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THE KEYS TO LIFE

Life Insurance Primer - 2023 Edition

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WHY READ?

The U.S. Life Insurance sector includes a diverse group of companies selling an array of protection and savings products. This updated and expanded primer provides a comprehensive overview of the products life insurers sell and how they make money. We also discuss key balance sheet and capital items, the sector's unique accounting nuances, and valuation trends.

- **Business mix a key driver of insurers' return and risk profile:** Most so-called life insurers offer a variety of products designed to protect against loss (death, disability) or accumulate wealth for retirement, and the earnings mix differs significantly among companies. Each product has a different risk, return, and cash flow profile, so mix is a big determinant of a company's ROE, cost of equity, and valuation.

- **Industry structure creates unique competitive dynamics:** Mutual insurers, which are owned by their policyholders, represent ~30% of the life industry, and not surprisingly tend to have lower ROE targets than public companies. This can depress pricing and cap profitability in lines where mutuals have material share. Distribution also has significant power since most life products are "sold not bought", enabling it to capture a sizable portion of the industry economics.

- **Modest organic growth:** We view life insurance broadly as a GDP+ growth industry. The U.S. is a mature market with relatively high penetration rates, and as the population ages, we expect less demand for death protection and more interest in retirement income solutions (such as annuities). The key will be finding ways to expand the market by targeting younger and less affluent consumers and increasing sales of supplemental products. We see attractive growth potential for savings products, and higher interest rates should broaden their appeal. Emerging markets offer attractive growth potential for both life insurance and reinsurance.

- **Cash flow and capital return key drivers of value:** The Life sector has consistently had among the highest buyback yield of any sector, and the current dividend yield is ~3%. In our view, holding company free cash flow represents the best predictor of future capital return, and we expect investors to reward insurers that consistently grow and successfully deploy cash flow.

- **Valuations consistently look cheap:** Life insurers perpetually have among the lowest P/E multiples within financials, which we attribute to several factors: 1) concerns about the quality of operating earnings, 2) low cash flow as a % of earnings, 3) long-duration "black box" risks, and 4) high sensitivity to interest rates, equity markets, and credit. Over a market cycle, we believe the group should trade in a range of 0.8-1.2x book value (ex. AOCI) and 7-9x forward earnings, but there tends to be wide dispersion among companies.

See the Disclosure Appendix of this report for required disclosures, analyst certifications and other important information.
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Putting Life in Context

We consider the life insurance sector to be a bit of a misnomer. Most public companies that get categorized as life insurers have a wide range of businesses, and selling traditional death protection products tends to be a small part of what they do. In reality, the life sector is comprised of a heterogeneous group of companies with wide differences in business mix and strategy. Another unique aspect of the industry is that many of the largest competitors are mutual insurers that are owned by their policyholders (rather than outside shareholders) and therefore may have different profit and return objectives. Therefore, before diving into specifics about individual products and how life insurers make money, we believe it's useful to briefly put the industry into context to help illuminate the competitive dynamics and major differences between companies.

Business mix the key driver of returns and risk profile

Life insurers' earnings/ROE profile and macro sensitivity are closely tied to the products they offer. We divide these into two broad categories: 1) protection products and 2) savings/accumulation products. Returns for protection products tend to be driven primarily by underwriting performance and are less macro sensitive. On the other hand, the economics of savings products tend to be closely tied to either the level of interest rates (for spread-based products) and/or equity markets (for products with fees tied to AUM). The table below shows our estimate of the earnings mix by product for each of our coverage companies. In general, companies deriving a high percentage of earnings from protection products tend to be more defensive, while those more focused on savings products tend to have greater market-sensitivity and higher betas.

Table 1: Earnings Breakdown by Product

	AEL	AFL	AMP	BHF	CNO	CRBG	GL	JXN	LNC	MET	PFG	PRU	RGA	UNM	VOYA	Industry
Protection Products																
Individual life insurance	1%	15%	6%	5%	19%	8%	76%	3%	6%	23%	5%	33%	33%	0%	0%	14%
Group insurance	0%	5%	0%	0%	0%	0%	0%	0%	17%	25%	16%	2%	3%	54%	17%	8%
Voluntary beneifts / A&H	0%	80%	0%	0%	32%	3%	24%	0%	0%	16%	0%	2%	12%	34%	10%	12%
Long-term care	0%	0%	0%	0%	9%	0%	0%	0%	0%	1%	0%	0%	4%	12%	0%	2%
Total	**1%**	**100%**	**6%**	**5%**	**60%**	**10%**	**99%**	**3%**	**23%**	**65%**	**21%**	**37%**	**51%**	**100%**	**27%**	**37%**
Spread-based Products																
Fixed/indexed annuities	90%	0%	0%	19%	21%	47%	1%	2%	5%	0%	0%	7%	25%	0%	0%	17%
RILAs	0%	0%	0%	19%	0%	0%	0%	3%	9%	0%	0%	0%	0%	0%	0%	2%
GICs / institutional products	0%	0%	0%	0%	11%	6%	0%	4%	0%	22%	10%	7%	0%	0%	11%	5%
Pension risk transfer	0%	0%	0%	0%	0%	4%	0%	0%	0%	6%	15%	15%	16%	0%	0%	4%
Banking / cash mgmt.	0%	0%	29%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%
Total	**90%**	**0%**	**29%**	**38%**	**32%**	**56%**	**1%**	**9%**	**13%**	**28%**	**25%**	**28%**	**41%**	**0%**	**11%**	**30%**
Fee-based Products																
Variable annuities	0%	0%	12%	57%	0%	25%	0%	88%	52%	4%	1%	24%	3%	0%	0%	19%
Defined contribution retirement	0%	0%	0%	0%	0%	8%	0%	0%	12%	3%	27%	0%	0%	0%	45%	6%
Asset Management	9%	0%	17%	0%	0%	0%	0%	0%	0%	0%	25%	11%	0%	0%	15%	5%
Wealth Management	0%	0%	36%	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	3%
Other fee-based products	0%	0%	0%	0%	6%	0%	0%	0%	0%	0%	0%	0%	5%	0%	1%	1%
Total	**9%**	**0%**	**64%**	**57%**	**8%**	**34%**	**0%**	**88%**	**64%**	**7%**	**53%**	**35%**	**8%**	**0%**	**61%**	**34%**
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	

Source: Company reports, Autonomous Research

Understanding Key Industry Competitive Dynamics

Life insurance seems like a good business on paper as companies offer products which address consumer needs, benefit from favorable demographic trends (aging populations and an expanding middle class), and have relatively high barriers to entry. However, in reality, there is little natural consumer demand, distribution captures an outsized share of the profits, and the presence of several large mutual companies distorts the industry return profile. We believe understanding these dynamics is key to assessing the long-term competitive position of public insurers. Below we show the top 20 U.S. life insurers based on cash & investments on

their balance sheet. At the end of 2022, domestic stock companies represented ~56% of the industry based on the number of insurers, but only accounted for 46% of assets, with mutuals comprising the majority of the remainder (foreign-owned companies only had 13% of industry assets).

Table 2: Top-20 Life Insurers by Admitted Cash & Investments ($M, 2022)

Rank	Company	Insurer Classification	Admitted Cash & Investments	Market Share	Change in Market Share (bps)
1	New York Life	Mutual	319,094,167	6.3%	22bps
2	TIAA	Mutual	306,506,574	6.1%	-4bps
3	Northwestern Mutual	Mutual	296,750,921	5.9%	7bps
4	MassMutual	Mutual	292,996,930	5.8%	26bps
5	MetLife	Domestic stock	278,360,463	5.5%	-40bps
6	Corebridge Financial	Domestic stock	222,296,565	4.4%	-5bps
7	Prudential	Domestic stock	171,896,678	3.4%	-34bps
8	Athene (U.S. only)	Domestic stock	131,476,580	2.6%	38bps
9	Lincoln Financial	Domestic stock	126,298,418	2.5%	-15bps
10	Global Atlantic (U.S. only)	Domestic stock	124,048,468	2.5%	27bps
11	Pacific Life	Mutual	121,888,060	2.4%	20bps
12	Allianz	Foreign stock	116,162,325	2.3%	-22bps
13	John Hancock (Manulife)	Foreign stock	113,857,604	2.3%	-12bps
14	Sammons Enterprises	Mutual	105,448,374	2.1%	5bps
15	Nationwide	Mutual	97,415,238	1.9%	10bps
16	State Farm	Mutual	88,654,303	1.8%	-3bps
17	Principal Financial	Domestic stock	85,653,094	1.7%	-4bps
18	Allianz (Transamerica)	Foreign stock	84,942,622	1.7%	0bps
19	Brighthouse Financial	Domestic stock	84,778,133	1.7%	6bps
20	Guardian Life	Mutual	77,962,058	1.5%	2bps
	Industry		**5,037,992,140**	**100.0%**	**NA**
	Top-10 companies		2,269,725,764	45.1%	-26bps
	Top-20 companies		3,246,487,574	64.4%	25bps

Source: S&P Market Intelligence, Autonomous Research

- **Mutual insurers remain a significant force:** Among the top 20 U.S. life insurers by assets, nine are mutual companies owned by their policyholders: New York Life, TIAA, Northwestern Mutual, Mass Mutual, Pacific Life, Sammons Enterprises, Nationwide, State Farm, and Guardian Life. Mutuals tend to have lower ROE targets, which makes them difficult to compete against. They are particularly dominant in traditional long-tail products like whole life insurance and have taken share in recent years as public companies have pulled back to maintain profitability. During the period of low interest rates (2012-2019), mutuals began gaining share in fixed annuities as public life insurers pulled back from the market, and more recently, these insurers have been growing their exposure to other spread liabilities like buffered annuities and FABNs. In our view, the presence of mutuals likely caps the level of profitability in lines of business where they have material share.

- **Life insurance tends to be sold, not bought:** Unlike auto or home insurance, consumers are not required to buy life insurance. As a result, most people do not seek out coverage and tend to buy on the recommendation of an insurance agent or financial planner. This leads to significant coverage gaps in the U.S., particularly for middle- and lower-income consumers, and makes it costly for insurers to acquire customers. According to a 2020 study from LIMRA and Life Happens, only 54% of American adults have life coverage, which is down 9 percentage points over the past decade.

- **Distribution has significant leverage:** Life insurance products get sold through five primary distribution channels: 1) captive agents employed be an insurance company, 2) independent insurance agents, 3) large brokerage firms, often referred to as wirehouses, 4) regional broker/dealers, and 5) banks. Direct to consumer distribution has also been growing, particularly for basic products like term life, but limited consumer demand and the complex nature of most products remain challenges. Since life insurers rely on distributors

to attract customers, the firms and individual agents have a lot of leverage to negotiate favorable distribution agreements, compensation, and product terms. As such, a lot of the profit in selling a life product accrues to the distributor.

- **Relatively high barriers to entry:** Life insurance is a capital-intensive business and requires strong ratings and significant access to underwriting data. As a result, there have been few newly formed insurance carriers, and most recent entrants (such as Athene) have gotten their start by acquiring existing insurers. While there have been some insurtech start-ups in the life sector, most focus on either distribution or operational support and are not trying to be traditional underwriters. In our view, this limits the scope for potential disruption.

- **State regulatory system can create distortions:** Unlike most other financial institutions, insurers are regulated at the state level. While there is a uniform framework based on rules developed by the National Association of Insurance Commissioners (NAIC), individual states have leeway in granting permitted practices, restricting/prohibiting certain activities, or requiring additional reserves. Therefore, an insurer's state of domicile can have material impact on its reported risk-based capital (RBC) ratio or even certain business activities (such as the use of offshore captive reinsurance entities). For example, New York is generally considered the most stringent regulator, while Iowa tends to be more friendly to the industry.

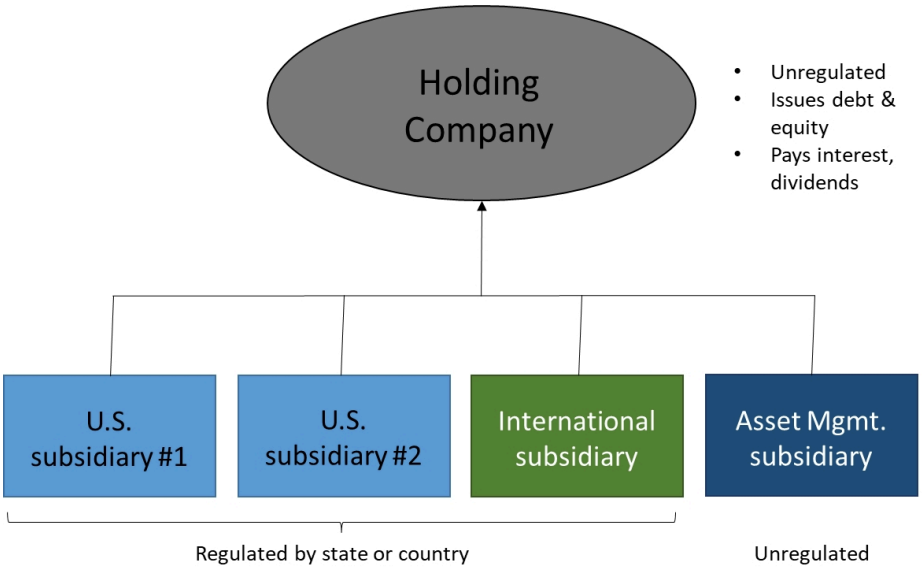
- **Critical differences between statutory and GAAP accounting:** U.S. insurers file both consolidated GAAP financials and statutory statements for each of their regulated insurance subsidiaries (prepared according to NAIC rules). While investors typically focus on GAAP results, statutory earnings and capital drive subsidiary dividend capacity and holding company cash flow. There are several differences between statutory and GAAP earnings. Most notably, policy acquisition costs (primarily commissions) get expensed immediately on a stat basis but are capitalized and amortized under GAAP. Initial required reserves also get calculated differently as stat rules tend to be prescriptive while GAAP allows for more management discretion in setting assumptions. Overall, stat results better approximate cash accounting and tend to be more conservative.

- **The rise of life insurers backed by alternative asset managers bears watching:** Over the past five years we've seen a flood of alternative asset managers enter the life sector, attracted by the large pool of sticky, long-duration assets backing life and annuity policies. Life insurance liabilities match up well with the less liquid private credit assets that the alternative managers can originate, and acquiring a life insurance platform can provide a steady source of inflows and fee earnings. Almost every major alts manager now has some form of life insurance exposure. Most alts-backed life insurers have been built via acquisition, with a manager either acquiring an operating platform to write new business (like what Apollo/Athene did with Aviva) or establishing a reinsurer to take in-force blocks of business (such as Fortitude Re). The basic business model of most alts-backed insurers is not that different from a traditional insurer, but they seek to generate a competitive advantage by being able to source higher yielding assets. Companies such as Athene and Global Atlantic (owned by KKR) have gained market share in spread-based products and grown significantly faster than the industry in recent years. In order to compete, we've seen traditional insurers either partner with an alternative manager (such as Corebridge with Blackstone) or shift their asset allocation. In our view, this could lead to more outsourcing of investment portfolio assets. To date, it looks like most alts-backed insurers have been prudent in not taking too much credit risk, but these companies have not been tested during a credit cycle, so this will be important to monitor.

Life Insurance Corporate Structures

Life insurers consist of multiple operating subsidiaries, each of which is set up as a separate legal entity, that roll up to a holding company. The day-to-day business operations (underwriting, sales, general account investments) occurs at the subsidiary level, and each of these subsidiaries gets reviewed by the insurance regulator in its state of domicile (or country of domicile for international businesses). The subsidiaries then pay permitted dividends (which are based on earnings or statutory surplus) to the holding company, which is unregulated and generally houses no business operations but is responsible for debt service and funding shareholder distributions (dividends, share buybacks). The holding company also issues debt and equity to investors, and it then contributes some or all of the proceeds to the operating subs to support the business.Most life insurers have multiple operating subsidiaries, which is typically the result of business needs (for example, insurers need a separate NY entity to sell products in the state), historical M&A deals, or actions taken to improve risk or capital management. Some companies also have non-insurance operations, such as asset management businesses, which are typically unregulated and pay distributions directly to the holding company. We discuss cash flow and capital movements in more detail later (pg. 69), but the chart below illustrates a typical corporate structure.

Chart 1: Illustrative Life Insurance Corporate Structure



Source: Autonomous Research

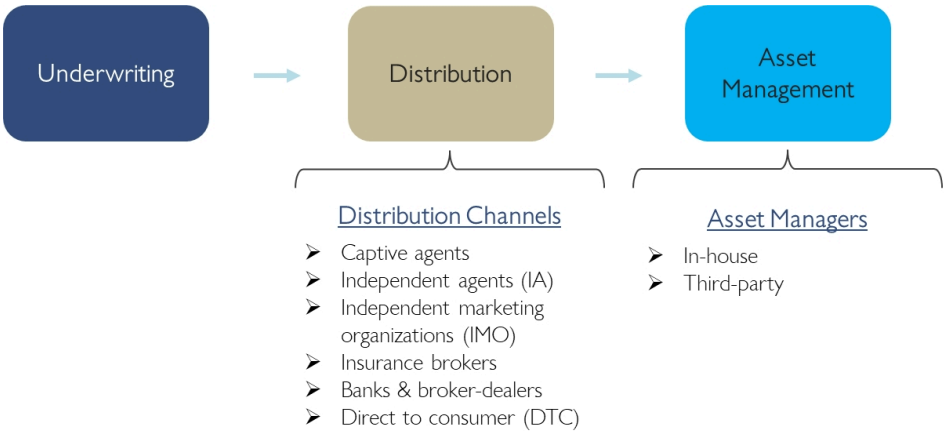
Since most debt and equity gets issued at the holding company level, that is really what investors own. Policyholders, on the other hand, have exposure to the operating subsidiary that issued their policy. It's important to note that an insurer can see its holding company go bankrupt but still have enough capital in its insurance subs to pay policy obligations. For most life insurers, rating agencies give the holding company a 2-3 notch lower rating than the operating subs' financial strength rating.

Insurance Value Chain

The life insurance sector's value chain has three primary components: Underwriting, Distribution, and Asset Management. While some insurers capture all three sources of earnings by manufacturing products, distributing them through controlled distribution (typically captive agents), and managing the general account assets in-house, most focus on only one or two activities. Investors tend to ascribe the highest value to distribution and asset

management since these generate fee earnings and don't create balance sheet risk. Ironically, these are also the functions most likely to be outsourced to third parties. We go into each of these value drivers in more detail in the following sections and also discuss the different approaches insurers take to capturing them.

Chart 2: Insurance Value Chain

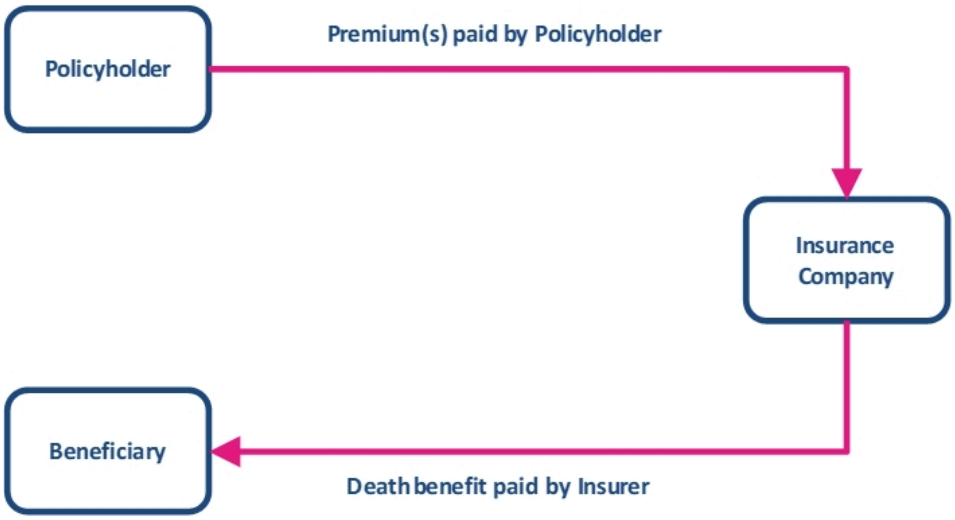


Source: Autonomous Research

Demystifying Insurance Products

The purpose of insurance is straightforward: it allows consumers to protect against the risk of potential loss in exchange for making periodic payments, known as premiums. Insurance protects against the financial risks that are present at all stages in a person's life, including the loss of property, an untimely death, or unexpected medical expenses. Policyholders who suffer a loss present a claim, requesting payment from the insurer. If the loss is covered under the terms and conditions outlined in the policy, the insurer provides financial compensation.

Chart 3: Simple Insurance Cash Flow Illustration

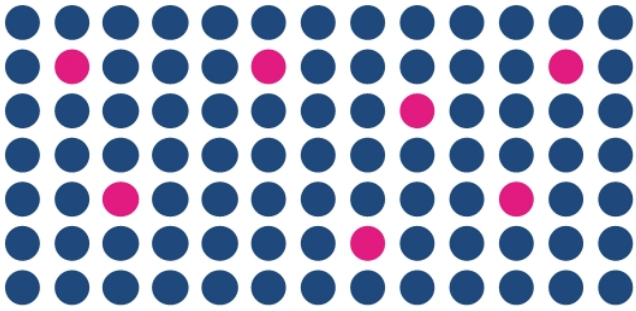


The policyholder is typically also the beneficiary for health products.
Source: Autonomous Research

Insurance companies are willing to accept this risk of claims because they can spread the losses across large numbers of policyholders. For most insurable risks, claims frequency is low, which allows companies to use the premiums they've collected from all policyholders to cover the claims from the few that suffer losses. This concept is known as risk pooling and is illustrated in Chart 4 below. Once insurers build a big enough book of business, they also benefit from the law of large numbers, which makes outcomes more predictable and reduces the risk from large one-off claims (see Chart 5).

Chart 4: Risk Pooling Illustration

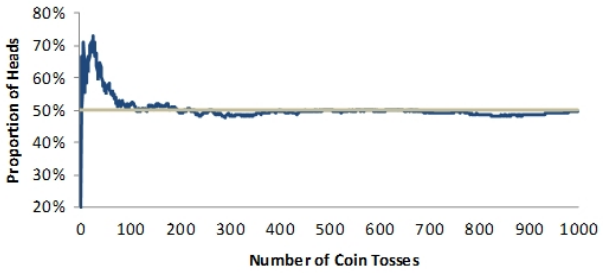
Both blue and pink dots pay premiums, only the pink dots file a claim



Source: Autonomous Research

Chart 5: Law of Large Numbers Illustration

The more tosses of a coin, the more likely a 50/50 heads to tails split



Source: Autonomous Research

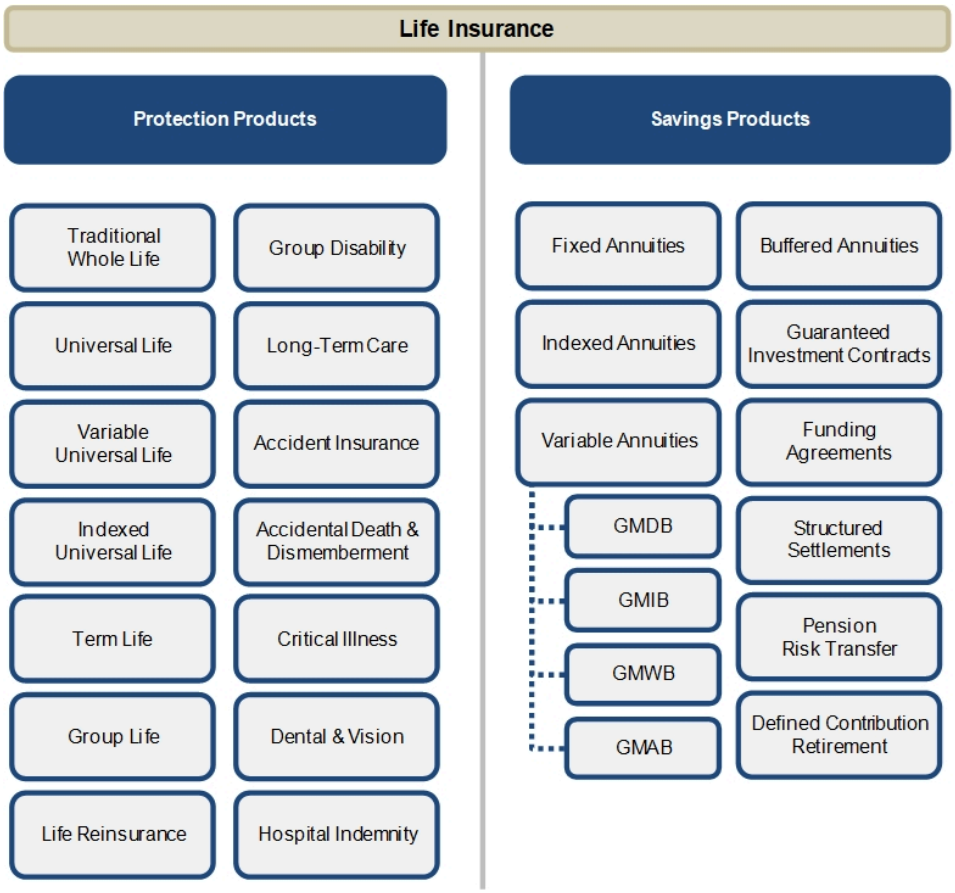
Life Insurance Products Cover an Array of Risks

Over time, Life Insurers have shifted their focus from just providing death protection to offering a broad portfolio of products. The industry now provides protection again three general types of risk:

- **Mortality risk** – protection against premature death
- **Morbidity risk** – protection against poor health or unexpected medical costs
- **Longevity risk** – protection against outliving one's financial resources

We divide life insurance products into two broad categories: Protection and Savings. Protection products primarily focus on insuring against mortality or morbidity risk, although they may also have a savings component as a secondary benefit. Savings products are designed to provide asset accumulation and, ultimately, retirement income. The chart below identifies the primary protection and savings products, and over the next several pages we illustrate how each works and discuss the growth outlook and current market share dynamics.

Chart 6: Life Insurance Products Can Be Split Into Two Broad Categories



Source: Autonomous Research

Individual Life Demand Drivers

1. GDP growth
2. Marriage rate
3. Birth rate
4. Pandemic/mortality concerns
5. Tax code changes

Life Insurance

Life insurance continues to be the most prominent protection product with approximately $21T of insurance in-force. The primary purpose of a life policy is to provide a tax-free death benefit that gets a paid to the insured's chosen beneficiary. In addition, a policy may build cash value which can be accessed by the policyholder either by surrendering the contract or taking a policy loan. The insurer charges a premium based on the cost of insurance (COI), which includes charges for mortality and policy administration expenses (often referred to collectively as M&E charges). The level of premium charged depends on several factors, including the age of the policyholder at the time of issue, their health status, and their family medical history. The insurer uses this data to estimate the likelihood of a claim and the expected timing. It also assumes an expected return from investing the collected premiums (commonly referred to as the "float"). While some of the investment return may get credited to policyholders to build cash value, the rest accrues to the insurance company and is a significant driver of a policy's profitability.

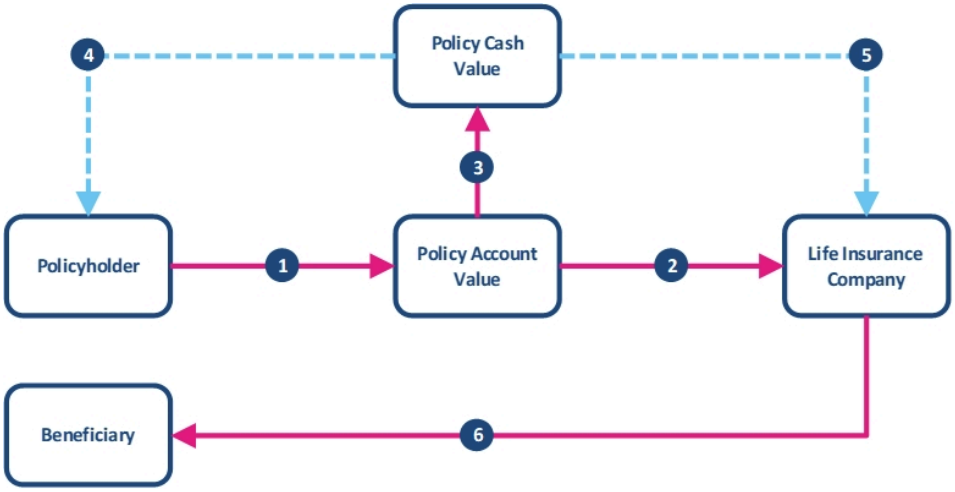
Whole life vs. term life policies

Life insurers offer coverage in two basic forms. Whole life policies (also known as permanent insurance) stay in-force as long as the policyholder remains current on premium payments and pay out upon their death. In contrast, term life policies only cover a specific period (typically 10, 20, or 30 years). For example, if a 35-year old purchases a 25-year term policy, they would be covered until age 60. If they die before that point, the policy pays the death benefit. If not, the policy lapses, and they receive nothing. Since the likelihood of a term policy having a claim is much lower (on average, only ~2% of policies pay out), the premium charged per dollar of death benefit is significantly lower than for a whole life policy.

Whole Life Cash Flows

1. Deposits & premiums paid
2. Earned premium, M&E charge, portion of investment income
3. Cash value builds based on investment performance (with a guaranteed minimum return)
4. Policyholders can borrow against cash value
5. Interest rate charged on policy loan
6. Death benefit payment

Chart 7: Whole Life Insurance Policy Cash Flow Illustration



Source: Autonomous Research

The type of policy a consumer chooses tends to be driven by a few factors. Term life is typically purchased by younger consumers looking for relatively inexpensive protection to support their family in the event of an untimely death. Many people buy term coverage when they get married or have children and choose a policy duration that covers either their expected working life or until their kids graduate from college. In addition, term may be purchased to cover final expenses (funeral costs) or key man risk for a company. By contrast, whole life appeals to people who want permanent coverage or intend to use life insurance as a savings vehicle (since cash value builds on a tax deferred basis). Whole life policies are also often bought as part of estate planning since the death benefit is not taxed and excluded from the

policyholders' assets.

Types of whole life insurance

Whole life insurance policies come in many different flavors, with the primary differences being how the cash value builds, how premiums are structured, and the available "secondary guarantee" options. The most common forms are:

- **Traditional whole life:** As noted earlier, a whole life policy provides both a death benefit and cash value accumulation. A traditional policy has a fixed annual premium that must be paid for the policy to remain active (in-force). Policies can either be sold on a participating or non-participating basis. Participating policies, which are offered by mutual insurers, pay an annual dividend to policyholders based on the surplus of the issuing company. The dividend can be used to increase the cash value and death benefit or reduce required premiums. They also serve as a buffer which absorbs a portion of any investment losses (protecting the insurance company). A non-participating policy pays a crediting rate based on prevailing interest rates (with a guaranteed minimum floor).

- **Universal life (UL):** UL policies account for the majority of whole life policies sold in the U.S. Unlike traditional whole life policies, UL policies have flexible premiums and death benefits. A policyholder has the option to pay premiums above the cost of insurance to build cash value. Also, if the cash value exceeds the cost of insurance, it can be used to cover future premiums (allowing the policyholder to forgo payments). However, the policy lapses if the cash value is insufficient to cover the COI charge and no additional payments are made. Given the flexible premiums, UL policies can be a cheaper way to purchase the same level of guaranteed death benefit as offered by a traditional whole life policy. However, the trade-off is that UL policies often have minimal cash value.

- **Variable universal life (VUL) and indexed universal life (IUL):** VUL and IUL policies offer similar flexibility as traditional UL but differ in terms of how the cash value builds. Variable policies allow policyholders to allocate the investment assets to mutual funds, which can yield higher returns when markets are favorable but also result in cash value declines if markets fall. The risk is that negative performance could either lead to a policy lapsing or the policyholder being required to pay higher premiums. Indexed UL policies base the investment crediting rate on the performance of an equity market index (such as the S&P 500), which can lead to higher returns if markets perform well. However, unlike with VUL policies, the cash value does not decline if markets fall (the minimum crediting rate is 0%). Therefore, IUL policies fall between traditional UL and VUL policies on the investment risk spectrum. The insurer bears little investment risk from VUL and IUL policies and has less exposure to the level of interest rates, so we've seen companies place greater emphasis on these products in recent years.

