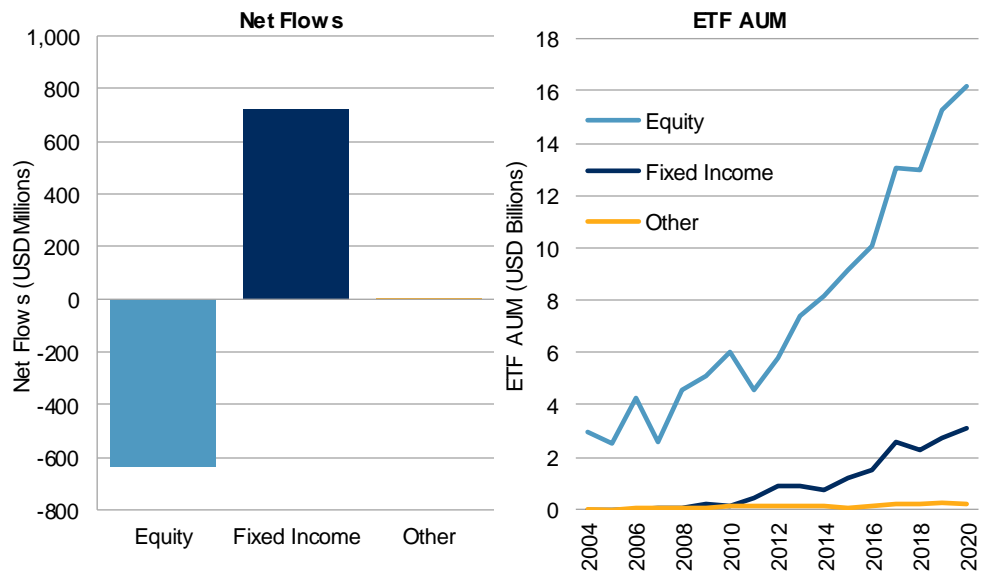
Life companies added USD 3 billion to Fixed Income ETFs.

P&C companies added to Fixed Income ETFs but took away from Equity ETFs.

Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

P&C companies added to Fixed Income ETFs but took away from Equity ETFs. However, due to market appreciation, their Equity and Fixed Income ETF AUM grew in 2020 (see Exhibit 39).

Exhibit 39: ETF Net Flows and ETF AUM Growth by Asset Class for P&C Companies

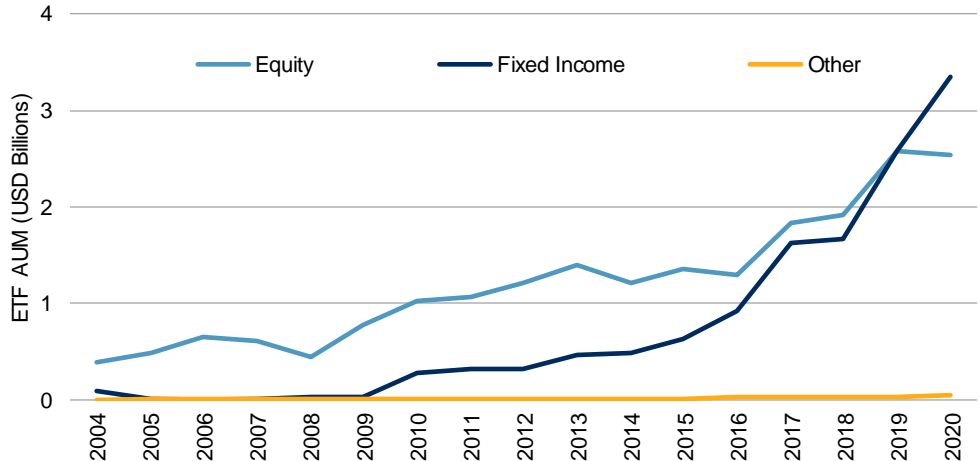


However, due to market appreciation, their Equity and Fixed Income ETF AUM grew in 2020.

Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Charts are provided for illustrative purposes.

Health companies added USD 1 billion to Fixed Income ETFs, and as of year-end 2020, held more in Fixed Income ETFs than in any other asset class (see Exhibit 40).

Exhibit 40: ETF AUM Growth by Asset Class for Health Companies



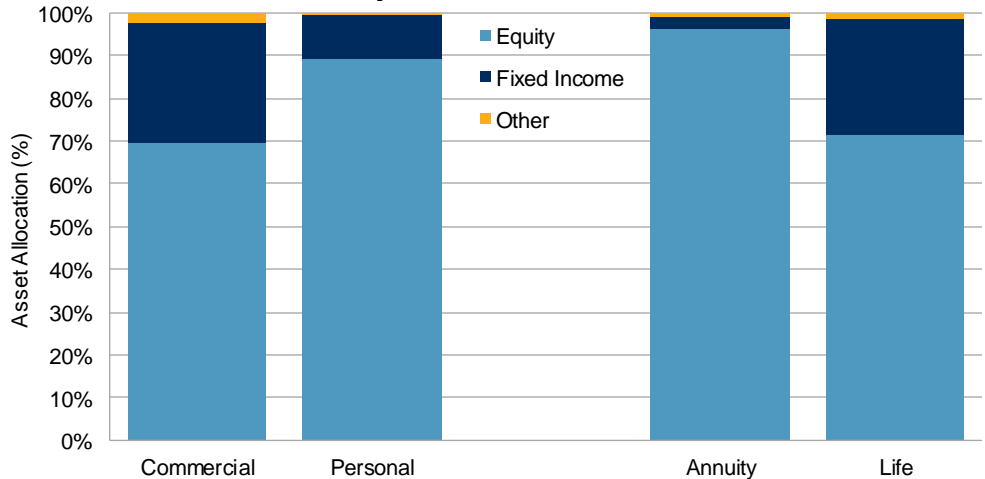
Health companies added USD 1 billion to Fixed Income ETF

Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

For P&C companies, Personal carriers were less likely to hold Fixed Income ETFs.

Asset allocation also varied by business focus. For P&C companies, Personal carriers were less likely to hold Fixed Income ETFs. In Life insurance, Annuity companies held almost exclusively Fixed income ETFs (see Exhibit 41).

Exhibit 41: Asset Allocation by Select Business Focus

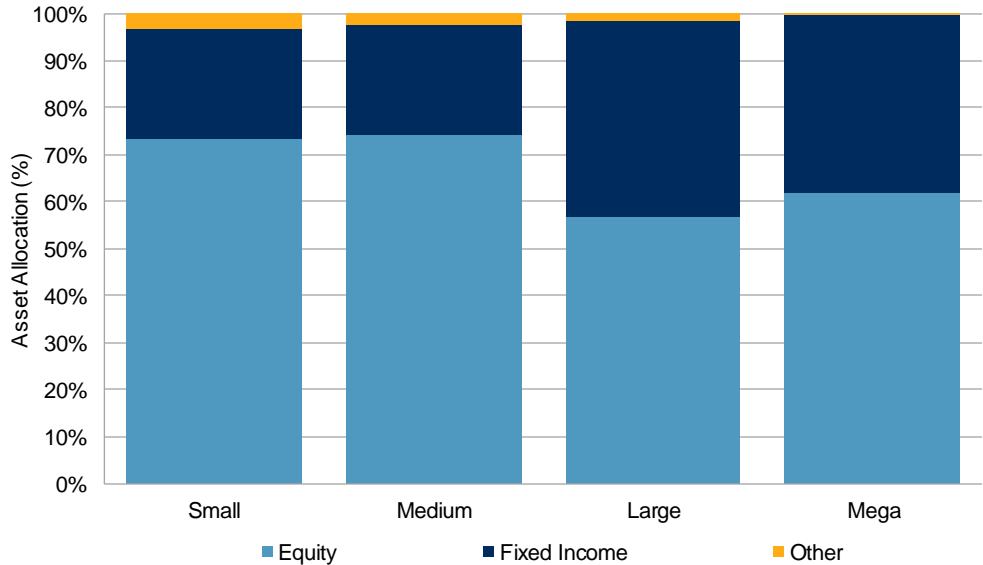


In Life insurance, Annuity companies held almost exclusively Fixed income ETFs

Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

In terms of company size, the flows to Fixed Income ETFs were primarily from Large and Mega companies, reflected by their relative asset allocation (see Exhibit 42).

Exhibit 42: Asset Allocation by Company Size

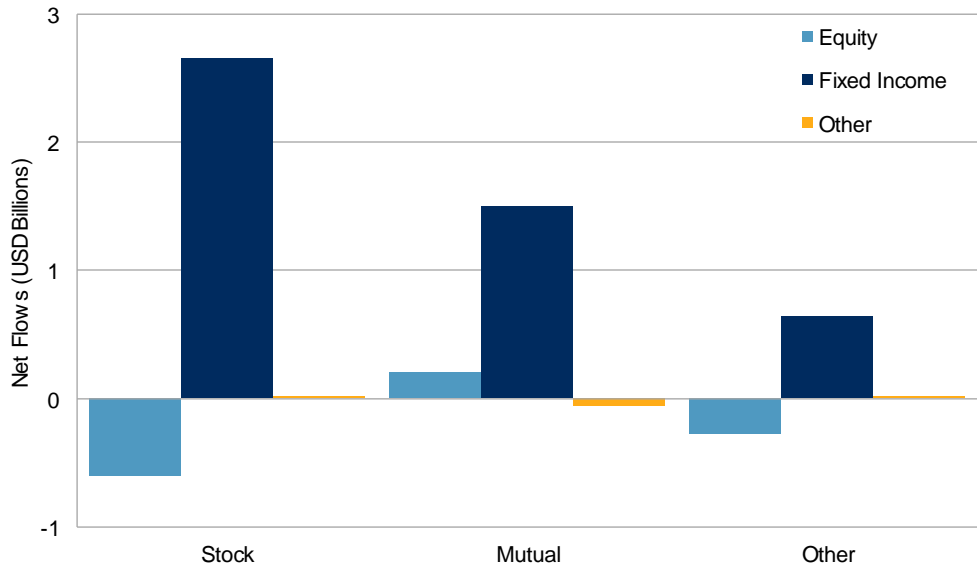


In terms of company size, the flows to Fixed Income ETFs were primarily from Large and Mega companies, reflected by their relative asset allocation.

Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

By ownership structure, all types of companies added to Fixed Income ETFs in 2020 (see Exhibit 43).

Exhibit 43: ETF Net Flows by Ownership Structure



All types of companies added to Fixed Income ETFs in 2020.

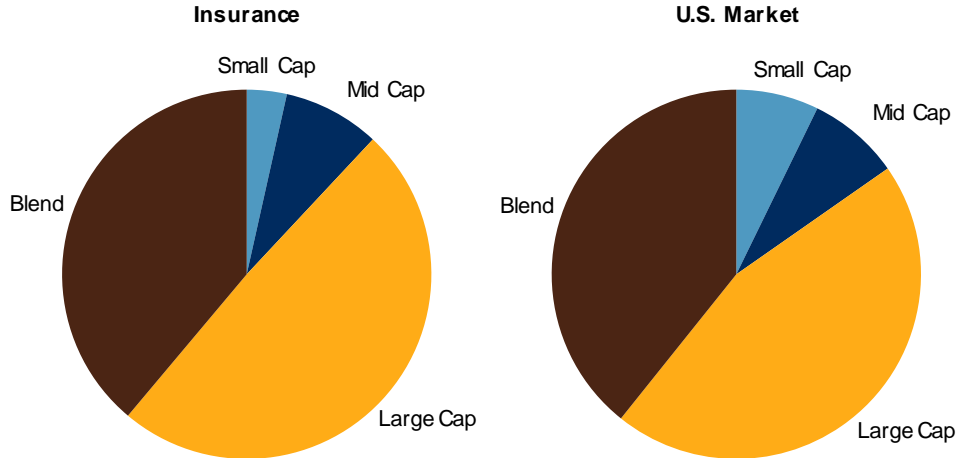
Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

ANALYSIS OF EQUITY ETFS

As of year-end 2020, Large Cap Equity ETFs comprised almost one-half of the insurance Equity ETF allocation. This was slightly larger than the Large Cap allocation for the overall U.S. ETF market. Insurance companies were less likely to invest in Small Cap than the overall market (see Exhibit 44).

Exhibit 44: Insurance and U.S. Market Equity ETF AUM by Market Capitalization

As of year-end 2020, Large Cap Equity ETFs comprised almost one-half of the insurance Equity ETF allocation.



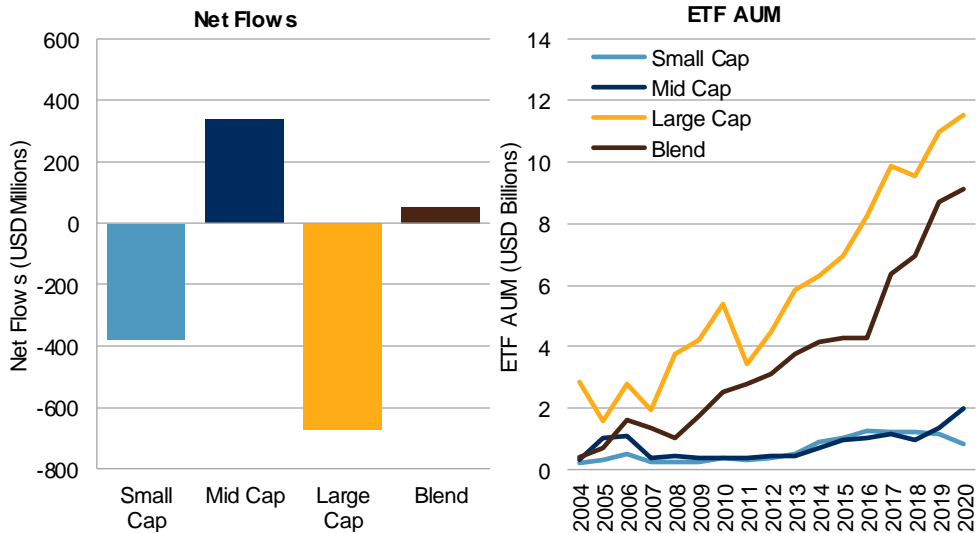
Large Cap ETF AUM grew in 2020, despite flows out of the Equity allocation.

Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Charts are provided for illustrative purposes.

Large Cap ETF AUM grew in 2020, despite flows out of the Equity allocation. Small Cap had net outflows as well as a decline in ETF AUM. Proportionally, the largest growth was in Mid Cap, which also had the most inflows (see Exhibit 45).

Exhibit 45: Equity ETF Net Flows and ETF AUM by Market Capitalization

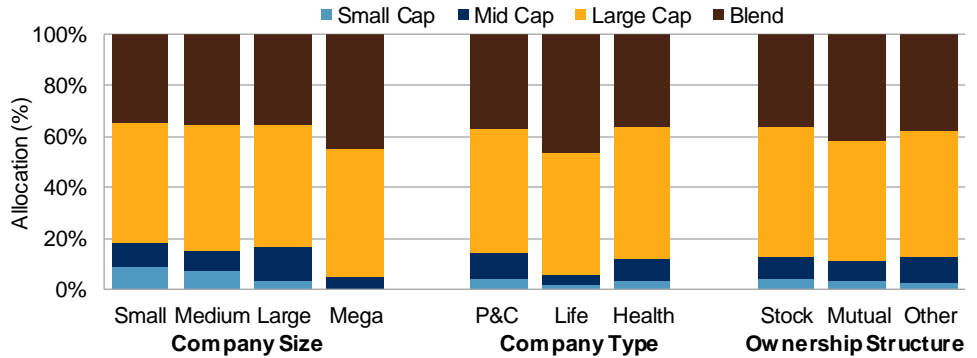
Proportionally, the largest growth was in Mid Cap, which also had the most inflows.



Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Charts are provided for illustrative purposes.

The Equity ETF allocation varied little by company type, company size, or ownership structure, but varied significantly by Life business focus (see Exhibits 46 and 47).

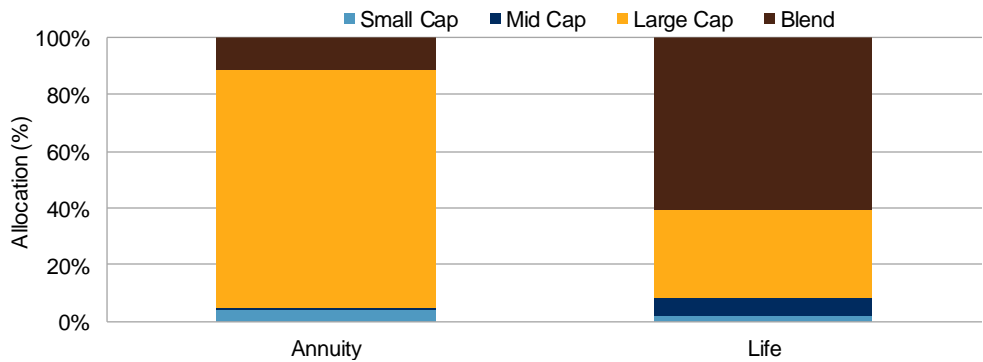
Exhibit 46: Equity Market Capitalization by Company Type, Company Size, and Ownership Structure



The Equity ETF allocation varied little by company type, company size, or ownership structure...

Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

Exhibit 47: Equity Market Capitalization by Select Life Business Focus

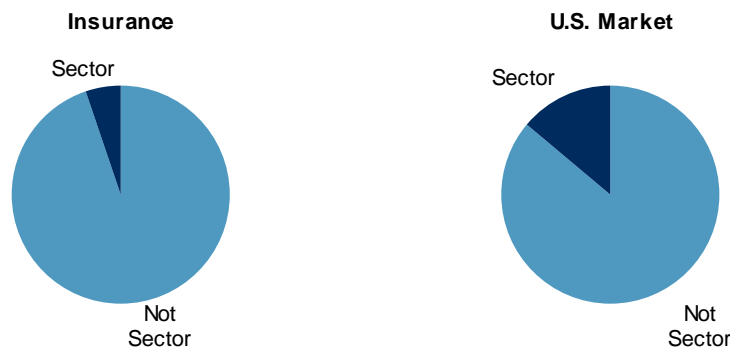


... but varied significantly by Life business focus.

Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

After two years of lower usage, insurance companies increased their allocation to Sector ETFs. However, the use of Sector ETFs by insurance companies was lower than that of the overall U.S. ETF market (see Exhibit 48).

Exhibit 48: Insurance and U.S. Market Equity ETF AUM by Sector Status



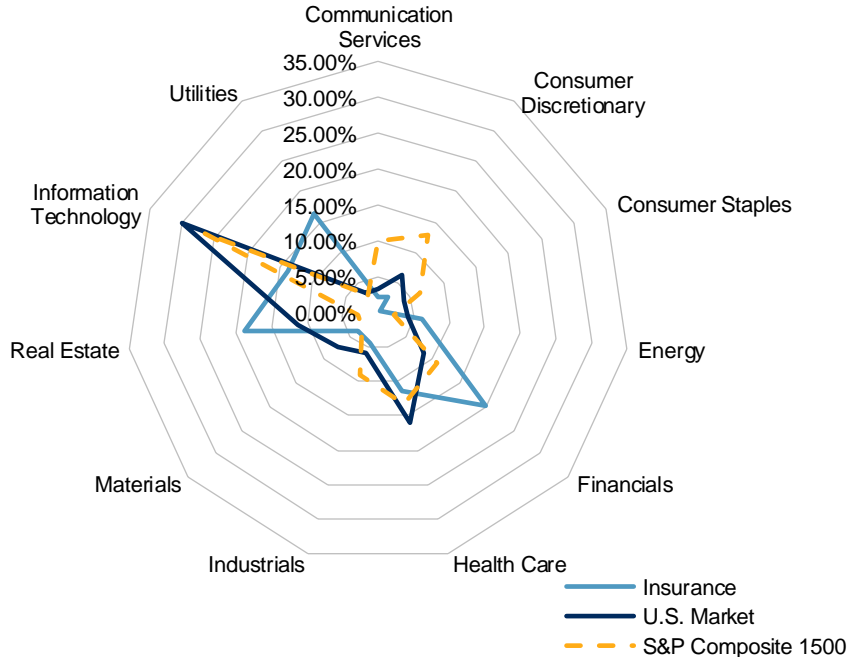
After two years of lower usage, insurance companies increased their allocation to Sector ETFs.

Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Charts are provided for illustrative purposes.

The allocation to Sector ETFs by insurance companies varied from the U.S. ETF market, which in turn varied from the sector allocation of the equity market, as represented by the [S&P Composite 1500®](#) (see Exhibit 49).

Exhibit 49: Sector Allocation of the Insurance and U.S. Markets

The allocation to Sector ETFs by insurance companies varied from the U.S. ETF market.