- **Secondary guaranteed universal life (SGUL):** Some UL policies offer "secondary guarantees," most commonly no-lapse features. These so-called SGUL policies are guaranteed to stay in-force as long as the policyholder makes certain minimum premium payments for a defined period, even if the cash value drops to zero. While the product generates relatively modest cash surrender value given the low level of required premium payments, the secondary guarantee feature effectively transfers some of the investment risk (mainly from low interest rates) to the insurance company. Lower than expected lapse rates have also been an issue for insurers, requiring them to add to reserves to cover future death benefits.

- **Bank-owned life insurance (BOLI) and company-owned life insurance (COLI):** BOLI and COLI are life insurance policies used to tax-efficiently offset employee benefit costs. For a BOLI policy, a bank purchases a life insurance policy on a group of key employees, with the bank being the owner and beneficiary. The policy tends to have a single upfront premium, and the bank earns a spread between its cost of financing and the cash value

growth it expects to generate. Earnings are typically used to offset the costs of offering an employee benefits program. Similarly, with a COLI policy, a corporation owns a life insurance policy (typically VUL) on a key employee or group of key employees and is the beneficiary. While premiums are non-deductible, the company does not pay any tax on cash value accumulation or any death benefit proceeds, and policy loans are repaid via reduced death benefits. The product is quite popular, with ~75% of Fortune 1000 companies using a COLI structure to finance their supplemental executive retirement plan obligations.

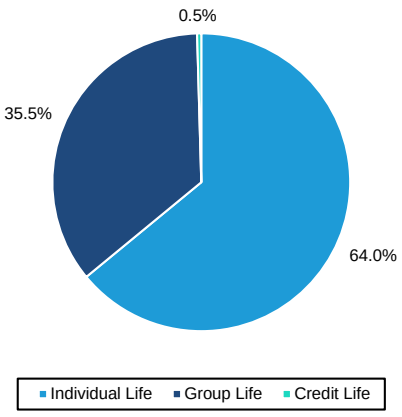
Group Life represents >35% of total U.S. life insurance in-force

Individual life policies accounted for 64% of U.S. life insurance in-force at the end of 2022, with the remainder being predominantly group policies purchased via the workplace. A group life policy is essentially annually renewable term insurance that has a fixed death benefit and does not accrue any cash value. Policies are typically not individually underwritten (unless a person purchases additional supplemental coverage), and the premium is based on age. Premiums can be paid either by the employer or the employee (via payroll deduction), and the death benefit is usually a multiple of the policyholders' base salary. Group policies tend to be much cheaper than individual policies per dollar of death benefit, and it's easy to sign up for coverage. On the other hand, group policies aren't portable, so coverage typically lapses if the employee leaves the company (unless the policy is converted to an individual contract, at which point the premium is reset accordingly). There also tend to be limits on how much insurance coverage can be purchased.

Market share: mutual insurers continue to have significant clout

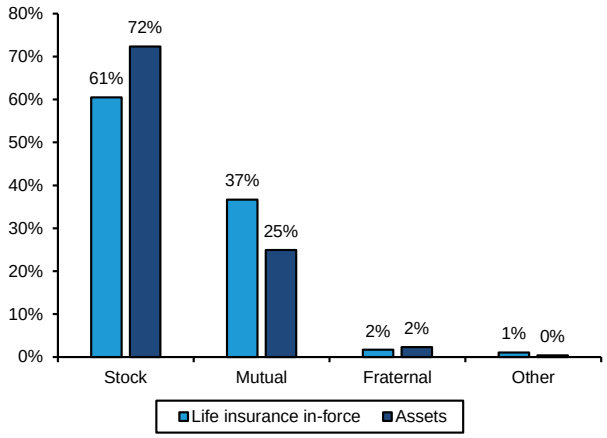
The individual life market continues to be a key focus area for mutual insurers, and they have ~37% share of total life insurance in-force and >30% share of ordinary life direct earned premiums (which includes individual whole life and term life). Mutual insurers tend to be less focused on returns than public companies, so this limits the level of profitability in the product. Individual life products are also capital intensive, expensive to distribute, and have modest growth potential, so it's not surprising that several public insurers have de-emphasized or exited the product in recent years.

Chart 8: Life Insurance In-Force by Type of Insurance



Source: ACLI Factbook (2022), Autonomous Research

Chart 9: Life Insurance Exposure by Type of Insurer



Source: ACLI Factbook (2022), Autonomous Research

As shown on the following page, the large mutual insurers have a leading position in the individual market, while group life tends to be dominated by public stock companies.

Table 3: Ordinary Life Insurance Market Share ($M, 2022)

Company	Direct Earned Premium	2022 Market Share	Market Share Change (bps)
Northwestern Mutual	18,873,736	11.2%	89bps
New York Life	12,050,200	7.1%	26bps
MassMutual	11,618,589	6.9%	73bps
Prudential	8,307,508	4.9%	-39bps
Lincoln Financial	6,824,646	4.0%	-48bps
State Farm	5,486,323	3.2%	-15bps
John Hancock (Manulife)	5,248,953	3.1%	-12bps
Guardian Life	4,990,451	3.0%	-11bps
Aegon US (Transamerica)	4,624,507	2.7%	-12bps
Pacific Life	4,553,328	2.7%	7bps
Sammons Enterprises	4,336,617	2.6%	83bps
MetLife	4,129,296	2.4%	-28bps
Dai-Ichi Life	3,622,163	2.1%	59bps
AIG	3,592,505	2.1%	-21bps
Nationwide Life	3,011,243	1.8%	16bps
Equitable Holdings	2,936,721	1.7%	-15bps
Primerica	2,837,958	1.7%	-6bps
Penn Mutual	2,669,663	1.6%	5bps
National Life	2,562,698	1.5%	23bps
Globe Life	2,392,234	1.4%	0bps
Industry	**168,822,799**	**100%**	**NA**
Top-10 companies	82,578,243	48.9%	50bps
Top-20 companies	114,669,341	67.9%	153bps

Source: NAIC, Autonomous Research

Table 4: Group Life Insurance Market Share ($M, 2022)

Company	Annualized Premium In-Force	Sales	Growth in Premium In-Force (y/y)	2022 Market Share	Market Share Change (bps)
MetLife	8,035,691	657,138	8.2%	25.6%	96bps
New York Life	3,738,310	414,199	3.3%	11.9%	-10bps
Prudential	3,631,877	238,312	2.9%	11.6%	-14bps
Securian Financial	2,790,268	177,195	2.7%	8.9%	-13bps
The Hartford	2,233,190	240,979	-0.1%	7.1%	-30bps
Unum	1,867,612	232,409	1.6%	6.0%	-15bps
Lincoln Financial	1,120,504	262,805	-26.0%	3.6%	-145bps
The Standard	1,119,308	134,306	4.4%	3.6%	1bps
Mutual of Omaha	824,724	127,827	9.1%	2.6%	12bps
Sun Life	795,116	99,573	11.0%	2.5%	16bps
Guardian Life	772,020	123,692	7.4%	2.5%	7bps
Voya Financial	597,353	77,412	6.6%	1.9%	4bps
Principal Financial Group	545,893	78,541	10.8%	1.7%	10bps
Reliance Standard Life	512,494	75,248	6.4%	1.6%	4bps
AAA Life Insurance	379,004	34,647	4.5%	1.2%	0bps
Dearborn National	373,527	34,191	4.2%	1.2%	0bps
Transamerica	257,121	60,812	8.9%	0.8%	4bps
UnitedHealthcare	250,460	33,156	14.3%	0.8%	7bps
Anthem	207,910	30,687	29.0%	0.7%	13bps
Symetra Financial	197,238	26,793	4.8%	0.6%	0bps
Industry	**31,372,620**	**3,428,334**	**4.1%**	**100.0%**	**NA**
Top-10 companies	26,156,600	2,584,743	2.9%	83.4%	-102bps
Top-20 companies	30,249,620	3,159,922	3.6%	96.4%	-51bps

Source: LIMRA, Autonomous Research

Table 5: Reasons Consumers Like Simplified Issue Policies

Reason Why	%
Fast & easy	66%
Unbiased & objective	66%
Transparent risks & pricing	58%
Avoids medical exams	56%
Avoids need to see a doctor	55%

Source: LIMRA, Autonomous Research

Innovations in Life Insurance

While the basic design and benefits of life insurance policies have not changed dramatically over time, there have been several recent innovations in how policies are underwritten and marketed to consumers. A key opportunity for insurers is to expand the market - particularly to reach more younger and middle income consumers - which will likely require developing new distribution channels, streamlining the underwriting process, and reducing costs. Some key developments include:

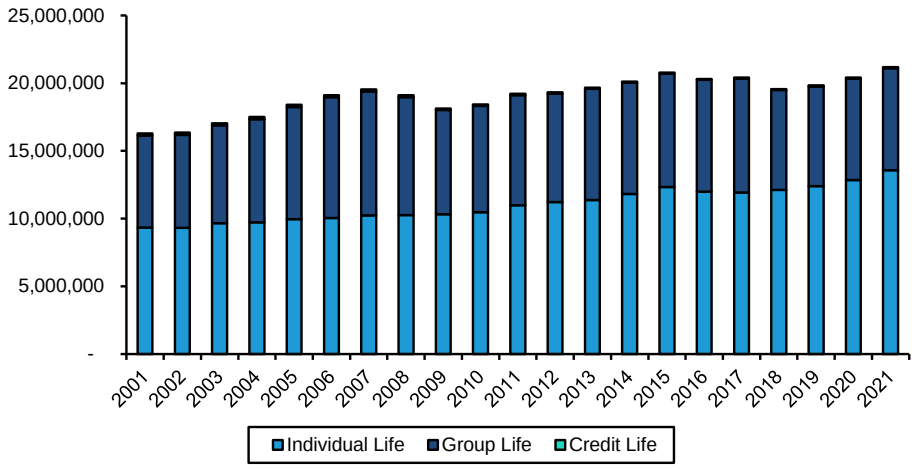
- **Simplified underwriting:** One of the biggest historical hurdles to selling life insurance policies has been the long and invasive underwriting process, which typically requires a medical exam and taking blood and urine samples. This turns off some potential purchasers and results in a long lag between when a customer decides to buy life insurance and when the sale gets completed. In addition, the price of coverage is not known until the end of the underwriting process. Over the past decade, a number of insurers have developed simplified, fluid-less underwriting processes that enable them to use customer data (including items from credit reports, prescription drug records, and medical questionnaires) to quickly issue policies without a medical exam. So far, this has mainly been used for term life policies, and companies typically limit the face amount of insurance that can be issued. Larger policies, or customers deemed higher risk, still need to go through traditional underwriting, but most customers can now buy life coverage quickly (in minutes rather than days or weeks). A 2020 LIMRA study shows that half of Americans are more likely to buy a life policy if simplified underwriting is used.

- **Expanded online and DTC sales:** The rise of simplified issue policies also makes it much easier to sell policies directly to consumers online, which is critical given changes in buying behavior. According to a LIMRA study, 64% of consumers preferred to buy life insurance in person in 2011, but this declined to 41% in 2020. Similarly, preference for online purchasing doubled from 17% in 2011 to 29% in 2020. We expect this trend to continue, and new distribution models that start online but leverage live agents may expand the DTC market beyond just term life.

Growth Outlook

U.S. Life insurance in-force has increased at a +1.3% CAGR over the past 20 years, indicative of a mature market with relatively high penetration rates. Looking forward, there a few notable trends. On a positive note, the pandemic increased awareness of the need for life insurance, resulting in higher sales. While the initial surge in demand has faded, we expect some ongoing benefit. Additionally, more employers continue to add group life insurance to their benefits packages to help attract and retain talent. On the other hand, as the population ages, we expect less demand for death protection and more demand for retirement income solutions. Overall, we forecast life insurance in-force to grow +1-2% annually over the next five years.

Chart 10: Life Insurance In-Force has Grown at a 1.3% CAGR since 2001 ($ millions)



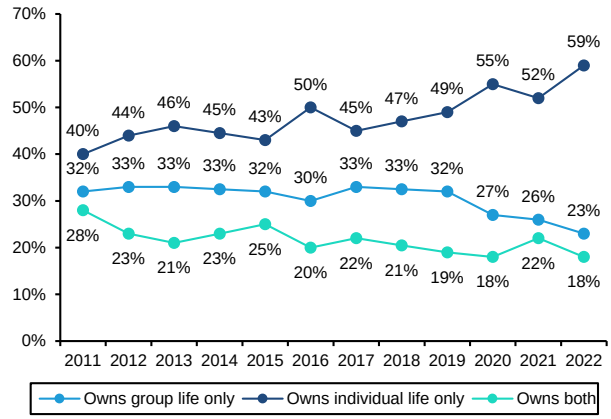
Source: ACLI Factbook (2022), Autonomous Research

The key opportunity for life insurers is closing the ~$12T coverage gap in the U.S. (estimated by LIMRA). We believe that materially expanding the market will require insurers to 1) further streamline underwriting processes and expand direct distribution, 2) develop simpler products with a clear value proposition, and 3) better target under-penetrated consumer groups. There are also some secular challenges to overcome, including lower marriage rates (50% in 2016 vs. 72% in 1960), people waiting longer to start families (and having fewer children), and a declining number of life insurance agents.

Recent data provides reasons for both optimism and concern. On a positive note, there has been a steady increase in individual life ownership over the past decade, which accelerated during the pandemic. We've also seen an increase in the average face value (death benefit) per policy over the last five years, erasing the declines that occurred post the financial crisis. On the negative side, group life ownership appears to be declining.

Chart 11: Trends in Life Insurance Ownership

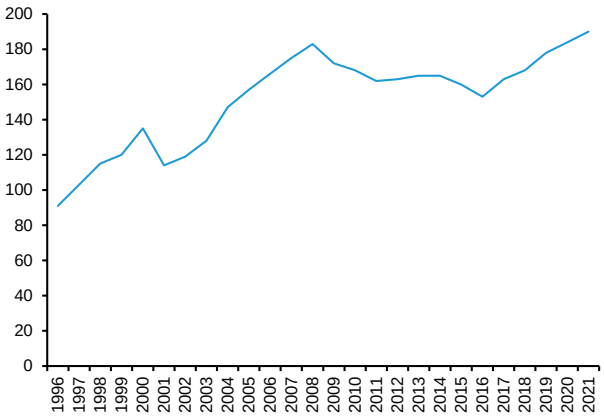
% of insureds



Source: LIMRA, Autonomous Research

Chart 12: Avg. Face Amount per New Policy Sold

$ in thousands



Source: ACLI Factbook (2022), Autonomous Research

Disability Insurance

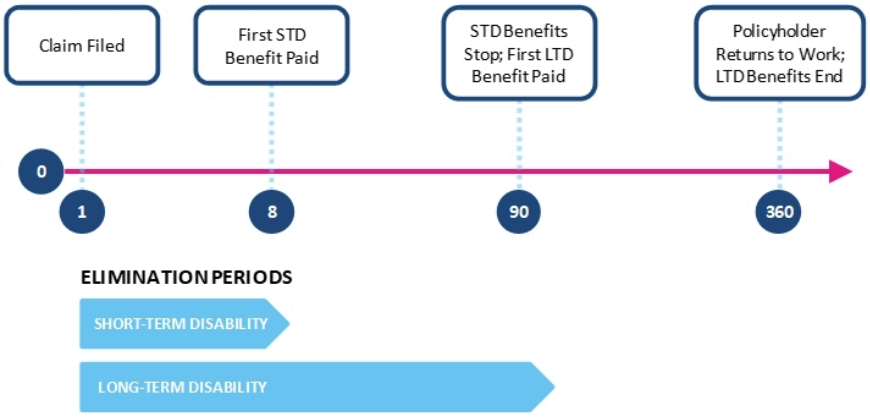
Disability insurance pays a benefit to policyholders who are unable to work due to injury or illness. The benefit is typically based on a percentage of the policyholders' salary and begins after a pre-specified waiting period (known as the elimination period). There are two types of coverage offered. Short-term disability (STD) typically pays benefits for a maximum period of 24 weeks (following a 7-day elimination period), although coverage can range from 13-104 weeks. Long-term disability (LTD) policies typically have a 90-day elimination period and pay benefits for as long as the policyholder is unable to work (until age 65 or a pre-specified maximum benefit period). One important distinction between policies is how they define disability. Policies may allow a claim if either the policyholder is unable to perform their "own occupation" or "any occupation", with the threshold for claim being lower for an "own occupation" policy. In order to qualify as permanently disabled, many policies also require the policyholder to file for Social Security disability insurance (SSDI).

A typical disability benefit is 60-70% of salary for STD coverage and 40-60% for LTD. Both products typically pay benefits on a monthly basis, and the payments may or may not be taxable depending on who paid the premium (the individual or their employer) and whether it was paid on a pre-tax or after-tax basis. Depending on the policy language, benefits may be reduced by any payments received from SSDI. Many individual disability policies also offer optional inflation riders, which increase the level of benefit over time.

LTD & STD are commonly purchased together so that STD benefits are paid while the LTD policy is in its elimination period.

Chart 13: Disability Insurance Payment Illustration

The hypothetical injury in the example below occurs on Day 0 and a claim is filed on Day 1



A gap may exist between STD benefits ending and LTD benefits starting
Source: Autonomous Research

Disability market dominated by group players

The vast majority of disability policies are sold on a group basis as it has become a core employee benefit offering. According to the U.S. Bureau of Labor Statistics, ~40% of workers in private industry have STD coverage and ~35% have LTD coverage. Most firms that provide disability offer employer-paid STD coverage and LTD coverage on either an employer-paid or voluntary (employee-paid) basis. Similar to group life insurance, a group disability policy lapses if the employee leaves their job. While individual disability coverage is portable and more customizable, it tends to be more expensive than a group policy.

The group disability market is dominated by public companies and highly concentrated with the top 10 insurers having >85% share. Group is a scale business since adding participants results in modest incremental administration and claims handling expenses. This makes it difficult for smaller insurers to earn competitive returns and has spurred consolidation.

Table 6: Group Disability Market Share

$ millions

Company	STD Premium	LTD Premium	Growth in Total Premium (y/y)	2022 Market Share	Market Share Change (bps)
The Hartford	1,313,213	2,325,409	4%	14.1%	-26bps
Lincoln Financial	1,503,364	1,886,822	14%	13.1%	93bps
Unum	1,249,554	1,911,143	5%	12.2%	-13bps
MetLife	1,045,514	1,771,145	8%	10.9%	24bps
New York Life	1,021,549	1,642,238	4%	10.3%	-22bps
Prudential	804,105	931,306	19%	6.7%	73bps
The Standard	386,461	1,042,904	9%	5.5%	16bps
Guardian Life	520,416	588,436	-36%	4.3%	-282bps
Sun Life	436,226	590,792	12%	4.0%	22bps
Mutual of Omaha	507,863	495,464	12%	3.9%	20bps
Reliance Standard Life	323,491	478,166	8%	3.1%	7bps
Principal Financial Group	259,812	371,224	11%	2.4%	12bps
American Fidelity	70,263	445,331	6%	2.0%	0bps
Dearborn National	110,349	122,031	12%	0.9%	5bps
Voya Financial	83,635	132,832	22%	0.8%	11bps
Symetra Financial	76,544	93,240	6%	0.7%	0bps
UnitedHealthcare	82,081	80,512	18%	0.6%	7bps
Anthem	73,720	85,981	6%	0.6%	0bps
OneAmerica	68,706	80,201	-2%	0.6%	-5bps
Northwestern Mutaul	21,309	103,452	4%	0.5%	-1bps
Industry	**10,449,663**	**15,414,447**	**5.9%**	**100.0%**	**NA**
Top-10 companies	8,788,265	13,185,659	4.7%	85.0%	-96bps
Top-20 companies	9,958,175	15,178,629	5.3%	97.2%	-62bps

Source: LIMRA, Autonomous Research

Leave management a growing adjacency

Leave management services represent an adjacent product to disability in which an insurer earns a fee for overseeing an employers' worker absence program. We see this as an attractive growth opportunity, especially with more states passing comprehensive paid leave legislation that employers must comply with. In addition to providing an additional revenue stream, leave management services can also deepen the relationship between the insurer and the employer/employees, improving persistency for core benefits like disability.

Growth trends and outlook

We forecast the disability market to grow roughly in-line with GDP over time. Group premiums are closely tied to employment and wage growth (since benefits are linked to salary levels), and while there may be some opportunity to increase employer penetration, the market is relatively mature. We expect faster growth in the small and mid-case segments of the market, typically defined as plans with under 2,000 lives. There may be opportunities for individual insurers to grow faster than the market, especially if there is further consolidation.

Voluntary Benefits and A&H Products

Accident & health (A&H) products provide coverage for specific risks on a “use it or lose it basis” and are typically offered by companies as voluntary (employee-paid) benefits. The products can be sold on a group or individual basis, and we describe the most popular coverages below.

- **Accident insurance:** Accident policies make a payment directly to the claimant following a qualifying injury (such as burns, concussions, dislocations, fractures and lacerations). The benefit is typically a fixed dollar indemnity payment which can be used to offset out-of-pocket expenses such as health plan deductibles, co-pays, ambulances, and physical therapy. Accident policies are often referred to as supplemental coverage because the

benefits can be claimed in addition to major medical coverage. Claims typically get paid quickly (Aflac boasts 1-day pay as a differentiating feature), and >50% of U.S. employers offer accident insurance.

- **Accidental death & dismemberment (AD&D) insurance:** As the name implies, AD&D policies provide a pre-specified payment in the event of a fatal accident or an accident that results in the policyholder losing their eyesight, speech, hearing, or a limb. Since the covered event is narrowly defined, AD&D policies typically provide a larger death benefit per dollar of premium than a traditional life insurance policy.

- **Critical Illness**: The coverage, also known as dread disease insurance, provides a lump-sum cash payment if the policyholder gets diagnosed with a specific disease, most commonly cancer. Policies may also pay benefits in the event of a heart attack or stroke. With serious illnesses, the vast majority of medical expenses will be covered by major medical insurance, so the critical illness policy is typically used to cover nonmedical costs associated with treatment such as rehabilitation, home modifications/care, childcare, and/or transportation. About 40% of midsize and large companies offer critical illness coverage, according to Towers Watson, and policies may also be offered on a standalone basis or as an optional rider on a life insurance policy.

- **Dental & Vision:** Most dental and vision products get sold via the workplace, but they may also be offered on an individual basis. Dental plans typically have different co-pays for different types of services, with the highest level of coverage for preventive care (which may be fully covered) and the biggest out-of-pocket expense for major operations. Most policies have a stated deductible, and benefits are capped at an annual maximum. Orthodontics treatments, dentures, and dental implants may not be covered. Vision coverage provides preventive care as well as contact lenses and glasses. Consumers typically have to pay a small co-pay, and polices are subject to annual limits.

- **Hospital Indemnity:** Policies pay a cash benefit while the policyholder is confined to the hospital. Policies typically must be renewed annually and are guaranteed through a maximum age (typically 65 or 70). Policies pay a fixed indemnity (benefit) either per day, week, month, or for the entire hospital stay. The insured policyholder has discretion over the use of claim proceeds, but they typically go to pay plan deductibles or defray other out-of-pocket expenses.

- **Medical Stop Loss:** Mid-large employers who self-insure their health insurance benefit often purchase stop-loss coverage to protect against outsized claims. Coverage can either be purchased to protect against large one-off claims (such as insuring any payments over $250k) or total aggregate claims above a certain level during a specified period. Stop-loss policies may have a "donut hole" design where claims revert back to an employer above a certain level (e.g. the employer pays the first $200k of any single claim, the stop-loss insurer pays the next $800k, and the employer pays anything above $1M). Most contracts renew annually, and pricing tends to track the level of medical cost inflation.

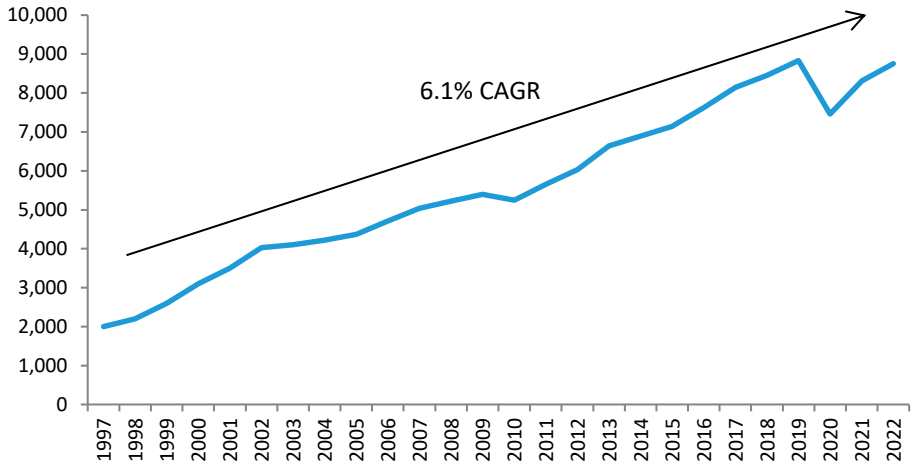
- **Medicare Supplement:** Med Supp (or Medigap) policies cover medical expenses not covered by Medicare. While there are a number of different types of policies offered, they all have the same premise, which is to cover gaps in Medicare A (hospital insurance) and B (medical insurance). The typical plan covers hospitalization expenses after the first 60 days, 20% coinsurance for both in and out-patient treatments, Hospice Care, and the cost of the first 3 pints of blood needed upon hospitalization. Policies also cover any deductibles. While some life insurers offer Medigap policies, the market is dominated by managed care providers, with UnitedHealth and Mutual of Omaha having leading market share. In recent years, Med Supp policies have been losing share to Medicare Advantage policies, which are a subsitute for traditional Medicare offered by private insurers (and includes Part A and B coverage). Medicare Advantage policies charge lower premiums but typically have

higher co-pays and may have medical network restrictions. None of the publicly traded life insurers manufacture Med Advantage policies, but CNO distributes the product via its captive agents.

A&H represents the fastest growing segment of the protection insurance market

We forecast mid-high single digit growth for most voluntary products over the near-intermediate term. The number of employers offering voluntary benefits as part of their benefits packages has been steadily rising, but penetration rates for most products remain low, and we see plenty of room to add new customers. In addition, the need for supplemental products continues to increase given the trend toward major medical plans with higher deductibles and larger co-pays. Both life insurers and employers have incentive to increase the awareness of voluntary coverages and benefits, and we expect this to drive higher employee sign up rates for supplemental products over time. In our view, the biggest impediment to growing the market is that rising health insurance costs could crowd out spending on other benefits.

Chart 14: U.S. Voluntary/Worksite Sales ($ millions)



Source: EastBridge Consulting, Autonomous Research

Market share concentrated among top-10, with Metlife having dominant position

While Aflac was one of the pioneers of the supplemental health market and has >13% market share, this has been eroding over time, and MetLife has taken a dominant market position with ~25% share. Overall, the top 10 companies have 77% share, with group benefits providers and insurers focused on worksite marketing dominating the market.

Table 7: Voluntary Benefits Market Share ($M)

Rank	Company	Annualized Premium (2022)	Growth in Total Premium (y/y)	2022 Market Share	Market Share Change (bps)	Sales (2022)	Sales Growth (y/y)
1	MetLife	10,667,633	8.1%	24.6%	33	1,176,771	-4.9%
2	Aflac	5,813,426	-1.6%	13.4%	(112)	1,319,181	6.5%
3	Unum	4,116,508	0.0%	9.5%	(63)	905,569	7.4%
4	Prudential	2,751,443	3.3%	6.3%	(21)	267,464	5.9%
5	Guardian Life	2,245,279	6.8%	5.2%	0	393,408	10.6%
6	The Hartford	2,150,037	1.6%	5.0%	(25)	325,047	12.8%
7	New York Life	2,022,715	93.7%	4.7%	209	216,148	18.4%
8	Lincoln Financial	1,346,566	5.2%	3.1%	(4)	288,522	14.8%
9	UnitedHealthcare	1,226,596	19.7%	2.8%	31	161,843	23.2%
10	Mutual of Omaha	1,222,041	12.7%	2.8%	15	199,551	24.1%
11	American Fidelity	1,167,807	6.4%	2.7%	(1)	221,127	11.6%
12	Allstate	1,066,459	-1.9%	2.5%	(22)	293,126	-10.1%
13	Voya Financial	1,062,017	14.4%	2.4%	17	210,541	18.6%
14	Principal Financial	859,044	14.2%	2.0%	13	168,280	22.3%
15	Washington National	693,257	4.6%	1.6%	(3)	41,655	19.6%
16	Transamerica (AEGON)	620,079	4.9%	1.4%	(2)	196,122	14.8%
17	Trustmark Insurance	488,526	1.5%	1.1%	(6)	96,374	-43.3%
18	Securian Financial	448,495	3.0%	1.0%	(4)	51,030	-16.1%
19	Aetna	369,341	19.3%	0.9%	9	140,663	-7.8%
20	Dearborn Group	345,298	9.7%	0.8%	2	45,834	1.0%
	Industry	**43,372,508**	**6.7%**	**100.0%**	**NA**	**7,581,974**	**3.8%**
	Top 10 companies	33,562,244	7.6%	77.4%	35	5,253,504	6.3%
	Top 20 companies	40,682,567	7.5%	93.8%	67	6,718,256	4.7%

Source: LIMRA, Autonomous Research

Long-term Care Insurance (LTC)

Long-term care (LTC) insurance provides coverage if a policyholder is unable to perform at least two activities of daily living (eating, bathing, dressing, transferring, toileting, and continence) or requires supervision due to cognitive impairment. Depending on the policy, the policyholder may receive care either in a nursing home or at their home, and the benefit duration ranges from <1 year (short-term care) to the policyholder's lifetime. Benefits may be paid on either an indemnity (fixed daily benefit) or reimbursement basis, and many policies included inflation riders where the benefit increases by +3-5% annually.

There is a clear need for LTC coverage as an estimated 70% of people turning 65 today will ultimately need long-term care, which is extremely expensive (>$100K annually on average for a nursing home in the U.S.). However, LTC insurance has been a hugely problematic product for the life insurance industry due to the massive underpricing of policies sold in the 1990s and early 2000s. Very few insurers still sell standalone LTC insurance today, but because of the long duration of the liability, many still have sizable blocks of legacy policies (generally producing very low, or negative, returns). Below we provide a brief overview of what went wrong and the outlook for the LTC market. For more detail, please see our 2018 report LTC Briefing & Comparisons.

LTC pricing inadequate due to several assumption errors

The poor performance of LTC blocks has been primarily the result of three factors:

- **Lower than assumed lapse rates:** When they began selling LTC policies, most insurers assumed 4-5% annual lapse rates, but actual lapses have been closer to 1%. This means that after 20 years, an insurer will have almost twice as many policies outstanding as it had expected. Given the high likelihood that a policyholder will eventually have a claim, this means that the actual number of claims is likely to be materially higher than initially assumed. In our view, the low lapse rates also indicate adverse selection as people who purchased the coverage believed they were likely to need it and realized they were getting a good deal.

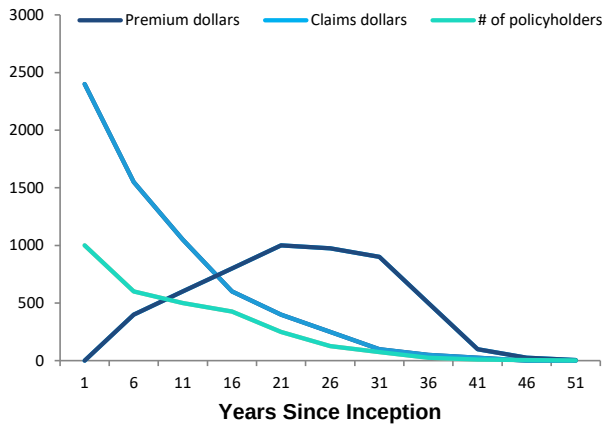
- **Declining interest rates:** Investment income is a key driver of LTC profitability, and the extremely long liability duration and recurring premium nature of the product mean that insurers take on significant interest rate risk. Most policies sold in the 1990s assumed 6.5-7% investment rates, but companies have only been able to achieve 4.5-5.5% yields for most of the past decade, resulting in much lower NII and earnings. While the recent rise in rates reduces some of this overhang, there is still a gap versus initial expectations.

- **Higher claims expense (morbidity):** Average claims expense has been rising due to rapid inflation in the cost of care and people living longer while on claim. This is particularly problematic for policies with lifetime benefits and/or inflation riders.

The combination of these factors has resulted in much higher assumed claims costs, which is not being offset by higher collected premiums (from more policies remaining in-force).

Chart 15: Projected LTC Financial Results

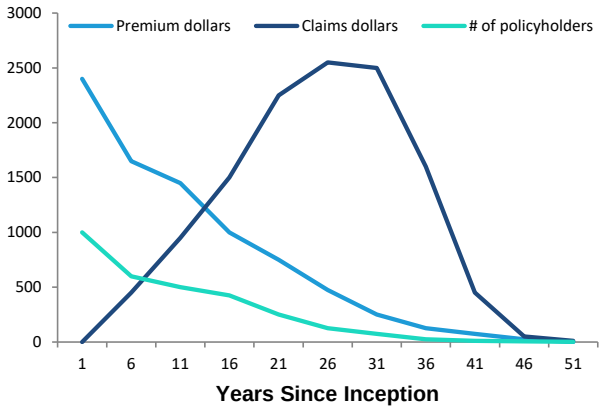
Projected financial results of a LTC block as of 2004



Source: American Academy of Actuaries, Milliman, Autonomous Research

Chart 16: Actual Results have been Much Worse

Actual results & new expected claims of the same LTC block as of 2014



Source: American Academy of Actuaries, Milliman, Autonomous Research

Assumptions have been reset to more realistic levels, but still uncertainty

Most insurers now assume very low lapse rates (<1%), so we see little risk of further adverse development there. Interest rate forecasts have also been reduced (from 7%+ historically to 5.0-6.0% in most cases), which combined with rising yields means the risk of big charges has been reduced. In our view, morbidity (claims costs) and mortality (how long people live, which influences the number of claims and claims duration) are the biggest areas of uncertainty. Of the two, morbidity is the harder to predict as it incorporates claims incidence, severity, and benefit utilization. Morbidity experience could also be positively affected by medical advancements such as new Alzheimer's drugs, which could reduce (or delay) the number of claims.

During the pandemic, insurers experienced favorable LTC results due to higher older-age mortality, particularly in more vulnerable populations such as those already in nursing homes. In addition, new claims incidence declined, which we attribute to both a reluctance to enter facilities and a lack of capacity due to a shortage of nursing home and skilled care professionals. Claims have now returned to normal levels, and most insurers aren't making any changes to their long-term assumptions. That said, we see some potential that insurers have been left with a healthier pool of policyholders following the pandemic.

Limited options for managing legacy blocks

A unique aspect of LTC policies is that insurers can request actuarially justifiable rate increases on in-force policies if performance is worse than expectations. These must be approved by

regulators in the state where the product was sold. While rate increases provide a helpful offset to the pressures outlined earlier, they are not nearly sufficient to bring product margins back to target levels. Most insurers have requested and completed multiple rounds of rate increases (with cumulative increases of 50%+ in most cases). However, regulators will generally only approve changes that get blocks back to being breakeven or slightly profitable, and some states have been loath to allow any changes (or have forced insurers to accept smaller than requested increases and apply again in the future). Therefore, most companies are still playing catch-up to the adverse trends they are seeing.

Table 8: New York LTC Premium Rate Increase Requests

						Only for Approved Rate Increases	
Year	# Companies	# Members	# Filings	# Denied	% Denied	Requested Rate	Approved Rate
2006	4	38,049	9	6	67%	25.0%	15.0%
2007	4	25,894	7	6	86%	30.0%	15.0%
2008	4	67,433	13	11	85%	13.6%	12.2%
2009	6	71,848	9	7	78%	22.8%	15.0%
2010	7	46,578	17	6	35%	18.5%	11.3%
2011	5	50,695	20	3	15%	24.1%	12.6%
2013	15	248,615	51	12	24%	37.6%	21.0%
2014	7	49,474	19	4	21%	51.2%	6.5%
2015	7	244,949	22	-	0%	50.9%	27.8%
2016	6	59,734	23	-	0%	73.0%	13.2%
2017	6	2,680,806	34	1	3%	47.7%	12.3%
2018	6	137,385	23	1	4%	72.9%	13.1%
2019	13	270,709	58	2	3%	45.8%	10.7%
2020	3	22,794	7	-	0%	49.6%	8.8%
2021*	13	281,525	54	4	7%	65.5%	14.7%

2012 missing from data history and 2021 reflects partial year of filings.
Source: New York DFS, Autonomous Research

Beyond rate increases, insurers have limited options to mitigate claims risk. Some companies have invested in claims management to try to reduce fraud (through steps like cell phone monitoring of home healthcare providers) or prevent claims (such as providing incentives to add safety measures in homes to reduce fall risk). There has also been a lot of discussion about the development of a more active risk transfer market, but we've seen little activity to date. The last major transaction occurred in 2018 when CNO reinsured $2.7B of legacy liabilities to Wilton Re, paying a 30% ceding commission to do so. While higher interest rates and further seasoning of blocks have helped narrow the bid-ask spread, there has yet to be a notable follow-up transaction in the industry. Interestingly, we suspect that blocks domiciled in states with more stringent reserving requirements (such as NY) may be easier to transact on as there would likely be a narrower gap between the buyer and seller's view on reserves.

Future of the LTC market more likely tied to linked benefits products

Currently, only a handful of insurers offer standalone individual LTC policies, and we don't see this changing in the foreseeable future. In order to earn a reasonable return, insurers must charge exorbitant premiums or limit benefits (such as restricting maximum benefit periods to 3 years), which makes coverage either unaffordable or unattractive to policyholders. We expect the industry to continue focusing on hybrid products such as life insurance policies with LTC riders (often referred to as linked-benefit policies). These policies allow the policyholder to either collect a death benefit or, if they need LTC, spend down the death benefit to pay for coverage for a defined period of time. Since the insured will collect on only one of two benefits, or redeem the policy for cash value, linked-benefit policies don't have the "use it or lose it" problem that makes traditional LTC less attractive (or results in adverse selection). Policyholders are also more likely to defer using the LTC benefit as long as possible since it has a finite duration and comes at the cost of reducing the policy's death benefit. Therefore, the risk profile is more attractive from the insurer's perspective, and claims experience to date has been consistent with expectations.

One interesting thing to watch will be what states may do to encourage people to purchase LTC coverage. States have a strong incentive to expand the private LTC market since people who can't afford care will ultimately fall on Medicaid. The state of Washington recently passed a 0.58% tax on wages for workers in the state to help fund LTC services for people who can't afford it. However, it will exempt people from paying the tax if they have private LTC insurance. If other states take similar steps it could help spur demand and lead to more insurers offering coverage options.

Annuities

Annuities remain the most prominent form of savings and income products sold by life insurers with >$250B of annual sales. The basic purpose of an annuity is to convert a lump-sum payment into a recurring stream of guaranteed retirement income payments for either a defined period or the policyholder's life. The are two basic forms of annuities:

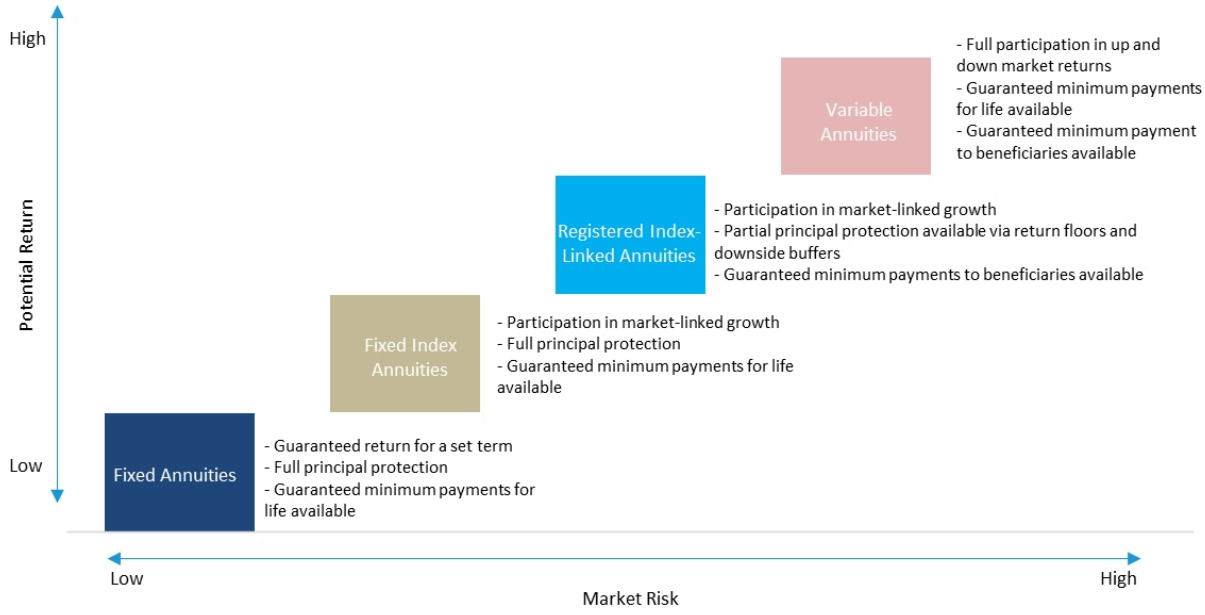
- **Immediate annuities:** These contracts (often referred to as single premium immediate annuities or SPIAs) have a single upfront premium payment, and in exchange the insurance company promises to pay a fixed benefit (typically monthly) for the rest of the policyholder's life. There is no accumulation phase — once the premium has been paid, the contract begins making fixed payments to the policyholder. The level of the income payment is determined by the policyholder's estimated life expectancy and projected interest rates. When the policyholder dies, any remaining assets stay with the insurer. On the other hand, if the person lives longer than expected and the asset pool has been exhausted, the insurer is required to continue making payments. Essentially, a SPIA allows a policyholder to shift longevity risk (the risk of outliving their assets) to the insurer. While this makes sense, SPIAs are not that popular with consumers because people don't like to give up control of their money and potentially not recoup all their investment (if they die early).

- **Deferred annuities:** Deferred annuities have two phases — accumulation (savings) and payout (withdrawal/annuitization). Fixed, indexed, buffered, and variable annuities are all forms of deferred annuities. During the accumulation phase, the initial deposit gets invested, and the policyholder's account balance grows based on the underlying return. A key benefit of annuities is that the policyholder does not pay tax on investment gains until the money is withdrawn (at which point all withdrawals are taxed at ordinary income rates). After a period, the policyholder has the option to annuitize the contract and begin taking income payments based on the accumulated account value. Annuitization has the same loss of control drawbacks as described above for SPIAs, so often policyholders do not elect to utilize this benefit and instead either surrender their contract for the cash value or take partial withdrawals (to the extent allowed). Most deferred annuities charge a surrender charge penalty (specified as a % of the account value) if the policyholder terminates the contract within a specified window (typically for 5-10 years after issue).

Four primary types of deferred annuity products

Deferred annuities make up the vast majority of the market and will be the focus of our discussion. Currently, insurers offer four primary types of deferred annuities: fixed annuities (FAs), fixed indexed annuities (FIAs), registered index-linked annuities (RILAs), and variable annuities (VAs). We'll discuss each in detail over the next few pages, but the following chart illustrates the relative risk vs. return for each of the products.

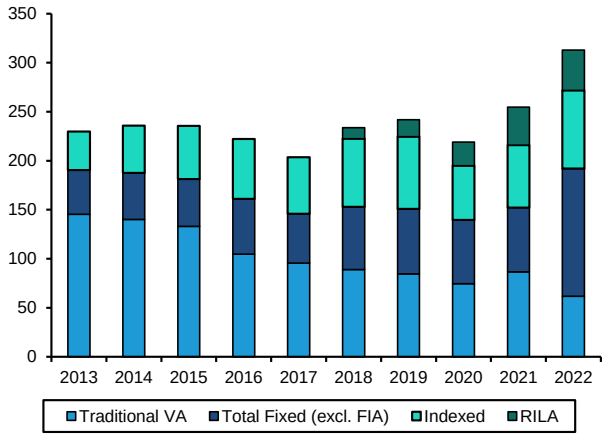
Chart 17: Annuity Risk-Return Framework



Source: Company reports, Autonomous Research

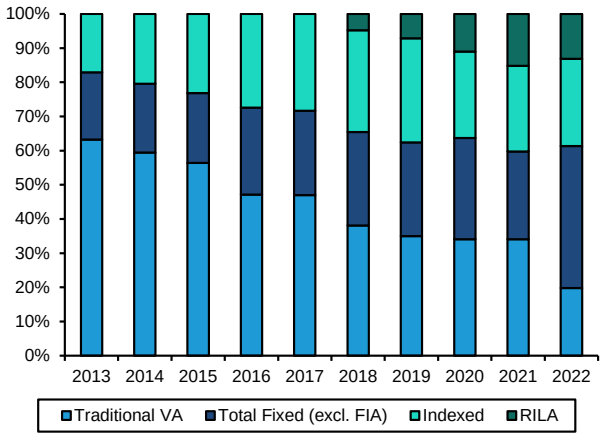
Total industry annuity sales were relatively flat for most of the past decade, which we attribute in large part to low interest rates. However, the higher rate environment has driven a significant uptick in the demand for yield-based products (namely fixed and indexed annuities), and RILA sales continue to increase as more insurers enter the market. As a result, the industry saw a record level of sales in 2022.

Chart 18: Annuity Sales ($B)



Source: LIMRA, Autonomous Research

Chart 19: Annuity Sales Mix By Product (%)



Source: LIMRA, Autonomous Research

Fixed and Indexed Annuities

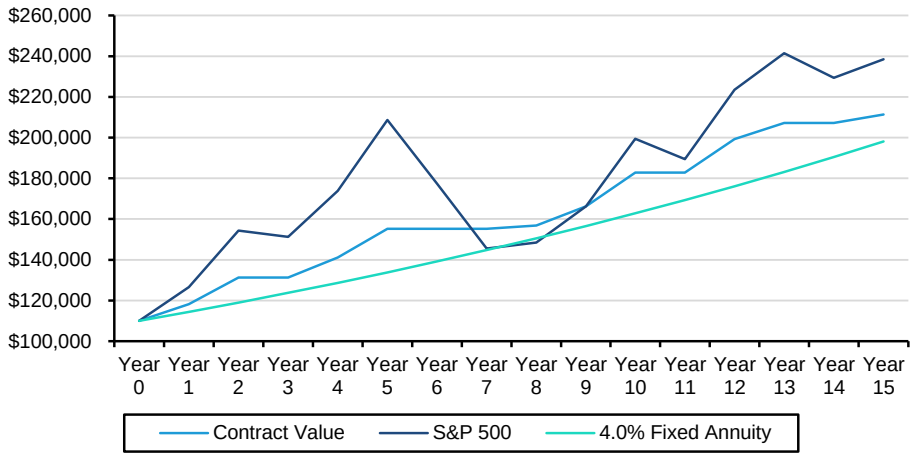
Fixed and indexed annuities both offer principal protection and grow account values over time based on underlying investment performance, but they differ in terms of how these investment credits get determined.

- **Fixed Annuities:** In a fixed annuity (FA), the policyholder's deposit is invested in the insurance company's own portfolio (referred to as its general account), and the insurer promises to pay a fixed crediting rate for a specified time period (typically 3-7 years). The insurer makes money based on the spread between its investment portfolio yield and the crediting rate paid. After the guaranteed rate period ends, the insurer can reset the crediting rate annually based on the level of interest rates (subject to the guaranteed minimum rate "floor" specified in the contract). Fixed annuities are viewed as a safe investment vehicle and often compared to Bank CDs. They tend to look relatively attractive when the yield curve is steep as crediting rates are typically tied to the 5-7 year part of the curve (vs. bank CDs being priced off of the short-end).

- **Fixed Indexed Annuities (FIAs):** In an FIA, the policyholder's crediting rate is based on the performance of an underlying market index (such as the S&P 500). If the index appreciates, the policyholder receives either a percentage of the upside (known as a participation rate) or the full upside up to a pre-specified cap. If the index declines, the policyholder receives zero credit, but their account value does not decline. Therefore, an FIA offers a relatively low-risk way to get some exposure to equity market appreciation, and the index credits tend to be higher than traditional FAs (or bank CDs) during periods of rising markets or low interest rates. From the insurers' perspective, they still invest the deposited funds in their general account. However, instead of paying out a fixed crediting rate, they use that money to purchase call options on the reference market index. If the index appreciates, the options end up in-the-money, and the proceeds are used to pay the index credit to the policyholder. If the index declines, the options expire worthless, and the policyholder receives no index credit, but the insurer hasn't lost anything (and still earns a spread). Therefore, FIAs also have a low risk profile for the insurer.

The chart below shows how the crediting rates for a traditional fixed annuity and an FIA may compare over time. While the FA generates a smooth return, the FIA will likely produce a higher cumulative return if markets rise.

Chart 20: Hypothetical Fixed Indexed Annuity Contract



Source: Autonomous Research

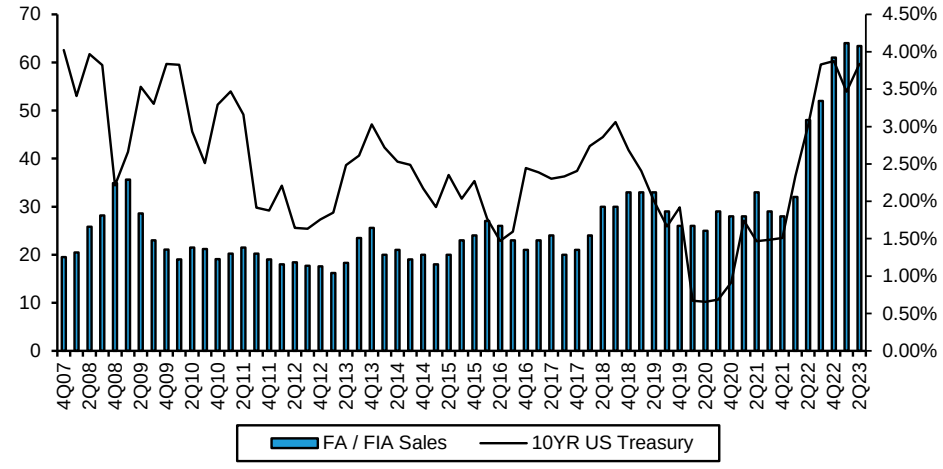
Additional fixed indexed annuity riders and features may be offered

The two most common supplemental features offered with FIAs are upfront bonuses and lifetime income benefit riders (LIBRs). A bonus feature provides a day 1 credit to the policyholders' account value (often up to 10% of the initial deposit), but this is more of an optical rather than "real" benefit as the insurer pays a lower ongoing crediting rate to offset this. Bonus products have become less prevalent in recent years. LIBR features provide an "income base" that grows at a guaranteed rate regardless of market performance and actual index credits. This income base is then used to calculate annuity benefits (based on the age of the policyholder when they begin taking payments and the length of time the policy has been in-force). However, it can only be monetized through annuitization, and if the policyholder surrenders the contract, they just receive the market value. The level of guaranteed return, and the fee charged for the LIBR benefit, varies between companies. Offering LIBR features transfers some market risk from the policyholder to the insurer, although we view them as much less risky than the variable annuity living benefits guarantees discussed later.

Demand drivers for fixed and indexed annuities

Fixed and indexed annuity sales tend to be driven by two primary factors: 1) the level of interest rates, and 2) consumer sentiment on market risk. Higher interest rates allow for more attractively priced products, and a steeper long-end of the yield curve improves the relative value of fixed annuities versus other principal-protected products (such as bank CDs, which are more tied to the short-end of the curve). The recent sharp rise in interest rates, coupled with equity market volatility, has driven a spike in sales to ~$60-65B per quarter (vs. the ~$20-30B quarterly run-rate for the prior decade). We also saw a surge in sales at the beginning stages of the GFC when investors were looking for safe money options.

Chart 21: Relationship Between Fixed/Indexed Annuity Sales & Interest Rates



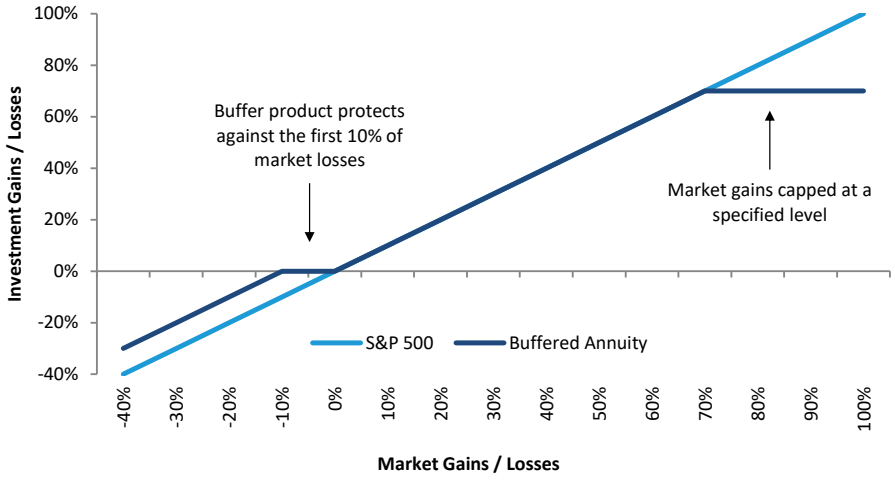
Source: LIMRA, Bloomberg, Autonomous Research

Registered Index-linked Annuities (RILAs)

Registered index-linked annuities (also known as buffered or indexed annuities) have been the most recent product innovation and allow policyholders to participate in equity index appreciation (up to a specified cap) in exchange for limited downside protection. RILAs have a specific term (such as 1, 3, or 6 years), and below we show the return profile for a simple contract with a 70% cap and 10% downside buffer (any declines >10% are borne by the policyholder). As the RILA product continues to evolve, insurers have begun to offer more types of crediting rate mechanisms (cap rates, step rates, performance triggers) and downside protection options (buffers, floors). Policies also typically offer a basic return of premium death benefit (usually for an additional fee), and some companies have begun to introduce living

benefit riders.

Chart 22: Buffered Annuity Illustration



Source: Brighthouse Financial, Autonomous Research

The insurance company can fully hedge the market risk on a basic RILA contract, and, since it invests the funds in its general account, profitability is tied to investment income rather than fees on AUM. Therefore, we view RILAs as a relatively low risk product for insurers. The product has also been popular with distributors and consumers since it is relatively easy to understand and doesn't charge explicit fees (except for optional riders). Therefore, we expect industry sales to continue growing at a healthy clip near-term, and RILAs will likely continue taking share from traditional VAs. Brighthouse and Equitable were the first insurers to introduce RILAs and remain market leaders, but most other VA writers now offer the product, and the market has grown to include traditional FA/FIA sellers looking to expand their product shelf (such as Athene). Therefore, we'll be keeping close watch on competitive dynamics to make sure companies don't start getting too aggressive with their pricing or product features.

Variable Annuities

Variable annuities (VAs) differ from FAs and FIAs in that the policyholder's deposits get invested in mutual funds (or similar vehicles) rather than in the insurer's general account. The policyholder's account value, which shows up as a separate account asset on the balance sheet, fluctuates based on the investment performance of the selected funds and can increase or decrease (no principal protection). The insurer charges a fee based on the percentage of account value, and this can range from ~1.25% to >3% depending on the contract and whether optional riders are elected.

Table 9: VA Fees Charged by Insurers

Fee Charges	Typical Range (% of account values)
Mortality & expense (M&E) risk charges	0.50% - 1.50%
Administrative & distribution fees	0.30%
Sub-account fees & investment charges	0.25% - 3.00%
Optional living/death benefit riders	0.25% - 1.15%

Source: Annuity.org, Autonomous Research

Most VAs offer optional guarantee features

In a traditional variable annuity, the account value serves as the basis for future income payments (either via annuitization or partial withdrawals of principal). However, many consumers and financial advisors dismissed VAs as little more than tax-deferred mutual funds with high fees. In response, insurers began offering additional guaranteed minimum death benefits (GMDBs) and guaranteed living (income) benefits (GLBs). Most VAs include a GMDB, while GLBs are typically optional riders available for an additional fee. These guarantees come in many different flavors and are continuously evolving, but we discuss the most prominent features below.

- **Guaranteed Minimum Death Benefit (GMDB):** GMDBs guarantee the minimum payment a beneficiary will receive upon the policyholder's death, regardless of market performance. The most common form guarantees a return of principal less any withdrawals, and these are typically available at no extra charge. More complex "enhanced death benefits" that guarantee an increasing payout over time typically charge an additional fee.

- **Guaranteed Minimum Income Benefit (GMIB):** GMIB features guarantee a minimum annual return for the asset base on which income payments get calculated. For example, if a policy has a 6% return guarantee, the income base on an initial deposit of $100,000 would grow to at least $179,085 after 10 years. If the actual market return was 5% (net of fees), the contract's market value would only be $162,890. If the policyholder surrenders the contract, they can withdraw the market value as a lump-sum, but if they choose to annuitize, the income would be calculated off of the higher guaranteed amount. GMIB contracts typically require a minimum waiting period (usually 10 years) before being able to access the guaranteed income, and the guarantee usually reaches a maximum value at a specified point (typically after 10 or 15 years). The annual income payment is determined based on the policyholder's age and how long the payments will last (for a specified period or for life), and it's typically a percentage of the inital guaranteed amount (such as 5%). Most GMIB contracts require the policyholder to annuitize in order to access the guaranteed benefit, although some allow for partial withdrawals. At annuitization, all assets get moved to the insurer's general account, and the contract essentially becomes a payout annuity. If the market value is exhausted and the policyholder is still entitled to income payments, these come out of the insurance company's pocket. Thus, the insurer has interest rate risk if a policyholder annuitizes an in-the-money GMIB with a return guarantee above the current level of interest rates (since it would be essentially purchasing a payout annuity with a negative spread). This is why the last decade of low interest rates have been particularly problematic for insurers with large blocks of legacy GMIB policies.

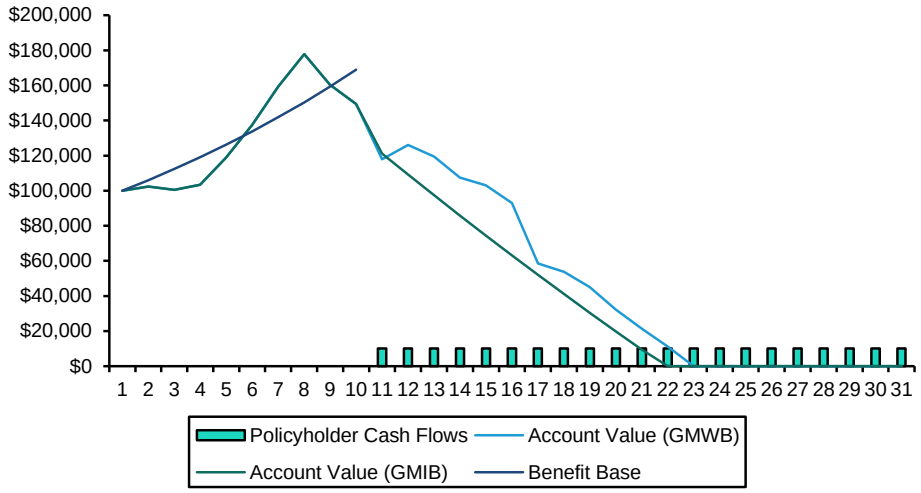
- **Guaranteed Minimum Withdrawal Benefit (GMWB):** The initial GMWB riders guaranteed that a policyholder could withdraw all their deposits (minus withdrawals) regardless of market performance. Current GMWB riders look more like GMIBs in that they guarantee a minimum rate of return during the accumulation period. The primary difference comes when taking income. Unlike a GMIB, GMWB features do not require the policyholder to annuitize, and instead allow them to withdraw a specified percentage of the guaranteed account value each year (typically for life). Once the market value is exhausted, the insurance company is responsible for making payments. Another difference versus GMIBs is that the assets remain invested in separate account funds, so the level of "moneyness" for the guarantee will continue to fluctuate after withdrawals begin. Therefore, even if a guarantee is in-the-money when the first withdrawal happens, the market value of the account may not get exhausted if market returns improve in the future. On the other hand, the insurer remains exposed to market declines. As a result, GMWB riders are more sensitive to equity markets than interest rates.

- **Guaranteed Minimum Accumulation Benefit (GMAB):** A GMAB guarantees a future income account value regardless of actual fund performance, either in the form of a pre-defined return or multiple of the original contribution amount (such as guaranteeing that

the benefit base will double in 10 years). While GMABs were popular for a period in the mid-2000s, few insurers offer them today as a standalone rider. That said, many current GMWBs essentially combine the original premise of GMABs with a withdrawal benefit.

The following chart illustrates the cash flows for hypothetical VA contracts with GMIB and GMWB riders. In both cases we assume 6% annual growth in the benefit base during the accumulation period, a 6% guaranteed annual income payment (based off the guaranteed benefit base), and that withdrawals begin in year 11. While the performance is the same before payouts begin, experience differs afterward since the GMIB gets annuitized while the GMWB remains invested in the separate account. In our scenario, it takes ~12 years for the GMIB account value to run out and ~13 years for the GMWB to be exhausted. If the policyholder lives longer, the insurer pays the benefit out of its pocket.

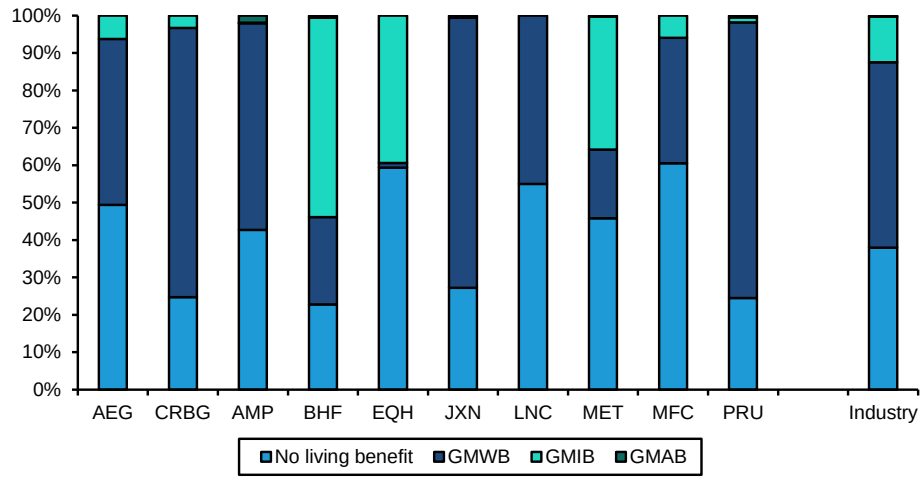
Chart 23: Hypothetical Variable Annuities with GMIB and GMWB Riders



GMWB/GMIB riders assume 6% annual ratchet, 6% withdrawal/income benefits, and that policyholder exercises the rider option in year 10.
Source: Society of Actuaries, Company reports, Autonomous Research

Each of the living benefits offered has a different risk profile, with GMWBs generally being more sensitive to equity market returns and GMIBs more sensitive to the level of interest rates. The following chart shows the benefit mix for each of the public companies with material exposure to VAs.

Chart 24: Variable Annuity Living Benefits Mix (YE22)



Source: Company reports, Autonomous Research

Strong risk management a key competency for VA providers

Variable annuities have among the highest sensitivity to equity market returns and interest rates among the products offered by life insurers. In addition, guarantee features create potential balance sheet tail risk if they end up in-the-money and are not appropriately hedged. During the financial crisis, several insurers experienced large GAAP losses and sharp swings in their capital positions due to the market decline and spike in volatility, leading to ratings downgrades and dilutive equity raises. Strong risk management remains a critical core competency for a successful VA company, and we briefly discuss key hedging and product design capabilities below.

- **Hedging:** While all life insurers hedge their VA risk, strategies can vary significantly amongst companies. Key decision points include which market factors to hedge (equity risk, interest rates, volatility, etc.), how to calibrate the hedge target (to maintain a certain level of capital, match economics, or minimize GAAP earnings volatility), which hedging instruments to use (options, which have an upfront cost, or futures/swaps, which do not), and how tightly to hedge. We consider hedging capital the most prudent approach as this is ultimately the risk that matters. We also favor fully hedging all major variables. To evaluate hedge effectiveness, we look at how the hedge assets change relative to their target rather than the GAAP realized gain/loss (which can be influenced by non-economic noise). For example, if a company is hedging capital, we want to see how its RBC ratio and VA capital position change.