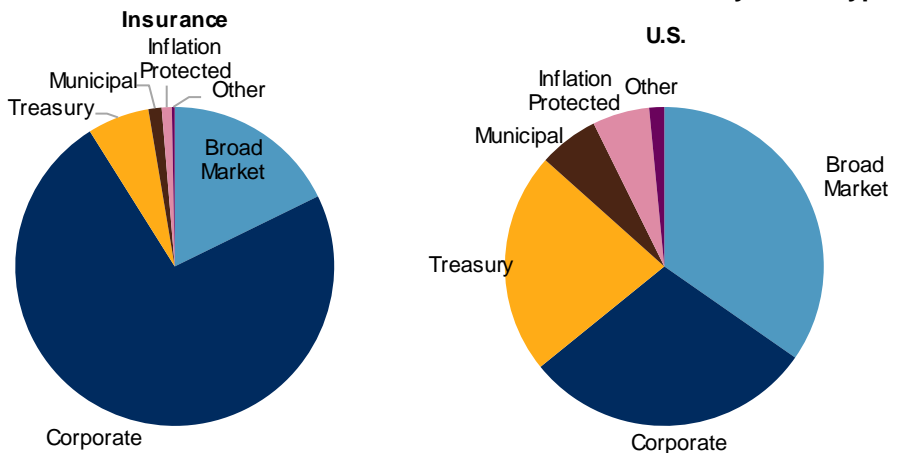
Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

ANALYSIS OF FIXED INCOME ETFS

While the USD 1 trillion allocated to Fixed Income ETFs by the overall U.S. market was broadly diversified across bond types, the insurance market mostly invested in Corporate ETFs (see Exhibit 50).

While the USD 1 trillion allocated to Fixed Income ETFs by the overall U.S. market was broadly diversified across bond types, the insurance market mostly invested in Corporate ETFs.

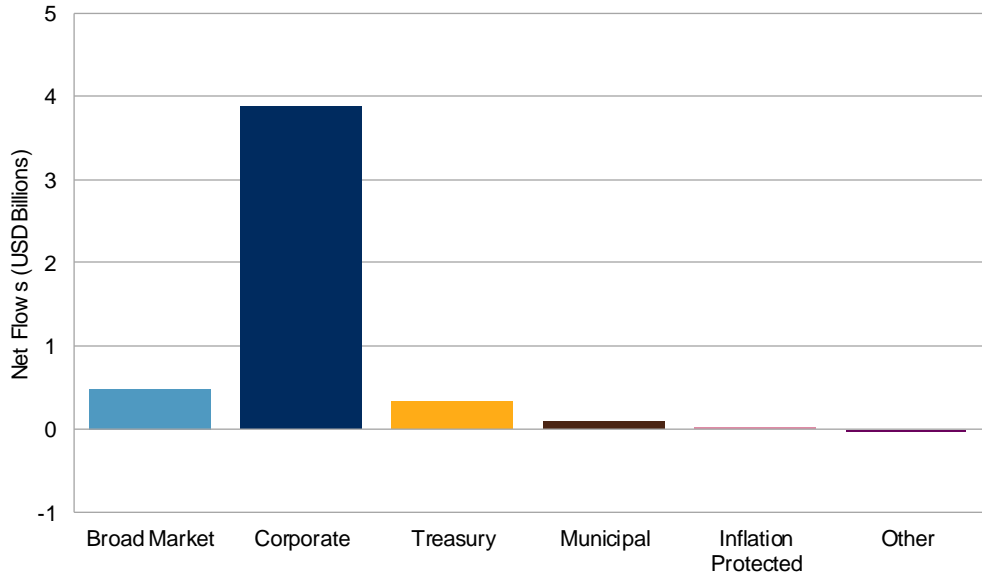
Exhibit 50: Insurance and U.S. Market Fixed Income ETF AUM by Bond Type



Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Charts are provided for illustrative purposes.

The overweight to Corporate ETFs increased in 2020, as 80% of the USD 4.8 billion in ETF net flows went to Corporate ETFs (see Exhibit 51).

Exhibit 51: Fixed Income ETF Net Flows by Bond Type



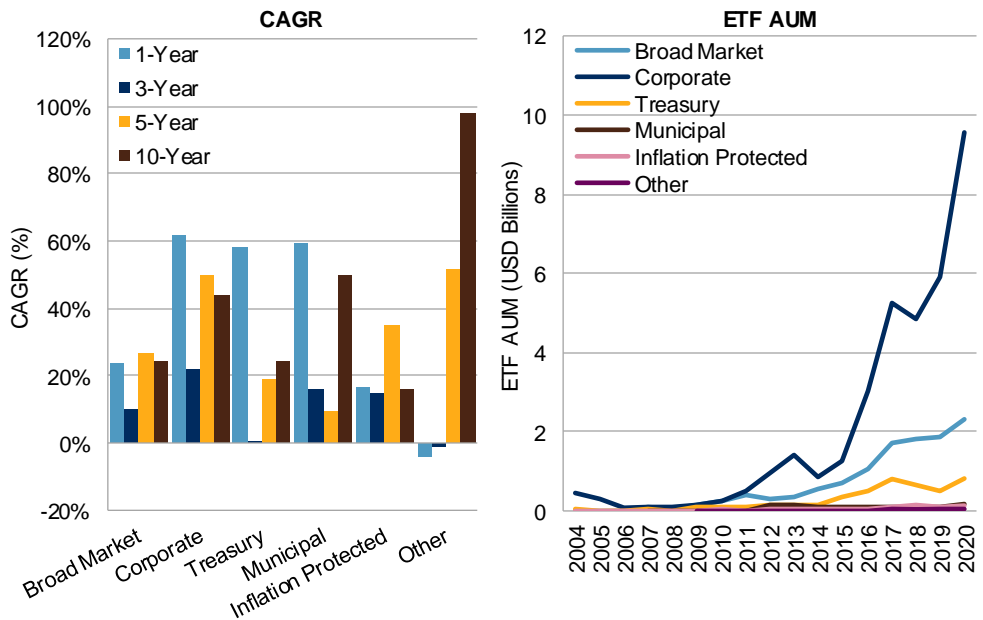
The overweight to Corporate ETFs increased in 2020, as 80% of the USD 4.8 billion in ETF net flows went to Corporate ETFs.

However, in 2020, all major bond types saw double-digit increases over 2019...

Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

However, in 2020, all major bond types saw double-digit increases over 2019, with Corporate, Municipal, and Treasury ETFs showing increases over 50% (see Exhibit 52).

Exhibit 52: Fixed Income CAGR and ETF AUM by Bond Type

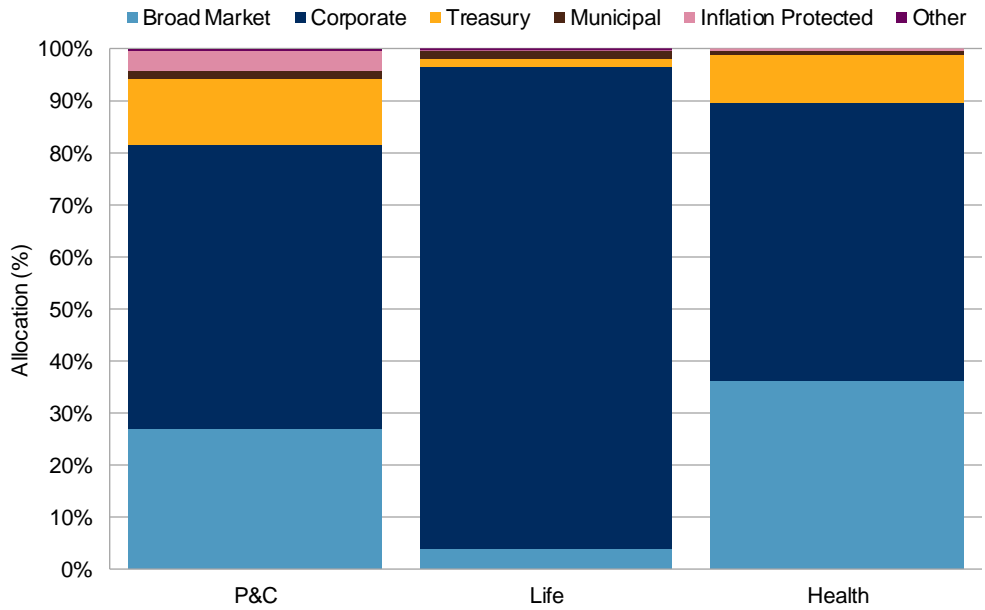


...with Corporate, Municipal, and Treasury ETFs showing increases over 50%.

Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Charts are provided for illustrative purposes.

Life companies invested mostly in Corporate ETFs, while P&C and Health companies had a more diversified allocation (see Exhibit 53).

Exhibit 53: Bond Type Allocation by Company Type



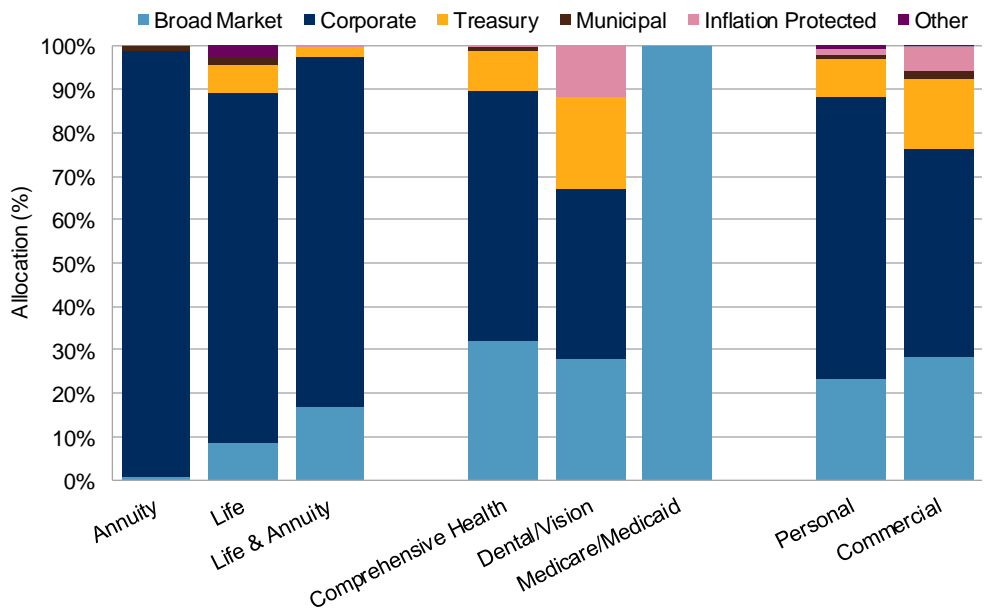
Life companies invested mostly in Corporate ETFs, while P&C and Health companies had a more diversified allocation.

Even among Life companies, there was dispersion in ETF usage.

Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

Even among Life companies, there was dispersion in ETF usage. Annuity writers were almost exclusively Corporate ETF users, while other profiles had a broader usage (see Exhibit 54).

Exhibit 54: Bond Type Allocation for Select Business Focuses

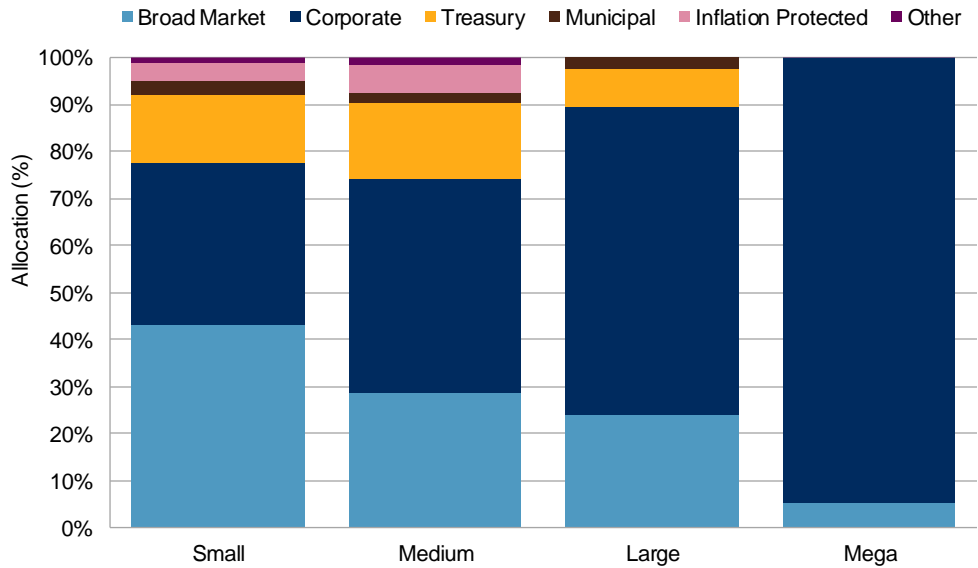


Annuity writers were almost exclusively Corporate ETF users, while other profiles had a broader usage.

Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

Corporate ETF usage increased with company size, and Broad Market ETF usage decreased (see Exhibit 55).

Exhibit 55: Bond Type Allocation by Company Size



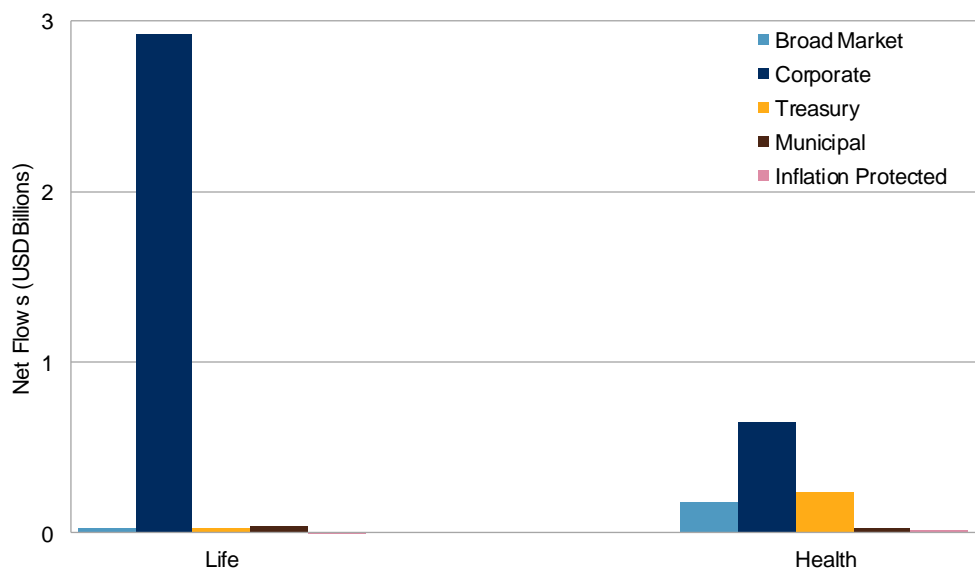
Corporate ETF usage increased with company size, and Broad Market ETF usage decreased.

Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

In terms of new investments, Life companies purchased USD 3 billion almost exclusively in Corporate ETFs in 2020, while Health companies, which added USD 1 billion in 2020, were more diversified in their purchases (see Exhibit 56).

In terms of new investments, Life companies purchased USD 3 billion almost exclusively in Corporate ETFs in 2020, while Health companies, which added USD 1 billion in 2020, were more diversified in their purchases (see Exhibit 56).

Exhibit 56: Bond Type ETF Net Flows for Life and Health Companies



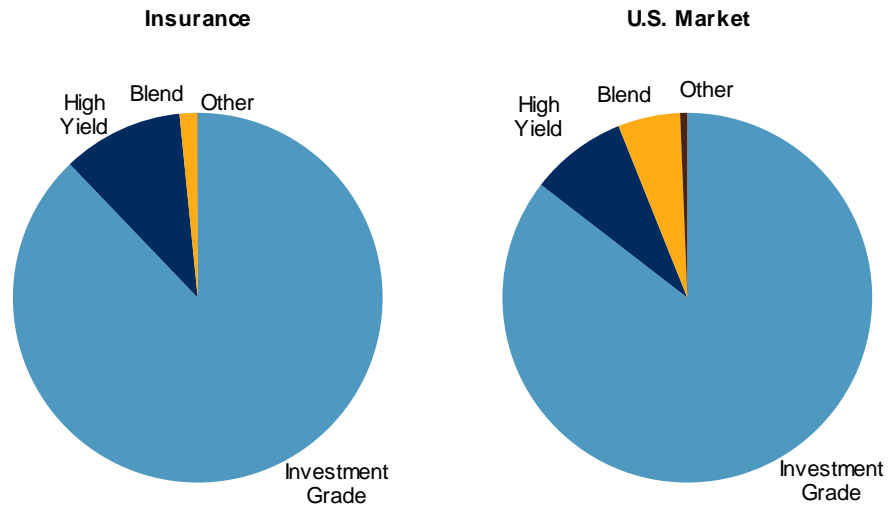
... while Health companies, which added USD 1 billion in 2020, were more diversified in their purchases.

Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

Although insurance companies invested mostly in Investment Grade ETFs, they held a higher portion of High Yield ETFs than the overall U.S. market—at the expense of Blend ETFs that were a mix of High Yield and Investment Grade (see Exhibit 57).

Exhibit 57: Insurance and U.S. Market Fixed Income ETF AUM by Credit Quality

Although insurance companies invested mostly in Investment Grade ETFs, they held a higher portion of High Yield ETFs than the overall U.S. market, at the expense of Blend ETFs.

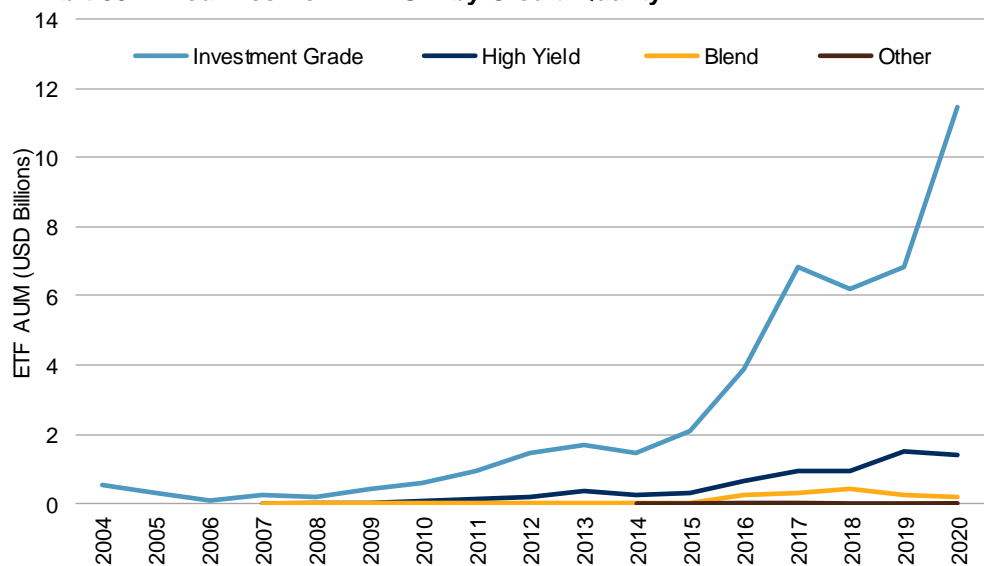


Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Charts are provided for illustrative purposes.

Although companies added to High Yield ETFs in 2020, the ETF AUM held by insurance companies declined slightly (see Exhibit 58).

Exhibit 58: Fixed Income ETF AUM by Credit Quality

Although companies added to High Yield ETFs in 2020, the ETF AUM held by insurance companies declined slightly



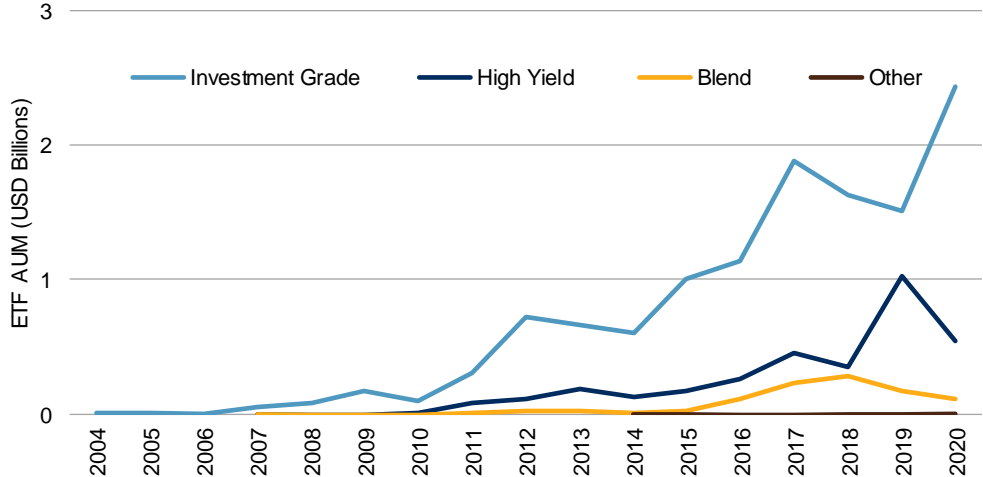
Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

P&C companies, with Personal carriers in particular, allocated about one-half of their Fixed Income ETF investments to High Yield ETFs. However, in 2020, P&C companies sold off High Yield ETFs and increased their allocation to Investment Grade ETFs (see Exhibit 59).