- **Product design:** Hedging reduces the risks associated with market factors, but insurers have to address policyholder behavior uncertainty through product design. VAs give policyholders multiple options, including asset allocation, when to begin withdrawing income, and whether to annuitize or take partial withdrawals. To reduce uncertainty (which makes hedging difficult), many insurers require policyholders to choose an asset allocation option with mandatory auto-rebalancing. It's impossible to eliminate uncertainty around the benefit utilization decision, but companies can try to guide this process by requiring mandatory waiting periods and capping guarantees after a certain point.

Net Amount at Risk (NAR) is the primary gauge of VA guarantee risk

Unfortunately, no quantitative measures truly capture VA risk on a comprehensive basis. Most investors focus on net amount at risk, or NAR, which attempts to show the potential loss if all guarantees are monetized. However, it has several flaws. For one, having every policyholder exercise in-the-money guarantees simultaneously is an unrealistic assumption. In addition,

NAR typically does not include hedge offsets. Companies also calculate NAR using different assumptions (particularly for discount rates), limiting comparability. We see the most value in tracking 1) changes in NAR, which provides a view on how the guarantee liability changes based on market conditions, and 2) NAR/AUM to gauge the relative riskiness of a company's block and the level of required capital. Companies disclose the NAR for both guaranteed death benefits and living benefits. In our view, GMDB NAR is less relevant given little risk of all guarantees being exercised immediately (the benefit is only payable upon death), and the payout is easier to hedge. Living benefit and death benefit NARs also should not be summed since only one guarantee can be monetized.

Table 10: Variable Annuity Details by Company (YE22, $M)

	AEG	CRBG	AMP	BHF	EQH	JXN	LNC	MET	MFC	PRU
Individual VA Assets	62,606	54,487	62,606	62,606	95,759	205,809	127,757	40,807	3,784	112,459
% with living benefit guarantees	51%	73%	68%	102%	41%	76%	55%	54%	46%	75%
% with death benefit guarantees	71%	92%	107%	132%	56%	88%	91%	100%	59%	87%
% with GMWB	44%	72%	55%	23%	1%	72%	45%	18%	34%	74%
% with GMIB	6%	3%	0%	53%	39%	1%	0%	36%	6%	1%
% with GMAB	0%	0%	2%	1%	0%	0%	0%	0%	0%	0%
% with death benefit only	49%	25%	43%	23%	59%	27%	55%	46%	61%	25%
Risk Metrics										
Living benefit NAR	1,385	198	3,137	5,671	3,228	42,682	3,100	433	285	9,227
% of VA AUM	2%	0%	5%	9%	3%	21%	2%	1%	8%	8%
% of equity	8%	1%	51%	57%	37%	430%	32%	1%	1%	27%
Death benefits NAR	3,743	3,209	2,162	16,504	15,676	13,526	5,089	5,338	452	5,720
% of VA AUM	6%	6%	3%	26%	16%	7%	4%	13%	12%	5%
% of equity	22%	14%	35%	166%	178%	136%	52%	13%	1%	17%
Statutory Details										
RBC ratio (12/31/22)	419%	411%	543%	441%	425%	537%	377%	370%	427%	386%
Captive	Recaptured	None	None	Recaptured	Recaptured	None	Barbados	Recaptured	Bermuda	Recaptured
Sales & Net Flows Details										
2022 VA sales	586	5,631	1,247	1,208	6,560	12,890	4,044	0	0	276
2022 market share (rank)	15	4	10	12	3	1	6	NM	NM	21
2022 net flows	(4,793)	(1,672)	(2,129)	(3,271)	(3,210)	(2,407)	(5,871)	NA	NA	(9,757)

Source: Company reports, S&P Market Intelligence, Autonomous Research

Annuity Market Dynamics and Growth Outlook

Sales outlook

After strong growth in the 1990s and 2000s, annuity sales stagnated in the 2010s before reaccelerating in 2022 with the rise in interest rates. However, the resumption in growth has been a tale of two cities. Sales of FAs and FIAs have more than doubled from 2010 levels, reflecting more attractive yields and strong interest in principally protected investments. RILAs sales also continue to rise, helped by more insuers entering the market. On the other hand, sales of traditional VAs continue to fall, which we attribute to: 1) less attractive product features as insurers significantly raised fees for VA guarantees, 2) several prominent insurers exiting the market, and 3) shifting consumer preferences, particularly toward RILAs.

Looking forward, we see several potential positive catalysts for growth in the annuity market, including an aging U.S. population, increased awareness of the need for lifetime income, and recent legislation that encourages the use of annuities within defined contribution retirement plans. That said, in order for the market to materially expand, insurers need to do a better job addressing the criticisms of annuities (high fees, complex guarantees) and highlighting the value of guaranteed lifetime income (which is something only an annuity can provide). We expect FA/FIA sales to moderate after the recent surge in volumes, but as long as interest rates remain above 3%, we forecast production to remain well above pre-2022 levels. We see industry RILA sales growing at a high single digit rate for the next several years. While we believe VA sales may be close to bottoming, we see little chance of volumes returning to historical levels near-term.

Manageable lapse risk in a higher rate environment

One risk for annuity writers is that in periods of higher interest rates, policyholders may lapse their existing contract to "trade up" to one with a higher guaranteed return. If too many policies were to lapse at once, an insurer could become a forced seller of assets, which would likely result in losses due to the rise in rates. In order to mitigate this risk, annuity contracts contain features that penalize early surrenders.

- **Surrender charge penalties:** Most FAs and FIAs levy a charge (based on a % of the account value) if the policyholder lapses during the initial guarantee period of the contract. These charges often start at 6% (or more) and grade down to zero over time. This provides a deterrent to yield-seeking behavior as it's difficult to overcome the initial charge. For example, if a customer has a $100K FA with a 2% rate, they will have ~$110K after 5 years. If they were to surrender early and pay a 5% surrender charge, they would only have $95K to invest so they would need to earn >3% annually just to break-even.

- **Market value adjustments:** An MVA adjusts the amount a policyholder receives on excess withdrawals (above the contractual limit) based on current interest rates. If rates are higher than when the contract was purchased, this will result in a negative adjustment, reducing the payment to the policyholder.

Annuities also have several other aspects that reduce the risk of excess surrenders.

- **Flexibility to adjust renewal crediting rates:** When an annuity exits the initial guaranteed crediting rate period, insurers can adjust the rate, subject to contractual minimums. While most have historically avoided increasing rates, they have the flexibility to do so, which provides a tool to retain policies. The trade-off would be lower spreads and earnings on the in-force block.

- **Tax implications:** Annuity contracts grow account value on a tax-deferred basis, with the policyholder only paying tax on any funds withdrawn. Comparatively, if a policyholder were to surrender a fixed annuity and reinvest the funds in a bank CD, bond fund, or other investment, they would incur a tax liability on any gains (assuming the annuity is not held in an IRA). However, if they were to exchange their current annuity for a new annuity, it would be a 1035 exchange which would allow the policyholder to continue to defer their tax bill.

- **Higher new sales:** As previously discussed, higher interest rates tend to result in strong sales, with rising volumes driven by both new money coming into annuities and churn from existing policyholders trading up. Thus, as long as new cash keeps coming in and insurers remain in inflow, the risk of being a forced seller of assets is low.

Market share varies significantly across products

Most insurers have historically specialized on one or two annuity products, with very few having a dominant position across FAs, FIAs, and VAs. In fact, Corebridge is the only insurer to have top 5 market share in each major product category. In our view, this is due to historical differences in distribution, with VAs being sold predominantly via insurance agents and securities firms, fixed annuities being big in banks, and FIA sales being driven by independent marketing organizations (IMOs). In addition, some companies have elected not to offer VAs due to the risk profile, while others have avoided FAs/FIAs due to low interest rates and the high asset leverage. As product categories continue to blend together, and FIAs gain further traction in the bank and broker-dealer channels, we expect more insurers to develop a "pan-annuity" product offering. In our view, the insurers with the strongest distribution and product development capabilities are best positioned to gain and sustain market share.

Table 11: Total Annuity Sales

$ in millions for 2022

Company	Sales	Market Share	Market Share Change (bps)
New York Life	23,244.6	7.4%	205
Athene	20,689.8	6.6%	314
Corebridge Financial (AIG)	20,161.5	6.5%	-85
Massachusetts Mutual	18,795.5	6.0%	190
Equitable Financial	15,158.9	4.9%	-89
Jackson National	14,900.0	4.8%	-283
Allianz	14,069.7	4.5%	-97
Lincoln Financial Group	12,101.2	3.9%	-85
Pacific Life	11,447.3	3.7%	47
Nationwide	11,140.2	3.6%	-78
Top 10 companies	161,708.7	51.7%	39
Total	**312,509.7**		

Source: LIMRA, Autonomous Research

Table 12: Fixed/Indexed Annuity Sales

$ in millions for 2022

Company	Sales	Market Share	Market Share Change (bps)
Athene	19,786.5	9.4%	300
New York Life	18,184.5	8.7%	214
Massachusetts Mutual	17,633.4	8.4%	90
Corebridge Financial (AIG)	14,530.2	6.9%	-126
Global Atlantic Financial	9,393.7	4.5%	-153
Sammons	8,320.9	4.0%	-31
Fidelity & Guaranty Life	8,294.8	4.0%	-79
Allianz	8,202.5	3.9%	-143
Pacific Life	8,071.7	3.8%	188
Western Southern Group	7,705.2	3.7%	105
Top 10 companies	120,123.3	57.3%	364
Total	**209,685.2**		

Source: LIMRA, Autonomous Research

Table 13: RILA Sales

$ in millions for 2022

Company	Sales	Market Share	Market Share Change (bps)
Equitable Financial	8,534.0	20.7%	105
Allianz	5,864.8	14.3%	-383
Brighthouse Financial	5,853.9	14.2%	-186
Prudential Financial	4,997.5	12.1%	-267
Lincoln Financial Group	4,726.4	11.5%	-118
Ameriprise Financial	2,799.0	6.8%	-16
New York Life	1,654.9	4.0%	218
Jackson National	1,649.9	4.0%	376
CMFG Life Insurance Company	1,316.6	3.2%	-82
Massachusetts Mutual	904.2	2.2%	121
Top 10 companies	38,301.2	93.1%	-232
Total	**41,135.6**		

Source: LIMRA, Autonomous Research

Table 14: Traditional VA Sales

$ in millions for 2022

Company	Sales	Market Share	Market Share Change (bps)
Jackson National	12,889.6	20.9%	-98
TIAA	7,626.4	12.4%	323
Equitable Financial	6,560.1	10.6%	262
Corebridge Financial (AIG)	5,631.3	9.1%	-13
Nationwide	4,301.2	7.0%	-172
Lincoln Financial Group	4,043.8	6.6%	-45
New York Life	3,405.2	5.5%	26
Pacific Life	3,375.6	5.5%	-97
Thrivent Financial for Lutherans	2,105.9	3.4%	15
Ameriprise Financial	1,247.1	2.0%	-176
Top 10 companies	51,186.3	83.0%	25
Total	**61,688.9**		

Source: LIMRA, Autonomous Research

Institutional Savings & Income Products

Many insurers also offer variations of annuity products to institutional investors. Sales tend to be lumpy, and they are often opportunistic in nature (capitalizing on favorable interest rates or credit spreads). The institutional market tends to be highly ratings sensitive, with insurers typically needing at least an "A" rating from AM Best to be competitive. Historically the market has been dominated by the large mutuals and diversified public companies, but we've seen a number of new entrants in recent years, including smaller public insurers (such as Brighthouse, CNO, and RGA) and companies backed by alternative asset managers (including Athene and Global Atlantic). Major institutional products include:

- **Guaranteed investment contracts (GICs):** GICs guarantee payment of principal and accumulated interest for a specified period. Similar to fixed annuities, the insurer receives an initial deposit which it invests in its general account, and it profits from the spread between its investment yield and interest credited to the policyholder. GICs are typically used in stable value funds, which are capital preservation investment options available in 401(k) and other retirement savings plans. A stable value option usually offers a higher yield than a money market fund but does not have the risk of principal loss like a typical bond fund. The trade-off is limited liquidity. GICs can also be purchased by other institutions (such as pension funds) looking for a short-term investment that offers a higher yield than cash and guaranteed principal.

- **Funding agreement backed notes (FABN):** FABNs are a form of GIC in which a special purpose vehicle issues a note to institutional investors with a fixed interest rate and stable principal value. The SPV then purchases a funding agreement from the insurance company

with equal terms. Since the FABN is collateralized by the insurer's general account, the SPV receives the same credit rating as the insurance operating company, which tends to be a notch or two higher than the holding company (and typically in the "A" range). The insurer invests the proceeds and earns a spread versus its cost of funding. FABNs typically have a duration ranging from 3-10 years, which insurers tightly match on the asset side, so credit is the primary risk. The best environment for issuing FABNs tends to be when an insurers' credit spread is tight relative to the overall market as this enables it to earn an attractive spread.

- **FHLB borrowing:** Most insurers are members of an FHLB bank and can borrow from them directly. This gives them access to relatively cheap funding, and they can invest the proceeds in higher yielding assets and earn a spread. Borrowings have to be fully collateralized by securities or loans, and acceptable collateral typically includes government obligations, municipal debt, structured mortgage securities, and commercial mortgage loans (corporate debt, alternative investments, and common equities are not allowed). FHLB borrowings utilized for spread enhancement tend to be classified as funding agreements and are viewed as insurance company operating leverage by rating agencies. In recent years we have seen an increasing number of insurers utilize these facilities to bolster earnings. However, we view this as a low multiple business given the leverage applied and relatively short duration of the benefit.

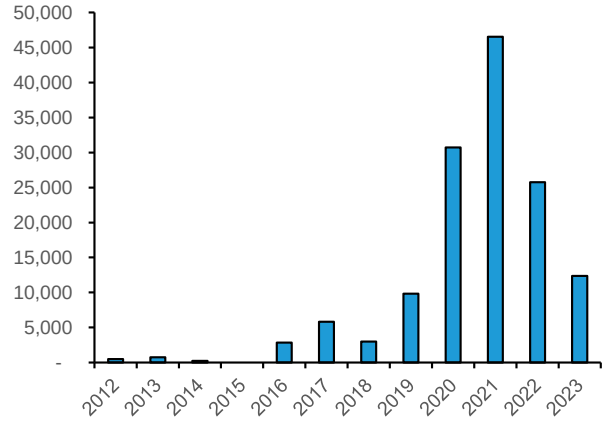
- **Structured settlements:** A structured settlement provides periodic payments for either a defined period or the life of the recipient. They are commonly used to fund personal injury settlements or the payout of lottery winnings. The party responsible for making the payment often buys a payout annuity contract from an insurer. The insurer receives a single upfront premium which it invests in its general account, and it pays income distributions to the recipient on the agreed upon schedule. The level of payment that can be purchased depends on current interest rates and, in the case of a lifetime payout, the insurance company's assessment of expected mortality.

- **Pension risk transfer (PRT):** A PRT transaction involves an insurance company assuming the obligations of a corporation's defined benefit pension plan in exchange for an upfront payment (either in the form of cash or securities). The transaction can either be structured as a pension buyout (the pension assets and obligations legally transfer to the insurer) or a buy-in (the plan sponsor purchases a group annuity contract to defease the risk, but the pension liability remains on its balance sheet). Pensions are essentially large group payout annuities, so they are a natural fit for an insurer. The primary risks are longevity (how long participants live and collect payments) and credit performance. For insurers with large mortality blocks, the longevity risk from PRT serves as a natural hedge. There were nearly $50B of PRT transactions in the U.S. in 2022, and we expect to see activity remain strong given a sizable pipeline of companies that would like to shed (or reduce) their pension liabilities. Higher interest rates are also a catalyst as most corporate pension plans are now fully funded, which reduces the cost of transacting (since an under-funded plan would need to be topped up before it could transact). Among public insurers, Athene/Apollo, MetLife, Principal, and Pru are the most prominent PRT writers.

- **Longevity reinsurance:** Longevity reinsurance, also known as a longevity swap, transfers the risk of pension plan participants or annuitants living longer than expected to an insurer by converting the uncertain future liability into a stream of fixed payments. For example, a pension plan may want to protect against its liability extending beyond 20 years, so it purchases protection from an insurer. The insurer charges a premium based on its assumed liability duration, and it benefits if the duration ends up being shorter and loses out if people live longer. Unlike in a full PRT transaction, the plan sponsor retains the liability on its books, and no investment assets change hands. As a result, the capital charge for the insurer

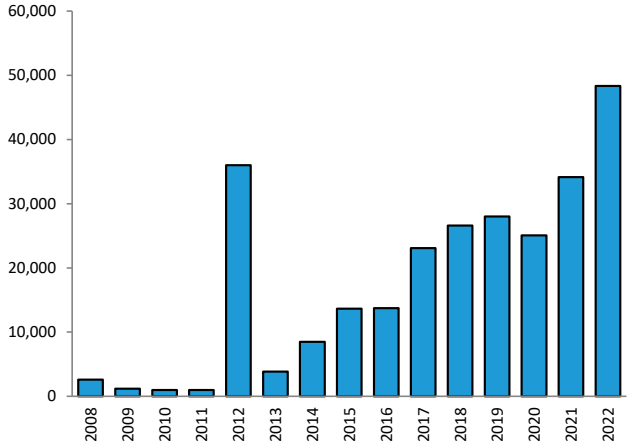
is much lower on a longevity swap. To date, we have seen strong demand for longevity reinsurance in the UK and Europe, but very little activity in the U.S.

Chart 25: Funding Agreement Issuance ($M)



Source: Bloomberg, Autonomous Research

Chart 26: U.S. Pension Risk Transfer Volumes ($M)

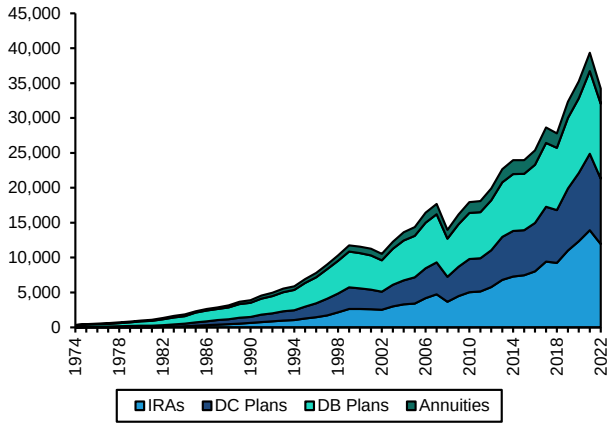


Source: LIMRA, Autonomous Research

Defined Contribution Retirement

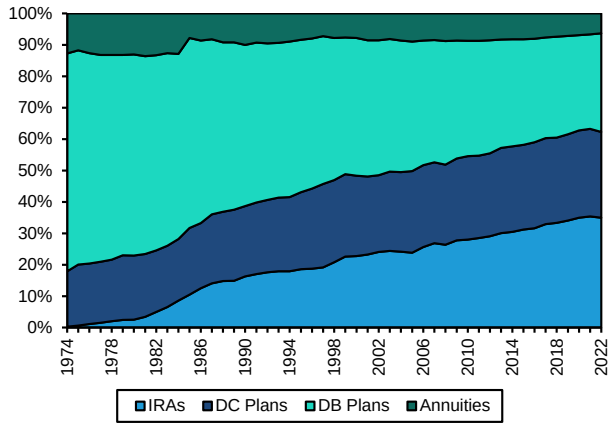
The U.S. retirement market has >$33 trillion of total assets housed across four major types of accounts: defined benefit (pension) plans, defined contribution plans, individual retirement accounts (IRAs), and annuities. Total assets have grown at CAGRs of 4%, 6%, and 9% over the past 5, 10, and 50 years, respectively (through 2022). The charts below shows the asset mix by account type and how this has shifted over time.

Chart 27: U.S. Retirement Market Asset Growth



Source: Investment Company Institute, Autonomous Research

Chart 28: Composition of U.S. Retirement Market



Source: Investment Company Institute, Autonomous Research

Types of retirement accounts

- **Defined benefit (DB) plans** provide a traditional pension, whereby participants receive a fixed yearly payment in retirement for as long as they live. The payment is determined by a number of factors, including the person's salary and employment tenure. During a participant's employment, the plan sponsor makes an annual contribution into the pension plan, typically a set percentage of the employee's salary. These contributions are invested in a general pool of assets to earn net investment income and build reserves for future benefits. Defined benefit plans have waned in popularity given the high and volatile costs

of offering the plans, with most plans closed to new employees, and many plans frozen (i.e. no new contributions made for any employee). Frozen plans are essentially a run-off liability, and as discussed earlier, there is growing demand from plans to de-risk these liabilities via pension risk transfer transactions. We expect the DB share of total retirement assets to decline over time.

- **Defined contribution (DC) plans** do not provide participants with any fixed income in retirement. Instead, participants are responsible for making contributions, selecting their investment options, and generating a large enough pool of assets to sustain a desired lifestyle in retirement. Participant contributions can be either pre-tax or post-tax (Roth), and employers typically match contributions to a set amount (such as 5% of base salary up to $250K). Annual contribution limits are set by the IRS ($22.5K for 2023), and retired participants can retain assets in-plan to take advantage of institutional fund pricing and other features. Withdrawals are penalized before age 59.5 (10% early withdrawal penalty), and participants are required to take required minimum distributions (RMDs) starting in the year they turn 72. We discuss our outlook for DC plan growth in more detail later.

- **Individual retirement accounts (IRAs)** are a tax-advantaged savings vehicle that can be funded either directly or via rollover from a DC plan. IRAs can be either traditional or Roth, with contributions to traditional IRAs tax-deductible in the current period. Roth IRA contributions are made with after-tax dollars, with future withdrawals tax-free (both principal and investment gains). Annual contribution limits are set at $6.5K for 2023, and both types of IRAs carry early withdrawal penalties before age 59.5. High-income earners (>$153K annual gross income for single/head-of-household filers) are restricted from contributing to Roth IRAs, although there are "backdoor" methods to contribute via reclassifying traditional IRA contributions. IRAs are offered by banks and broker-dealers and have relatively unconstrained investment options. We expect IRAs to remain one of the faster growing segments of the retirement market (+8% 10-year CAGR).

Key business roles within the defined contribution market

A number of functions need to be executed when an employer decides to offer a defined contribution plan. While these could all potentially be performed by one full-service provider, most plans (particularly larger ones) use multiple specialists.

- **Plan design and administration:** Plan administrators (typically referred to as third-party administrators or TPAs) are responsible for developing a document that lays out the plan's rules and making sure it complies with all applicable laws and regulations. Once a plan is established, the administrator provides ongoing monitoring and handles the annual required Form 5500 filing. Administrative fees can either be paid directly by the plan sponsor or passed through to the participants. While many plans use separate TPAs, their responsibilities can also be bundled with recordkeeping services.

- **Recordkeeping:** The plan recordkeeper processes employee enrollments, investment transactions, and other activities (employer matches, participant loans, rollovers, etc.). In addition, it is responsible for generating and sending plan statements and disclosures and providing service and support to plan participants. Many recordkeepers also provide tools such as retirement calculators, although they can't provide explicit investment advice. The largest recordkeepers tend to be insurance companies (36% of plans, 37% of assets) and asset managers (15% of plans, 44% of assets). Fees are charged as either a percentage of AUM or on a per-participant basis, with the latter approach becoming more common.

- **Investment management:** Defined contribution plan assets are allocated to a range of professionally managed mutual funds and separate accounts (both active and passive). The actual investments offered are selected by the plan sponsor, usually with the help of a financial advisor or consultant. In most cases, the recordkeeper also offers investment solutions, and as long as performance and fees are competitive, it will likely be one of the

primary managers on the platform (particularly for options such as index funds, target date funds, or stable value). That said, nearly every 401(k) plan is now open architecture, which has created opportunities for managers with a recordkeeping business to compete on a defined contribution investment only (DCIO) basis.

- **Financial advice:** Most DC plans do not directly offer financial advice beyond basic tools (such as an online savings calculator), but employers may provide enrollees with voluntary access to financial advisors or other managed account services. If an employee chooses to utilize these options, any fees incurred would be separate from those paid through the plan.

Life insurers have a relatively strong market position

Life insurers are among the largest providers of defined contribution (DC) plans in the U.S., with exposure across corporate (401K), education/non-profit (403b), and government (457) plans. In our view, they have a couple of potential competitive advantages, notably their ability to offer annuity and stable value solutions. In certain segments of the market, particularly the education sector, annuities are often used as the primary savings vehicle. As a result, life insurers tend to have a dominant share in education, with TIAA, Corebridge, and Equitable being the top three providers. Another popular offering is stable value funds, which are principally protected income solutions. Since these tend to be backed by GICs (see earlier discussion) and have balance sheet risk, life insurers have a strong market position. If a life insurer can capture additional economics by offering annuities or having stable value funds, this can give them an advantage in pricing the recordkeeping business.

Table 15: Top-10 Retirement Providers (2022)

		AUMA ($M)	AUMA Mix				Participants	Plans	Avg. AUMA per plan ($M)	Participants per plan
			401(k)	403(b)	457	Other				
1	Fidelity	$2,874,561	84%	11%	1%	5%	29,947,387	34,902	$82	858
2	Empower Retirement	$1,231,212	78%	5%	10%	6%	16,830,193	80,401	$15	209
3	Alight Solutions	$1,162,944	39%	1%	0%	60%	11,713,594	228	$5,101	51,375
4	TIAA	$643,049	2%	76%	2%	21%	6,718,095	23,429	$27	287
5	The Vanguard Group	$624,938	84%	6%	0%	0%	5,989,246	32,567	$19	184
6	Voya Financial	$454,218	57%	12%	30%	1%	6,654,060	52,479	$9	127
7	Principal Financial	$449,988	65%	5%	1%	30%	11,200,948	46,769	$10	239
8	Ascensus	$253,475	61%	9%	1%	30%	4,377,914	95,289	$3	46
9	Bank of America	$247,058	72%	0%	0%	28%	4,853,266	1,013	$244	4,791
10	T. Rowe Price	$221,562	93%	2%	3%	3%	2,304,004	7,695	$29	299

Source: PlanSponsor, Autonomous Research

Industry consolidation driving growth for industry leaders

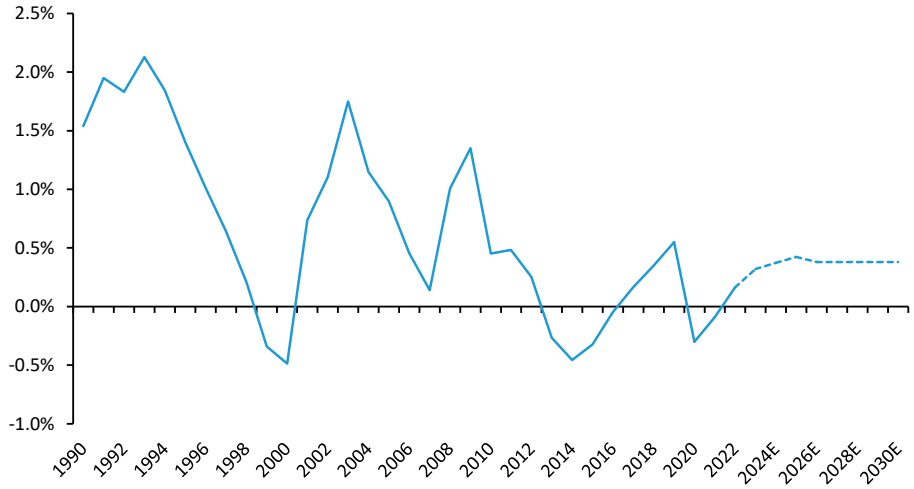
The defined contribution industry has seen significant consolidation over the past decade with market leaders acquiring sub-scale platforms. Notable deals include Principal's purchase of Wells Fargo's retirement business and Empower's acquisitions of both MassMutual's and Prudential's businesses. This has led to a notable decline in the number of industry providers (68 in 2013 vs. 38 in 2022), and has contributed to the top-10 competitors controlling ~75% market share. While most mid-size platforms ($50-150B AUM) have been consolidated, we expect to see further M&A, whether to add scale or round out existing product offerings.

We project +0-1% organic growth, driving ~5% annual AUM growth

The rapid growth phase of the DC market has ended as most mid and large sized employers offer plans, and we see dueling trends over the next decade. On the positive side, average plan participation rates have increased from 66% in 2008 to 76% currently, and we expect this to continue trending higher given greater adoption of auto-enrollment provisions. Additionally, recent legislation (Secure Act 1.0 and 2.0) supports the creation of multiple employer plans and provides tax incentives for small businesses to offer DC plans, which should increase access to 401k. However, the 2020s will also mark the peak period for baby

boomer retirements, with an estimate 21M leaving the workforce over the next 10 years. While more retirees are leaving assets within their DC plans rather than taking a lump-sum distribution or rolling into an IRA, this will still be a headwind for net flows. Overall, we expect +0-1% organic growth, and +4-6% AUM growth (after factoring in market returns) for the industry over the intermediate term.

Chart 29: DC Industry Organic Growth Rate



Source: Investment Company Institute, Bloomberg, Autonomous Research

Life Reinsurance

Life reinsurance allows a primary insurer (the company underwriting the policy) to offload a portion of the business it has written to a third-party to manage risk or free capital. There is reinsurance capacity for both biometric risks (mortality and morbidity) and more asset intensive products (such as annuities). Reinsurance can also be used for financial transactions to help manage capital and satisfy regulatory requirements.

Reinsurance agreements can be structured in several ways, but the most common forms are yearly renewable term (YRT) coverage and coinsurance. In a YRT contract, the reinsurer assumes the mortality or morbidity risk for the period covered. In coinsurance, the reinsurer assumes the full liability of the policy (mortality/morbidity, investment risk, lapses), typically on a permanent basis. Generally, the amount of life reinsurance ceded is stated on either an excess (amount above an agreed upon retention limit) or a quota share (fixed percentage of business written) basis. The reinsurer either underwrites business on a facultative or automatic treaty basis. Facultative policies are individually underwritten and priced, and they typically involve large face amounts or complex risks (such as a heart attack or cancer survivor). Under treaty reinsurance (often referred to as flow reinsurance), the reinsurer agrees to take a portion of all business written that meets certain stipulations (policy size, age, risk class, etc).

Oligopoly market structure creates favorable competitive dynamic

The U.S. life reinsurance market has consolidated over the past 10-15 years, and we believe this has created a favorable competitive dynamic as the remaining companies benefit from a highly concentrated market. In the US, the top five life reinsurers accounted for >88% of new business written in 2021. Primary insurers typically use 3-5 reinsurance counterparties to diversify risk, so there is little incentive for the top 5 reinsurers to compete too aggressively on price since they will likely each get a share of most large treaties. Unlike in P&C reinsurance, there are also significant barriers to entry in terms of claims data, underwriting capabilities (particularly for facultative business), and ratings. Life reinsurers also typically provide

services, such as help with new product development, so they are viewed as more than just capital providers. As a result, pricing does not tend to be overly cyclical.