P&C companies allocated about one-half of their Fixed Income ETF investments to High Yield ETFs...

...however, in 2020, they sold off High Yield ETFs and increased their allocation to Investment Grade ETFs.

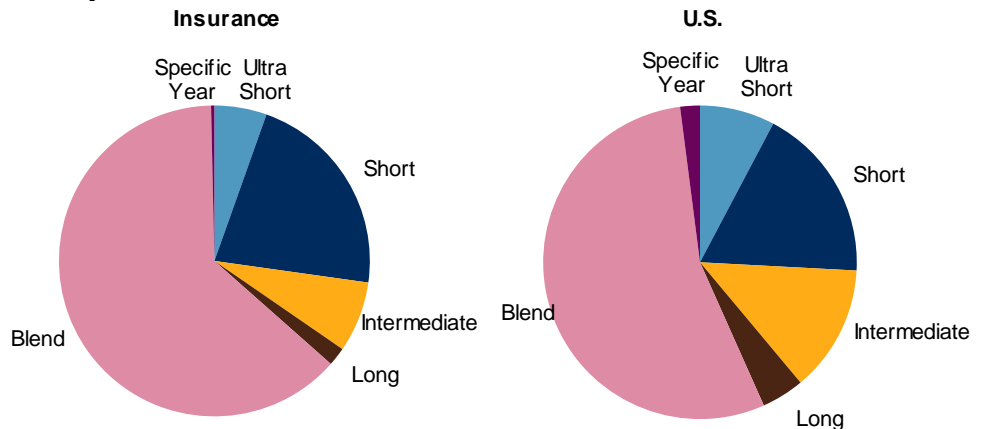
Exhibit 59: Fixed Income ETF AUM for P&C Companies by Credit Quality



Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

Insurance company investment in Fixed Income ETFs, by average maturity, was similar to that of the overall U.S. market (see Exhibit 60).

Exhibit 60: Insurance and U.S. Market Fixed Income ETF AUM by Average Maturity



Insurance company investment in Fixed Income ETFs, by average maturity, was similar to that of the overall U.S. market.

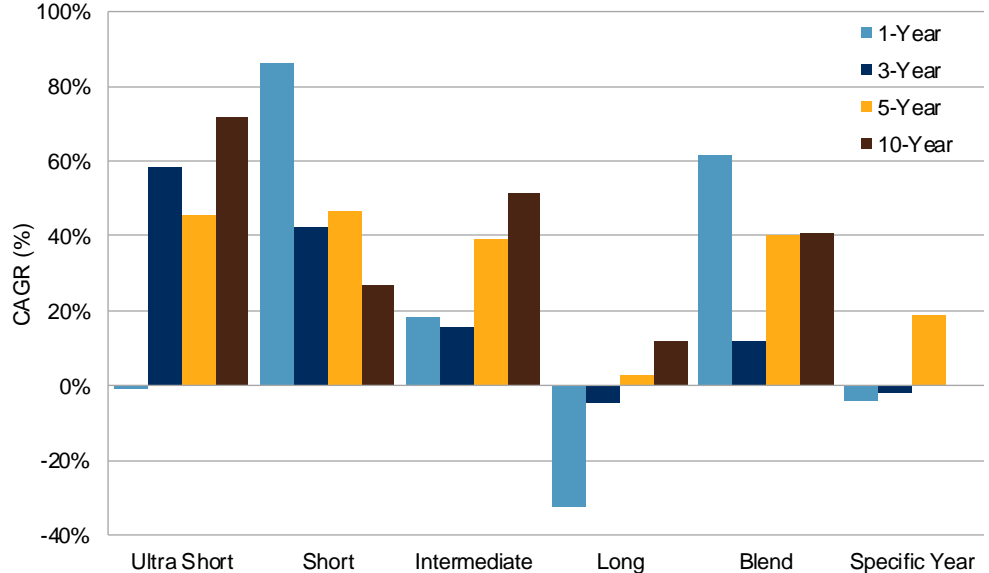
Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Charts are provided for illustrative purposes.

While Blend ETFs had the most assets, other maturity buckets, especially Short, grew faster. Long maturity ETF AUM has declined in recent years (see Exhibit 61).

While Blend ETFs had the most assets, other maturity buckets, especially Short, grew faster.

Long maturity ETF AUM has declined in recent years.

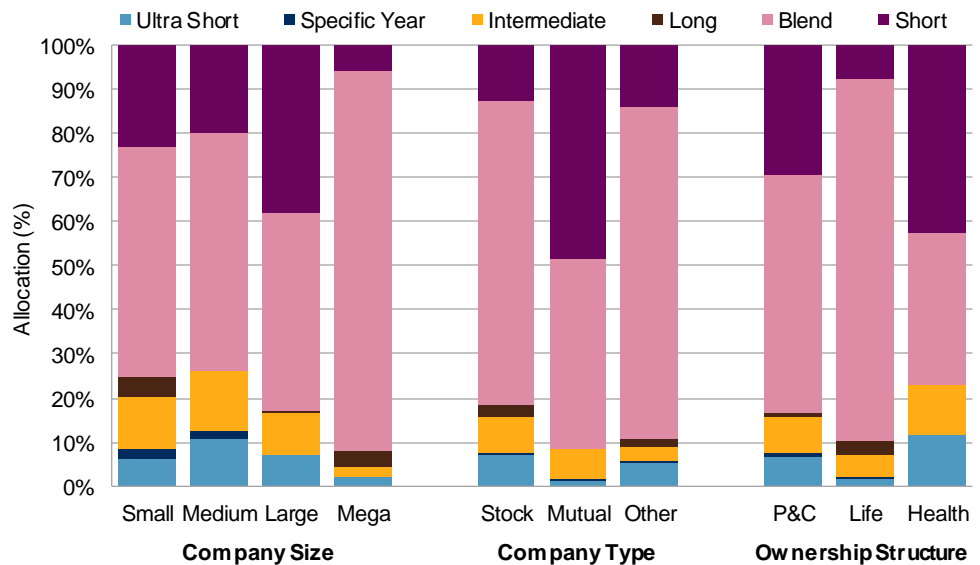
Exhibit 61: CAGR of Fixed Income ETF AUM by Average Maturity



Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

In terms of company size, Mega companies were more likely to use Blend ETFs. Life companies also used Blend ETFs, but Health companies tended to use Short ETFs (see Exhibit 62).

Exhibit 62: Fixed Income Average Maturity ETF Allocation by Company Size, Type, and Ownership Structure



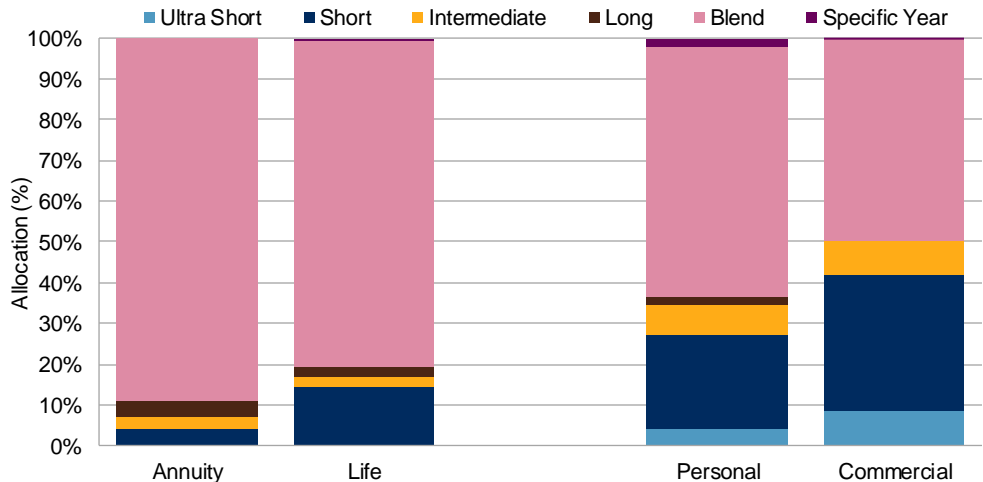
Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

In terms of company size, Mega companies were more likely to use Blend ETFs.

Annuity writers almost exclusively used Blend maturity ETFs (see Exhibit 63).

Exhibit 63: Fixed Income Average Maturity ETF Allocation by Select Business Focuses

Annuity writers almost exclusively used Blend maturity ETFs.



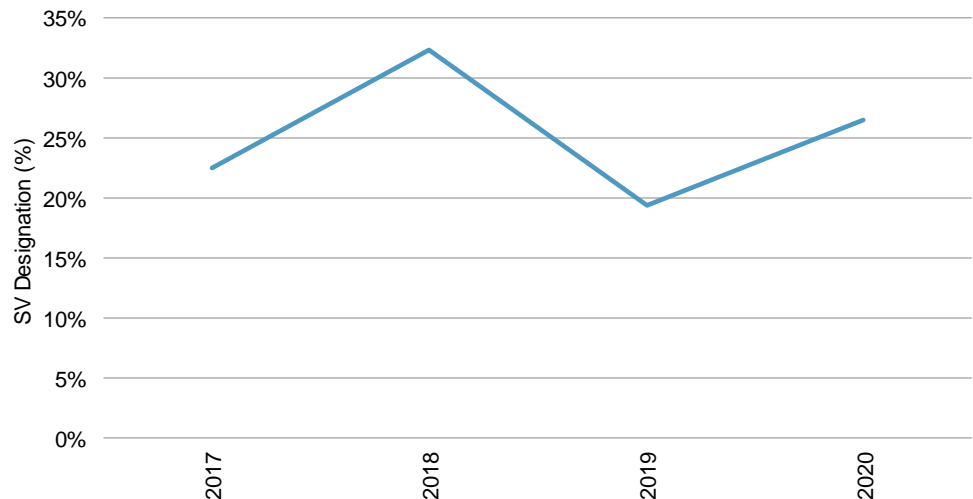
Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

SYSTEMATIC VALUATION

Systematic valuation (SV) is a book-value-like accounting treatment that has the potential to reduce income volatility in statutory filings. Of the USD 13 billion in Fixed Income ETFs, insurance companies designated 26.5% as SV.⁵ In the four years SV regulations have been in effect, the use of the designation has remained about 25% (see Exhibit 64).

Exhibit 64: SV Designation for Fixed Income Securities

Of the USD 13 billion in Fixed Income ETFs, insurance companies designated 26.5% as systematic valuation.



Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

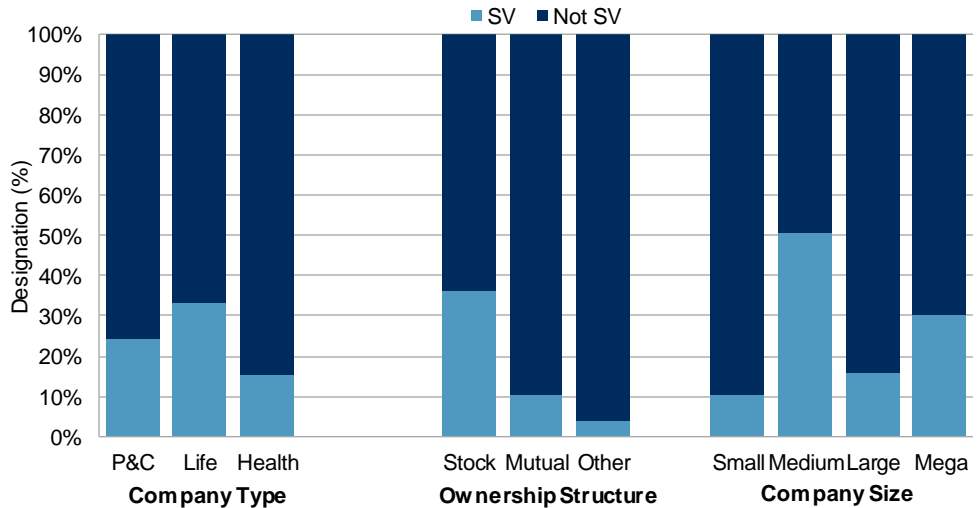
⁵ This analysis excludes USD 945,000 of Equity ETFs classified as SV.

Life companies designated more ETFs as SV than Health or P&C companies. Medium and Mega companies used the SV designation more than other company sizes; although Large companies increased the use of SV in 2020. The use of SV was predominantly by Stock companies (see Exhibit 65).

Life companies designated more ETFs as SV than Health or P&C companies.

Medium and Mega companies used the SV designation more than other company sizes.

Exhibit 65: SV Designation by Company Type, Ownership Structure, and Company Size

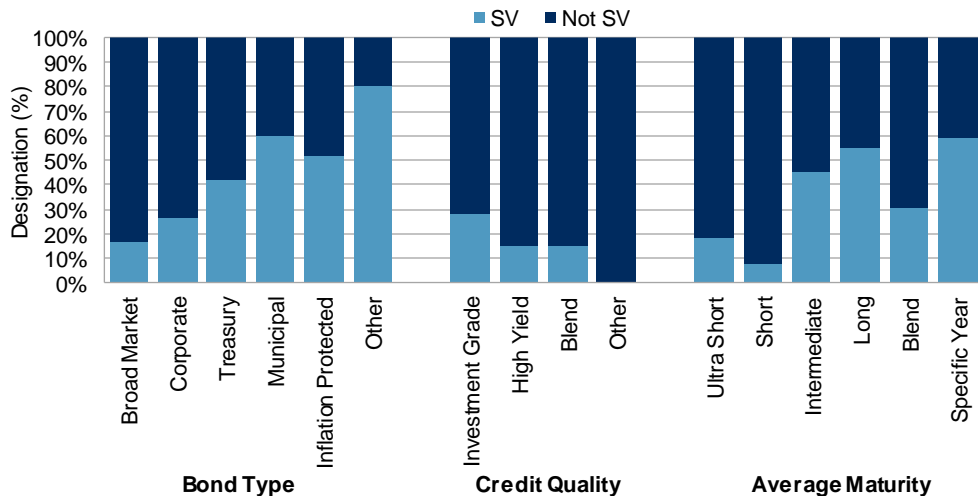


Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

The use of the SV designation for ETFs with a specific maturity year declined in 2020, while the use of SV for Long maturity ETFs increased. Investment Grade ETFs had a higher SV designation than High Yield or Blend ETFs. Finally, in 2020, there was a sharp increase in SV designations for Municipal ETFs; the use of SV for Treasury ETFs also increased in 2020 (see Exhibit 66).

The use of the SV designation for ETFs with a specific maturity year declined in 2020, while the use of SV for Long maturity ETFs increased.

Exhibit 66: SV Designation by Bond Type, Credit Quality, and Average Maturity



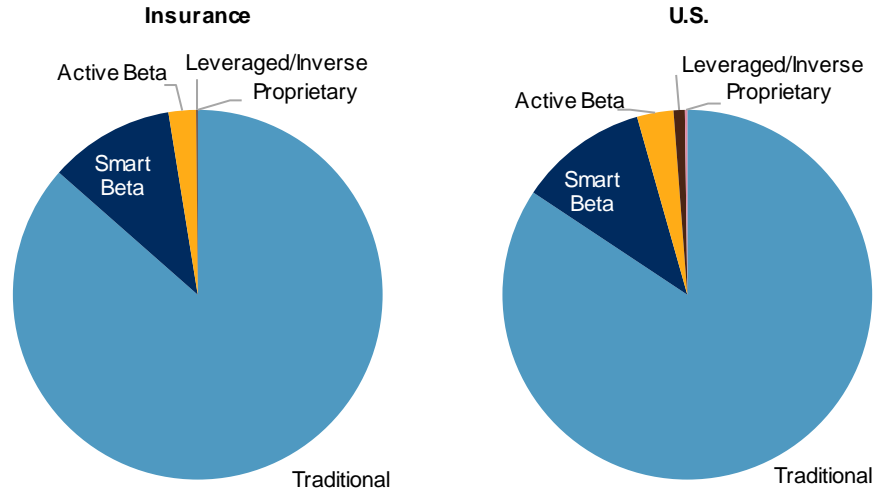
Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

ANALYSIS OF SMART BETA ETFS

The majority of ETF investments by insurance companies were Traditional Beta ETFs. The insurance industry allocated to different beta types in a similar manner to the overall U.S. ETF market (see Exhibit 67).

Exhibit 67: Insurance and U.S. Market ETF AUM by Beta Type

The majority of ETF investments by insurance companies were Traditional Beta ETFs.

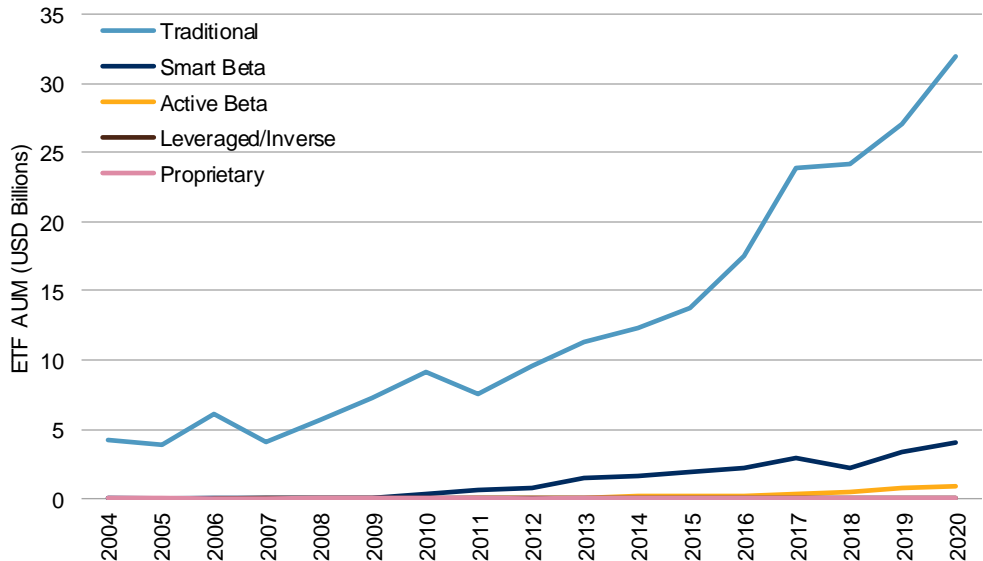


Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Charts are provided for illustrative purposes.

In 2020, the allocation to Smart Beta ETFs increased by 20%, and the allocation to Active Beta ETFs increased by 9.8%, albeit off a small base (see Exhibit 68).

Exhibit 68: ETF AUM Growth by Beta Type

In 2020, the allocation to Smart Beta ETFs increased by 20%, and the allocation to Active Beta ETFs increased by 9.8%, albeit off a small base.

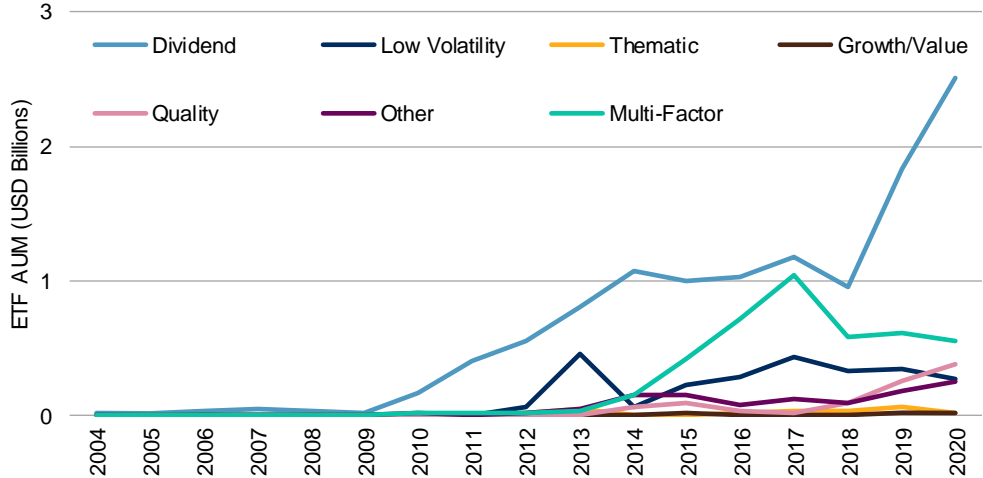


Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

Within the Smart Beta allocation, 99% was in Equity ETFs. Of the different smart beta factors, the largest allocation has been to Dividend ETFs, and this strategy continued to increase in 2020 (see Exhibit 69).