Table 16: US Life Reinsurance New Business (2021)

$ millions for 2021

Company	New Business	Growth in New Business (y/y)	Market Share	Market Share Change (bps)
Swiss Re	384,489	118.2%	37.6%	1,310
Munich Re (US)	184,838	10.9%	18.1%	(510)
SCOR Global Life (US)	156,211	58.8%	15.3%	159
RGA Reinsurance Company	119,846	14.2%	11.7%	(288)
General Re Life	51,683	3.2%	5.1%	(192)
PartnerRe (formerly Aurigen)	37,549	216.1%	3.7%	202
Hannover Life Re	34,763	-3.1%	3.4%	(159)
RMA	26,230	-30.3%	2.6%	(267)
Canada Life	12,291	-28.8%	1.2%	(120)
Optimum Re (US)	8,105	-30.8%	0.8%	(84)
AXA Equitable	2,375	-20.0%	0.2%	(18)
Berkshire Hathaway Group	2,075	-1.6%	0.2%	(9)
Pacific Life	1,397	-49.1%	0.1%	(25)
RGA Re (Canada)	-	-100.0%	0.0%	(0)
Employers Re Corp.	-	NA	0.0%	-
Top 5 competitors	897,067	50.5%	87.8%	480
Total	**1,021,853**	**42.2%**		

Source: Munich Re, Autonomous Research

Table 17: US Life Reinsurance In-Force (2021)

$ millions for 2021

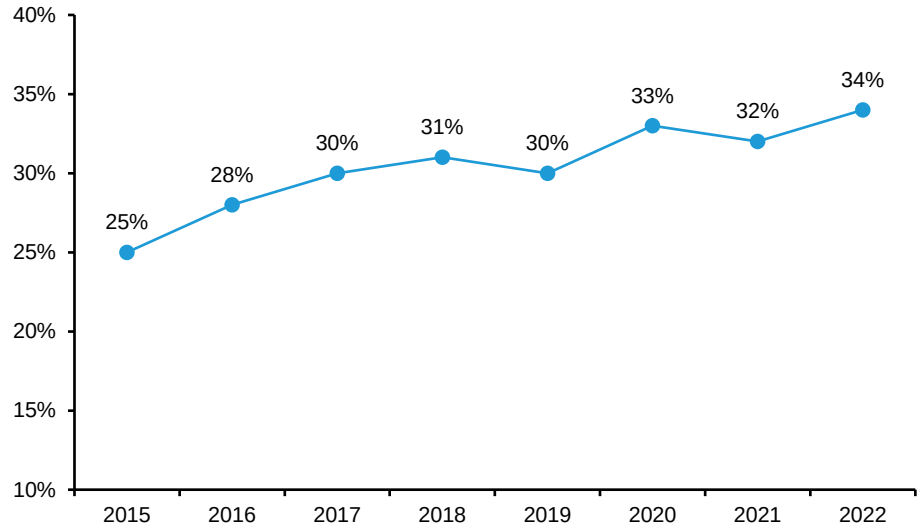
Company	In-Force	Growth in In-Force (y/y)	Market Share	Market Share Change (bps)
Swiss Re	1,802,272	19.6%	20.4%	281
SCOR Global Life (US)	1,787,471	-5.0%	20.2%	(174)
RGA Reinsurance Company	1,595,133	1.4%	18.1%	(31)
Munich Re (US)	1,221,596	10.5%	13.8%	93
Hannover Life Re	1,210,828	-8.0%	13.7%	(166)
Canada Life	237,638	-7.3%	2.7%	(30)
General Re Life	225,877	20.3%	2.6%	36
RMA	210,104	7.6%	2.4%	10
Pacific Life	140,852	-11.7%	1.6%	(27)
Berkshire Hathaway Group	130,994	-6.8%	1.5%	(16)
PartnerRe (formerly Aurigen)	104,788	43.7%	1.2%	33
Optimum Re (US)	85,609	4.7%	1.0%	1
Employers Re Corp.	52,987	-11.7%	0.6%	(10)
AXA Equitable	27,857	-1.2%	0.3%	(1)
RGA Re (Canada)	617	-5.7%	0.0%	(0)
Top 5 competitors	7,617,301	3.14%	86.2%	3
Total	**8,834,624**	**3.11%**		

Source: Munich Re, Autonomous Research

Modest growth potential in the U.S., significant opportunity abroad

While the underlying U.S. life insurance market has grown at only a +2% CAGR since 2015, the reinsurance market has grown +6% annually over the same period. A key driver of growth has been an increase in the use of reinsurance, which we attribute to multiple factors, including growth in digital/DTC products with simplified underwriting (which tend to use more coinsurance) and shifts in insurers' risk or capital needs post pandemic. Looking forward, we expect U.S. cession rates to continue increasing +1-2% annually near-term, so reinsurance market growth should continue to outpace that of the primary market. In addition, we expect reinsurers to supplement organic growth by acquiring in-force blocks.

Chart 30: U.S. Reinsurance Cession Rates have been Rising



Source: RGA 2023 Investor Day, Autonomous Research

Outside the U.S. we see strong growth opportunities, particularly in Asia. Growth drivers include favorable macro / demographic trends (i.e. an emerging middle class, an aging population, higher interest rates), increased demand for protection products following the pandemic, rising reinsurance penetration rates, and upcoming accounting and solvency regime changes in many countries (including Hong Kong, Japan, and Korea). In our view,

reinsurers are well-positioned to benefit from both growth in the primary market as well increasing penetration of reinsurance and new product development (which is often done in conjunction with reinsurers), and we forecast high single to low double-digit annual growth in Asia over the next decade. We also see attractive growth potential in Europe, particularly for longevity reinsurance.

Active market for block reinsurance deals likely to continue

In recent years, we have seen a surge in life insurers using reinsurance to transfer blocks of legacy in-force liabilities to third-parties. These transactions, often referred to as risk transfer deals, can be executed by traditional reinsurers or specialist companies focused on block acquisitions (such as Athene, Global Atlantic, or Resolution Life). In our view, the rise in activity has largely been spurred by the entrance of new companies (often backed by alternative asset managers) that want to acquire cheap, long-duration liabilities and manage the associated general account assets. This has provided insurers with an opportunity to shed legacy blocks with low returns, high capital requirements, or an unattractive risk profile, in the process freeing capital and, potentially, improving their valuation multiple.

Table 18: Summary of Recent Block M&A Activity ($M)

Seller	Buyer	Type of block	Announce date	Price / capital release	Assets / liabilities	Price / Assets	Price / Earnings
Annuities							
Prudential	Constellation Insurance	Variable annuities	5/24/2023	650	10,000	6.5%	13x
Principal	Talcott Resolution	Fixed annuities, SGUL	1/31/2022	800	25,000	3.2%	9x
Allianz	Resolution Life, Talcott	Fixed indexed annuities	12/3/2021	4,100	35,000	11.7%	NA
Manulife	Venerable	Variable annuities	11/16/2021	2,000	21,530	9.3%	10x
Prudential	Fortitude Re	Variable annuities	9/15/2021	2,200	31,000	7.1%	9x
Ameriprise	Global Atlantic	Fixed annuities	6/29/2021	650	8,000	8.1%	NA
Allstate (ALICNY)	Wilton Re	Fixed annuities, life	3/30/2021	220	5,000	4.4%	NA
AFG (Great American)	MassMutual	Fixed/FIA	1/27/2021	3,500	40,000	8.8%	NA
Allstate	Blackstone	Fixed annuities, life	1/27/2021	2,800	28,000	10.0%	NA
Talcott Resolution	Sixth Street	Variable annuities, other	1/20/2021	2,000	90,000	2.2%	NA
Equitable	Venerable	Variable annuities	10/27/2020	1,200	12,000	10.0%	8x
AEL	Brookfield	Fixed indexed	10/18/2020	496	5,000	9.9%	9x
Global Atlantic	KKR	Fixed/FIA	7/8/2020	4,400	71,000	6.2%	NA
Jackson National	Athene	Fixed/FIA	6/18/2020	1,700	27,000	6.3%	NA
FGL	FNF	Fixed/FIA	2/27/2020	2,700	28,332	9.5%	8x
Ameriprise	Global Atlantic	Fixed annuities	3/19/2019	200	1,700	11.8%	NA
Lincoln	Athene	Fixed annuities	12/10/2018	500	7,700	6.5%	NA
Voya	Athene	Fixed/FIA	12/21/2017	1,000	19,000	5.3%	NA
Voya	Venerable	Variable annuities	12/21/2017	NA	32,000	NA	NA
Hartford Financial	Talcott (consortium)	VAs, FAs, other annuities	12/4/2017	2,050	189,000	1.1%	NA
Life & Other							
Prudential	Somerset Re	SGUL	7/24/2023	450	12,500	3.6%	NM
MetLife	Global Atlantic	SGUL, other life, FA	5/25/2023	3,250	19,200	16.9%	16x
Lincoln	Fortitude Re	SGUL, other life, FA	5/2/2023	450	28,000	1.6%	4.5x
Lincoln	Resolution Life	Individual life	9/17/2021	1,200	9,400	12.8%	16x
Unum	Global Atlantic	Individual disability	12/17/2020	600	7,100	8.5%	NA
Voya	Resolution Life	Individual life	5/6/2020	1,500	38,000	3.9%	9x
Liberty Mutual	Protective Life	Individual life & annuity	1/19/2018	1,170	NA	NA	NA
CNO	Wilton Re	LTC	8/2/2018	(825)	2,700	-30.6%	NA
Great-West Life	Protective Life	Individual life & annuity	1/24/2019	1,200	NA	NA	10x

Source: Company reports, Autonomous Research

Any type of insurance liability can be reinsured, and while the initial wave of deals generally involved simpler products such as fixed and indexed annuities, we have recently seen more complex transactions involving variable annuities, life insurance with secondary guarantees, and individual disability policies (and often multiple types of liabilities in a single deal). Most deals have been well-received by investors, and we expect the market to remain active going forward. We also believe the scope of liabilities that get transacted on will continue to expand, with LTC risk-transfer being a potential opportunity as claims experience data becomes more robust (reducing the bid/ask spread).

International Insurance Markets & Products

There are few truly global life insurers as most companies with international businesses focus on a handful of countries or regions. For US-based insurers, the most prominent foreign markets include Japan and Latin America, while most companies have limited exposure to EMEA. Emerging Asia is another focus area given the significant growth potential, but the current earnings contribution remains small. The table below shows our estimated earnings contribution by geography for each of our coverage companies.

Table 19: Earnings Mix by Geography (2024E)

	AEL	AFL	AMP	BHF	CNO	CRBG	EQH	GL	JXN	LNC	MET	PFG	PRU	RGA	UNM	VOYA
United States	100%	34%	91%	100%	100%	98%	90%	100%	100%	100%	60%	74%	60%	41%	93%	100%
Canada	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	9%	0%	0%
EMEA																
UK	0%	0%	4%	0%	0%	2%	0%	0%	0%	0%	1%	4%	1%	7%	5%	0%
Continental Europe	0%	0%	4%	0%	0%	0%	0%	0%	0%	0%	2%	3%	1%	9%	2%	0%
Other EMEA	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	3%	0%	0%
Total EMEA	0%	0%	8%	0%	0%	2%	5%	0%	0%	0%	3%	7%	2%	19%	7%	0%
Latin America																
Brazil	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	6%	0%	0%	0%	0%
Chile	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	4%	5%	1%	0%	0%	0%
Mexico	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	1%	0%	0%	0%	0%
Other Latin America	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%
Total Latin America	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	12%	12%	1%	1%	0%	0%
Asia																
Australia	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
China	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	2%	0%	3%	0%	0%
Hong Kong	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	11%	0%	0%
Japan	0%	66%	0%	0%	0%	0%	0%	0%	0%	0%	18%	3%	36%	6%	0%	0%
Korea	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%	5%	0%	0%
Other Asia	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	1%	6%	0%	0%
Total Asia	0%	66%	1%	0%	0%	0%	5%	0%	0%	0%	24%	6%	37%	30%	0%	0%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

EQH using 2024E consensus as of 8/17/23.
Source: Bloomberg, Company reports, Autonomous Research

- **Japan:** Japan is the third largest life insurance market in the world (after the U.S. and China), and foreign insurers have ~20% market share. Products fall into two categories: first sector (life & savings) and third sector (accident & health). Most foreign insurers generate low-to mid-teens returns in their Japanese life businesses, well above the profitability of domestic competitors (even adjusting for differences in accounting). We attribute this to several factors, including foreign insurers': 1) more efficient cost structures, 2) higher distribution productivity, 3) superior investment capabilities, and 4) lack of legacy negative spread issues in their in-force blocks. Foreign insurers also benefit from a favorable regulatory backdrop as Japan's Financial Services Agency (FSA) has been more focused on preserving the financial health of the industry than driving the lowest prices for consumers (a legacy of eight Japanese life insurers entering bankruptcy from 1997-2001). As a result, new-business returns continue to be attractive, with better mortality margins than in other mature markets. The challenge is growth given Japan's aging (and shrinking) population and already high levels of insurance ownership (>90% of Japanese households have life insurance). That said, we still see near-term opportunity for life insurers given the growing number of people in the 45-65 age band (prime insurance buying years). Demand is likely to shift from simpler term life and accident & health (A&H) policies to whole life and retirement products (including savings-oriented life policies and annuities). The latter tend to have higher premiums, so even if unit sales slow, new annualized premiums should continue to grow. Persistency tends to be higher in Japan, so growing in-force business is less reliant on new sales. FX-denominated products are popular, although this may change if the BOJ abandons YCC and yen rates start to rise. U.S. life insurers with the most material exposure to Japan include Aflac, MetLife, Prudential, and RGA (which has a growing reinsurance

business). The alternative asset manager-backed life insurers (Athene, Fortitude Re, Global Atlantic) have also begun to enter the market, primarily to do block and/or flow reinsurance deals.

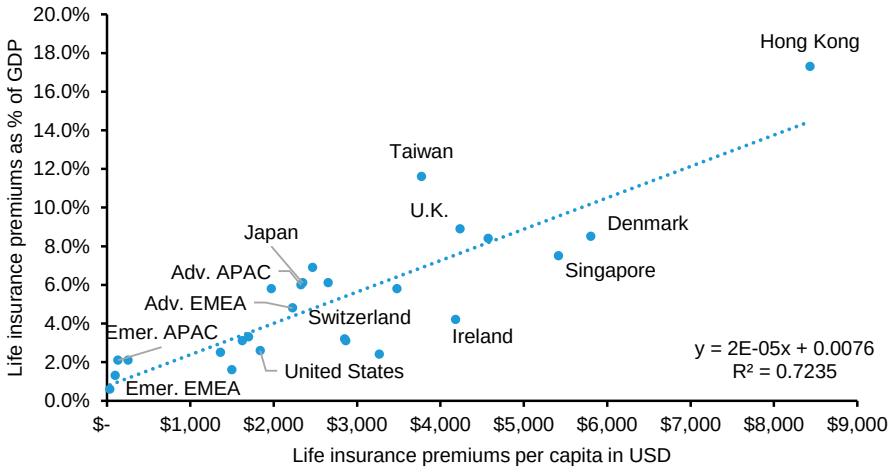
- **China & Hong Kong:** China is the second-largest insurance market in the world (behind the U.S.) and is also one of the fastest growing, driven by a rapidly expanding middle class. The mainland market remains dominated by domestic companies, with foreign insurers generally participating via joint ventures. The exception is insurers that have received approval for independent representative offices (notably AIA). While we don't expect China to move the earnings needle for any U.S. insurers near-term, the long-term opportunity remains substantial. Hong Kong also represents a sizable insurance market, and another access point for China, but without foreign ownership caps. HK's protection insurance market is dominated by AIA, Prudential UK, and Manulife, and we see little opportunity for U.S. insurers to break in (Met recently sold its HK operation). Hong Kong also has a mandatory retirement system, known as the MPF system, which requires employees to contribute a certain percentage of earnings (up to a cap). The funds are managed by private companies (insurers and asset managers), with Manulife and HSBC having >40% combined market share. Principal's MPF business ranks in the top 10, but its share is well below that of the market leaders.

- **Southeast Asia:** Similar to China, Southeast Asia has a number of fast-growing insurance markets, including Indonesia, Malaysia, Singapore, Thailand, and Vietnam. Penetration remains low, so we expect strong sales momentum to continue (mid-teens growth), but earnings are currently small for most insurers. Therefore, we view the region as a long-term opportunity but one which will take more investment to realize. Most business is done via JV partnerships. Principal has an asset management JV with CIMB (60% stake), Pru has a JV in Indonesia (49% stake), and Met has small operations in several countries throughout SE Asia (including Malaysia, Vietnam, and India). RGA provides reinsurance support throughout the region.

- **Latin America:** MetLife, Principal, and Prudential have all built meaningful LatAm businesses through organic investment and acquisitions, and Met is the largest life insurer in the region. The biggest opportunities are in Brazil, Chile, and Mexico and encompass both traditional protection products and retirement savings. Met is the largest insurer in Mexico, and both it and Pru also have growing Brazil operations. Brazil in particular represents a core emerging market for Pru, and the company has a distribution partnership with MercadoLibre to expand into the mass-affluent segment. All three companies own mandatory pension providers (known as AFPs) in Chile, and Principal also is a top 5 player in Mexico's retirement (AFORE) market and has a pension JV with Banco do Brasil in Brazil. While currency and economic and political instability have been recent headwinds, we continue to see strong growth potential in LatAm and expect the region to be a key earnings driver over time.

- **EMEA:** The developed European life markets are dominated by local insurers, and most U.S. firms have minimal exposure. Unum has employee benefits operations in the UK and Poland, and Met has small operations throughout EMEA that were part of the Alico acquisition (although this has shrunk over time as it has divested a number of geographies). RGA generates the most earnings from EMEA among our coverage, driven by growth in PRT and longevity reinsurance. Met, Pru and Athene are also active in the European PRT market. We see the African market as long-term growth opportunity given favorable demographic trends, but it will take time to develop. Among U.S. companies, Pru has made the biggest investment in Africa and has businesses in Kenya and South Africa (RGA also has a South Africa business).

Chart 31: The U.S. has Low Life Insurance Penetration vs. Peer Countries (2021)



Other countries/regions in chart include Finland, Sweden, Luxembourg, Norway, France, Italy, South Korea, Canada, Belgium, Cayman Islands, Israel, China, and LatAm.
Source: Swiss Re Sigma Institute, Autonomous Research

Distribution

An old insurance adage says that life insurance products are "sold not bought" as coverage is voluntary rather than compulsory (unlike auto or home insurance). The lack of natural consumer demand makes life insurers very reliant on distribution to drive sales. In our view, this reduces life insurers' pricing power and forces them to cede much of the economics from new policy sales to distributors.

Historically, life insurance products have been primarily sold by specialized insurance agents, but deregulation has expanded the opportunity for banks and securities firms to participate as well. Today, life & supplemental health products are sold through four primary distribution channels:

- **Captive Agents:** Captive agents are employed by an insurance company and exclusively sell that company's products. They may receive a base salary and marketing support from the insurer, but compensation is primarily tied to commissions generated from sales. A benefit of having a captive agent force is that the insurer can better control the type of products being sold and pivot depending on market conditions (such as shifting from universal life to indexed life in a low interest rate environment). In addition, captive agents can be effective in penetrating niche markets. On the other hand, large agent forces have high fixed costs, and agents need volume to earn a living, which makes it hard for insurers to pull back if pricing and competitive dynamics become challenging. In addition, captive agent forces have significant churn, which makes growing the producer count difficult (particularly in a strong economy). Finally, we believe the increased focus on fiduciary duty and conflicts of interest has put captive agents under more scrutiny. For these reasons, several public companies have de-emphasized captive distribution in recent years, although mutual insurers typically remain committed to the captive model.

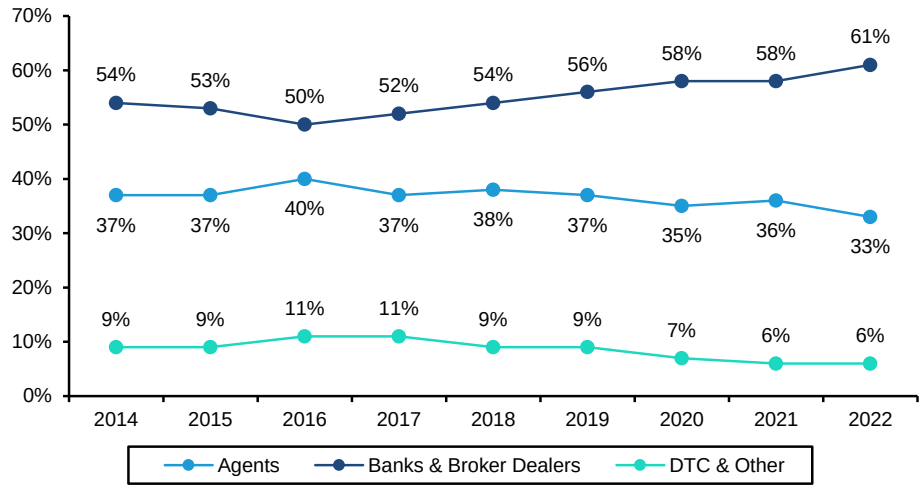
- **Independent Agents:** Independent agents sell products for multiple insurance companies and receive commissions based on sales production. While there is no limit to how many companies an independent agent can sell for, they typically only act as an active producer for a handful. Therefore, insurers need to recruit and win over top independent agents via a strong marketing and wholesaling effort. While utilizing independent agents makes distribution costs more variable and better aligns with production, the insurer has less

control over what products get sold. In addition, since independent agents have multiple product options, they tend to be more focused on price and product features, so the channel is very competitive.

- **Banks/Broker-dealers:** Banks and broker dealers have become key distribution channels for accumulation products, particularly annuities. They typically offer products from multiple insurers, but shelf space has been reduced in recent years (often to four or five options per product). Therefore, it is highly competitive to get shelf space at large banks and wirehouses, and insurers need to have a strong product offering, consistent approach to the market, and robust wholesaling effort. A strong credit rating is also critical. They may also have to pay distribution fees to the institution in addition to commissions paid to the individual producer.

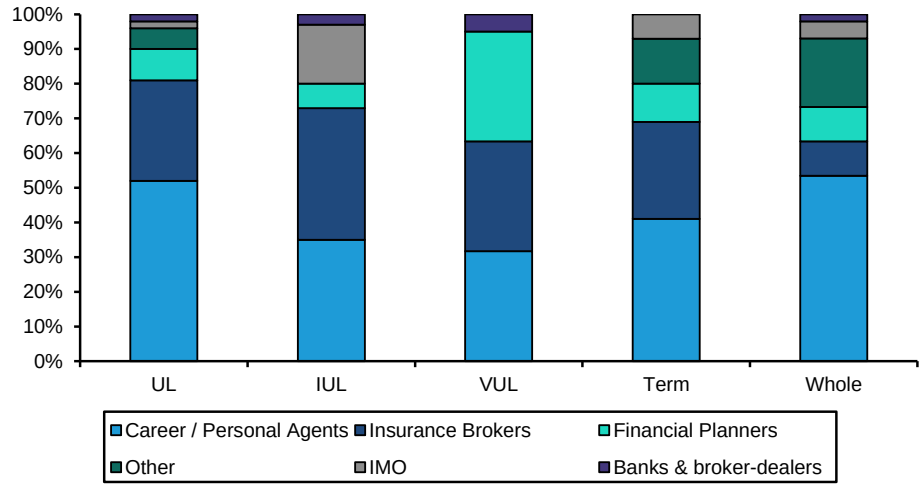
- **Direct-to-consumer:** Direct distribution accounts for a small proportion of overall industry sales currently, but companies are very focused on trying to expand the market. Historically, the most successful DTC efforts have used direct mail, television ads, and internet-based advertising to sell simple products (typically low face value term life). The fact that most life insurance products are complex and not actively sought out by consumers makes them hard to sell on a direct basis. We see this potentially becoming less of an issue over time as more tech savvy consumers used to buying products direct reach life insurance buying age. New platforms that combine an online interface with direct agent interaction have also begun to emerge and could expand the market. Cracking the code on DTC could make it much more efficient (and less costly) to reach certain consumers, so we expect further investment and experimentation. We expect the pandemic-driven shift from direct mail to internet-based advertising to become permanent.

Chart 32: Annuities Distribution Channels



Source: LIMRA, Autonomous Research

Chart 33: Individual Life Distribution Channel Mix by Product

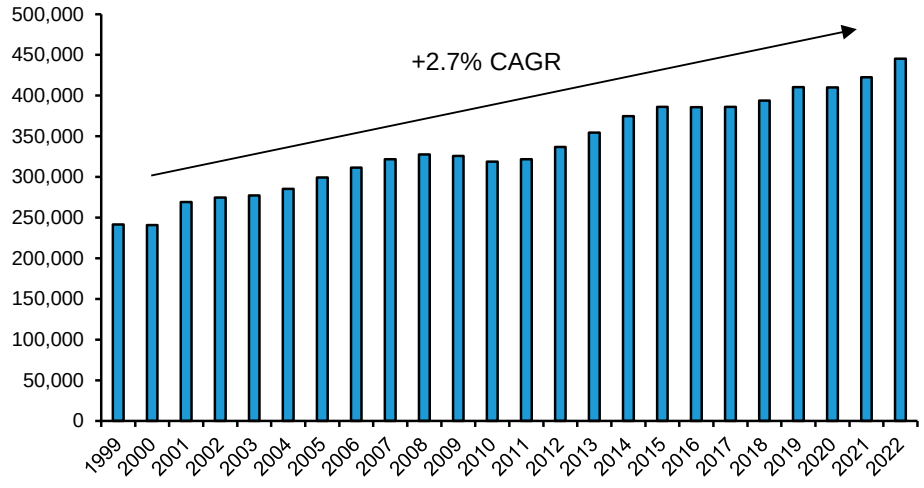


Source: Oliver Wyman, Southeastern Actuaries Conference, Autonomous Research

U.S. distribution methods will need to adapt

A key long-term challenge for the US life insurance industry is the aging of its distribution force. According to a 2016 McKinsey study, the average US insurance agent is nearly 60 years old, and >25% of insurance agents are expected to retire over the next ten years. Over time, industry sales roughly track the agent count, so in order to offset the attrition, life insurers will need to expand recruiting, make current distribution more productive, or cultivate new channels. In recent years, there has been a lot of focus on boosting productivity through investments such as digital policy forms, sales presentations loaded onto tablets, and agent training. The pandemic vastly accelerated the shift to digital-enabled agent distribution, and we expect productivity gains to persist post-pandemic. However, we still see considerable room to improve and streamline the sales process, which could drive higher conversion rates and enable agents to make more sales calls. More productive agents should not only lift sales but also improve retention and make it easier to recruit new agents. In addition, the potential for a shrinking distribution force underscores the need to develop viable direct offerings.

Chart 34: U.S. Insurance Agent Count



Includes all insurance agents including those at brokerages and other financial institutions
Source: Bureau of Labor Statistics, Autonomous Research

More insurers starting to focus on distribution as a profit source

In our view, investors assign too little value to many insurers' proprietary distribution businesses because they aren't reported as separate segments, don't show up clearly in the P&L, or are treated as a cost center. Distribution provides critical competitive advantages and is the engine that drives growth, and private market deals highlight the value that buyers assign to distribution platforms. Therefore, we believe companies should 1) do more to highlight their distribution assets; and 2) explore opportunities to better monetize their capabilities. We've seen some examples of this, with Ameriprise's transition into being primarily a wealth management business the biggest success story. Others such as Equitable have started to report distribution as a standalone segment, and companies like AEL and CNO have strategies to grow distribution fee income through the strategic use of flow reinsurance and selling products manufactured by third parties. We expect to see more of this going forward if the valuation gap between distribution and underwriting businesses persists.

Asset Management

The third leg of the insurance value chain is the management of the assets supporting policy liabilities. Being able to generate competitive yields with minimal credit losses represents a critical success factor for insurers as it is a key driver of product profitability and the level of value that can be offered to policyholders. Insurers can either manage their general account assets internally or outsource the management to a third party. Historically, most insurers elected internal management, but we're seeing a shift as investment allocations have become more complex and the cost of external management has declined.

Most life insurers still manage the majority of general account assets in-house

A majority of public life insurers continue to manage their investment portfolios in-house, running all aspects of the asset management process (asset allocation, duration management, security selection, risk management, hedging, portfolio reporting) internally. Select components may be outsourced to third-party providers (e.g. utilizing BlackRock's Aladdin platform for portfolio risk management), but the insurer maintains control over the majority of the asset management process. For most public insurers, the cost of managing the general account internally is ~15-20bps. Many companies charge these fees to their insurance subs from a wholly owned asset management subsidiary, creating a source of unregulated cash flow to the holding company. In our view, this works well for insurers that have commercial asset management businesses with broad expertise across fixed income and lending products (such as Equitable, Principal, Pru, or Voya) and the ability to invest in top talent. In addition, it may work for life insurers focused on simple products that either don't require a lot of investment leverage or aren't that yield sensitive (such as A&H or group benefits). However, as the industry continues to evolve and diversify into more sophisticated asset classes, it is becoming harder to compete when relying just on internal capabilities.

Increased trend toward outsourcing

In recent years we have seen an increasing number of life insurers either partially or fully outsource their investment portfolio to third-party asset managers. This has particularly been the case for specialty asset classes such as alternatives and private credit, but a number of companies have gone to a fully outsourced model. While this eliminates their ability to participate in a portion of the product value chain, we believe it makes sense for companies that have: 1) small portfolios that don't justify the costs of an in-house investment operation; or 2) a yield-sensitive business mix that requires exposure to an array of specialty assets classes. In general, if an insurer does not have a third-party asset management business, we believe it will be difficult for it to make the necessary investments to compete in private assets, structured investments, and other non-core fixed income classes. If a company has a big enough portfolio it may still make sense to manage the core portfolio (corporate and government bonds) in-house and only outsource the specialty assets, but for many this is not cost efficient. One strategy we've seen a few insurers pursue is to leverage their size and

ability to generate assets to negotiate ownership stakes or JV relationships with the specialty managers they use. This provides them with a source of fee earnings and allows them to participate in future growth of their partners.

In the table below, we illustrate the spectrum of public life insurers' asset management relationships, showing which insurers outsource to third-party managers versus retain the asset management function in-house. In their quarterly statutory filings, insurers are required to disclose all investment managers that have investment discretion over their general account. We note that this data does not include cases in which the insurer is a limited partner (LP) is an investment fund (so as private equity, real estate, or hedge funds). Only a few insurers manage all of their non-alts assets in-house (Ameriprise, CNO, Equitable, Met, Principal, and Prudential), and, in most cases, they have a commercial asset management business. AEL, Brighthouse, Corebridge, and Lincoln have outsourced most, if not all, of their portfolios.

Table 20: Investment Manager Relationships (as of 2Q23)

Includes all IM relationships where the manager has discretion; excludes relationships where the insurer is an LP investor

Insurer	Manager	Affiliation
AEL	Adams Street Partners	U
	American Equity Investment Life Holding Company	A
	Ares Management	U
	Barings	U
	BlackRock Financial Management	U
	Brookfield Asset Management Reinsurance	U
	Conterra	U
	MetLife Investment Management	U
	Oaktree Capital Management	U
	Pretium Mortgage Credit Management	U
	Voya IM	U
	Octagon Credit Investors	U
	Conning Asset Management	U
	26North Holdings	U
AFL	Aflac Asset Management	A
	Acore Capital	U
	Goldman Sachs Asset Management	U
	Kolhberg Kravis Roberts & Co	U
	NB Alternatives Advisers	U
	NXT Capital Investment Advisers	U
	Principal Real Estate Investors	U
	Varagon Capital Partners	U
	Voya IM	U
	Sound Point Commercial Real Estate Finance	U
	BMO Asset Management	U
	Denham Sustainable Infra Management	U
AMP	Columbia Investment Management	A
BHF	Barings	U
	Brighthouse Services	A
	Goldman Sachs Asset Management	U
	Hamilton Lane Advisors	U
	MetLife Investment Management	U
CNO	4086 Advisors	A
	AIG Asset Management	A
	J.P. Morgan Investment Management	U
	PNC Capital Advisors	U
CRBG	Varagon Capital Partners	U
	Blackstone ISG-I Advisors	U
	Carlyle Investment Management	U
	BlackRock Financial Management	U
EQH	Equitable Agrifinance	A
	AllianceBernstein	A
	AXA Real Estate Investment Managers	U
	AXA Investment Managers	U
GL	Globe Life	A
	Prudential Private Placement Investors	U
	BlackRock Investment Management	U
	AllianceBernstein	U
	MetLife Investment Management	U
	Voya IM	U
JXN	PPM America	A
	BlackRock Investment Management	U
	Apollo Insurance Solutions Group	U
LNC	Lincoln Investment Management	A
	Macquarie Investment Management	U
	Goldman Sachs Asset Management	U
	Athene Asset Management	U
	Prudential Private Placement Investors	U
	Barings	U
	Apollo Global Management	U
	J.P. Morgan Alternative Asset Management	U
	J.P. Morgan Investment Management	U
	BlackRock Investment Management	U
	Hamilton Lane Advisors	U
	Blackstone Insurance Solutions	U
	Ares Management	U
MET	MetLife Investment Management	A
PFG	Principal Global Investors	A
PRU	PGIM	A
RGA	Deustche Asset Management	U
	Desjardins Asset Management	U
	UBS Global Asset Management	U
	Prudential Private Placement	U
	Crescent Capital	U
	GC Advisors	U
	TCW Asset Management	U
	Milliman Financial Risk Management	U
	AllianceBernstein	U
	BlackRock Financial Management	U
	RGA Enterprise Services Company	A
	KKR Credit Advisors	U
	Velocity Capital Advisors	U
UNM	Provident IM	A
	JPMorgan Chase Bank	U
	Apollo HGA Management	U
VOYA	Voya IM	A
	BlackRock Financial Management	U
	Blackstone	U
	Pomona Management	A
	Global Atlantic	U
	Goldman Sachs Asset Management	U
	Athene Asset Management	U

Source: Company reports, Autonomous Research

Income Statement

How Life Insurers Make Money

Life insurance products and accounting are undoubtedly complex, but the basic earnings drivers are pretty straightforward. In this section, we highlight the key income statement drivers for different business lines. The three primary sources of earnings are 1) underwriting income, 2) interest spreads, and 3) fees on AUM. We separate protection products (where profits primarily come underwriting results) from savings/accumulation products (where profits tend to be driven by fee or spread income). Regardless of the type of business insurers sell, the goal is to maximize the return on capital. We summarize the key financial indicators that insurers report and target below.