Exhibit 69: Equity ETF AUM Growth by Smart Beta Factor

Of the different smart beta factors, the largest allocation has been to Dividend ETFs, and this strategy continued to increase in 2020.

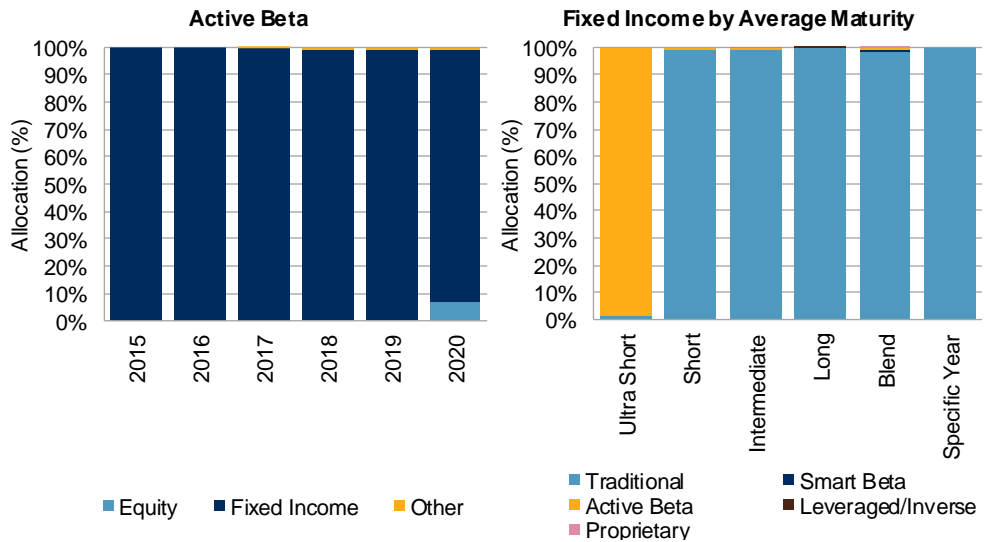


Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

In contrast to Smart Beta, almost all of the Active Beta allocation was in Fixed Income ETFs. Within Fixed Income, almost all of the Active Beta was in Ultra Short ETFs (see Exhibit 70).

Exhibit 70: Active Beta ETF Allocation by Asset Class and Average Maturity

In contrast to Smart Beta, almost all of the Active Beta allocation was in Fixed Income ETFs with Ultra Short average maturity.



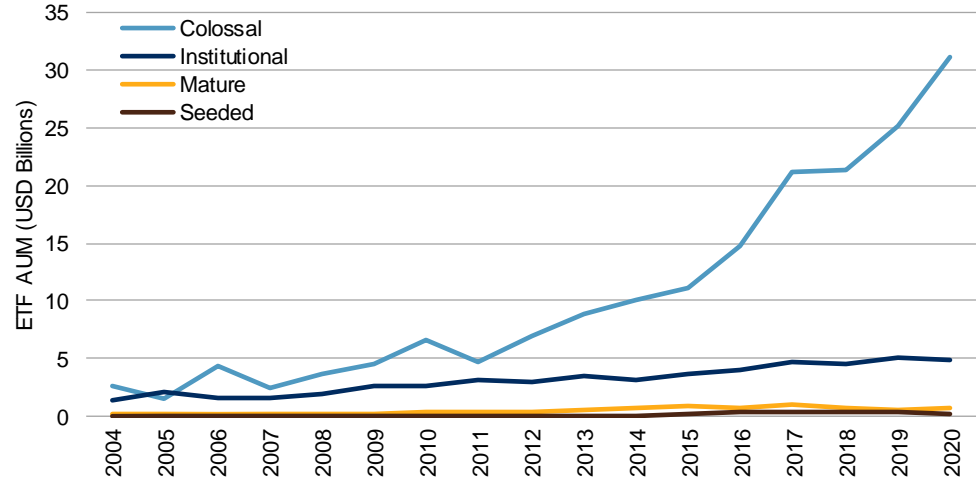
Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Charts are provided for illustrative purposes.

MISCELLANEOUS ANALYSIS

Insurance companies invested 84% of the assets in Colossal ETFs. This category of ETFs continued to attract assets in 2020 (see Exhibit 71). The only investments in Seeded ETFs were larger Life companies investing in ETFs from affiliates.

Insurance companies invested 84% of the assets in Colossal ETFs, which continued to attract assets in 2020.

Exhibit 71: Equity ETF AUM by ETF Size

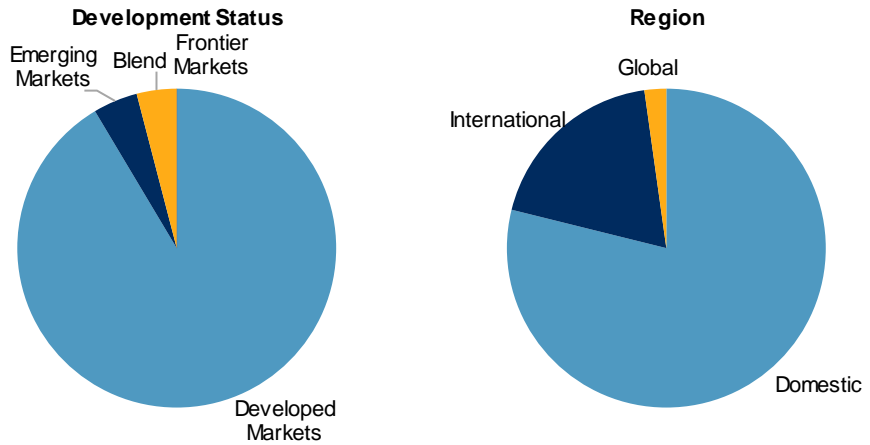


Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

In terms of location, insurance companies invested mostly in Developed Market and Domestic ETFs (see Exhibit 72).

Exhibit 72: ETF Allocation by Location

In terms of location, insurance companies invested mostly in Developed Market and Domestic ETFs.



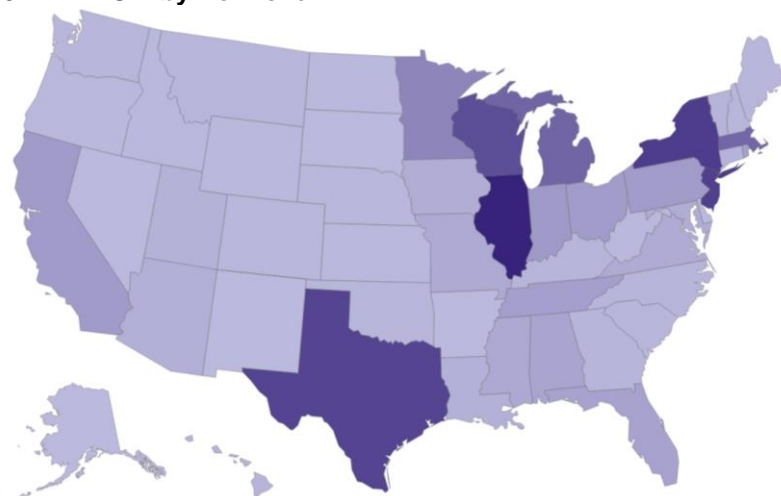
Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Charts are provided for illustrative purposes.

Insurance companies invested 0.23% of ETF investments to ESG ETFs; this is lower than the 1.3% of the U.S. ETF market. The primary use of ESG ETF investments was by insurance companies in their asset management subsidiaries.

Insurance companies invested 0.23% of ETF investments to ESG ETFs; this is lower than the 1.3% of the U.S. ETF market.

Looking at the geographic distribution of insurance ETF usage, companies located in Illinois, New York, New Jersey, Texas, and Wisconsin were the largest users of ETFs (see Exhibit 73). However, of the five states with the largest ETF usage, only New York had lower ETF allocation than its share of invested assets (see Exhibit 74). Of the top five states, all increased their ETF usage, except Illinois. New Jersey grew the fastest in 2020 to move into third place (see Exhibit 75).

Exhibit 73: ETF AUM by Domicile

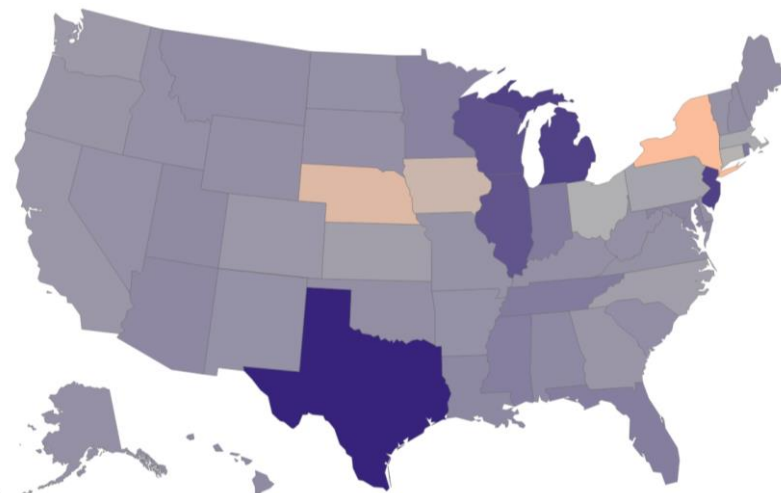


Fewer ETFs **More ETFs**

Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

Looking at the geographic distribution of insurance ETF usage, companies located in Illinois, New York, New Jersey, Texas, and Wisconsin were the largest users of ETFs.

Exhibit 74: ETF Overweight and Underweight Relative to Invested Assets by Domicile

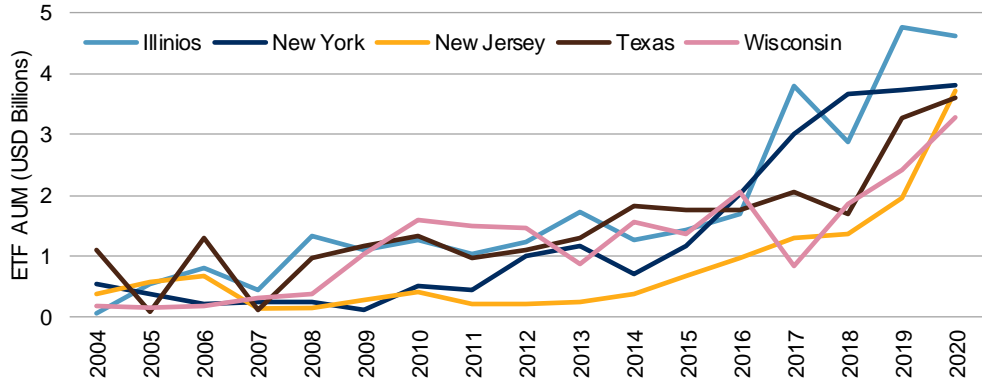


Underweigh **Overweight**

Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

However, of the five states with the largest ETF usage, only New York had lower ETF allocation than its share of invested assets.

Exhibit 75: ETF AUM Growth by the Top Five Domiciles



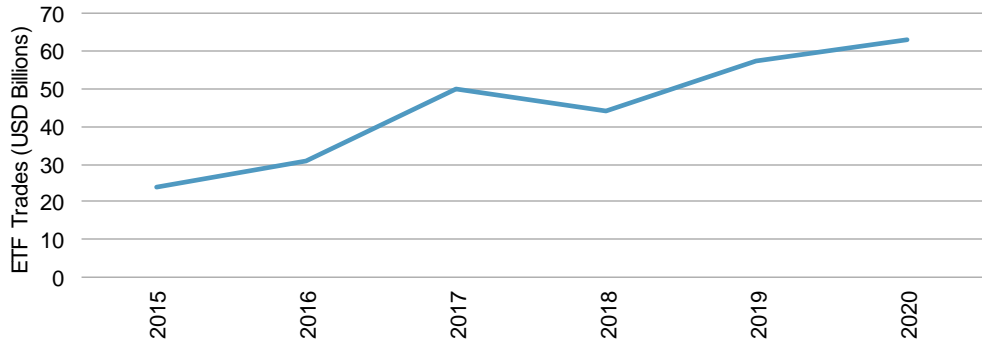
Of the top five states, all increased their ETF usage, except Illinois. New Jersey grew the fastest in 2020 to move into third place.

Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

TRADE ANALYSIS

In addition to holdings data, insurance companies also filed information for all the trades they executed over the year. For this report, we analyzed trading data back to 2015. Over the past six years, the U.S. dollar amount of ETFs traded by insurance companies increased 234% from USD 23 billion to USD 63 billion. This equated to a five-year CAGR of 21%. In 2020, the amount traded increased 10% over the amount traded in 2019 (see Exhibits 76 and 77).

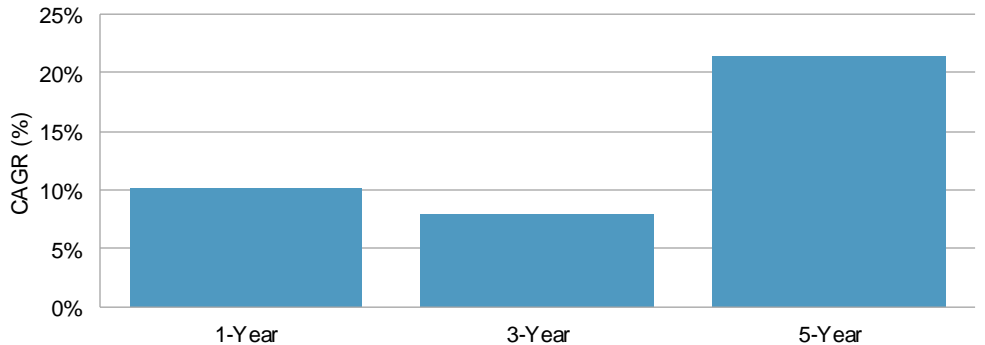
Exhibit 76: ETF Trades



Over the past six years, the U.S. dollar amount of ETFs traded by insurance companies increased 234% from USD 23 billion to USD 63 billion.

Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

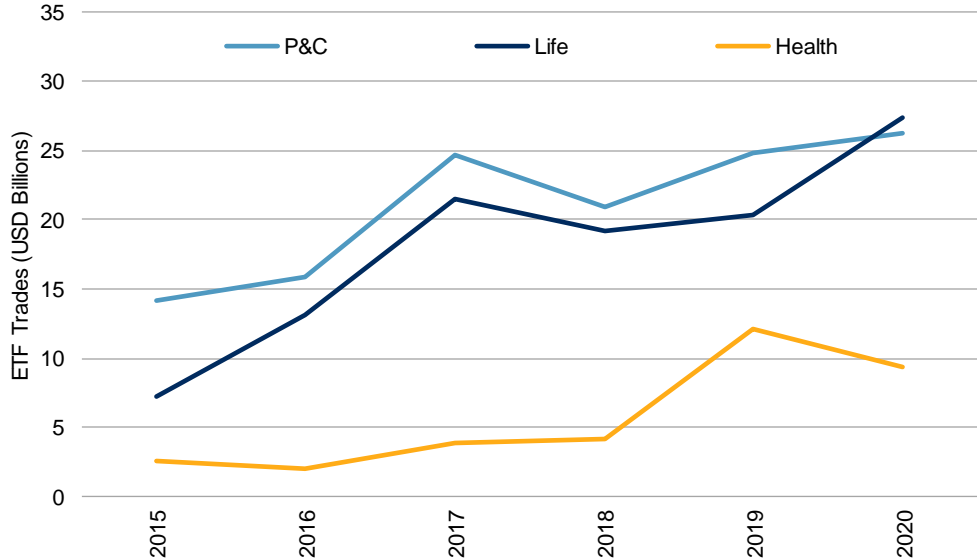
Exhibit 77: CAGR for ETF Trades



Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

Life and P&C companies accounted for approximately 85% of the trades. Life companies increased their trading volume by 35% in 2020 (see Exhibit 78).

Exhibit 78: ETF Trades by Company Type



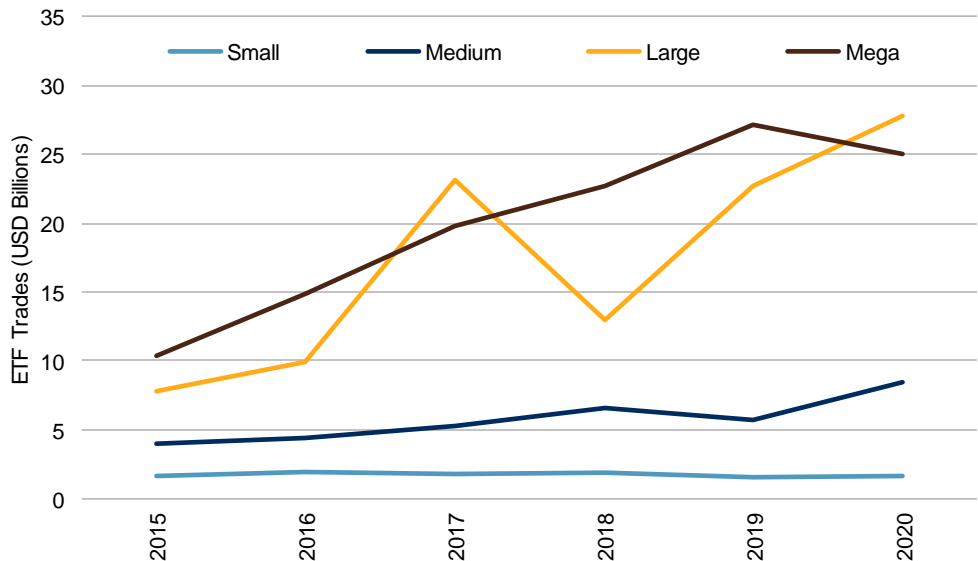
Life and P&C companies accounted for approximately 85% of the trades.

Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

Mega and Large companies accounted for the bulk of the trading.

Mega and Large companies accounted for the bulk of the trading. However, Mega companies reduced trading in 2020, while Large companies increased volume by 22%. At 48%, Medium companies increased trading the most (see Exhibit 79)

Exhibit 79: ETF Trades by Company Size

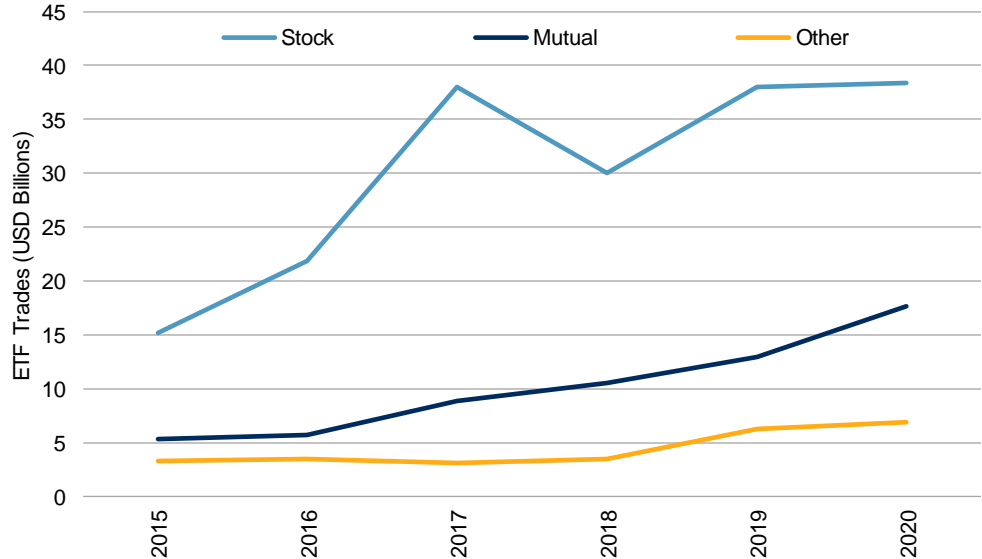


At 48%, Medium companies increased trading the most.

Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

Stock companies traded the most ETFs, but in 2020, they did not increase their volume. Mutual companies, on the other hand, increased trading volume by 36% (see Exhibit 80).

Exhibit 80: ETF Trades by Ownership Structure



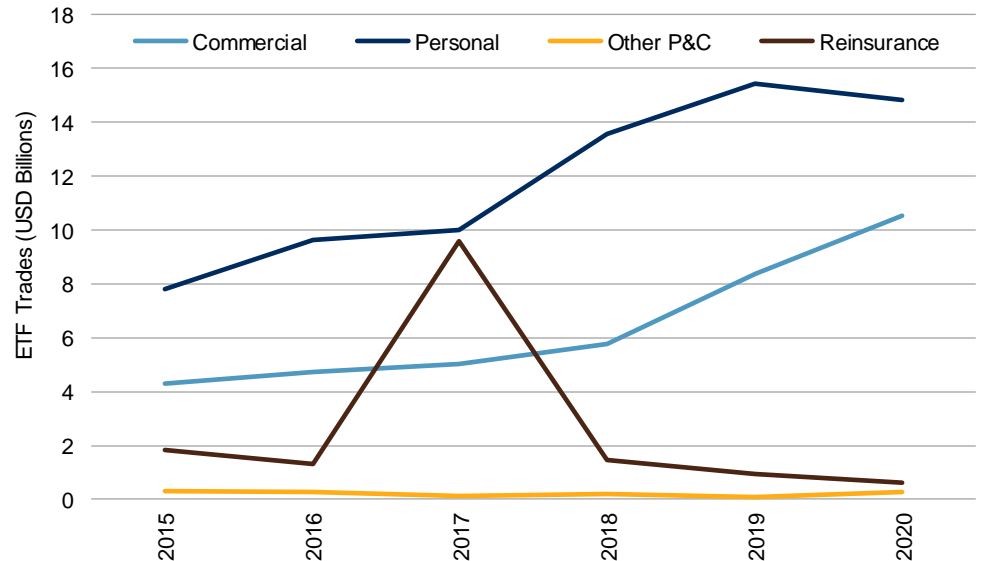
Stock companies traded the most ETFs, but in 2020, they did not increase their volume.

Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

Among P&C companies, Commercial and Personal carriers dominated trading. These two types of companies accounted for 97% of all trades for P&C companies in 2020. Commercial companies increased trading by 25%, while trades by Personal companies declined slightly (see Exhibit 81).

Among P&C companies, Commercial and Personal carriers dominated trading. These two types of companies accounted for 97% of all trades for P&C companies in 2020. Commercial companies increased trading by 25%, while trades by Personal companies declined slightly (see Exhibit 81).

Exhibit 81: ETF Trades by P&C Business Focus



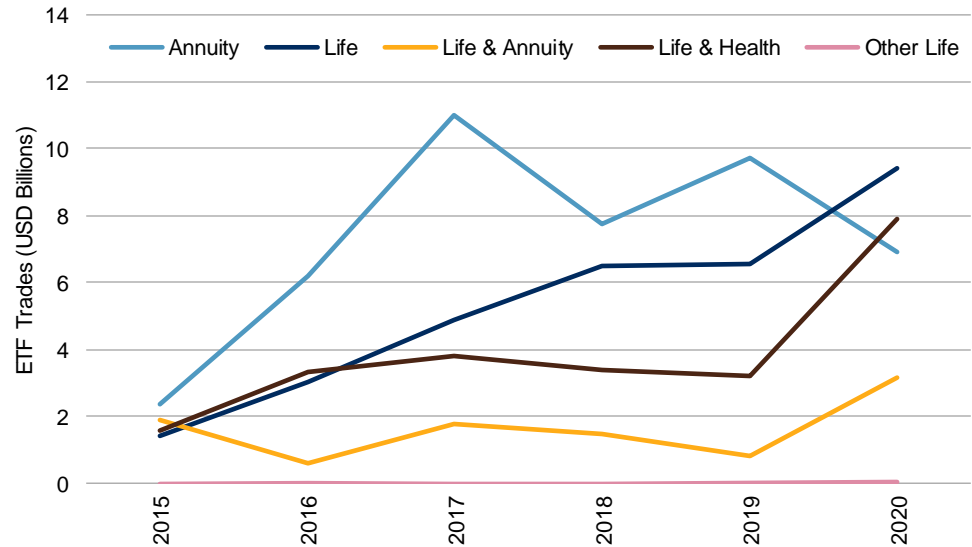
Commercial companies increased trading by 25%, while trades by Personal companies declined slightly.

Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

Life & Health companies increased trading by 148% in 2020, and as of year-end 2020 they accounted for 29% of trading volume by Life companies. Annuity companies decreased their trading volume in 2020 by 29%. Life & Annuity companies increased trading the most, up 274% in 2020, but accounted for only 12% of trades. Life companies increased trading by 48% and became the largest trading block among Life companies (see Exhibit 82).

Life & Health companies increased trading by 148% in 2020 and as of year-end 2020, accounted for 29% of trading volume by Life companies.

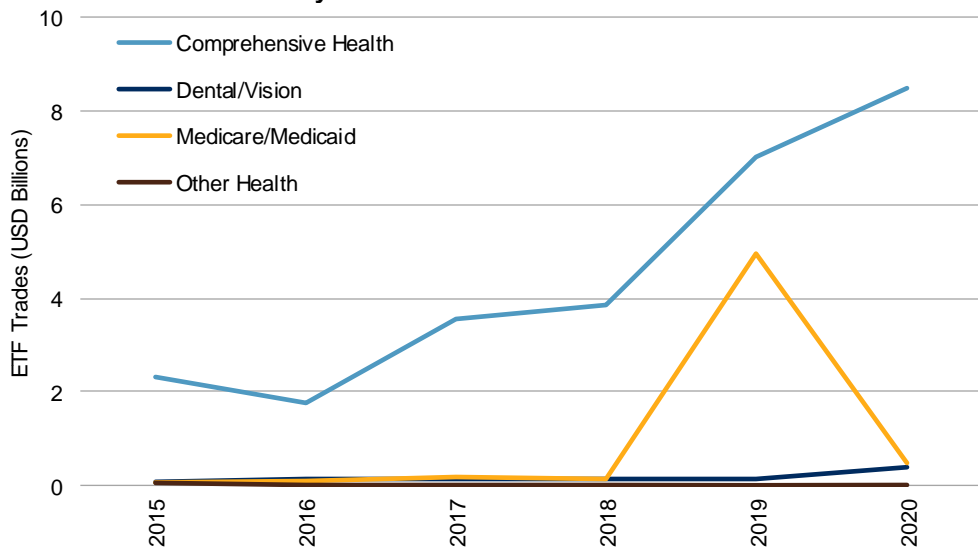
Exhibit 82: ETF Trades by Life Business Focus



Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

After a brief appearance by Medicare/Medicaid companies in 2019, Comprehensive Health again dominated trading by Health companies (see Exhibit 83).

Exhibit 83: ETF Trades by Health Business Focus



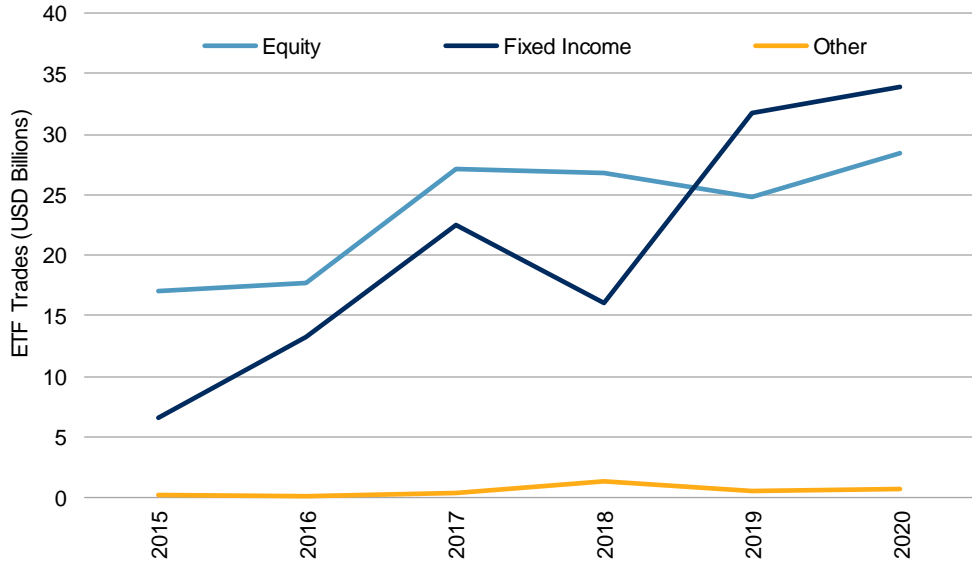
Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

After a brief appearance by Medicare/Medicaid companies in 2019, Comprehensive Health again dominated trading by Health companies.

In 2015, Fixed Income ETFs accounted for a little over 25% of all ETF trades by insurance companies. By 2020, Fixed Income ETFs accounted for over one-half of all ETF trades. Over this period, Fixed Income ETF trading grew at an annual rate of 39% per year (see Exhibit 84).

Exhibit 84: ETF Trades by Asset Class

In 2015, Fixed Income ETFs accounted for a little over 25% of all ETF trades by insurance companies, but by 2020, they accounted for over one-half of all ETF trades.

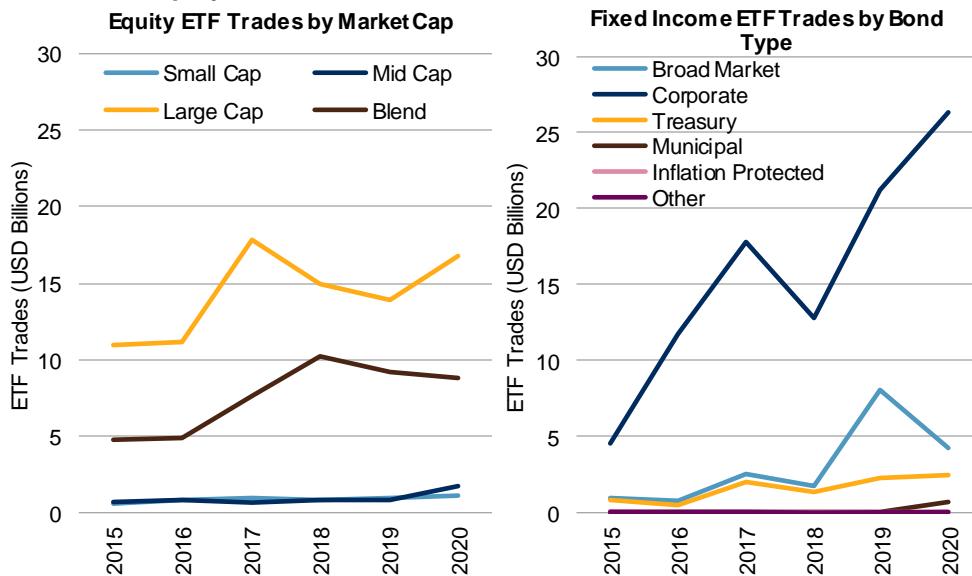


Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

Among Equity ETFs, Large Cap trades dominated; among Fixed Income ETFs, Corporate ETFs traded the most (see Exhibit 85).

Exhibit 85: Equity and Fixed Income ETF Trades

Among Equity ETFs, Large Cap trades dominated; among Fixed Income ETFs, Corporate ETFs traded the most.

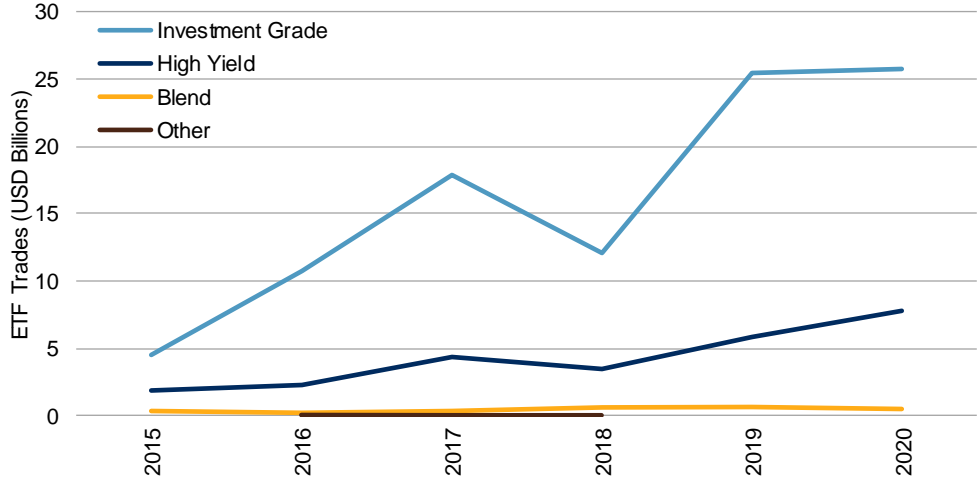


Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Charts are provided for illustrative purposes.

Investment Grade ETFs traded the most, but High Yield ETFs have consistently increased in volume. In 2020, their volume increased 35% and they had a five-year CAGR of 33% (see Exhibit 86).

Exhibit 86: Fixed Income Trades by Credit Quality

Investment Grade ETFs traded the most, but High Yield ETFs have consistently increased in volume.

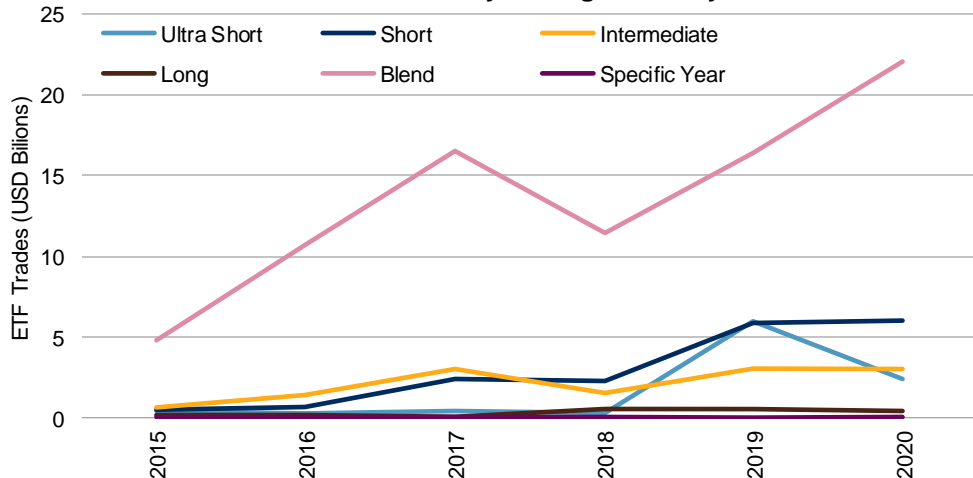


Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

In general, ETFs with Blend maturity traded the most. Short and Ultra Short ETFs have traded more in recent years, although their trade volumes declined in 2020 (see Exhibit 87).

Exhibit 87: Fixed Income ETF Trades by Average Maturity

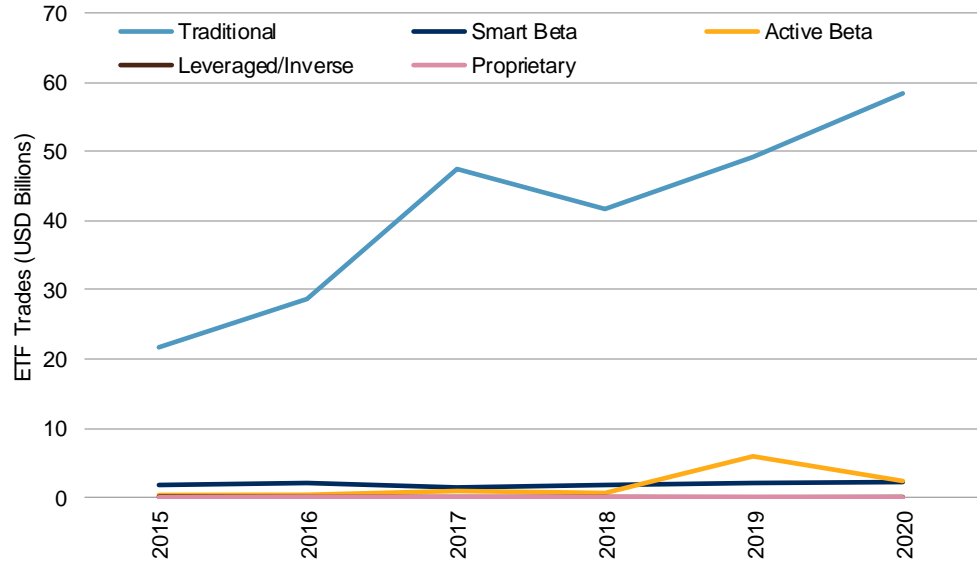
Among Equity ETFs, Large Cap trades dominated; among Fixed Income ETFs, Corporate ETFs traded the most.



Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

Insurance companies traded mostly using Traditional market cap-weighted ETFs (see Exhibit 88).

Exhibit 88: Fixed Income ETF Trades by Beta Type

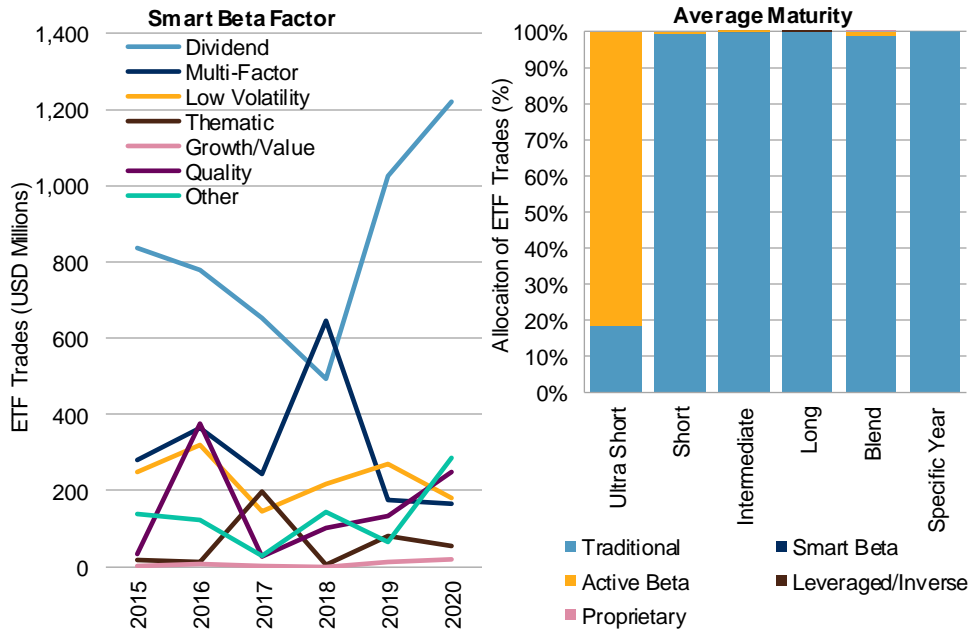


Insurance companies traded mostly using Traditional market cap-weighted ETFs.

Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

As with our holdings analysis, among Smart Beta Equity ETFs, Dividend ETFs traded the most, and Active Beta ETFs dominated Fixed Income ETF trades with Ultra Short average maturity (see Exhibit 89)

Exhibit 89: ETF Trades by Smart Beta Factor and Average Maturity

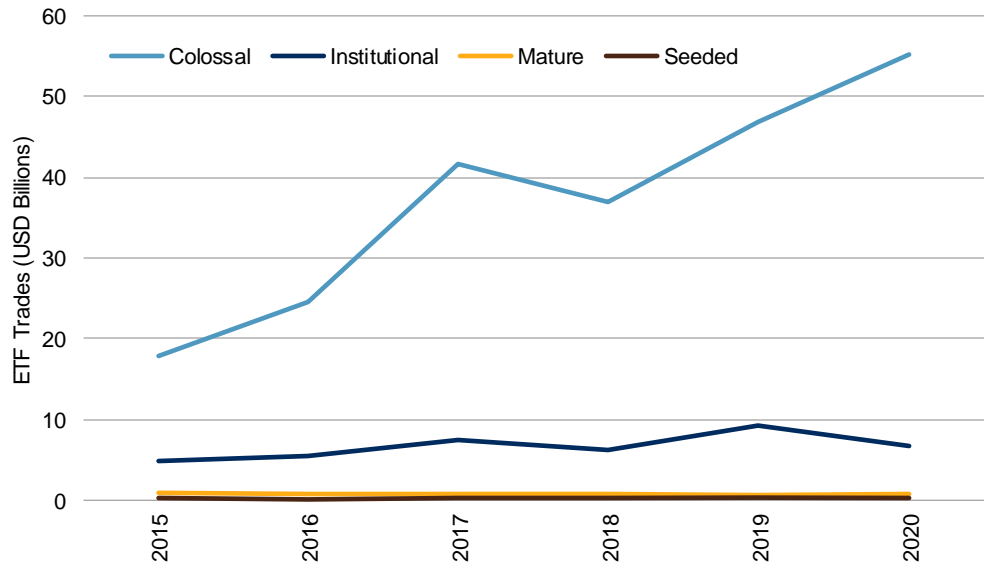


As with our holdings analysis, among Smart Beta Equity ETFs, Dividend ETFs traded the most, and Active Beta ETFs dominated Fixed Income ETF trades with Ultra Short average maturity.

Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Charts are provided for illustrative purposes.

Also mirroring the holdings analysis, Colossal ETFs dominated trading (see Exhibit 90).