Table 21: Key Profitibility Metrics

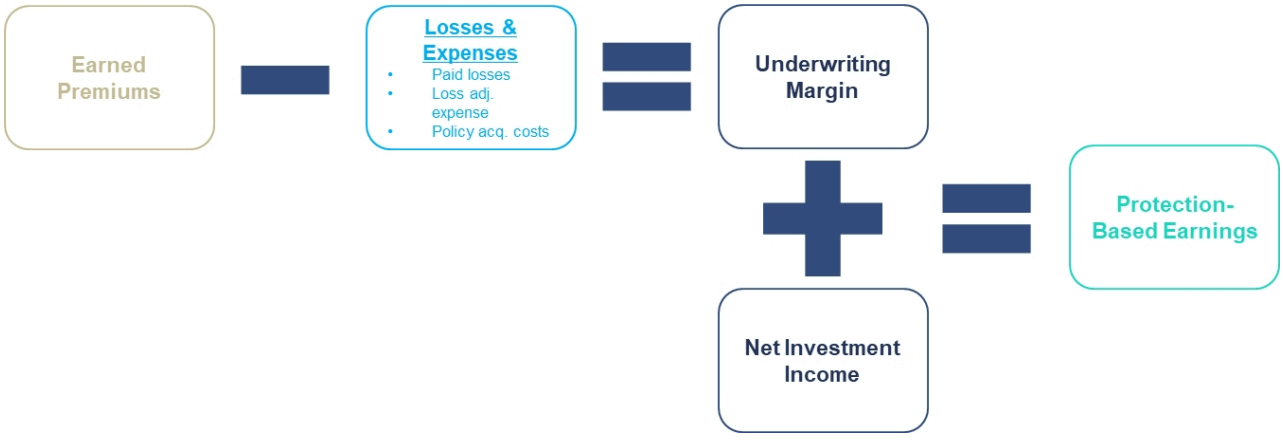
Metrics	Calculation	Useful for which profucts
Return on equity (ROE)	Operating income / average allocated equity	Protection / Spread / Fee
Return on assets (ROA)	Operating income / average assets	Protection / Spread / Fee
Pre-tax profit margin	Earnings before tax / revenue	Protection / Spread / Fee
Benefits ratio	(Benefits + changes in reserves) / premiums	Protection
Expense ratio	Operating expenses / premiums	Protection
Investment yield	Net investment income / average invested assets	Protection / Spread
Investment spread	Investment yield - % cost of crediting	Protection / Spread
Return on net revenue	Earnings before tax / (revenue - benefits or claims)	Fee

Source: Autonomous Research

Protection Products

As discussed earlier, protection products include life insurance, disability, and accident & health policies. Below we illustrate the major earnings drivers for these products. The relative earnings contribution from the underwriting margin and investment yield are dependent in large part on the liability duration and level of market competition. In general, short duration products will generate a bigger underwriting margin (and less investment income), while earnings generated by long duration products typically depend primarily on investment income (with many products generating negative underwriting margin).

Chart 35: Protection Product Operating Earnings Formula



Source: Autonomous Research

Underwriting Process

1) Prospective policyholder fills out application

2) Insurer assigns a rating factor; based predominantly on age and health (a medical exam is required for most life insurance)

3) Insurer uses a combination of public and private data to determine the expected claim

4) A premium is set based on the expected claim and other macro factors such as the insurer's expected investment returns

Underwriting is the process of determining whether a risk is insurable, and, if so, at what price and terms. At its heart, underwriting centers on predicting claims frequency (the probability of a policyholder making a claim) and severity (the size of the claim). Good underwriters can generate sustainable above-average returns, while underwriting mistakes can hang over a company for years (with long-term care being a notable example). Good underwriters generally have superior data, a wide pool of risks to select from, disciplined pricing practices, and appropriate incentives (tying comp to business performance).

Insurers must also be adept at identifying and avoiding potential pitfalls such as:

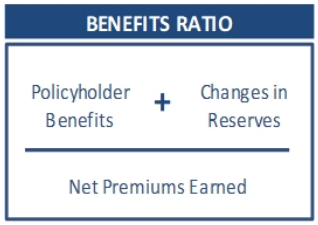
- **Adverse Selection:** Prospective policyholders with higher potential for filing a claim often seek coverage more aggressively. Examples include an individual with a terminal illness attempting to buy life insurance or someone whose family has a history of cognitive disorders buying LTC. A rigorous underwriting process attempts to weed this out through medical exams and reviews of family history. Insurers also must be cognizant of attracting too much business in a specific risk category (e.g. life insurance for male smokers age 50-55) which may signal pricing is (unintentionally) off-market.

- **Moral Hazard:** In some cases, a policyholder may engage in riskier activities than they would if they did not have an insurance policy. An example would be someone who, after purchasing health, accident, or life insurance, decides to go cliff jumping. Insurers attempt to mitigate moral hazard issues by including deductibles, policy exclusions, and contingent pricing. Life policies usually include a contestability period (typically 1 or 2 years depending on the state) during which the insurance company can dispute claims due to misrepresentation.

- **Policyholder Behavior:** Life insurance and annuity products offer policyholders' options, including whether to lapse the contract, when to withdraw income, and whether to utilize policy guarantee benefits. Policyholder behavior is inherently unhedgeable, so the insurer has to make a prudent judgement using past data and actuarial best estimates. Pricing mistakes related to assumed policyholder behavior have been the main cause of life insurer's large assumption review charges (including lower than assumed lapse rates for VA, SGUL, and LTC products).

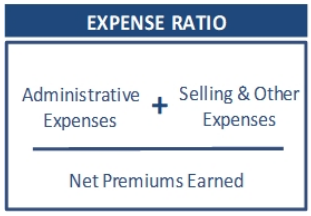
- **Fraud:** Insurance premiums are partially determined based on information provided by the policyholder, creating risk of false/misleading statements. Therefore, insurers can deny claims if they determine that the policyholder lied on their application. Certain lines of business such as disability are more susceptible to fraudulent claims since things like back pain are tough to observe and monitor, making it critical that the insurer structures contract benefits in a way that incentivizes the insured to return to work rather than remain on claim.

Chart 36: Benefits Ratio



Source: Autonomous Research

Chart 37: Expense Ratio



Source: Autonomous Research

Measuring underwriting profitability

Underwriting margins are calculated by dividing premiums by insurance benefits and operating expenses. The two primary ratios used to evaluate life underwriting are:

- **Benefits ratio:** Also referred to as the loss ratio, this is the percentage of premiums that go to paying claims and building reserves. The lower the benefits ratio, the better the underwriting profitability. For long-tailed lines of businesses, such as LTC, life insurers sometimes provide an interest-adjusted benefits ratio (which adds net investment income to the numerator) in order to properly frame the profitability of the business. Generally, target benefit ratios are lower for short-tail lines and higher for long-tail lines.

- **Expense ratio** – The expense ratio measures the costs associated with acquiring policies, plus G&A, as a percentage of premiums. For life products, most acquisition costs can be deferred and amortized over time rather than being expensed immediately. Therefore, G&A accounts for most of the expense ratio.

Investment yield also a key driver of earnings

A significant source of earnings for life insurers is the investment income earned on premiums collected that are not needed to pay claims (known as the float). Therefore, the expected investment yield is a key consideration when pricing products. This is particularly true for long-tail lines where underwriting margins are thin (or even negative). As a result, if interest rates decline, an insurer must increase the premium it charges. When rates fell to historically low levels in recent years, companies had to re-price products, and, in some cases, change the design (such as switching from a fixed crediting rate to an index-linked rate) in order to maintain profitability. With rates recently moving back higher, product design and consumer demand have once again shifted to favor fixed rate products.

Below we show a sample income statement for protection products as well as descriptions of the primary revenue and expense line items. While there may be some disclosure differences between companies, this highlights the major notable items.

Chart 38: Individual Life Sample Income Statement ($M)

Revenue Drivers

Premiums: premiums collected
Insurance fees: includes policy charges, rider fees, and variable life fees
Net investment income: driven by assets in the general account and interest on reserves

Expense Items

Benefits: benefits paid to policyholders net of change in reserves
Interest credited: credits to policyholders on interest-sensitive life contracts with cash value
Deferral of acquisition costs (DAC): contra-expense for deferrable expenses, primarily commissions; driven primarily by sales levels
Amortization of DAC: straight-line amortization schedule specific to each product
Other expenses: predominantly G&A expense

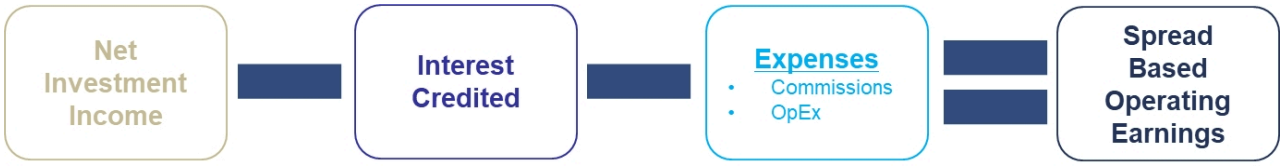
	1Q22	2Q22	3Q22	4Q22	2022
Net premiums	1,541	1,631	1,640	1,778	6,590
Net investment income	289	186	201	224	900
Other revenue	6	10	6	5	27
Total revenues	**1,836**	**1,827**	**1,847**	**2,007**	**7,517**
Claims & other policy benefits	1,447	1,524	1,520	1,642	6,133
Future policy benefits remeasurement (gains) loss	103	(11)	(10)	10	92
Interest credited	17	17	18	17	69
Policy acquisiiton costs & other expenses	181	181	182	178	722
Other operating expenses	43	45	44	52	184
Total expenses	**1,791**	**1,756**	**1,754**	**1,899**	**7,200**
Pre-tax operating income	**45**	**71**	**93**	**108**	**317**

Source: Company reports, Autonomous Research

Spread-Based Products

For spread products (including fixed annuities, indexed annuities, and GICs), the insurer's profit is based on the difference between the investment income earned on policyholder deposits and interest credited to the policyholders' account (plus administrative expenses).

Chart 39: Spread-Based Operating Earnings Formula



Source: Autonomous Research

Companies price business for a target spread and set the crediting rate based on what they can generate for an investment return. The initial crediting rate is usually locked-in for a period and then resets based on market conditions (subject to a guaranteed minimum rate). As with other life products, sales commissions get capitalized and amortized over time, and having a

competitive expense structure is critical in order to generate attractive returns.

Chart 40: Fixed/Indexed Annuity Sample Income Statement ($M)

Revenue Drivers

Net investment income: driven by invested assets in the general account

Fee income: some companies may collect fee income for lifetime income benefit riders

Expense Items

Interest credited: interest paid to policyholders on assets in the general account

Annuity benefits / other liability costs: benefits paid to policyholders net of change in reserves

Deferral of acquisition costs (DAC): contra-expense for deferrable expenses, primarily commissions; driven primarily by sales levels

Amortization of DAC: straight-line amortization schedule specific to each product

Other expenses: predominantly G&A expense

	1Q22	2Q22	3Q22	4Q22	2022
Fixed income and other investment income	1,207	1,302	1,471	1,727	5,707
Alternative investment income	448	186	250	322	1,206
Net investment income	**1,655**	**1,488**	**1,721**	**2,049**	**6,913**
Strategic capital management fees	12	13	14	14	53
Cost of funds	(822)	(873)	(902)	(1,158)	(3,755)
Net investment spread	**845**	**628**	**833**	**905**	**3,211**
Other operating expenses	(109)	(109)	(120)	(128)	(466)
Interest and other financing costs	(62)	(64)	(73)	(80)	(279)
Spread related earnings	**674**	**455**	**640**	**697**	**2,466**
Yields & Spreads as % of Avg. Invested Assets					
Net investment income	3.68%	3.22%	3.61%	4.22%	3.69%
Interest credited	(1.81)%	(1.88)%	(1.88)%	(2.37)%	(1.98)%
Other expenses	(0.38)%	(0.37)%	(0.40)%	(0.43)%	(0.38)%
Return on assets	**1.49%**	**0.97%**	**1.33%**	**1.42%**	**1.31%**

Source: Company reports, Autonomous Research

Fee-Based Products

Fee businesses include variable annuities, defined contribution retirement, and asset management, each of which charge fees based on AUM. As a result, earnings are sensitive to investment performance and movements in asset balances. Insurers may also charge additional fees for optional guaranteed death and living benefit options (often based on the guarantee value rather than AUM) and generate spread earnings on assets allocated to the general account. Expenses consist primarily of G&A and acquisition costs, and insurance products (like VAs) also have policy benefits expense. Acquisition costs get deferred for VAs and some DC retirement products but are immediately expensed for asset management.

Chart 41: Fee-Based Operating Earnings Formula

Source: Autonomous Research

Chart 42: Variable Annuity Sample Income Statement ($M)

Revenue Drivers

Premiums: driven by fixed annuities / SPIAs

Fee income: fees charged for mortality & expenses (M&E), administration, and investments as % of AUM; rider fee often as % of guarantee level

Net investment income: driven by assets in the general account and interest on reserves

Expense Items

Annuity benefits: benefits paid to policyholders net of change in reserves; affected by markets and changes in embedded derivative values

Interest credited: interest paid to policyholders on assets in the general account

Deferral of acquisition costs (DAC): contra-expense for deferrable expenses, primarily commissions; driven primarily by sales levels

Amortization of DAC: straight-line amortization schedule specific to each product

Other expenses: predominantly G&A expense

	1Q22	2Q22	3Q22	4Q22	2022
Premiums	30	25	57	52	164
Policy charges and fee income	628	591	574	556	2,349
Net investment income	359	367	348	389	1,463
Amortization of deferred gain on reinsured business	6	6	6	6	24
Other revenue and fees	124	108	128	122	482
Total revenues	**1,147**	**1,097**	**1,113**	**1,125**	**4,482**
Insurance benefits	52	48	79	72	251
Interest credited to contractholder funds	207	215	224	248	894
Policyholder liability remeasurement (gain) loss	1	1	1	-	3
Commissions incurred	269	254	254	240	1,017
Other expenses incurred	259	239	251	242	991
Amounts capitalized	(118)	(110)	(117)	(103)	(448)
Amortization	106	107	108	107	428
Total benefits and expenses	**776**	**754**	**800**	**806**	**3,136**
Pre-tax operating income (loss)	371	343	313	319	1,346
Taxes	54	49	38	44	185
Operating income	**317**	**294**	**275**	**275**	**1,161**

Source: Company reports, Autonomous Research

Balance Sheet & Capital Structure

An insurance company's balance sheet provides the basis for its financial strength, and in this section we discuss the key metrics for analyzing an insurer's assets, liabilities, and capital.

Simplifying the Balance Sheet

The three primary components of an insurance company balance sheet are capital (debt plus equity), reserves, and invested assets. Investments constitute the majority of life insurers' assets, while reserves represent most of their liabilities. Capital is the amount of invested assets held in excess of reserves to ensure companies can pay claims even if actual losses differ significantly from expected results. We discuss each component in more detail below. To prevent any confusion, we also provide a brief overview of the way life insurers segregate their assets (and liabilities) into general and separate accounts.

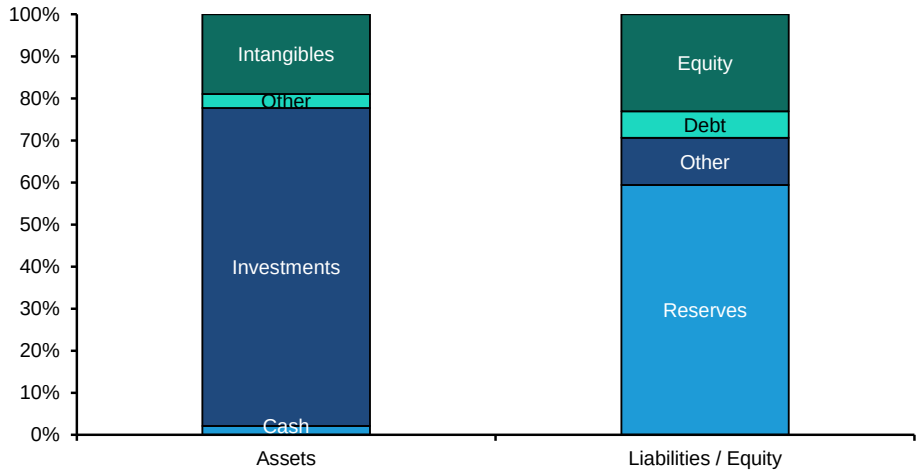
- **Capital:** Capital represents the cushion an insurance company maintains to protect itself, its policyholders, and its shareholders against adverse development of losses relative to expectations. Insurance products are variable in nature, and the assets that back the liabilities are exposed to adverse financial market developments. Therefore, life insurers maintain loss-absorbing capacity in excess of established liabilities to protect against potential deviations between the value of liabilities and the investments that back them. The amount of capital held is subject to regulatory minimums (i.e. required capital) and rating agency scrutiny, but ultimately should reflect the specific risks (and management's perception of risk) to which insurers are exposed.

- **Reserves:** Reserves are liabilities established upon the issuance of an insurance policy and reflect the expected value of future obligations based upon management's best estimates. Reserves for expected and unexpected losses are backed by financial assets and represent the primary liability on an insurer's balance sheet. Under LDTI accounting, the best estimate for traditional products gets updated on a quarterly basis, with changes in reserves due to differences in actual versus expected experience running through the remeasurement gain/loss line of the income statement. For non-traditional products, the assumptions underlying reserves get reviewed regularly based on emerging loss experience and changes in financial markets, with updates usually occurring during a company's annual assumption review period (typically 3Q for most insurers).

- **Invested assets:** Life insurers purchase financial assets to back their insurance liabilities using the premiums received from policyholders. They also invest the capital buffer they hold over and above liabilities and regulatory capital requirements. The type of assets purchased varies depending on the duration and nature of the liabilities they support, but most life companies invest conservatively and primarily own highly rated fixed income securities with predictable cash flows.

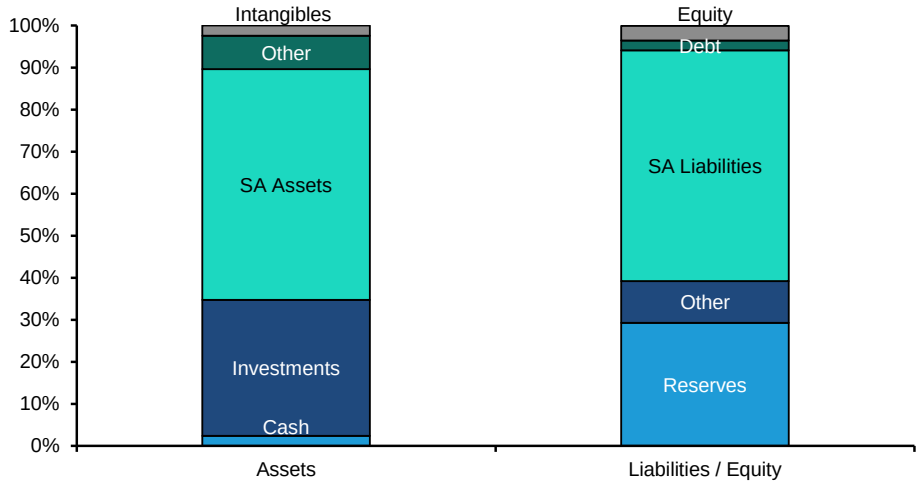
- **Separate vs. general account assets:** Life insurers segregate their assets into two independent accounts on their balance sheet—the general account and the separate account. General account assets support liabilities for products with fixed payouts or guarantees, and the investment risk is borne by the insurance company. In contrast, separate account assets support "pass-through" products, such as variable annuities, in which investment risk is borne by the policyholder. For investors, the existence of separate account assets optically makes the balance sheet appear riskier. However, there is an offsetting separate account liability, so leverage calculations used to assess riskiness should exclude separate account items.

Chart 43: Sample Life Balance Sheet for Protection-Oriented Life Insurer



Source: Autonomous Research

Chart 44: Sample Life Balance Sheet for Macro-Sensitive Life Insurer



Source: Autonomous Research

Capital, Reserves, Regulators, and Rating Agencies

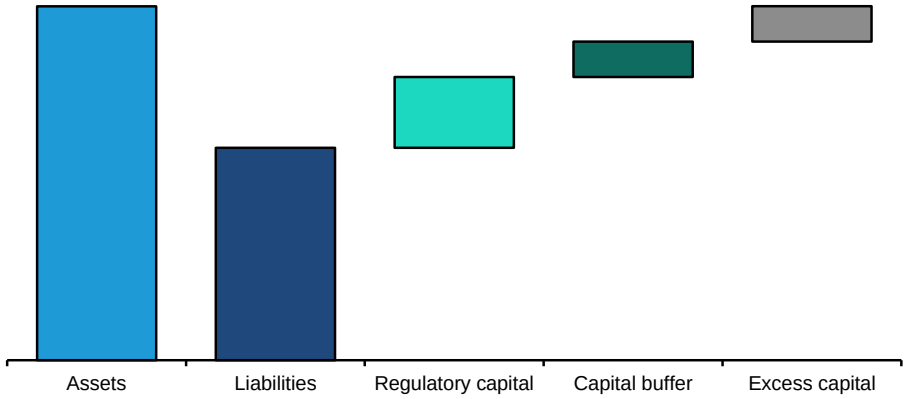
In this section we focus on the difference between capital and reserves, the typical capital structure for a life insurer, and the different definitions of capital used by different stakeholders.

The difference between capital and reserves

In order to meet their promises to policyholders, insurance companies maintain various layers of loss absorbing capacity. The primary layer is reserves, which reflect a company's expected future claims obligations. In addition, insurers hold capital (debt and equity) to provide a buffer in case reserves prove inadequate. Regulators require that insurers hold a minimum level of capital based on their solvency framework, and companies then operate with a buffer above that level. Most insurers establish their minimum target level of capital based on achieving/ maintaining a target financial strength rating from the rating agencies. In most environments, companies also retain some "excess" capital above that targeted level, which could be used

for M&A or to opportunistically return to shareholders. We define excess capital as assets which could be deployed (or lost) without jeopardizing the company's rating.

Chart 45: Building Blocks of Capital

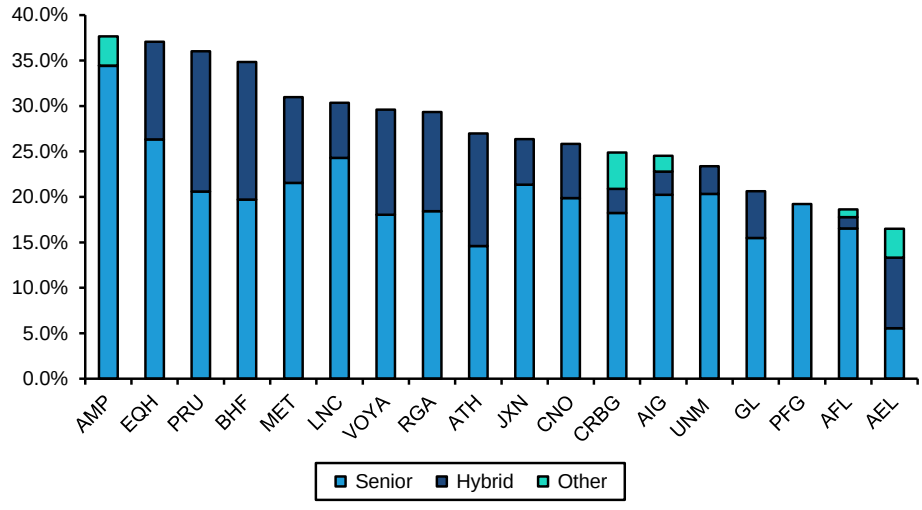


Source: Autonomous Research

Life insurers' capital structure

Most life insurers have a capital structure comprised of equity, debt, and hybrid securities (converts, preferred stock). In general, life insurers have debt-to-capital ratios ranging from 20-35% as regulatory and rating agency capital charges discourage companies from taking on too much leverage. The ratings agencies typically give partial equity credit for hybrid securities (converts, preferred stock), so adjusted leverage ratios generally look more favorable than what we show below.

Chart 46: Debt-to-Capital Ratios for U.S. Life Insurers (2Q23)



Source: Bloomberg, Company reports, Autonomous Research

The level of required capital gets evaluated through several lenses

The capital insurers hold to meet future claim obligations is often viewed differently by regulators, rating agencies and the companies themselves. Regulators primarily care about protecting policyholders, so they focus on a company's ability to pay claims. Ratings agencies

evaluate an insurers' financial strength (claims paying ability) as well as its credit worthiness, and they want to see a margin of safety above minimum requirements. Companies care about their credit ratings as well as perceived financial strength by investors, so they tend to hold a buffer of capital in excess of rating agency and regulatory minimums.

- **Regulatory Capital:** In the US, capital requirements are set by the National Association of Insurance Commissioners (NAIC) and enforced by the individual state insurance offices. While regulators set minimum capital requirements, healthy insurers maintain a multiple of this amount. Regulators and investors primarily assess capital strength using the risk-based capital (RBC) ratio, which divides an insurer's total adjusted capital by required capital. We discuss the RBC ratio in more detail later on, but the goal is to apply standardized risk charges to insurers' assets and liabilities to provide a measure of overall capital adequacy.

- **Rating Agency Capital:** Rating agencies determine the level of capital they expect an insurer to hold in order to attain, or maintain, a desired credit or financial strength rating (FSR). Each rating agency has its own approach and proprietary capital model that utilizes quantitative and qualitative factors. In our view, the rating agencies play a bigger role than regulators in determining the level of capital most life insurers hold as management teams typically set target RBC ratios and capital structures based on their desired rating. While rating agencies assign both credit and financial strength ratings to the insurers they analyze, the FSR assigned by A.M. Best and the credit ratings assigned by Moody's and S&P are most relevant to investors.

- **Excess Capital:** We define excess capital as the amount of capital a company could lose without suffering a credit rating downgrade. The amount of capital held over and above regulatory and rating agency requirements is based on management's view of the capital needed to cover unexpected losses (typically within a given confidence interval) and still run the business successfully. For publicly traded insurers, management teams must weigh the level of excess capital against its impact on shareholder returns. We calculate excess capital using two pieces: 1) the amount of excess capital held in the insurance subsidiaries above target RBC levels, and 2) excess holding company liquidity above minimum targets. Most insurers target maintaining holdco liquidity of at least 1-2x annual fixed charges (usually including common stock dividends). Our definition does not explicitly include excess capital at international insurance subsidiaries and non-insurance entities given limitations in disclosure.

Table 22: Excess Capital for U.S. Life Insurers (2Q23)

	Current RBC Ratio	Target RBC Ratio	Excess Capital	Hold Co. Liquidity	Liquidity Target	Excess Liquidity	Est. Excess Capital	% of Mkt Cap
AEL	440%	375%	661	390	200	190	851	28.3%
AFL	675%	400%	1,427	3,500	1,800	1,700	3,127	7.8%
AMP	560%	400%	979	1,600	1,300	300	1,279	4.1%
BHF	455%	425%	548	900	800	100	648	23.9%
CNO	386%	375%	62	176	150	26	88	3.6%
CRBG	415%	400%	609	2,150	1,100	1,050	1,659	15.4%
GL	308%	310%	-12	74	50	24	12	0.1%
JXN	465%	463%	32	900	250	650	682	28.3%
LNC	395%	400%	-126	457	450	7	-119	-3.6%
MET	365%	360%	3,494	5,200	3,500	1,700	5,194	13.4%
PFG	407%	400%	91	1,140	800	340	431	2.6%
PRU	383%	375%	2,791	4,500	4,000	500	3,291	11.4%
RGA	NM	NM	NA	NA	NM	NM	450	4.5%
UNM	450%	350%	1,056	1,100	800	300	1,356	15.4%
VOYA	405%	375%	245	450	200	250	305	4.4%

Market data as of 8/11/23
Source: Bloomberg, S&P Global Market Intelligence, Autonomous Research

Table 23: Summary of Credit and Financial Strength Ratings

	Financial Strength		Long-term Debt Rating			
Ticker	AM Best	Outlook	Moody's	Outlook	S&P	Outlook
AEL	A-	Stable	NR	NR	BBB-	Negative
AFL	A+	Stable	A3	Stable	A-	Stable
AIG	A	Stable	Baa2	Positive	BBB+	Negative
AMP	A+	Stable	A3	Stable	A-	Stable
ATH	A	Positive	Baa1	Stable	A-	Positive
BHF	A	Stable	Baa1	Stable	BBB+	Stable
CNO	A	Stable	Baa3	Stable	BBB-	Stable
CRBG	A	Stable	Baa2	Stable	BBB+	Stable
EQH	A	Stable	Baa1	Stable	BBB+	Stable
GL	A	Stable	Baa1	Stable	A	Stable
JXN	A	Stable	Baa2	Negative	BBB	Stable
LNC	A	Stable	Baa1	Negative	BBB+	Stable
MET	A+	Stable	A3	Stable	A-	Stable
PFG	A+	Stable	Baa1	Stable	A-	Stable
PRU	A+	Stable	A3	Stable	A	Stable
RGA	A+	Stable	Baa1	Stable	A	Stable
UNM	A	Stable	Baa3	Stable	BBB	Stable
VOYA	A	Stable	Baa2	Stable	BBB+	Stable

Source: Bloomberg, Company reports, Autonomous Research

For more detailed discussion of how RBC ratios are calculated, please see pg. 66.

The RBC ratio is the most commonly used measure of capital adequacy

The RBC ratio compares the amount of total adjusted statutory capital (TAC) an insurer has to the amount required regulatory capital based on the risk profile of its in-force book of business and investment portfolio. An RBC ratio of 400% means that an insurer has total adjusted capital equal to 4x its required capital. Regulators will only begin to take action against a company if its RBC ratio falls below 200%, and the table below indicates the regulatory response at different RBC levels (culminating with the regulator being authorized to seize control of the company if the RBC ratio hits 100%). Public insurers rarely face the risk of their RBC ratios falling near action level thresholds as rating agency requirements are well in excess of the regulatory trigger points.

Chart 47: Reported RBC Ratio

Risk-Based Capital Ratio

$$\text{RBC Ratio} = \frac{\text{Total Adjusted Capital}}{\text{Company Action Level Risk-Based Capital}}$$

Source: NAIC, Autonomous Research

Table 24: RBC Intervention Levels & Trigger Points

RBC Model Law	RBC Level	Action
Company Action Level	150-200%	Submit action plan to regulator
Regulatory Action Level	100-150%	Regulatory actions mandated
Authorized Control Level	70-100%	Regulators may seize control
Mandatory Control Level	<70%	Regulator required to seize control

Source: NAIC, Autonomous Research

Reinsurance provides an important capital optimization tool

Insurers must balance maintaining a strong capital position with the drag on returns from carrying excess capital. For this reason, companies will often utilize capital management tools such as reinsurance (including captive reinsurance entities) to satisfy regulatory capital requirements in a more efficient manner. While reinsurance has typically been used to transfer risk and reduce claims volatility, it also frees capital since reinsurance counts as an asset. Therefore, insurers may choose to use reinsurance to finance sales growth or free capital during a period of stress. Financial reinsurance is often more efficient, and less costly, than raising capital through the debt or equity markets.

Many insurers also form wholly owned reinsurance subsidiaries (commonly known as captives) to reinsure business written by their subsidiaries. While captives do not provide any real risk transfer, they are an efficient way to aggregate and manage certain insurance risks.