Exhibit 90: ETF Trades by ETF Size



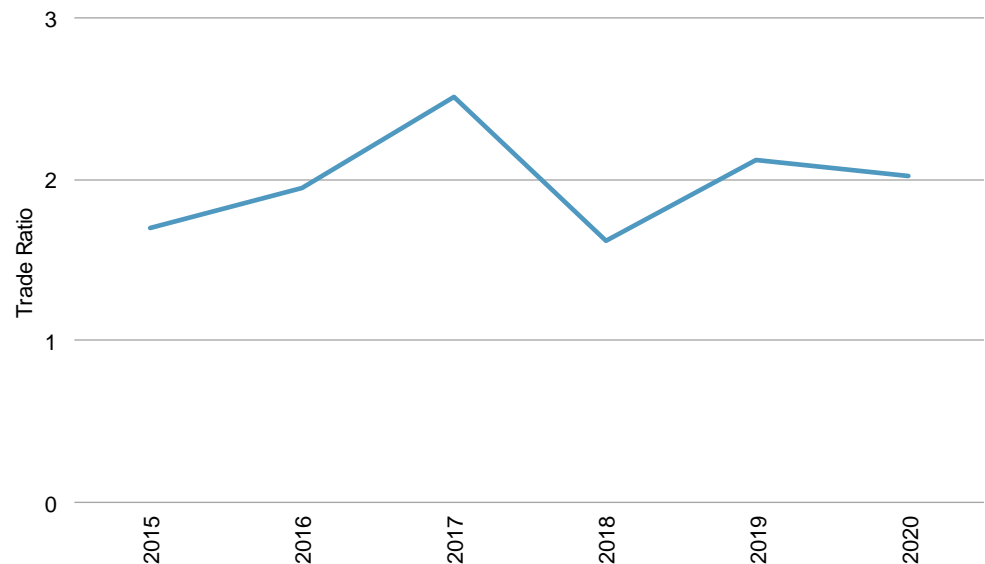
Also mirroring the holdings analysis, Colossal ETFs dominated trading.

Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

ETF Trade Ratio and Trade Size

By combining the holding and trade data, we analyzed the amount of trading relative to holding. Dividing the amount traded in a given year by the number of ETFs held at the beginning of the same year gave us a trade ratio for the year. Insurance companies have consistently traded twice as many ETFs as they have held (see Exhibit 91).

Exhibit 91: ETF Trade Ratio



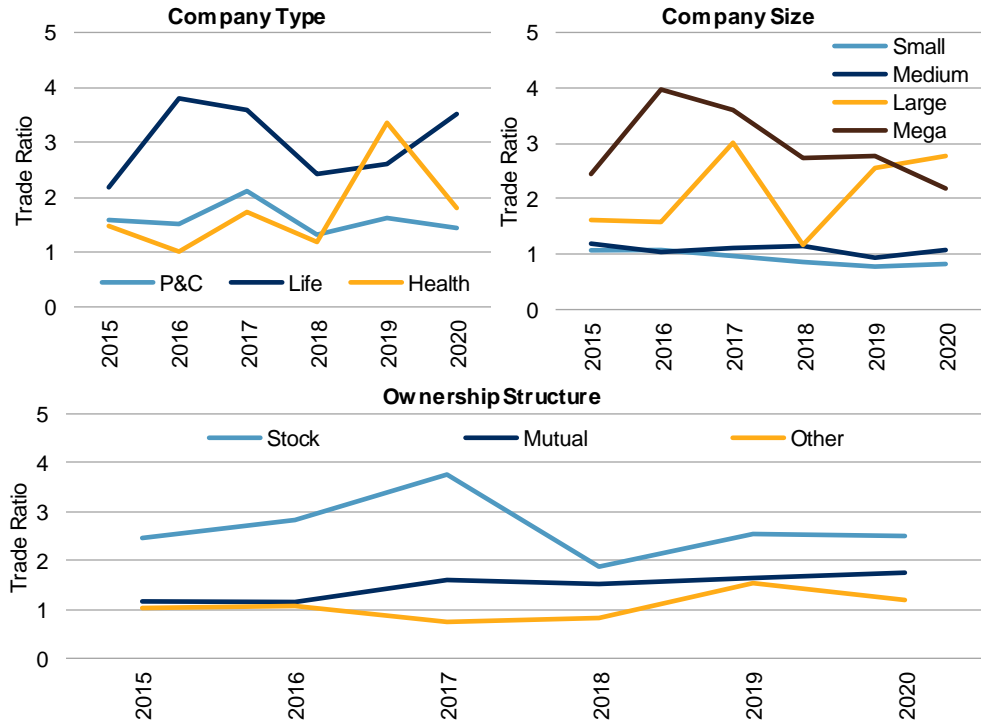
Insurance companies have consistently traded twice as many ETFs as they have held.

Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

In 2020, Life companies traded 3.5 times the amount of their holdings; whereas, P&C companies have consistently traded at 1.5 times. As they have increased their ETF holdings, Mega companies' trade ratio declined steadily and ended 2020 at 2.19 times. The trade ratio for Large companies varied more year to year and ended 2020 at 2.79 times. Stock companies had the highest trade ratio, but this has also declined as holdings have increased (see Exhibit 92).

Exhibit 92: Trade Ratio by Company Type, Size, and Ownership Structure

In 2020, Life companies traded 3.5 times the amount of their holdings; whereas, P&C companies have consistently traded at 1.5 times.



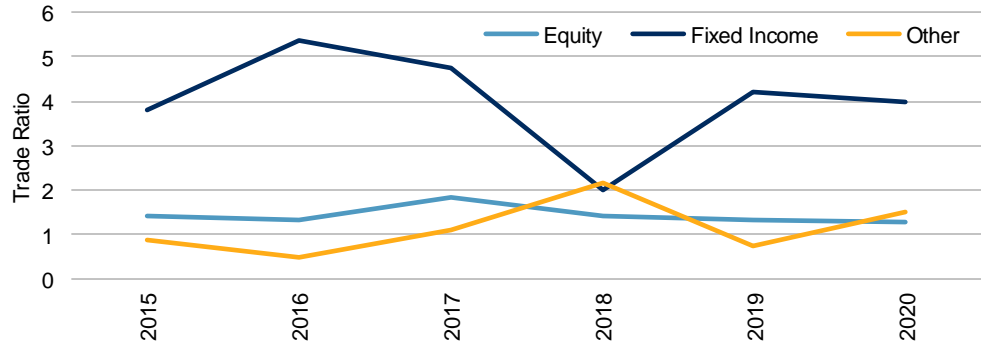
Stock companies had the highest trade ratio, but this has also declined as holdings have increased.

Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Charts are provided for illustrative purposes.

In terms of asset class, insurance companies traded Fixed Income ETFs much more frequently than Equity ETFs. The Equity trade ratio always remained under 2 times, while the Fixed Income trade ratio never dipped below 2 times (see Exhibit 93).

Exhibit 93: ETF Trade Ratio by Asset Class

In terms of asset class, insurance companies traded Fixed Income ETFs much more frequently than Equity ETFs.

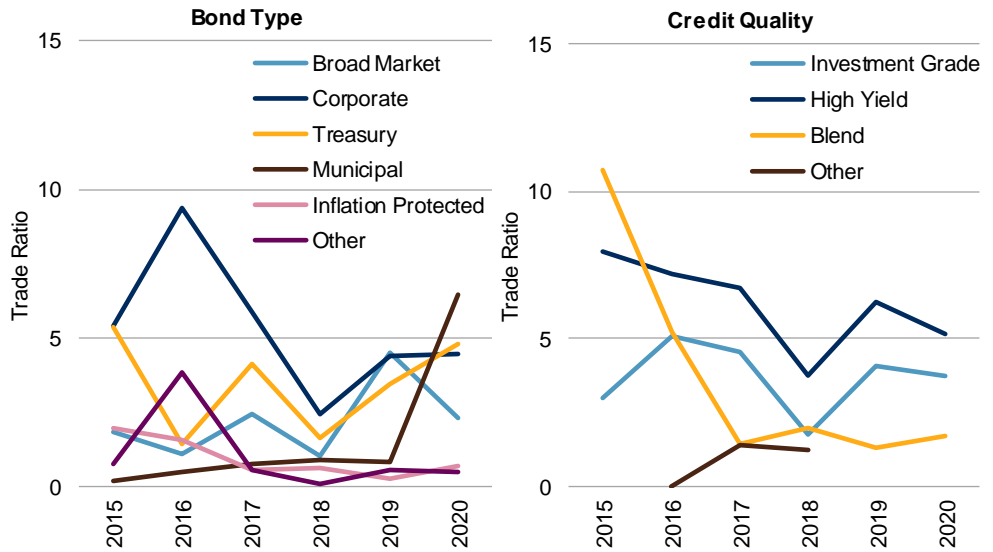


Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

Corporate ETFs, the most commonly held type of Fixed Income ETF, traded 4.5 times in 2020; it traded as high as 9.4 times in 2016. Even though insurance companies have held fewer assets in High Yield ETFs, they traded High Yield at a higher rate (see Exhibit 94).

Exhibit 94: ETF Trade Ratio by Bond Type and Credit Quality

Corporate ETFs, the most commonly held type of Fixed Income ETF, traded 4.5 times in 2020; it traded as high as 9.4 times in 2016.



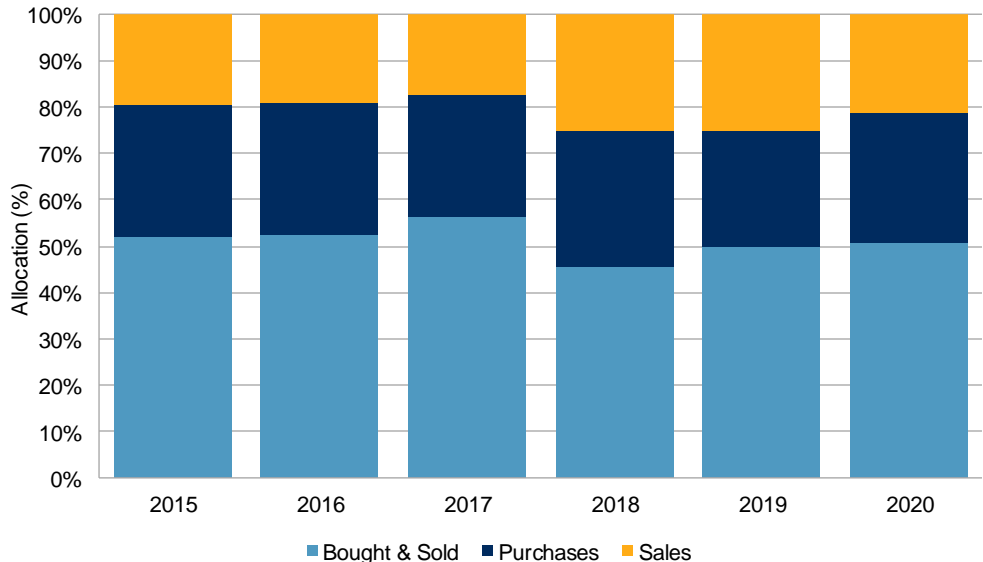
Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Charts are provided for illustrative purposes.

Even though insurance companies have held fewer assets in High Yield ETFs, they traded High Yield at a higher rate.

Using NAIC schedules, we can also identify ETFs that were a) bought in a year, b) sold in a year, or c) bought and sold within a year. Consistently, one-half of the trades completed by insurance companies were these round-trip trades (see Exhibit 95).

Exhibit 95: ETF Trades by NAIC Schedule

Consistently, one-half of the trades completed by insurance companies were bought and sold in the same year.

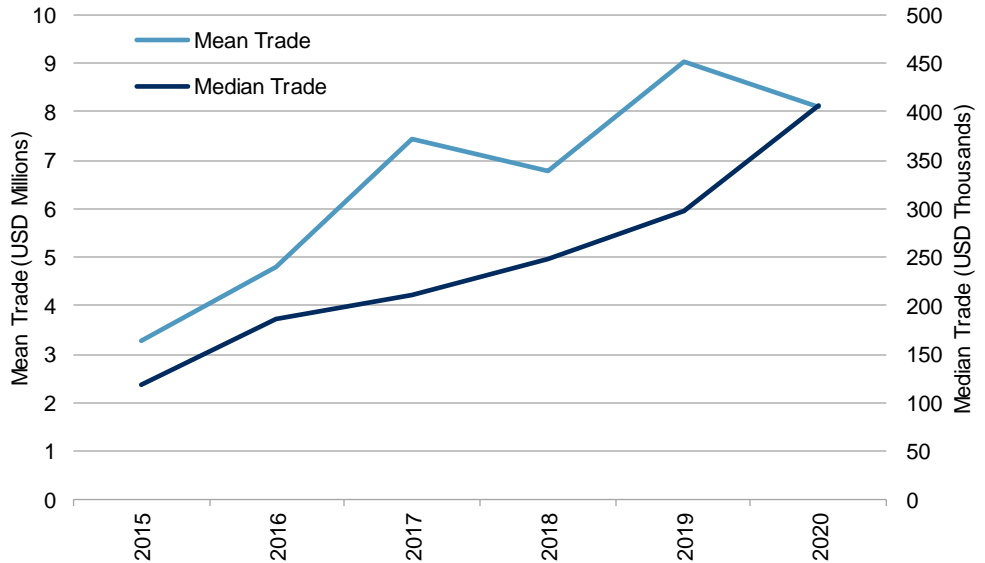


Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

The data also allowed us to look at the size of ETF trades. We noted a large disparity between the mean and median of trades. In 2020, the average trade was USD 8 million, while the median trade was USD 406,000 (see Exhibit 96).

We noted a large disparity between the mean and median of trades.

Exhibit 96: Mean and Median ETF Trade Size

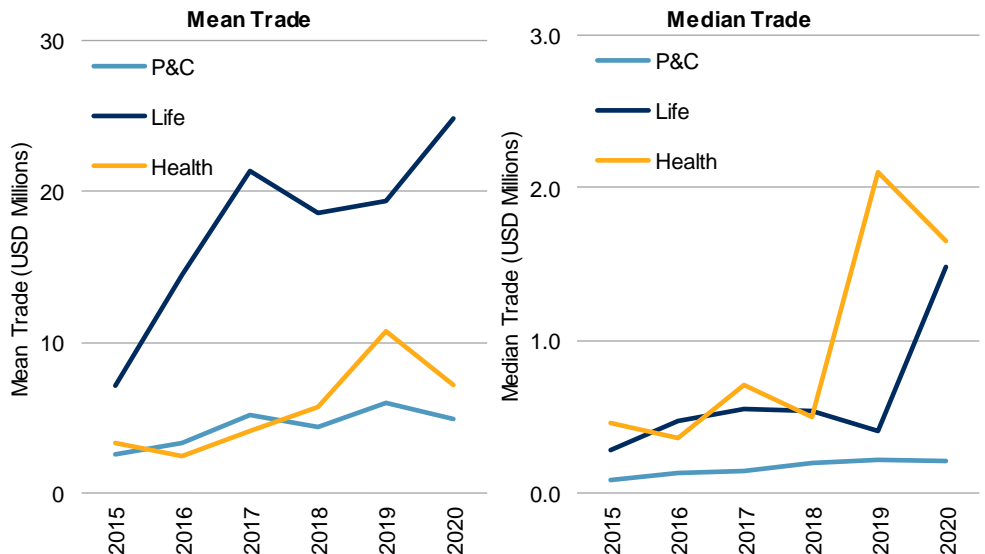


In 2020, the average trade was USD 8 million, while the median trade was USD 406,000.

Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

For both the mean and median, Life companies had a higher mean trade size than P&C or Health Companies. However, Health companies had higher median trades (see Exhibit 97). A few dozen trades over USD 500 million executed by Large and Mega companies accounted for this skew.

Exhibit 97: Mean and Median Trade Size by Company Type



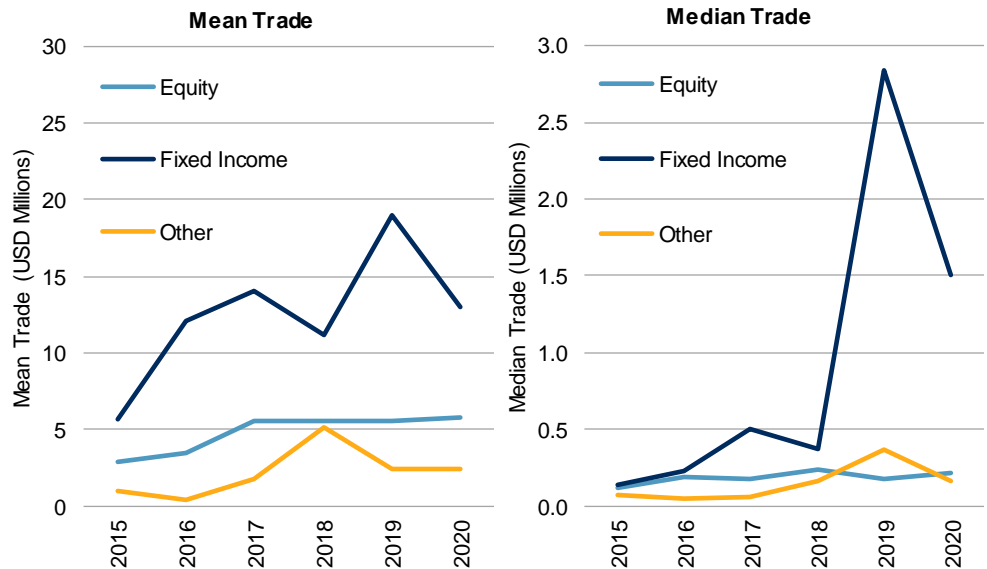
For both the mean and median, Life companies had a higher mean trade size than P&C or Health Companies.

Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Charts are provided for illustrative purposes.

Fixed Income trades has always had a higher mean trade size. Until 2019, all types of assets had roughly the same median trade size, but in 2019 and 2020, Fixed Income ETFs had a much higher median trade size (see Exhibit 96).

Fixed Income trades has always had a higher mean trade size.

Exhibit 98: Mean and Median ETF Trade Size by Asset Class



Until 2019, all types of assets had roughly the same median trade size, but in 2019 and 2020, Fixed Income ETFs had a much higher median trade size.

Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Charts are provided for illustrative purposes.

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) compiled this data from the NAIC and makes it available in a usable format. From this database, we extracted all insurance ETF holdings and trades, both current and historical. In addition, First Bridge, a CFRA Company, which is an ETF data and analytics company, provided us with a list of U.S. ETFs, as well as characteristics of each ETF—such as asset class, stock strategy, bond credit quality, etc. We combined First Bridge 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 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 2021. 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 7, 2021.

SPGMI classified companies in various ways. For companies that are members of a group, we classified all companies the same way as a group. For example, if a group contained individual companies of various ownership structures (Stock, Reciprocal Exchange, Lloyd’s Syndicate, etc.), but SPGMI classified the group as a Stock company. For this analysis, we assigned the ownership structure of the parent organization to all the subsidiaries. We do a similar assignment across all the features in this report.

In 2020, the SPGMI database contained 6,137 companies, both historical and operating. Most of these companies (3,867 or 63%) belonged to one of 626 insurance groups; this left 2,261 stand-alone insurance entities. For this analysis, we refer to “companies” as the combination of the 626 groups and 2,261 individual entities. This gave us 2,887 companies in our analysis (see Exhibit 99).

TYPE OF COMPANY	INDIVIDUAL COMPANIES	STAND ALONE COMPANIES	COMPANIES PART OF A GROUP	NUMBER OF GROUPS	GROUPS PLUS STAND-ALONE COMPANIES
P&C	3,468	1,374	2,094	325	1,699
Life	1,069	404	665	145	549
Health	1,600	483	1,117	156	639
Total	6,137	2,261	3,876	626	2,887

Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. 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 the data had not made it into the SPGMI database by April 7, 2021. To test for completeness, we compared the reported invested assets⁶ of the 6,137 companies in 2020 versus 2019. Of the 6,137 entities, 293 had assets in 2019 but not in 2020. However, these companies represented only 1.38% of the total 2019 invested assets (see Exhibit 100). Conversely, we had

⁶ Invested assets refer to net admitted cash and invested assets, reported on page 2, line 12 of the annual statement.

98.62% of companies reporting in terms of invested assets. Of the companies not reporting, the largest number of late filers were Health companies at 9.95%. This may have had an impact on the analysis of ETF usage by Health companies.