Companies also use captives to shift business to a jurisdiction with a more favorable economic capital framework. An insurer's operating subsidiaries get reserve credit for ceding the risk to a captive (freeing capital), while the captive holds capital based on its business mix and local requirements. The use of captives has become quite common, but regulators and investors still tend to be somewhat wary of them as they can make it harder to assess risk (since captives are usually domiciled in a different state than the company's primary subsidiaries). Arizona, Bermuda, the Cayman Islands, and Vermont are all common capitve domiciles.

How reserves get established and updated

As noted earlier, reserves are liabilities established when an insurance policy gets issued. Insurers set the level of reserve based on the expected present value of future claim costs using assumed investment returns as the discount rate. In establishing reserves, actuaries must make several key assumptions, including mortality/morbidity experience, expense levels, policy persistency, policyholder behavior (for policies with living benefit options), and investment returns. These assumptions get reviewed and updated over time based on emerging claims experience, with the impact of changes running through the P&L in the period they are made. Insurers are required to review all assumptions at least annually.

Table 25: Cash Flow Assumptions in the Reserve Calculation

Inflows	Outflows
Premiums	Claims pmts for death or surrender/lapse activity
Fees	Operating expenses & taxes
Investment income	Commissions
Reinsurance recoveries	Reinsurance premiums

Source: Autonomous Research

While total reserves represent a collection of individual product reserves, insurers typically evaluate reserve adequacy by looking at "blocks" of similar policies. Pooling of risk means that the experience for a large block of similarly underwritten policies should be more predictable. Following the adoption of LDTI, insurers can no longer aggregate "blocks" of policies across issuance years, and instead are required to evaluate reserve adequacy for each traditional liability by issuance year cohort. Insurers do this by calculating the net premium ratio (NPR) for each cohort, which determines the benefit and expense coverage from future gross premiums. The NPR is capped at 100%, at which point the cohort is no longer profitable and is in "loss recognition." For blocks with an NPR of 100%, any deviations in actual vs. expected claims experience gets recognized in the P&L immediately rather than being amortized in over time.

Chart 48: Formula for Net Premium Ratio

$$Net\ premium\ ratio = \frac{Present\ value\ of\ benefits\ and\ related\ expenses}{Present\ value\ of\ gross\ premiums}$$

Source: PwC, Autonomous Research

Insurers still conduct an "annual review" of actuarial assumptions, comparing actual vs. expected results. If there are material deviations, the insurer may have to adjust assumptions and either increase or release reserves. This is particularly important for investment products (such as variable annuities) which are outside the scope of the NPR framework. For these products, the annual review is the main opportunity for insurers to adjust assumptions and update market factors. It remains to be seen how the level of "noise" from annual assumption updates will change under LDTI. On one hand, there will no longer be DAC unlocking (historically a big source of volatility), and experience updates for traditional products happen quarterly. On the other hand, if a company makes material assumption changes for traditional products, they will impact both results for the quarter and the earnings run-rate going forward.

Investment Portfolio

Insurers' reserves are supported by general account investments, with the returns on these invested assets being a key driver of earnings. Investment portfolios are typically constructed using a multi-factor framework, with insurers balancing several objectives: 1) generating yield, 2) matching liability duration, 3) servicing liquidity needs, 4) optimizing capital requirements, and 5) minimizing credit losses. Investment portfolios tend to be broadly diversified across a range of fixed income asset classes with varying cash flow, yield, credit, and liquidity profiles. Corporate bonds tend to represent the largest allocation, but most insurers also own government bonds, municipal securities, structured securities, commercial mortgage loans, and alternative investments. The vast majority of holdings have investment-grade ratings, with the average rating being in the A-/BBB+ range. As discussed in more depth later, portfolio duration and investment leverage (investments / shareholders equity) can vary significantly between companies, with business mix being the primary determining factor. Please see our annual review of investment portfolio trends for more detail (here).

Table 26: Life Insurance Investment Portfolio Allocations

% of total cash & investments, as of 12/31/2022

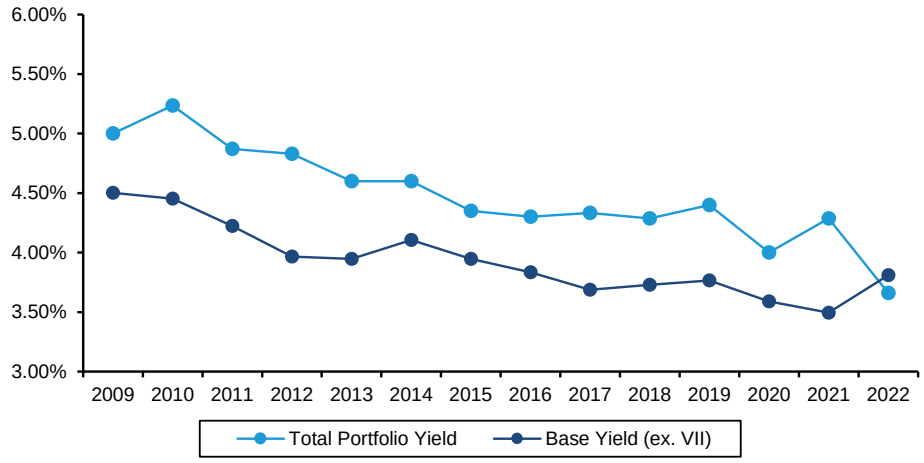
	AEL	AFL	AMP	ATH	BHF	CNO	CRBG	EQH	FG	GA	GL	JXN	LNC	MET	PFG	PRI	PRU	RGA	UNM	VOYA	Median
Total cash & investments ($B)	**46.6**	**117.4**	**51.5**	**196.5**	**112.7**	**25.0**	**194.9**	**98.9**	**41.8**	**117.3**	**18.3**	**45.9**	**131.6**	**453.5**	**79.4**	**3.1**	**434.7**	**67.4**	**43.8**	**41.3**	**73.4**
Corporate bonds	0.4%	33.2%	18.8%	34.5%	33.2%	51.2%	40.2%	44.1%	25.4%	32.5%	74.7%	38.1%	50.8%	26.9%	34.9%	48.4%	33.9%	44.4%	1.1%	1.5%	34.2%
U.S. Government / agency sec.	8.2%	0.1%	4.0%	1.4%	7.1%	0.6%	0.5%	5.9%	0.2%	0.3%	1.9%	7.8%	0.3%	7.1%	1.8%	1.3%	6.0%	2.2%	7.9%	2.0%	2.0%
Municipal securities	1.3%	2.2%	1.5%	1.2%	3.4%	9.6%	2.7%	0.5%	3.4%	3.8%	12.6%	0.0%	3.9%	2.7%	5.7%	1.1%	2.2%	1.7%	1.9%	1.1%	2.2%
Foreign government securities	21.4%	36.8%	0.1%	0.1%	1.0%	0.3%	2.0%	0.8%	0.4%	0.0%	0.2%	2.2%	0.2%	10.3%	0.6%	7.5%	17.2%	14.7%	1.3%	24.2%	1.1%
Mortgage and asset backed sec.	0.0%	1.8%	54.7%	26.7%	17.3%	24.9%	19.7%	12.7%	38.3%	17.8%	0.7%	11.7%	11.1%	11.7%	17.1%	22.4%	6.0%	9.6%	11.3%	0.0%	12.2%
Other fixed maturities	74.6%	6.6%	0.0%	6.7%	5.1%	0.0%	7.0%	0.7%	7.1%	0.0%	0.0%	7.9%	9.5%	4.5%	0.0%	0.1%	7.3%	6.0%	79.5%	73.5%	6.3%
Total debt securities	105.9%	80.7%	79.3%	70.6%	67.1%	86.6%	72.1%	64.8%	74.7%	54.4%	90.2%	67.7%	75.8%	63.2%	60.3%	80.8%	72.7%	78.5%	103.0%	102.4%	75.3%
Mortgage loans	2.3%	1.7%	3.9%	17.8%	20.4%	5.7%	20.2%	16.7%	9.5%	29.9%	1.0%	14.9%	13.9%	18.5%	22.4%	0.0%	12.9%	9.8%	1.0%	0.0%	11.4%
Real estate investments	2.7%	5.5%	0.0%	0.0%	0.7%	0.0%	0.9%	0.0%	0.0%	4.0%	0.0%	0.0%	0.0%	2.9%	2.8%	0.0%	0.4%	0.0%	1.7%	4.3%	0.2%
Partnership investments	0.0%	2.0%	0.0%	6.1%	3.5%	2.4%	3.1%	3.2%	5.8%	5.7%	4.2%	5.3%	2.3%	3.4%	7.5%	0.0%	3.9%	3.5%	0.1%	0.8%	3.3%
Equities	0.0%	0.9%	0.0%	0.9%	0.1%	0.5%	0.1%	0.0%	2.0%	0.0%	0.0%	0.5%	0.3%	0.4%	0.0%	1.1%	2.1%	0.2%	8.2%	0.9%	0.3%
Policy loans	1.8%	0.2%	1.6%	0.9%	1.1%	0.5%	0.7%	4.1%	0.0%	0.7%	3.4%	2.1%	1.8%	2.0%	1.0%	0.0%	2.3%	1.8%	0.5%	1.2%	1.2%
Other invested assets	0.0%	5.6%	1.7%	0.0%	2.5%	1.8%	0.4%	7.0%	1.9%	0.0%	0.1%	0.8%	3.4%	4.2%	2.1%	0.0%	0.7%	1.7%	0.0%	0.0%	1.3%
Cash & short-term investments	0.0%	3.4%	13.5%	3.8%	4.6%	2.6%	2.5%	4.3%	6.0%	5.2%	1.1%	8.8%	2.5%	5.5%	3.9%	18.1%	5.0%	4.6%	0.0%	0.0%	4.1%
Fixed Maturities by Rating																					
AAA/AA/A	62.5%	74.9%	79.2%	52.1%	64.9%	60.9%	55.4%	62.3%	61.6%	63.7%	45.2%	56.0%	57.0%	68.7%	64.8%	57.7%	69.6%	61.0%	44.3%	52.2%	61.3%
BBB	35.6%	22.9%	19.3%	43.7%	31.4%	35.8%	35.9%	33.6%	32.8%	31.2%	52.2%	36.4%	39.3%	26.4%	28.5%	39.9%	24.4%	33.2%	50.0%	43.9%	34.6%
Below investment grade	1.8%	2.2%	1.5%	4.2%	3.7%	3.3%	8.7%	4.1%	5.6%	5.1%	2.6%	7.6%	3.6%	4.9%	6.7%	2.4%	6.0%	5.7%	5.7%	3.9%	4.1%
Overall Portfolio Data																					
Yield	0.0%	3.0%	3.3%	3.7%	3.8%	4.6%	4.2%	3.6%	4.1%	3.3%	5.2%	3.1%	4.0%	4.3%	4.8%	3.4%	3.5%	4.7%	0.0%	0.0%	3.6%
Investments / equity ex. AOCI	9.0	4.4	8.7	14.9	11.4	7.2	9.1	11.1	9.0	19.0	2.9	3.9	11.2	10.3	4.7	1.6	11.8	6.9	451.4	32.0	9.1
Portfolio duration	7.2	10.2	NA	NA	NA	8.3	7.2	6.4	4.9	NA	8.8	6.0	9.5	5.5	5.9	4.7	8.9	8.2	7.8	6.2	7.2
Unrealized G/L (%)	-4.6%	-0.6%	-4.9%	-9.5%	-5.2%	-8.4%	-8.2%	-8.2%	-11.4%	-10.1%	-7.7%	-11.9%	-5.9%	-4.3%	-6.4%	-7.8%	-4.1%	-8.0%	-4.6%	-8.5%	-7.8%

Aflac, Principal, Unum investment leverage uses LDTI-restated book value
Source: S&P Market Intelligence, company reports, Autonomous Research

Higher interest rates starting to boost portfolio yields

Prior to 2022, life insurers experienced over a decade of declining investment portfolio yields, and we estimate that low interest rates reduced sector ROEs by >100bps and annual earnings growth by (2)-(3)%. Therefore, we're encouraged by the increase in base (fixed income) yields over the past year and expect this to continue given current new money investment rates. While some of the NII benefit from higher rates has been masked by lower variable investment income (bond calls, weak alts returns), this headwind should be temporary.

Chart 49: Average Investment Portfolio Yields

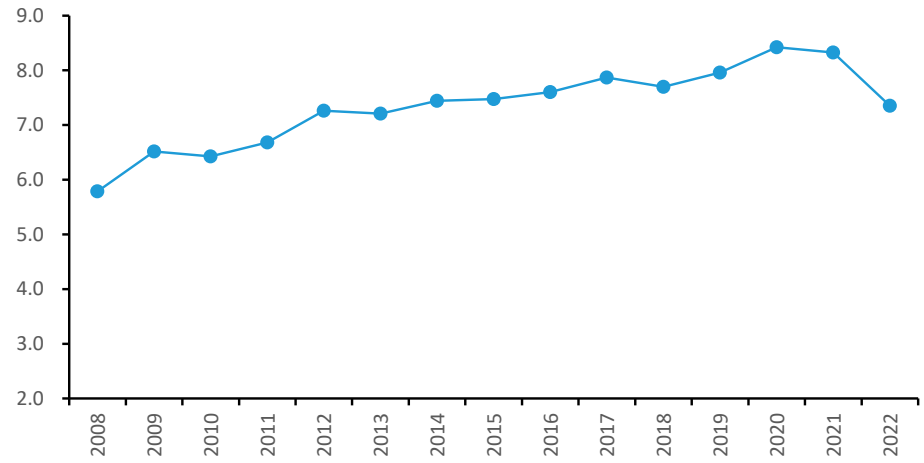


Source: S&P Market Intelligence, Company reports, Autonomous Research

Investment portfolio construction considerations

Life insurers' asset allocation decisions tend to be driven primarily by asset & liability management (ALM) considerations and the risk-adjusted returns offered by different securities. Ideally, companies seek to match the duration of their insurance liabilities with similar duration assets so that cash flows from investments are available to pay benefits without needing to sell securities to raise funds. While this is not always possible for very long-duration whole life or LTC policies (which can have any expected life of 30+ years), most insurers run with an asset/liability duration mismatch of <1 year.

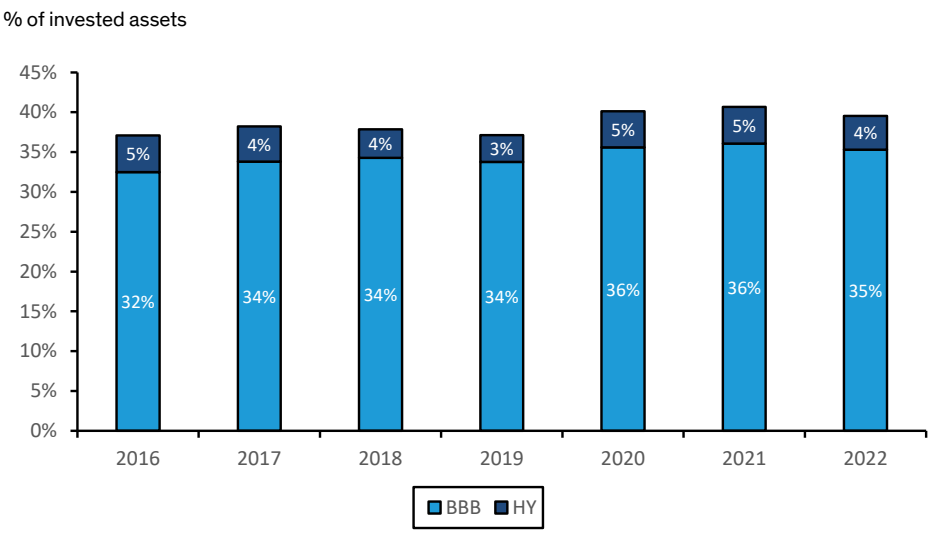
Chart 50: Historical Average Portfolio Duration



Source: S&P Market Intelligence, Company reports, Autonomous Research

In selecting investments, insurers need to balance yield, credit risk, liquidity, and capital charges. Companies are required to hold capital against investments based on their credit rating, and the charges increase dramatically for riskier securities. This tends to act as a governor on the amount of credit risk insurers will take, and most companies maintain an average portfolio rating in the A-/BBB+ range. At YE22, the median life insurer only had ~4% of their portfolio invested in below investment grade securities.

Chart 51: Median Allocation to BBB and HY Securities

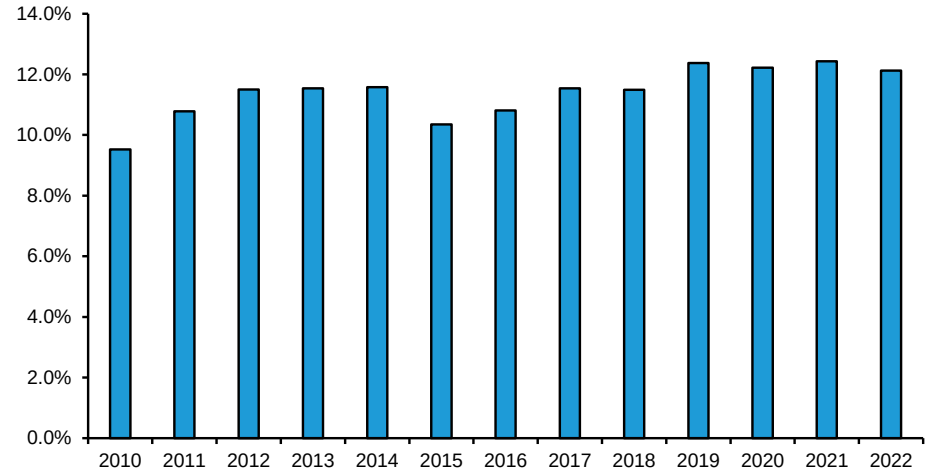


Source: S&P Market Intelligence, Company reports, Autonomous Research

During the low interest rate environment of the past decade, insurers struggled to find adequate yield in public securities and increasingly turned to less liquid private credit and alternative assets with higher expected returns. We have seen notable increases in allocations to private placements, bank loans, structured securities (including CLOs and non-agency MBS), mortgage loans, directly held real estate, and alternatives. In our view, life insurers are well suited to make the yield-for-liquidity trade due to their sticky, long-duration liabilities and protections against early withdrawals. While price volatility is a risk, with potential for unrealized losses if credit markets seize up, an insurer's capital position is not affected by changes in the unrealized gain/loss position of its portfolio (unlike banks). Therefore, assuming an insurer has the capacity to hold a credit to maturity, price volatility is a reduced concern.

Chart 52: Median Private Placement Investment Allocations

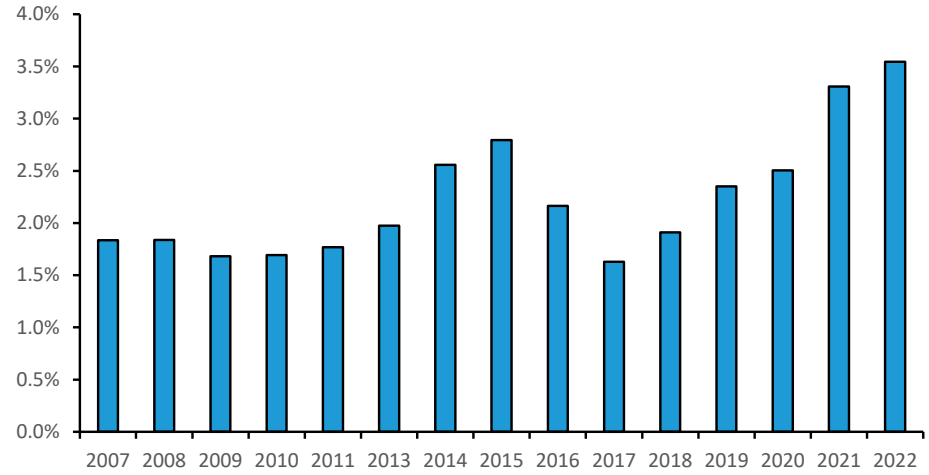
% of invested assets



Source: S&P Market Intelligence, Company reports, Autonomous Research

Chart 53: Median Allocation to Alternatives

% of invested assets



Source: S&P Market Intelligence, Company reports, Autonomous Research

Credit impairments directly reduce capital

Insurers have significant discretion as to when they impair a security, which allows them to delay taking a capital hit on bonds trading at distressed levels. A company is only forced to impair a position if it intends to sell the security or if there is a credit event. Most insurers do not have bright-line tests that require them to impair securities that have traded below a certain level (such as <80% of par) for a specified period (for example >180 days). This means, for example, that an insurer is not forced to impair a security just because it is trading at <70% of amortized cost.

When a security is impaired, there are different implications under GAAP and statutory accounting. Under GAAP, most securities are classified as available-for-sale and are marked to market each quarter, with any unrealized gain/loss recognized in AOCI (accumulated other comprehensive income) rather than through the P&L. When a security gets impaired, the

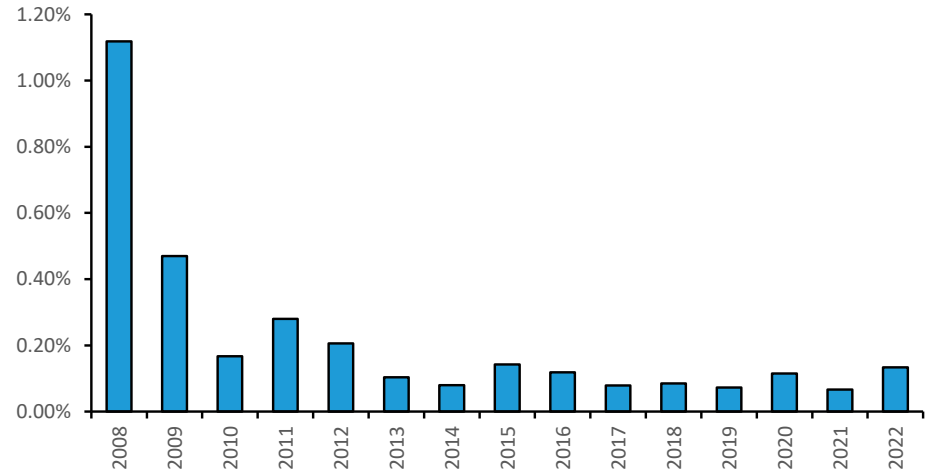
difference between the current carrying value and amortized cost gets recorded as a realized loss and runs through net income (with the gross impairment being reduced by tax and DAC offsets). Book value ex. AOCI decreases by the amount of the impairment, but total book value only declines by the difference between the prior carrying value and the impaired value.

On a statutory basis, securities are carried at amortized cost and not marked to market. If a security is impaired, the full loss runs through statutory net income, reducing surplus/capital. There is no DAC in statutory accounting, so the only offset is taxes. However, insurers do carry an asset valuation reserve (AVR), which provides some cushion against future credit losses.

Over the past ten years, the industry's annual credit losses have average ~10bps, and while we saw upticks in impairments in 2020 and 2022, the sector hasn't experienced any real credit stress since the Great Financial Crisis.

Chart 54: Life Insurance Sector Annual Statutory Impairments

% of cash & invested assets, after-tax



Includes both public and private life insurers
Source: S&P Market Intelligence, NAIC, Company reports, Autonomous Research

The National Association of Insurance Commissioners (NAIC) also tracks statutory impairments for life insurers by asset class. While the data only goes back to 2008, it provides helpful context for how different asset classes have performed. Note that this data is only for assets held in life insurer investment portfolios, so there is some explicit quality selection bias (e.g. life insurers had immaterial exposure to CCC-rated pre-2008 CLOs). As a result, the historical impairments for life insurers will screen better than for the overall asset class over the same period.

Table 27: Historical Statutory Impairments by Asset Class

% of investments, after-tax

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Avg.
Corporate bonds	1.29%	0.24%	0.09%	0.08%	0.05%	0.03%	0.03%	0.12%	0.07%	0.04%	0.05%	0.04%	0.07%	0.02%	0.05%	0.15%
U.S. Govt / Agencies	0.11%	0.06%	0.02%	0.01%	0.00%	0.01%	0.00%	0.02%	0.01%	0.01%	0.00%	0.01%	0.01%	0.01%	0.02%	0.02%
Municipal bonds	0.05%	0.02%	0.03%	0.00%	0.00%	0.00%	0.00%	0.06%	0.02%	0.04%	0.00%	0.00%	0.00%	0.00%	0.00%	0.02%
Foreign Govt.	0.29%	0.03%	0.00%	0.65%	0.51%	0.04%	0.02%	0.04%	0.01%	0.00%	0.04%	0.15%	0.08%	0.04%	0.46%	0.16%
MBS / ABS	NA	NA	NA	0.62%	0.44%	0.16%	0.09%	0.07%	0.10%	0.04%	0.04%	0.03%	0.10%	0.05%	0.13%	0.16%
Total debt securities	1.09%	0.31%	0.10%	0.27%	0.16%	0.07%	0.04%	0.09%	0.07%	0.03%	0.04%	0.03%	0.07%	0.03%	0.07%	0.16%
Mortgage loans	0.08%	0.13%	0.11%	0.05%	0.03%	0.02%	0.02%	0.01%	0.01%	0.01%	0.00%	0.00%	0.06%	0.03%	0.02%	0.04%
Direct real estate	0.27%	0.67%	0.75%	0.20%	0.52%	0.31%	0.13%	0.45%	0.70%	0.24%	0.39%	0.13%	0.38%	0.35%	0.78%	0.42%
Partnership invest.	1.91%	3.26%	1.23%	0.73%	1.27%	0.78%	0.67%	0.96%	1.03%	0.81%	0.80%	0.51%	0.73%	0.52%	0.58%	1.05%
Equities	4.79%	2.34%	0.75%	0.54%	0.40%	0.40%	0.64%	0.88%	0.43%	0.51%	0.35%	0.84%	0.76%	0.36%	1.85%	1.06%

Source: S&P Market Intelligence, NAIC, Autonomous Research

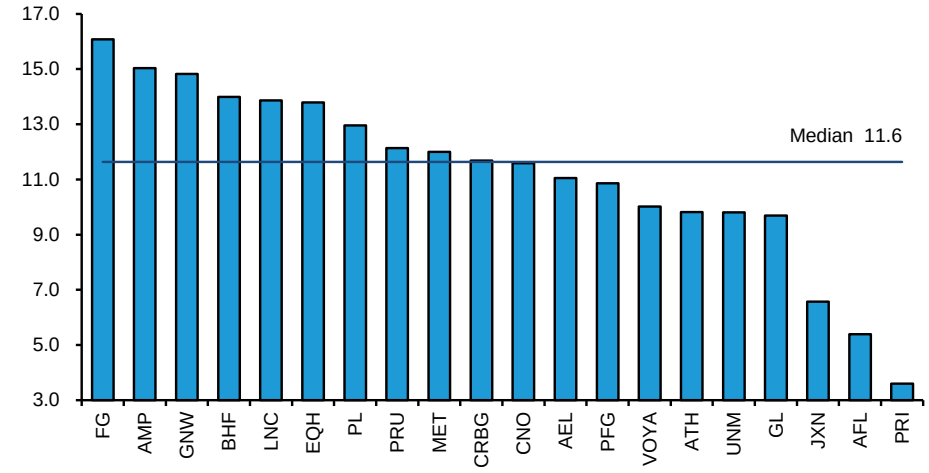
Portfolio leverage a closely watched metric, but proceed with caution

Investors often look at an insurer's invested assets / shareholders' equity to gauge how sensitive book value is to investment losses. Historically, companies with higher leverage have tended to underperform in credit downturns. While this makes intuitive sense, GAAP leverage also has a few flaws that undermine its utility as a risk metric. The ratio excludes margins and reserves, both of which are loss absorbing, and does not account for participating policies (where credit risk is borne by the policyholder). In addition, tax and DAC offsets reduce the hit to net income from losses.

As a result, we view statutory leverage as a better metric given stat capital is the primary driver of cash flows to the holding company. In the following chart we show investments divided by statutory total adjusted capital (TAC) for U.S. insurance entities plus estimated allocated capital for the international operations of Aflac, MetLife, Principal, and Prudential. This isn't a perfect metric as it excludes the impact of captives and excess holding company liquidity. In addition, we use market value of investments in our calculation while investments are carried at amortized cost on a statutory basis. That said, we think it's still more useful than looking at GAAP leverage.

Chart 55: Statutory Investment Leverage

As of YE22, TAC / investments (adj. for Int'l operations)



Source: S&P Market Intelligence, Company reports, Autonomous Research

Other Notable Balance Sheet Items

While investments account for most of a life insurer's assets, the other important balance sheet items for investors to focus on are:

- **Deferred acquisition costs (DAC):** DAC represents capitalized policy acquisition expenses, primarily the commission paid at the time of sale. DAC is booked as an asset and amortized over time, with the idea being that this better aligns revenues and expenses. Following the adoption of LDTI accounting rules in 2023, DAC gets amortized on a straight line basis over the expected life of the block and only gets written off if the block lapses early. While some investors consider DAC an intangible asset since it is non-cash (the expenses have already been paid), we view it as a real asset with economic value. Therefore, we include DAC when calculating tangible book value.

- **Value of business acquired (VOBA):** VOBA is an asset that is created in an acquisition. The acquired company's DAC is converted to VOBA as part of the purchase GAAP accounting, with the balance adjusted to reflect current profitability assumptions. The VOBA balance is then amortized on a straight-line basis over a defined period.

- **Market risk benefit assets & liabilities:** A market risk benefit (MRB) is an amount that a policyholder would receive in addition to the account balance upon the occurrence of a specific event, such as death, annuitization, or periodic withdrawal, and importantly, the amount involves protection from capital market risk. Said another way, it is a guaranteed contract or contract feature that has transferred the capital market risk from the policyholder to the insurer. Insurers are required to report the net MRB balance at fair value, calculated either by an option-based approach (where applicable) or more commonly via an "attributed fee" method. This method runs a series of risk-neutral stochastic scenarios and calculates the fair value of the MRB as the avg. PV of future benefits less the avg. PV of fees multiplied by the locked-in attributed fee ratio (avg. PV of future benefits over avg. PV of future fees at contract issuance date). The discount rate used is the sum of the risk-free rate plus a credit spread related to the insurer's own credit risk. The portion of the fair value change attributable to a change in the own credit risk is recognized in AOCI, while the remaining change in FV of the MRB runs through net income. MRBs are typically present in variable annuities with GMxB features, fixed/indexed annuities with living benefit riders, and certain types of variable and universal life insurance. While there are a few insurers that adjust out the fair value of MRBs from tangible book value, we view this as a low-quality adjustment as there is real economic value to the MRBs that should be considered.

- **Funds withheld assets & liabilities:** Funds withheld assets and liabilities are a byproduct of a coinsurance with funds withheld reinsurance transaction in which the reserves (liabilities) and specific risks are transferred from the cedant to the reinsurer, but the associated assets are not. Instead, the cedant retains the assets on their balance sheet and sets up both a funds withheld asset and a payable account called a funds withheld liability. The cedant retains asset management control over the segregated pool of assets (subject to negotiated investment constraints with the reinsurer) and generates net investment income which it pays to the reinsurer. Thus, while the cedant has actual custody of the assets, in reality it has zero economic interest in the assets. When we analyze life insurer investment portfolios, we do so on a net of funds withheld basis to remove non-economic assets and risks from the portfolio.

- **Goodwill and other intangibles:** Goodwill is an asset created in an acquisition and represents the price paid above the total value of the assets and liabilities. This balance is not amortized, but it is subject to annual testing to determine whether the carrying value remains justifiable. Other intangible items may include trademarks, copyrights, and other

forms of intellectual property. These tend to be minimal for most insurers, and they may be amortized if there is a defined useful life.

- **Accumulated other comprehensive income (AOCI):** AOCI is a part of shareholders' equity that records unrealized gains or losses not run through net income. These gains or losses can be derived from a company's investment portfolio, pension plan, or certain hedging programs, amongst other activities. For life insurers, the AOCI account is primarily driven by changes in the unrealized gain / loss position on the investment portfolio given the majority of fixed maturities are accounted for on an available-for-sale basis. In periods of higher interest rates, AOCI balances can be deeply negative, whereas when interest rates were low, insurers posted large positive AOCI balances. Ultimately, insurers have both the capacity and willingness to hold positions to maturity, and thus interest rate driven swings in fixed maturity valuations tend to not be economically meaningful to insurers' operations as changes in price do not impact net investment income. There's only an impact on net income and book value when gains or losses become realized (either through an insurer taking portfolio actions or from a credit event). Thus, we tend to exclude AOCI when valuing life insurers on a P/BV basis.