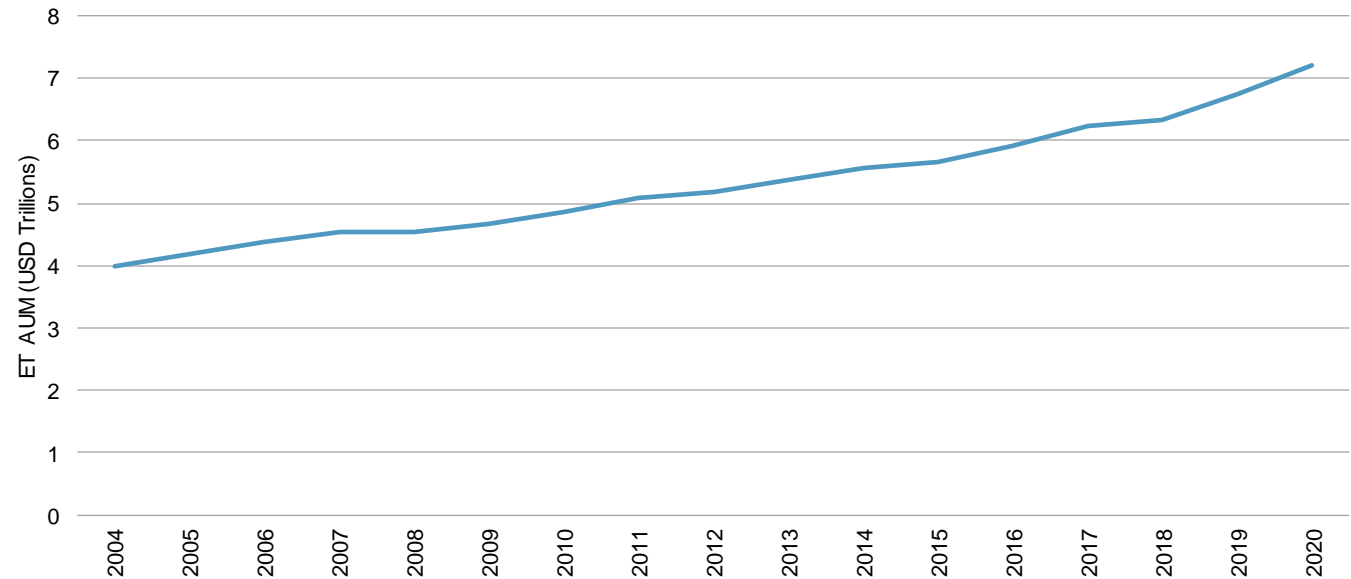
Exhibit 100: Companies without Filing Data

TYPE OF COMPANY	NUMBER OF COMPANIES	INVESTED ASSETS (%)
P&C	106	1.57
Life	54	0.81
Health	133	9.95
Total	293	1.38

Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Table is provided for illustrative purposes.

As of December 2020, the U.S. insurance industry had USD 7.2 trillion in invested assets (see Exhibit 101).

Exhibit 101: Historical Invested Assets



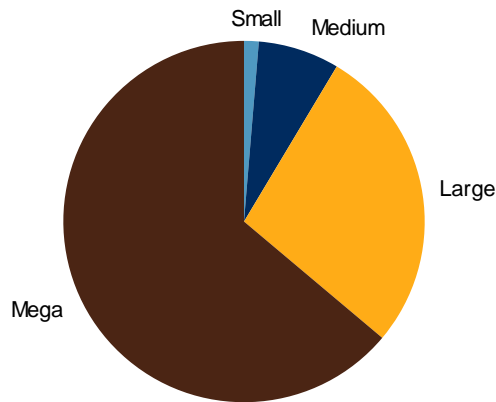
Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

We segregated companies by size, based on their invested assets as of Dec. 31, 2020.

- Small: Invested assets < USD 500 million
- Medium: USD 500 million ≤ invested assets < USD 5 billion
- Large: USD 5 billion ≤ invested assets < USD 50 billion
- Mega: Invested assets ≥ 50 billion

Historically, invested assets were concentrated in Mega companies. As of 2020, Mega companies represented 64% of all the industry’s invested assets (see Exhibit 102).

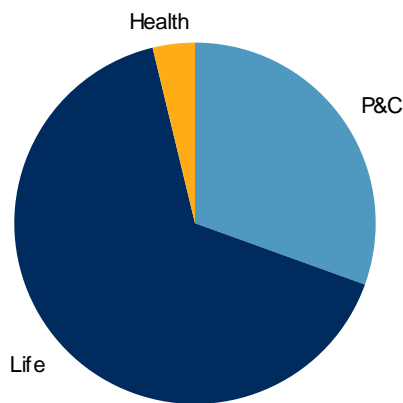
Exhibit 102: Invested Assets by Company Size



Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

Life companies represented approximately 66% of all invested assets in the insurance industry (see Exhibit 103).

Exhibit 103: Invested Assets by Company Type



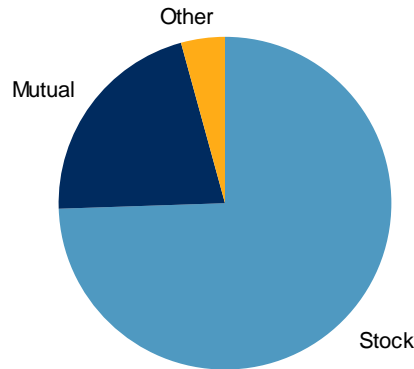
Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

SPGMI classified the ownership of each company in 12 different way, which we condensed into three ownership structures.

- Stock: Stock companies
- Mutual: Mutual companies
- Other: BC/BS Not for Profit, BC/BS Stock, Limited Liability Corporation, Lloyd’s Organization, Non Profit, Reciprocal Exchange, Risk Retention Group, Syndicate, U.S. Branch of Alien Insurer, Other

Stock companies held the vast majority of invested assets, with Mutual companies holding just 21% of invested assets (see Exhibit 104).

Exhibit 104: Invested Assets by Company Ownership Structure



Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

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

Exhibit 105: Business Focus Classifications

P&C COMPANIES	LIFE COMPANIES	HEALTH COMPANIES
Commercial Financial Lines Focus	Annuity and A&H Focus	Comprehensive Health
Commercial General Liability Focus	Annuity Focus	Dental/Vision
Commercial Lines Focus	Individual Life Focus	Medicaid Provider
Commercial Medical Malpractice Focus	Life Insurance Focus	Medicare Provider
Commercial Property Focus	Life Minimum NPW	Health - Other Focus
Commercial Workers Compensation Focus	Life and Annuities Focus	Health Minimum NPW
Accident & Health Lines Focus	Group Accident & Health Focus	Other Health
Other P&C	Individual Life and A&H Focus	
P&C Minimum NPW	Life and A&H Focus	
Personal Lines Focus	Specialty A&H Focus	
Personal Property Focus	Credit Insurance Focus	
Large Reinsurance Focus	Other Life	
Reinsurance Focus		

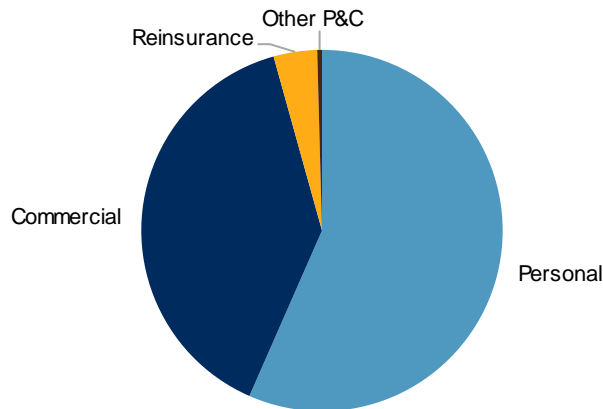
Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Table is provided for illustrative purposes.

SPGMI has 13 classifications for P&C companies (see Exhibit 105). We collapsed these into the following four groups.

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

Personal carriers had the most assets, with Commercial carriers taking up most of the rest (see Exhibit 106).

Exhibit 106: Invested Assets by P&C Business Focus



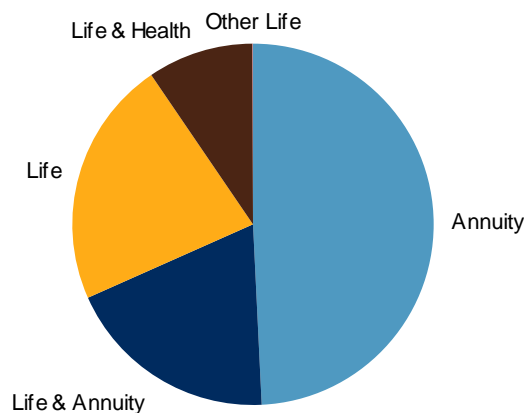
Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

As Exhibit 105 shows, Life companies have 12 business focus classifications, which we collapsed into the following five groups.

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

For Life insurance companies, Annuity companies had approximately one-half of the invested assets (see Exhibit 107).

Exhibit 107: Invested Assets by Life Business Focus



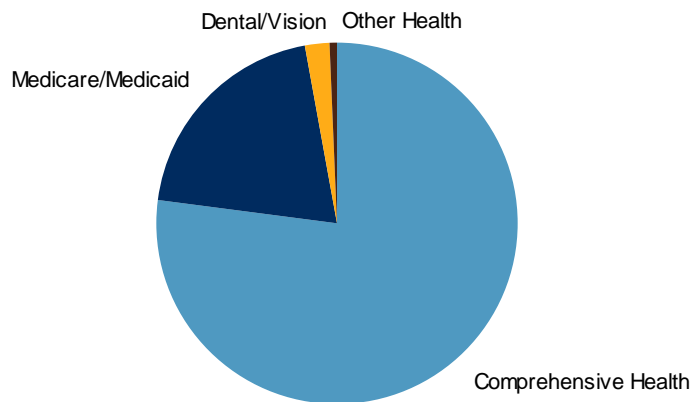
Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

As Exhibit 105 shows, Health companies have seven business focus classifications, which we collapsed into the following four groups.

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

Comprehensive Health companies had the clear majority of invested assets (see Exhibit 108).

Exhibit 108: Invested Assets by Health Business Focus



Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

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 insurance holdings against a master ETF list. Where the CUSIP and tickers did not both match exactly, we employed a manual method to identify the correct ETF. In spite of the 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.

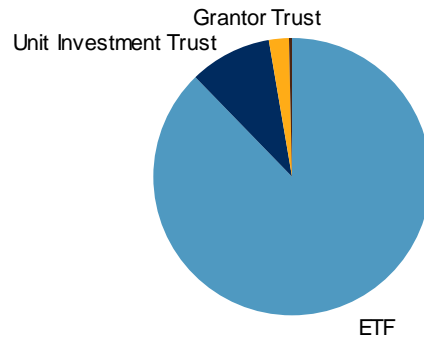
Appendix 1.2: First Bridge Data

We used First Bridge as the source of ETF data in this analysis. We used the categorization labels developed by First Bridge in this analysis. For example, we used First Bridge's definition of Smart Beta. We also relied on First Bridge to classify every Smart Beta ETF. We assume consistency and completeness of the data provided by First Bridge.

For year-end 2020, First Bridge provided us with a list of 2,336 funds. We note that insurance companies do not invest in a vast majority of these funds. While we refer to these funds as ETFs, the funds have varying legal structures. The vast majority of the funds in the list are open-ended ETFs. However, a few large funds have a Unit Investment Trust or Grantor Trust. The remaining legal structures, including semi-transparent ETFs, do not represent a material amount of Assets (see Exhibit 109). For this reason, we do not analyze ETF usage by legal structure and refer to all these funds as ETFs.⁷

⁷ Our analysis excludes exchange-traded notes.

Exhibit 109: ETF AUM by Legal Structure

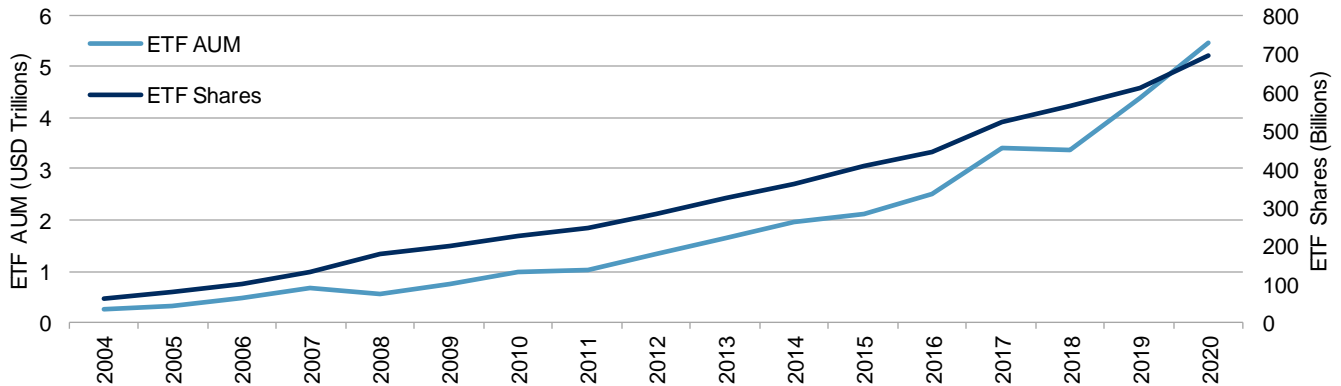


Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

First Bridge provided the AUM and price for each ETF. By dividing the AUM by price, we approximated the number of shares outstanding at any period. Share analysis is not perfect, as share splits could affect these values. Also, ETFs trading at a discount or premium could affect the share calculation. However, at an aggregate level, share analysis is directionally useful.

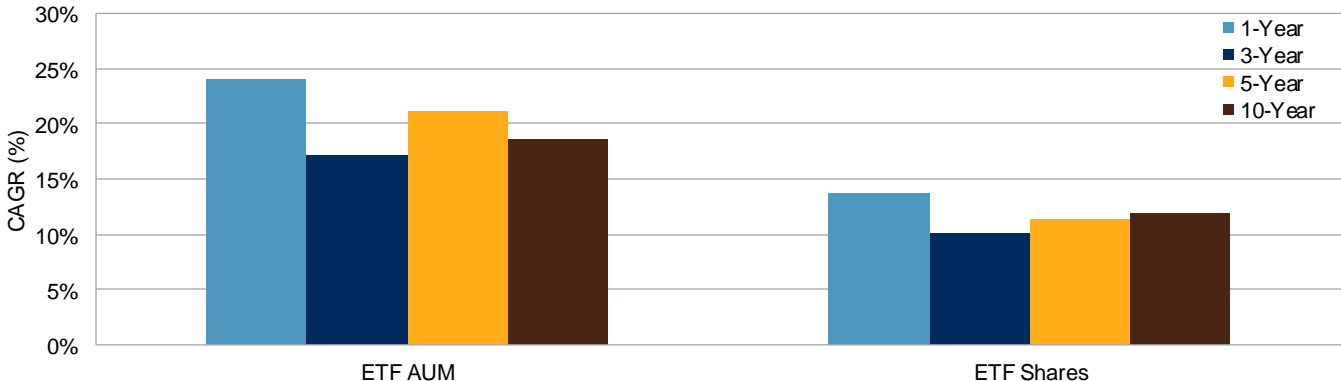
In 2020, ETF AUM exceeded USD 5 trillion (see Exhibit 110). Over the past 10 years, ETF AUM increased at an annualized rate of 19%. This increase was not just because of the extended rally in equity markets, as the number of share outstanding also increased over the same period at an annual basis of 12% (see Exhibit 111).

Exhibit 110: ETF AUM and Shares Growth



Source: FirstBridge. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

Exhibit 111: CAGR of ETF AUM and Shares



Source: FirstBridge. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

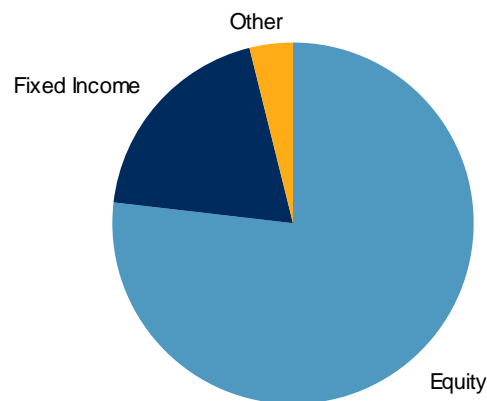
Often First Bridge classified ETFs in more granular detail than was needed for this analysis. In these instances, we combined fields to make our analysis more meaningful.

For example, the First Bridge field of asset class contained six different categories. We collapsed these into three.

- Equity: Equities
- Fixed Income: Bonds
- Other: Commodities & Metals, Currency, Target Date/Multi Asset, and Other Asset types.

The vast majority of U.S. ETFs are Equity ETFs. Fixed Income ETFs grew considerably in recent years and comprised 19% of the ETF market as of year-end 2020 (see Exhibit 112).

Exhibit 112: ETF AUM by Asset Class



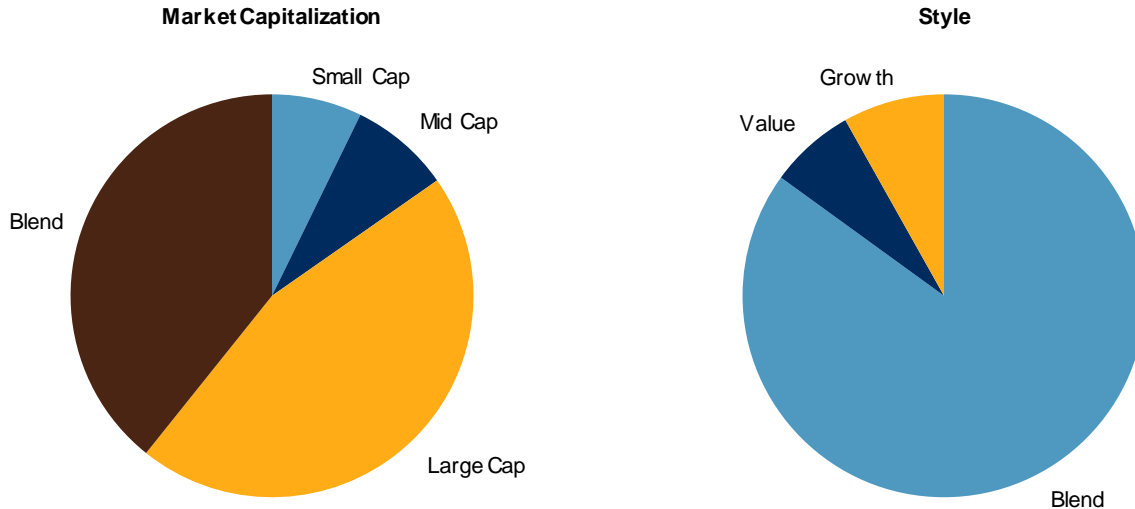
Source: FirstBridge. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

First Bridge segregated Equity ETFs into eight buckets by market capitalization. We consolidated these into four buckets.

- Blend: Broad Market/Multi Cap
- Large Cap: Large Cap and Mega Cap
- Mid Cap: Mid Cap, Large & Mid Cap, and Small & Mid Cap
- Small Cap: Small Cap and Micro Cap

Large Cap ETFs had the most assets, with Blend ETFs closely behind. In terms of style, Blend ETFs had the highest allocation (see Exhibit 113).

Exhibit 113: Equity ETF AUM by Market Capitalization and Style



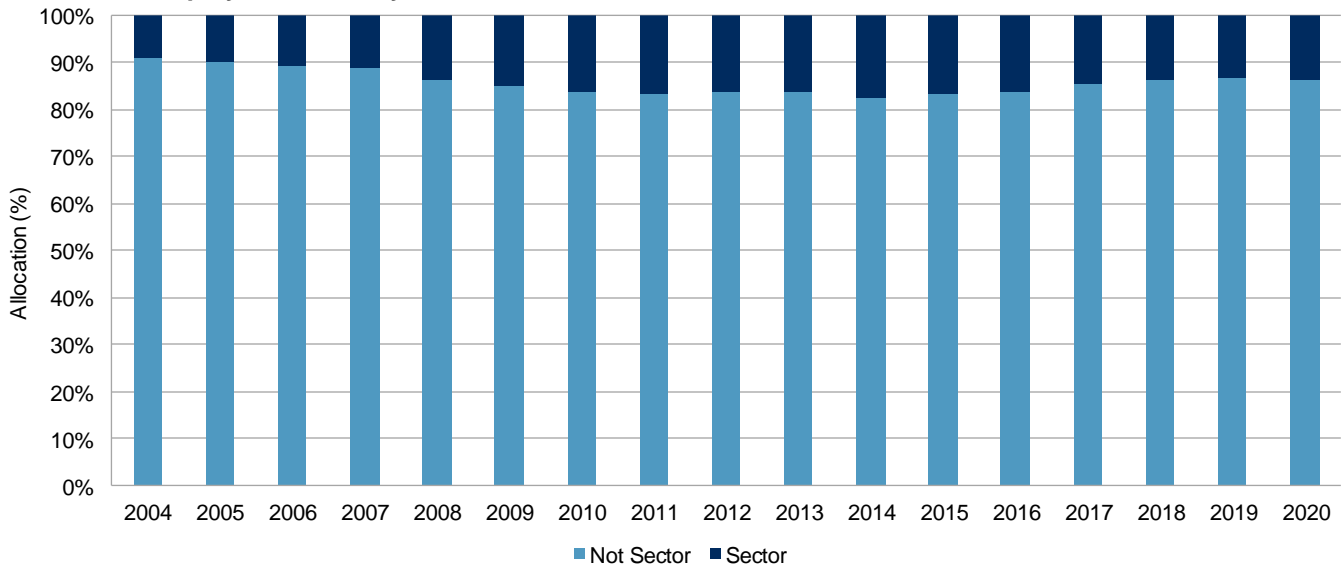
Source: FirstBridge. Data as of Dec. 31, 2020. Charts are provided for illustrative purposes.

First Bridge classified individual sector fields for Equity ETFs. First Bridge also identifies whether an ETF is not sector specific or rotates through different sectors. Using this field, we identify whether an Equity ETF is a Sector ETF or not.

- Not Sector: Not Applicable, Sector Rotation/Combination
- Sector: All Other

While the AUM in Sector ETFs increased in 2020, as a percentage of all Equity ETFs, Sector ETF shares have remained consistent for nearly a decade (see Exhibit 114).

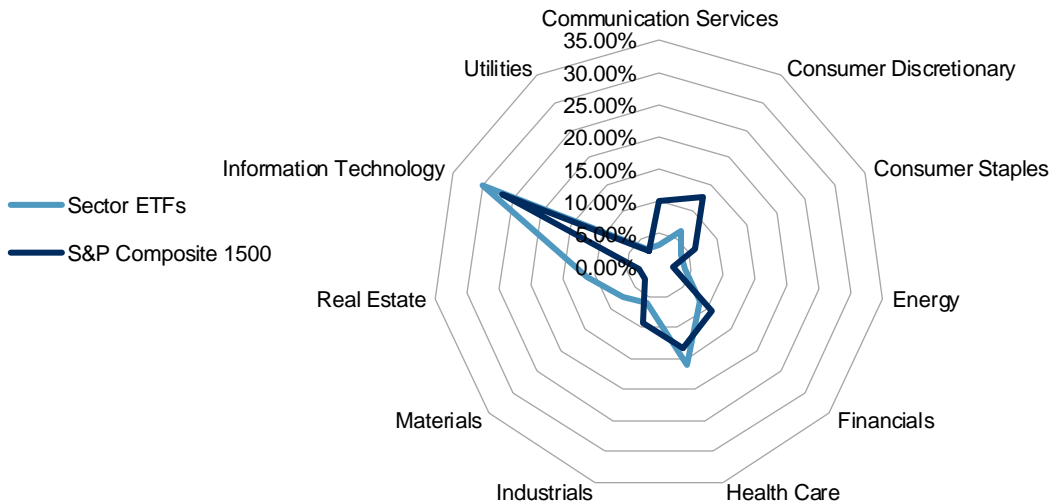
Exhibit 114: Equity ETF AUM by Sector Status



Source: FirstBridge. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

We compared the ETF market allocation to various sectors relative to the sector allocation within the S&P Composite 1500 and noted that ETF investors did not replicate the sector weights of the broader market (see Exhibit 115).

Exhibit 115: Equity ETF Sector Allocation versus S&P Composite 1500 Sector Allocation



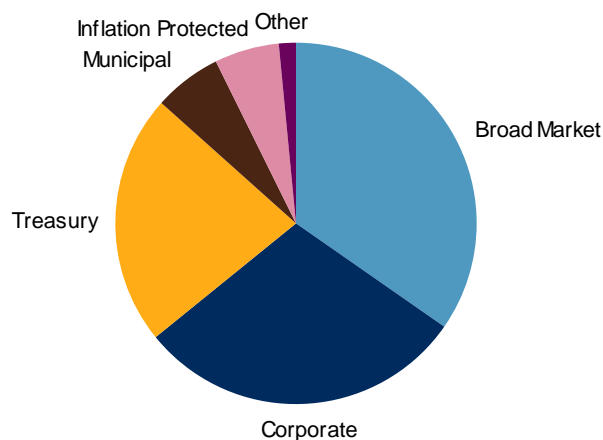
Source: FirstBridge. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

First Bridge classified Fixed Income ETFs into eight types. We narrowed this to the following six bond types.

- Broad Market: Broad Market
- Corporate: Corporate
- Treasury: Treasury & Government
- Municipal: Municipal
- Inflation Protected: Inflation Protected
- Other: Convertible, Mortgages, and Not Applicable

Broad Market ETFs had the largest allocation. However, all types showed double-digit increases in ETF AUM in 2020, with Corporate ETFs increasing by 42% (see Exhibit 116).

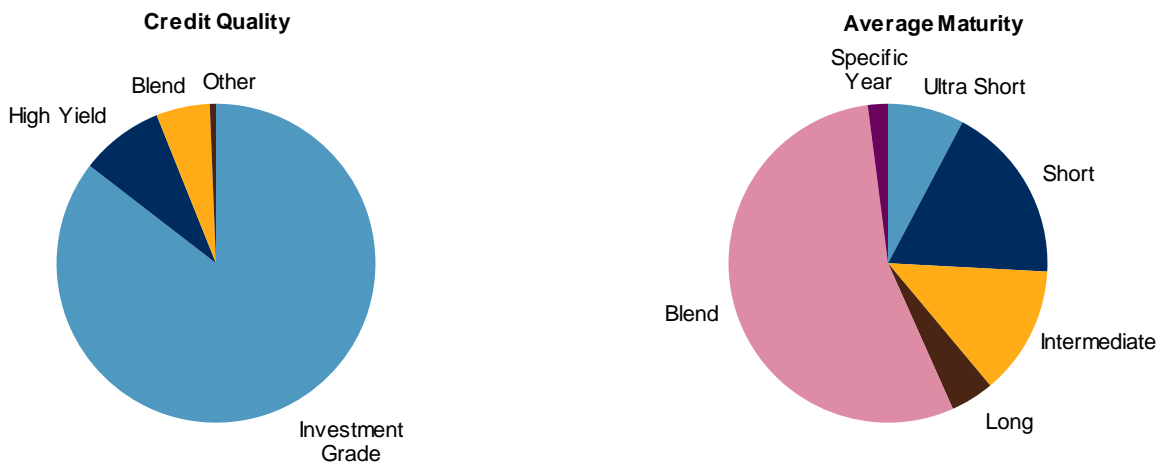
Exhibit 116: Fixed Income ETF AUM by Bond Type



Source: FirstBridge. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

In terms of credit quality, First Bridge classified Fixed Income ETFs as Investment Grade, High Yield, Blend, or Not Applicable. Investment Grade ETFs comprised the majority of Fixed Income ETFs. In terms of average maturity, First Bridge classified Fixed Income ETFs into six buckets: < 1 Year, 1-3 Years, 3-10 Years, 10+ Years, Blend, and Specific Year. We labeled these duration buckets Ultra Short, Short, Intermediate, and Long, respectively. The majority of Fixed Income ETFs had a Blend maturity (see Exhibit 117).

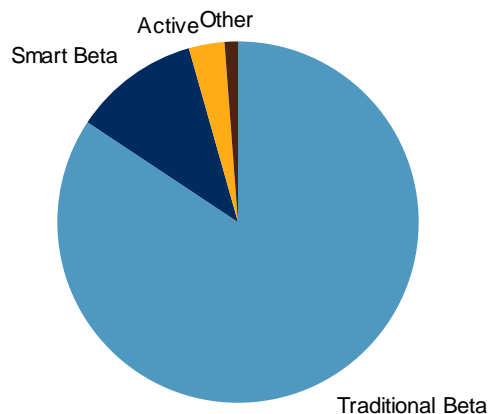
Exhibit 117: Fixed Income ETF AUM by Credit Quality and Average Maturity



Source: FirstBridge. Data as of Dec. 31, 2020. Charts are provided for illustrative purposes.

Most ETF AUM and shares had market capitalization weights. Index providers and ETF sponsors have created new indices and ETFs that have different weighting methodologies. First Bridge classified portfolio weighting in six ways: Traditional Beta, Smart Beta, Active Beta, Leveraged/Inverse, and Proprietary Model.⁸ The vast majority of U.S. ETFs used Traditional Beta, or market capitalization weighting. Investors allocated a little over 11% to Smart Beta ETFs (see Exhibit 118). We also note the increased use of Active Beta ETFs.

Exhibit 118: ETF AUM by Beta Type



Source: FirstBridge. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

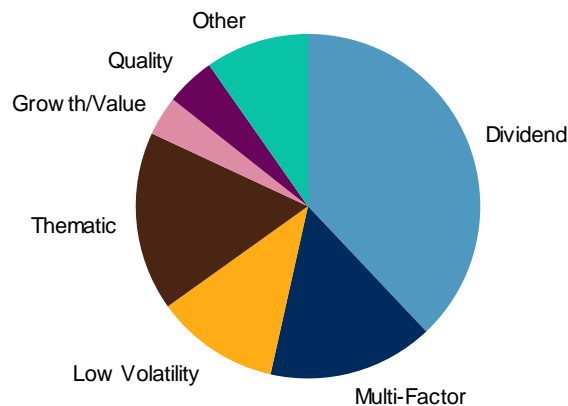
⁸ See detailed descriptions of Smart Beta at First Bridge: <https://www.firstbridgedata.com/smartbetadefinitions/Smart%20Beta%20Definition%20Framework.pdf>.

Of those ETFs classified as Smart Beta, 97% were Equity ETFs. For these ETFs, First Bridge had 15 classifications of smart beta factor. We condensed these into the following seven factors.

- Dividend: Dividend
- Low Volatility: Low Volatility
- Multi-Factor: Multi-Factor
- Thematic: Thematic
- Low Volatility: VIX/Risk Control
- Growth/Value: Factor Weighted Growth/Value, Cap Weighted Growth/Value,
- Other: Hedge Fund Replication, High/Low Beta, Options Overlay, Revenue Weighted, Strategy, Quality, Momentum, and Equal Weighted

Dividend ETFs were the most prevalent. However, since its introduction in 2011, allocation to Low Volatility ETFs has increased substantially (see Exhibit 119).

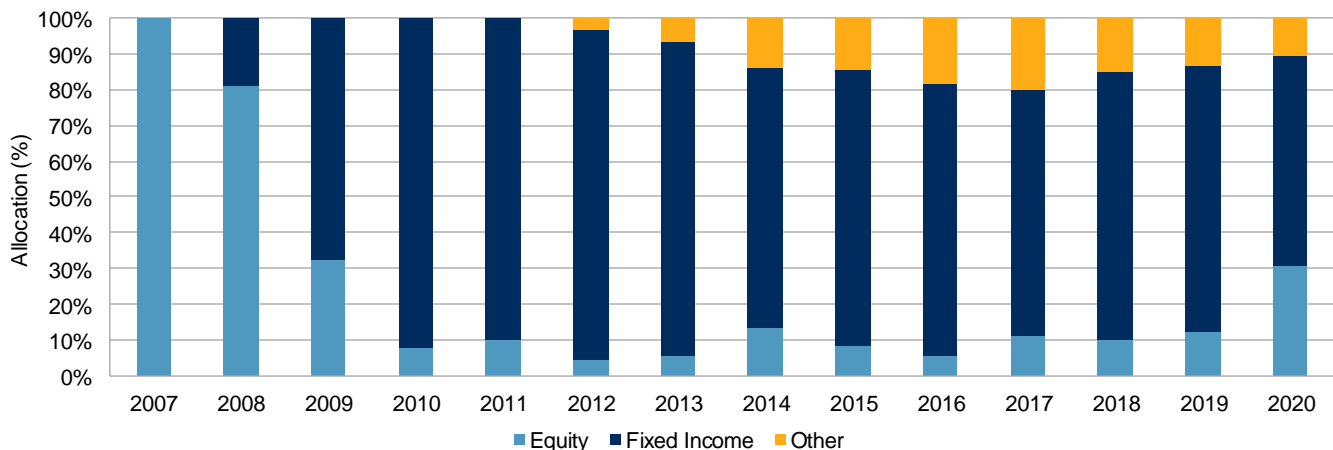
Exhibit 119: Equity ETF AUM by Smart Beta Factor



Source: FirstBridge. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

Approximately 3.2% of all U.S. ETFs were Active Beta ETFs; this is an increase of nearly 100 bps since 2019. Most of the Active Beta ETFs were Fixed Income. However, use of Active Beta Equity ETFs increased in 2020 (see Exhibit 120).

Exhibit 120: Active ETFs by Asset Class



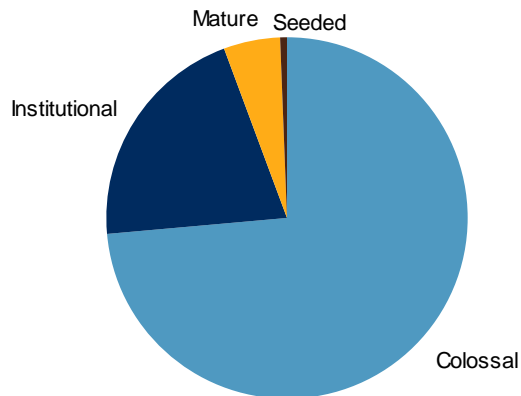
Source: FirstBridge. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

We classified the size of the ETF in four different ways, by amount of AUM.

- Seeded: AUM < USD 100 million
- Mature: USD 100 million <= AUM < USD 1 billion
- Institutional: USD 1 billion <= AUM < USD 10 billion
- Colossal: AUM >= USD 10 billion

Investors invested nearly 75% of the AUM in Colossal ETFs (see Exhibit 121).

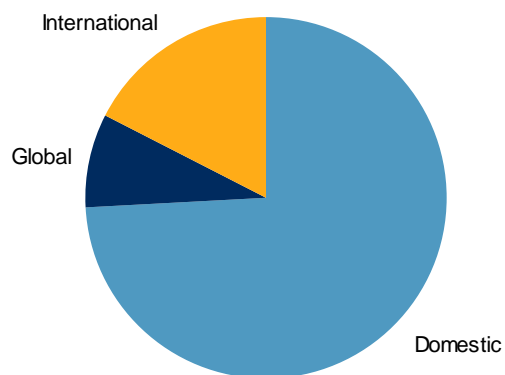
Exhibit 121: ETF AUM by ETF Size



Source: FirstBridge. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

The U.S. ETF market invested mostly in the Domestic ETF market (see Exhibit 122). Equity investments resembled overall ETF market, but Fixed Income ETFs contained a domestic bias. International funds were mostly Equity, while Global funds had a large Other component.

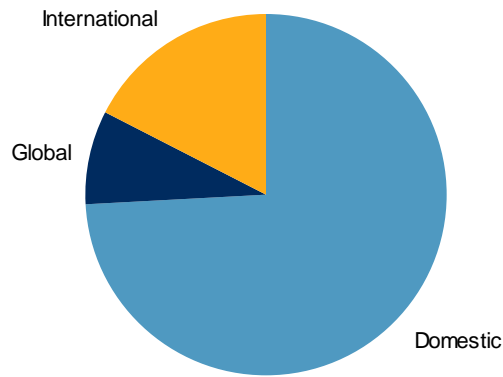
Exhibit 122: ETF AUM by Region



Source: FirstBridge. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

By development status, most ETF investment was in Developed countries. Investors were twice as likely to invest in Blend funds than strictly in Emerging market funds (see Exhibit 123).

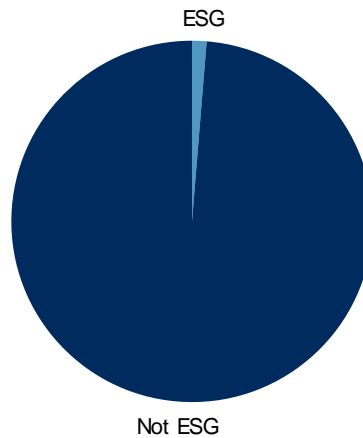
Exhibit 123: ETF AUM by Development Status



Source: FirstBridge. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

While the amount invested in ESG ETFs more than tripled in 2020, these funds represented only 1.3% of all ETFs (see Exhibit 124).

Exhibit 124: ESG ETFs

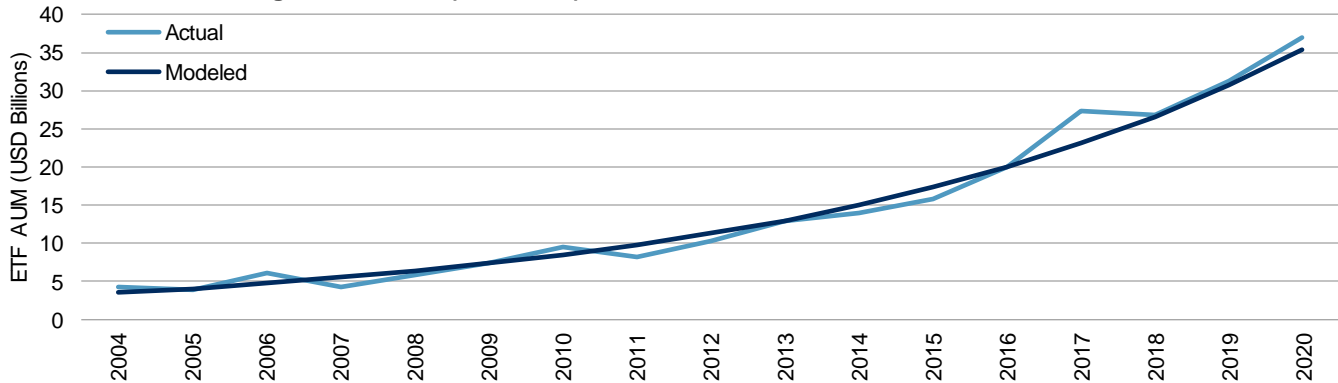


Source: FirstBridge. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

APPENDIX 2: LINEAR REGRESSION

To model the growth of ETF AUM, we applied a linear regression to the data (see Exhibit 125).

Exhibit 125: Linear Regression of ln(ETF AUM)



Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

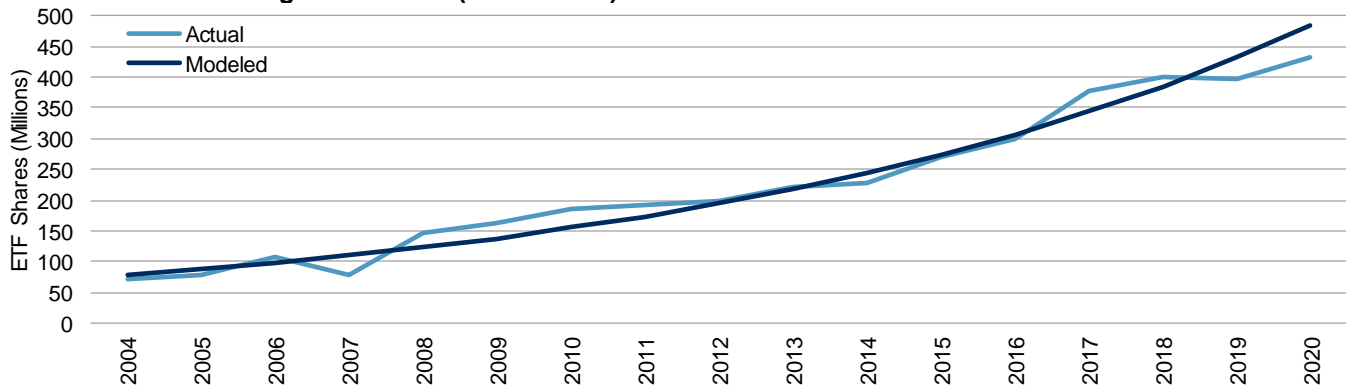
Based on the data, the following equation described the trend of ETF AUM as a function of the year.

$$\ln(ETF\ AUM) = 0.4131 \times Year - 264.7369$$

This model has a coefficient of determination of 96.94%. The coefficient of determination explains how well the model represents the actual results. The value can range from 0% to 100%. A value of 0% implies that the independent variable (year) cannot explain the dependent variable. A value of 100% implies the model explains the dependent variable exactly. Using this model, we estimated future AUM, assuming the growth continues according to historical trend.

We performed a similar exercise with the number of shares held by insurance companies (see Exhibit 126).

Exhibit 126: Linear Regression of ln(ETF Shares)



Source: NAIC via S&P Global Market Intelligence. Data as of Dec. 31, 2020. Chart is provided for illustrative purposes.

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

$$\ln(ETF\ Shares) = 0.1138 \times Year - 209.8957$$

This model has a coefficient of determination of 94.86%. We used this model to estimate future share growth.

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