TAC = Capital and Surplus + Asset Valuation Reserve + [50% * dividend liability]

Balance Sheet 201: A Primer on RBC Ratios

Given the importance of the RBC ratio, we believe it's helpful for investors to understand the key inputs for each component of the calculation.

- **Numerator: Total Adjusted Capital (TAC).** TAC is essentially the insurers' equity on a statutory basis (stated as capital and surplus), and it also includes a smoothing mechanism called the Asset Valuation Reserve (AVR). The AVR is a liability established to absorb investment losses and protect statutory surplus against large fluctuations in loss experience (AVR is considered by many to be "above the line" surplus). The dividend liability is an insignificant part of the formula, but it is included to adjust for changes in expected policyholder dividends.

- **Denominator: Risk-Based Capital.** Required capital is derived by applying capital charges based on several factors, including investment risk, insurance risk, interest rate risk, and business risk. An insurer establishes values for each factor (C0-C4, shown in the table below) and then plugs these into the covariance formula shown on the left. The outcome produces the Company Action Level (CAL) RBC capital requirement, which is what most insurers and ratings agencies focus on.

Sourcing and calculating the RBC using the annual statutory statements

It is relatively straightforward to source and calculate a company's consolidated RBC ratio using the annual statutory statements. For companies with multiple operating subsidiaries, knowing which are the primary versus the subordinated subsidiaries is important as capital held in the subordinated subsidiary is included in the primary sub's capital. In the annual statement, there is a section called "Five-Year Historical Data" which discloses operational highlights over the period (e.g. life insurance in-force, key balance sheet figures, net gains/ losses from operations, and capital positions). The first page of this section is where to find the TAC and Authorized Control Level RBC capital (multiply by two to calculate CAL RBC capital). If there are several primary insurance subsidiaries, aggregate together the TAC and ACL capital across all the primary subsidiaries to determine the consolidated RBC ratio for the life insurer.

RBC Formula:

C0 + [((C1o + C3a)^2 + c1cs^2 +C2^2 +C3b^2 + C4b^2) ^0.5)] + C4a

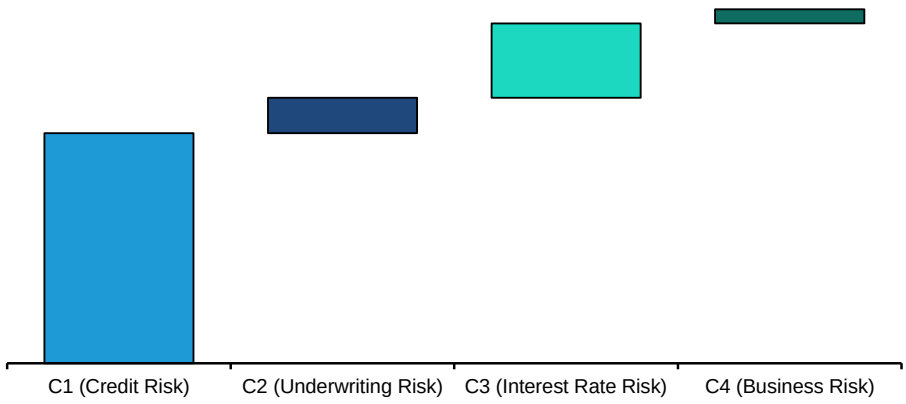
Table 28: Summary of RBC Factors

Factor	Description
C0	Insurance affiliate investment and non-derivative off-balance sheet risk
C1cs	Invested common stock asset risk
C1o	Invested asset risk, plus reinsurance credit risk except for assets in C1cs
C2	Insurance (mortality and morbidity) risk
C3a	Interest rate risk
C3b	Health provider credit risk
C4a	Business risks - guaranty fund assessment and separate account risks
C4b	Business risk - health administration expense risk

Source: NAIC, Autonomous Research

Given life insurers' large investment portfolios and the long-tail nature of their products, credit risk typically has the largest impact on required capital, followed by interest rate risk.

Chart 56: Approximate Impact of Risk Factors on Required Capital



Source: S&P, Autonomous Research

Fixed maturity credit risk gets calculated by applying a capital charge to each individual security in an insurer's portfolio based on its credit rating (where available). There are 20 different ratings categories that align with rating agency ratings, with pre-tax risk factors ranging from 0.16% (for securities rated AAA) to 30% (for equities and fixed income securities at or near default). If a security experiences a ratings downgrade, the insurer would have to post capital equal to the incremental difference between the prior risk factor and the new factor, and vice versa if a security experiences a ratings upgrade.

Table 29: NAIC C-1 Capital Charges

NAIC rating	1A	1B	1C	1D	1E	1F	1G	2A	2B	2C	3A	3B	3C	4A	4B	4C	5A	5B	5C	6
NRSO rating	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2	B3	Caa1	Caa2	Caa3	Equity/NR
Pre-tax charge	0.16%	0.27%	0.42%	0.52%	0.66%	0.82%	1.02%	1.26%	1.52%	2.17%	3.15%	4.54%	6.02%	7.39%	9.54%	12.43%	16.94%	23.80%	30.00%	30.00%

Source: NAIC, Autonomous Research

For commercial mortgage loans, credit risk is evaluated by comparing a loan's debt service coverage and loan-to-value versus a preset matrix. For statutory purposes, debt service coverage ratios are calculated based on trailing 3-year net operating income. LTVs get calculated based on the assessed value at loan origination or a reset event (impairment, restructuring, extension), multiplied by the change in value of the NCREIF Index. Loans

are rated between CM1 (high-quality) and CM7 (in process of foreclosure), and there are corresponding capital factors for each CM rating. When a loan moves into non-performing status (i.e. is past due and in default), it is viewed as likely to default, so the capital charge for CM6 and CM7 ratings is aligned with the charge for on-balance sheet real estate equity.

Table 30: CML and CRE Rating and Capital Charge Matrix

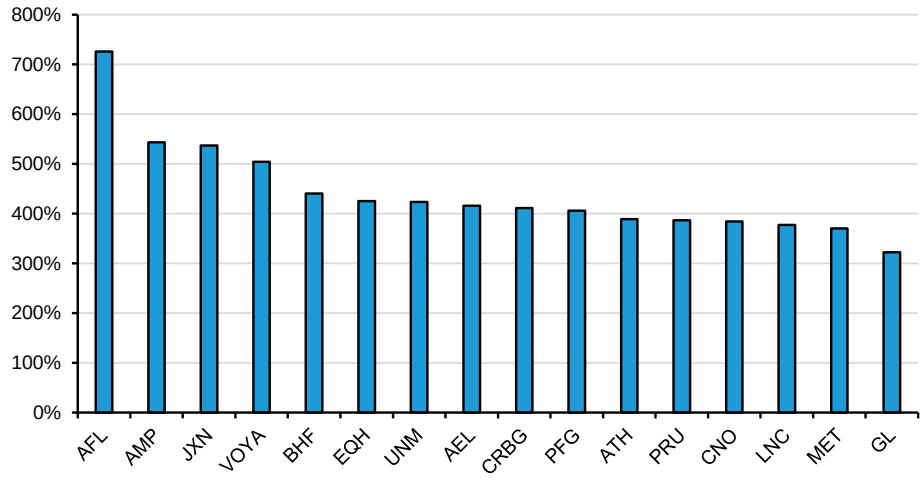
Risk Category	Debt Service Coverage Limits		Loan-to-Value Limits	Before-Tax Capital Factor	After-Tax Capital Factor
CM1	1.50x < DSC	&	LTV < 85%	0.90%	0.76%
CM2	0.95x < DSC < 1.50x	&	LTV < 75%	1.75%	1.47%
	1.15x < DSC < 1.50x	&	75% < LTV < 100%		
	1.50x < DSC	&	85% < LTV < 100%		
	1.75x < DSC	&	100% < LTV		
CM3	DSC < 0.95x	&	LTV < 85%	3.00%	2.53%
	0.95x < DSC < 1.15x	&	75% < LTV < 100%		
	1.15x < DSC < 1.75x	&	100% < LTV		
CM4	DSC < 0.95x	&	85% < LTV < 105%	5.00%	4.21%
	0.95x < DSC < 1.15x	&	100% < LTV		
CM5	DSC < 0.95x	&	105% < LTV	7.50%	6.32%
CM6	Loan 90 days past due but not yet in the process of foreclosur			11.00%	8.69%
CM7	Loan in process of foreclosure			13.00%	10.27%
Schedule A (Directly Held Real Estate)				11.00%	8.69%
Schedule BA (Other Long-term Invested Assets)				13.00%	10.27%

CM ratings matrix for office, industrial, multi-family, and retail properties.
Source: NAIC, Autonomous Research

The appropriate RBC ratio target varies significantly from one insurer to the other

There's no such thing as one "right" RBC ratio that all insurers should target. The level of needed RBC can vary significantly depending on a company's business mix, level of investment risk, and ratings aspiration. Insurers that have more exposure to products with significant market risks, such as variable annuities, typically hold more capital to cushion against adverse deviation, leading to a higher RBC ratio. Other companies with relatively plain vanilla liabilities, such as Globe, can operate with a lower RBC ratio.

Chart 57: Life Insurer RBC Ratios (YE22)



Source: S&P Market Intelligence, Company reports, Autonomous Research

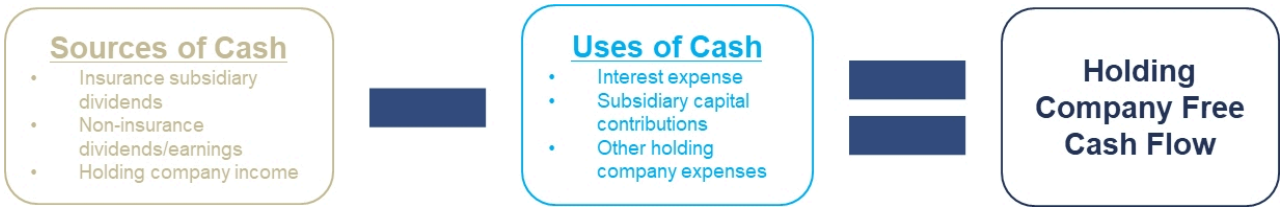
Life Insurance Free Cash Flow

Cash generation has become a much bigger focus for both insurance investors and management teams, and it is now also a key driver of valuations. We believe this is positive for the industry as it spurs companies to judiciously allocate capital and find ways to be more efficient in getting cash to their holding company. From an investor standpoint, free cash flow matters as it represents the biggest ongoing source of capital for buybacks and dividends. In addition, it provides a gauge of an insurer's quality of earnings. Therefore, we believe cash flow metrics, particularly free cash flow conversion (or FCF / operating earnings), will continue to gain prominence.

How we define free cash flow for life insurers

We define free cash flow as cash that is brought to the holding company that is available to either distribute to shareholders (via dividends or share repurchases) or deploy for other purposes (such as M&A). Our definition of free cash flow assumes that holding company expenses (including interest expense) have already been paid. This provides a comparable way to look at capital generation across companies and sectors.

Chart 58: Free Cash Flow Formula



Source: Autonomous Research

For life insurers, the primary sources of free cash flow are:

- **Dividends from U.S. insurance subsidiaries:** By far the biggest source of cash flow for most companies is dividends from their regulated insurance subsidiaries. Ordinary dividends can be paid without regulatory approval, and the allowable amount is determined by a formula. In most states, ordinary dividend capacity is based on the greater of prior-year statutory earnings or 10% of the statutory surplus at year-end. Therefore, ordinary dividend capacity for the current year is locked-in based on prior year results. Insurers can also apply for an extraordinary dividend, but these must be approved by the regulator in the state where the subsidiary is domiciled. Insurers may elect not to pay the full allowable dividend, either because they need to maintain capital in their subs or don't have a cash need at the holding company.

- **Dividends from international insurance subsidiaries:** Dividend rules differ by geography, but most countries either have a formulaic approach or require approval from the local regulator. In 2017, the U.S. moved to a territorial tax system, so foreign earnings now only get taxed by the local jurisdiction (and are not taxed again when repatriated to the U.S.). Our FCF estimates don't distinguish between payments to international holding companies versus the U.S. holding company (where it can be used for dividends or share repurchases), but this distinction matters less than it previously did since there's no longer a repatriation penalty.

- **Distributions from non-regulated subsidiaries:** Many US life insurers also own non-regulated businesses such as asset managers. These entities generally have low capital requirements and can distribute earnings directly to the holding company throughout the year. We therefore typically assume a high dividend payout ratio as a percentage of after-tax earnings.

- **Fees paid to the holding company:** Some insurers charge their insurance subsidiaries fees for providing certain services, most notably management of the general account portfolio. This fee is paid directly to the holding company and is not subject to regulatory approval or ordinary dividend limitations, so it's an efficient source of regular cash flow.

- **Surplus notes and inter-company borrowings:** A holding company can loan money to its insurance subsidiaries, and the interest then gets paid back directly as cash (and doesn't go through the regulatory dividend process).

- **Other holding company income:** Insurers' holdings companies may also generate other direct income, such as interest earned on holdco cash and investments. This tends to be a modest source of cashflow for most insurers.

- **Net debt issuance:** Some insurers include debt issuance in their definition of free cash flow as long as they remain below maximum leverage ratio targets. We understand the logic as a growing company can support more debt, and this provides unconstrained cash to fund other activities. However, we view debt issuance as episodic and a relatively low-quality source of cash flow. Therefore, we generally exclude net issuance from our definition of free cash flow, which can create discrepancies between our estimates and what companies report.

Primary uses of cash

- **Interest expense:** Most insurers' debt gets issued by the holding company, so interest expense needs to be paid from cash at the holdco.

- **Capital contributions to subsidiaries:** In some situations, an insurer may need to inject cash into one of its subsidiaries to bolster the capital position, support growth, or fund an acquisition. This is one reason that many insurers keep excess liquidity at the holdco (versus in their insurance subs) as this provides more flexibility to move resources around as needed.

- **Other holding company expenses:** Most of an insurer's expenses get allocated to its operating subsidiaries, but certain costs may be borne by the holding company. This tends to be a small percentage of expenses for most companies.

Key factors that drive statutory dividend capacity

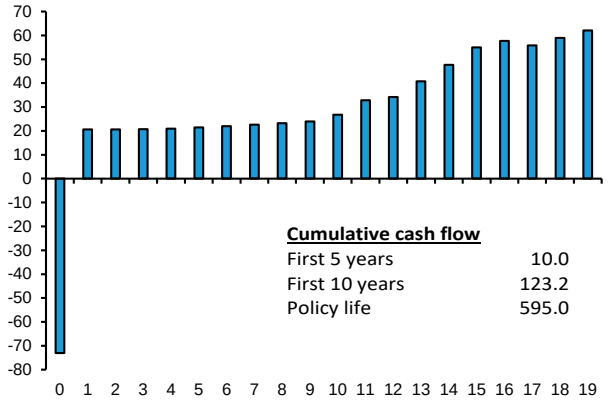
As noted above, ordinary dividend capacity gets determined based on the prior year's statutory results. Statutory earnings tend to be lower than GAAP earnings due to the immediate expensing of acquisition costs and more conservative reserving requirements. Additional factors that influence subsidiary statutory earnings and, in turn, dividend capacity include:

- **New business growth:** Statutory accounting requires companies to expense acquisition costs (including commissions paid to agents). In addition, companies must establish sizable initial reserves when a policy is issued. This causes significant upfront "strain" from new product sales. Insurers that are growing more rapidly therefore tend to have lower statutory earnings (relative to GAAP earnings) than slower-growth companies.

- **Product mix:** Different products have different capital requirements and cash flow dynamics. Generally, products with long liability durations (such as whole life insurance) or rich guarantees (variable annuities, secondary guarantee universal life) require more capital, particularly in the early years of a policy's life. Therefore, initial cash conversion is typically <50% of GAAP earnings. By contrast, short-tail policies with fixed benefits (such as accident & health products) have relatively high stat earnings compared to GAAP as they require less capital (and therefore have better free cash flow conversion).

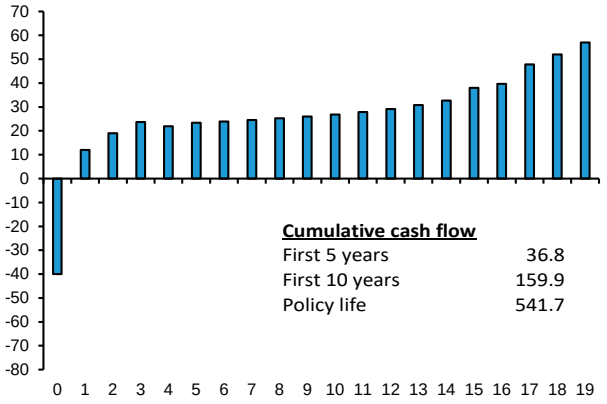
- **Product design:** How an insurer structures a product's commission payouts, guarantees, and benefits also significantly affects the timing of cash flows and level of required reserves. Even within the same product category (e.g. individual life), cash generation can vary significantly depending on how the policy and compensation are structured. For example, shifting from a 6% commission paid all upfront to a 4% initial commission with a 1% trail paid on each of the first two policy anniversary dates would ease the initial strain. Another example would be lowering the guaranteed period for whole life insurance (such as from age 121 to 105), which reduces the required reserve. As companies have become more focused on maximizing cash flow, product design has emerged as a key lever.

Chart 59: Traditional Term Life Policy Cash Flows



Hypothetical cash profit by year for 20 year level premium policy
Source: Autonomous Research

Chart 60: Adjusted Term Life Policy Cash Flows



Cash profit by year; assumes smaller initial commission, larger trail
Source: Autonomous Research

Free cash flow vs. capital generation

Historically, we have focused on holding company free cash flow rather than capital generation. This may seem like semantics, but there's a key distinction: cash flow just looks at funds that can be brought to the holding company and tends to be backward looking whereas capital generation is a real-time measure driven by current year statutory earnings and portfolio actions. In most years, we just look at capital generation as the source for future cash flow. However, in an environment where there is concern about investment losses or other calls on capital, current capital generation becomes more critical as it directly supports RBC ratios. There are two key components:

- **Current year statutory net income:** Statutory earnings directly build capital and are affected by not only current business performance but also new business volumes and investment gains/losses. As discussed in more detail below, management teams have some control over sales and investment actions and can use these as a lever to bolster statutory earnings and capital in the short-term.

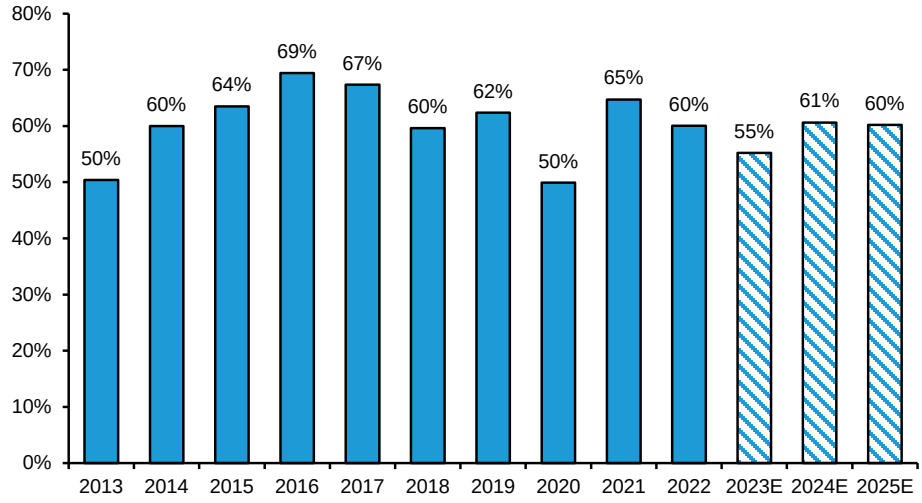
- **Capital released from the runoff of existing in-force business:** When policies lapse or mature, the capital backing them gets released. This can be a meaningful source of capital for insurers with large closed blocks of legacy business or those active in businesses like pension risk transfer where the liability steadily declines over time.

Assessing industry and company free cash flow trends

We typically focus on the free cash flow conversion ratio (free cash flow / operating earnings) as this makes it easy to compare FCF across companies. In addition, this is the metric most insurers guide to when projecting cash flow. As shown below, the industry FCF conversion ratio had been steadily trending higher from 2013-2017 as management teams took steps to make products more capital efficient and streamline cash flow to the holding company. The drop in 2018 is almost entirely attributable to tax reform, which had little impact on the

level of cash flow but increased GAAP earnings, reducing the ratio. 2020 dipped as during the pandemic, remittance ratios declined due to companies retaining excess capital in their subs to bolster RBC ratios. As markets rebounded in 2021, conversion returned to more normal levels, and several companies received proceeds from risk transfer transactions. Looking ahead, our estimates assume modestly lower FCF conversion in 2023 due to lingering pandemic impacts (elevated 1H22 mortality) and weak 2022 equity markets. However, we project the median FCF conversion ratio to rebound to ~60% in 2024-25E.

Chart 61: Normalized Industry FCF Conversion Ratio



Source: Company reports, Autonomous Research

Below we show our free cash flow estimates by company for 2024E, including the key components. Ameriprise, Principal, and Voya consistently generate among the strongest FCF in the industry given their capital-light businesses, while Brighthouse and Jackson have low FCF conversion ratios given their macro-sensitive and capital consumptive businesses.

Table 31: Free Cash Flow Projections by Company (2024E) ($M)

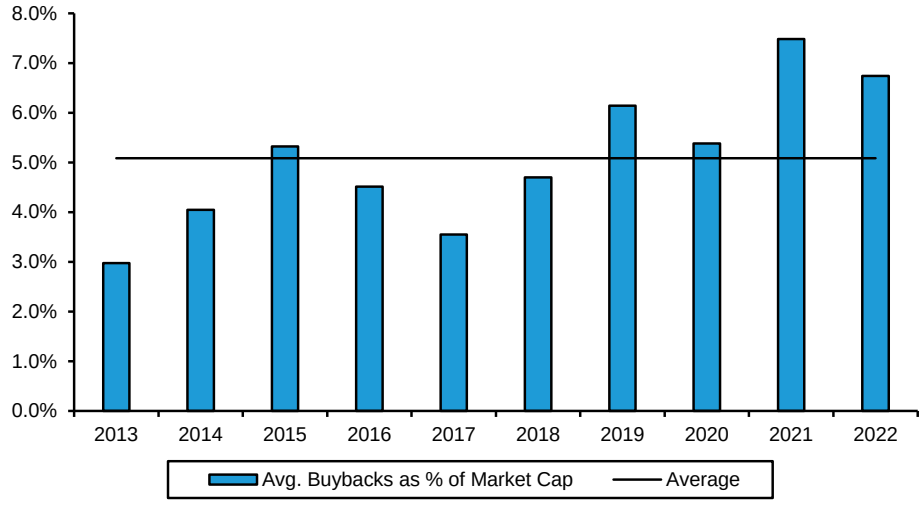
	AEL	AFL	AMP	BHF	CNO	CRBG	GL	JXN	LNC	MET	PFG	PRU	RGA	UNM	VOYA	Median
Sources of cash																
Dividends from insurance subs.	150	2,559	1,022	392	194	2,100	490	600	822	7,270	1,178	2,728	581	1,065	914	
Dividends (non-insurance subs.)	191	141	2,040	224	230	-	68	-	116	-	393	846	-	-	100	
Holding company income/other	-	-	-	-	-	200	2	-	23	-	35	615	250	193	36	
Total cash inflows	341	2,701	3,063	616	424	2,300	560	600	960	7,270	1,606	4,189	831	1,258	1,050	
Uses of cash																
Interest expense	(94)	(152)	(155)	(255)	(71)	(426)	(109)	(71)	(402)	(907)	(164)	(942)	(250)	(256)	(131)	
Holding company expenses	(15)	-	(156)	(5)	(136)	(200)	(5)	(25)	(10)	(1,928)	(41)	(232)	(58)	-	(59)	
Capital contributions to subs.	-	(75)	-	-	-	-	-	-	-	(100)	-	(400)	-	-	-	
Total cash uses	(109)	(227)	(311)	(260)	(207)	(626)	(114)	(96)	(412)	(2,935)	(205)	(1,574)	(309)	(256)	(190)	
Holdco free cash flow	**232**	**2,474**	**2,752**	**355**	**217**	**1,674**	**446**	**504**	**549**	**4,334**	**1,400**	**2,615**	**522**	**1,002**	**861**	
Operating earnings	575	3,658	3,463	1,090	345	2,887	1,056	1,285	1,361	6,604	1,808	4,840	1,227	1,521	927	
FCF conversion (% earnings)	**40.4%**	**67.6%**	**79.5%**	**32.6%**	**62.8%**	**58.0%**	**42.3%**	**39.2%**	**40.3%**	**65.6%**	**77.5%**	**54.0%**	**42.5%**	**65.9%**	**92.8%**	**60.4%**
Shareholder dividends	-	1,003	582	-	68	594	91	204	311	1,517	649	1,836	231	303	164	
Capital for share repurchases	-	2,250	2,200	300	250	1,000	385	300	-	4,500	750	1,200	200	400	700	
Capital return (% FCF)	**0.0%**	**131.5%**	**101.1%**	**84.4%**	**146.7%**	**95.2%**	**106.7%**	**100.0%**	**56.6%**	**138.8%**	**99.9%**	**116.1%**	**82.5%**	**70.2%**	**100.4%**	**99.9%**

Source: Company reports, Autonomous Research

Capital Return is the Primary Use of FCF

U.S. life insurers have put together a strong track record of returning capital to shareholders through both share repurchases and dividends, and this represents the sector's primary source of appeal for many investors. Since recovering from the financial crisis, U.S. life insurers have returned significant capital to shareholders. Annual buybacks have averaged 5% of market cap over the last decade, and the sector had even higher levels in 2021-22 as it drew down excess capital positions and redeployed proceeds from risk transfer transactions. The sector has also maintained a consistent 2%+ median dividend yield, pushing the total capital return yield to 7%+ (and higher for many companies).

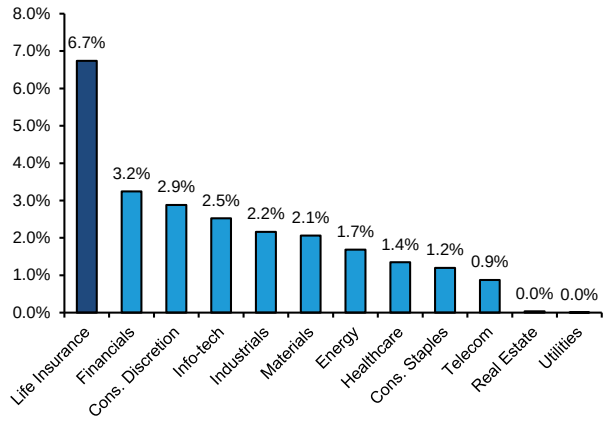
Chart 62: Sector Buybacks have Averaged 5% of Market Cap



Source: Bloomberg, Company reports, Autonomous Research

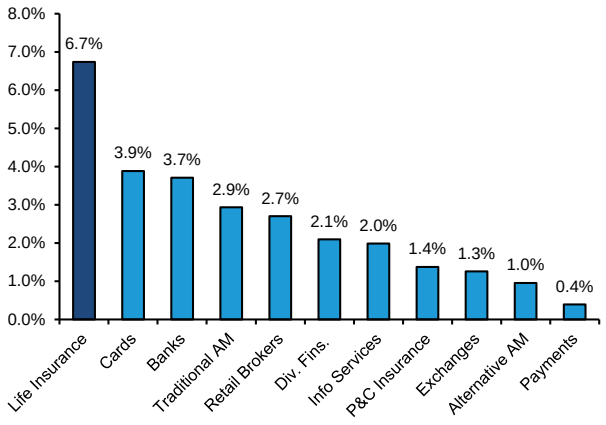
Compared to other S&P500 sectors, it is readily apparent just how outsized the sector's buyback yield has been over the past 5 years (2018-22). On average, life insurers returned ~7% of market cap annually to shareholders through share repurchases, more than double the yield of broader financials and other sectors. This was driven by insurers building up significant excess capital positions in the early days of the pandemic (and was bolstered by risk transfer proceeds), and then redeploying this capital into outsized share repurchases. We expect life insurance buyback yields to moderate going forward now that these excess capital positions have largely been spent down, although capital return will remain a focus for the sector given its importance to investors.

Chart 63: Trailing 5-year Average Buyback Yields by S&P500 Sector



Source: Bloomberg, Autonomous Research

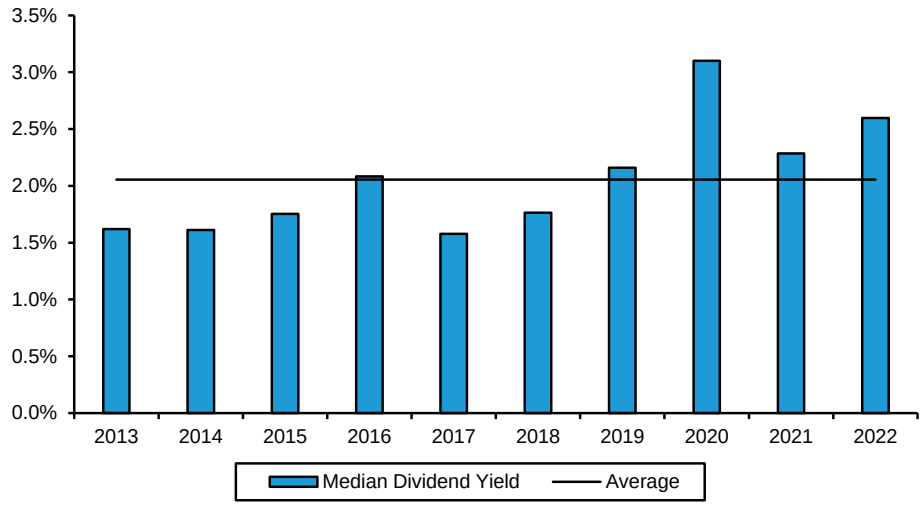
Chart 64: Trailing 5-year Average Buyback Yields by Financial Sub-Sector



Source: Bloomberg, Autonomous Research

The life sector's median common stock dividend yield has mechanically grown over time to 2% + due to stationary market caps (in part due to the volume of sector share repurchases) and increased investor desire for fixed capital return.

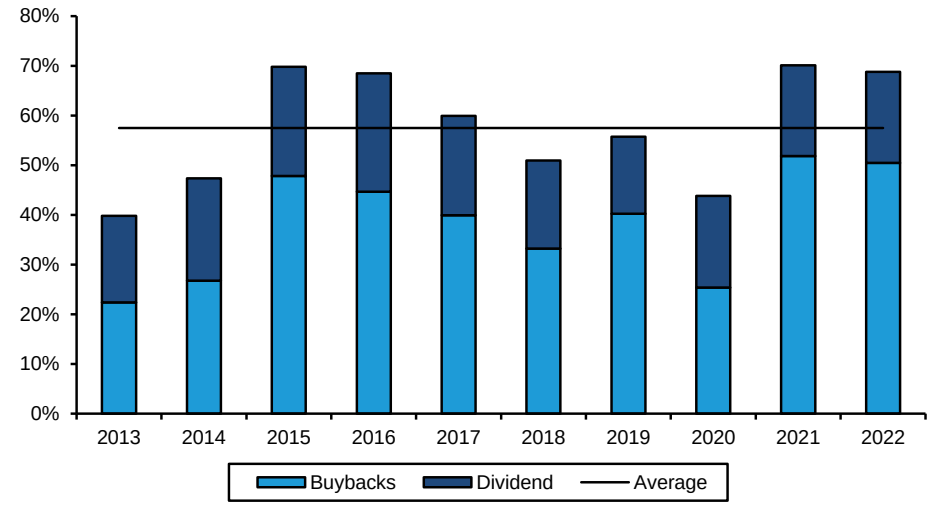
Chart 65: Median Sector Dividend Yield has Averaged 2%+



Source: Bloomberg, Company reports, Autonomous Research

Historically, the sector has had an average total payout ratio of nearly 60% of operating earnings, which seems relatively low for an industry focused on capital return. However, this closely mirrors the sector's free cash conversion ratio.

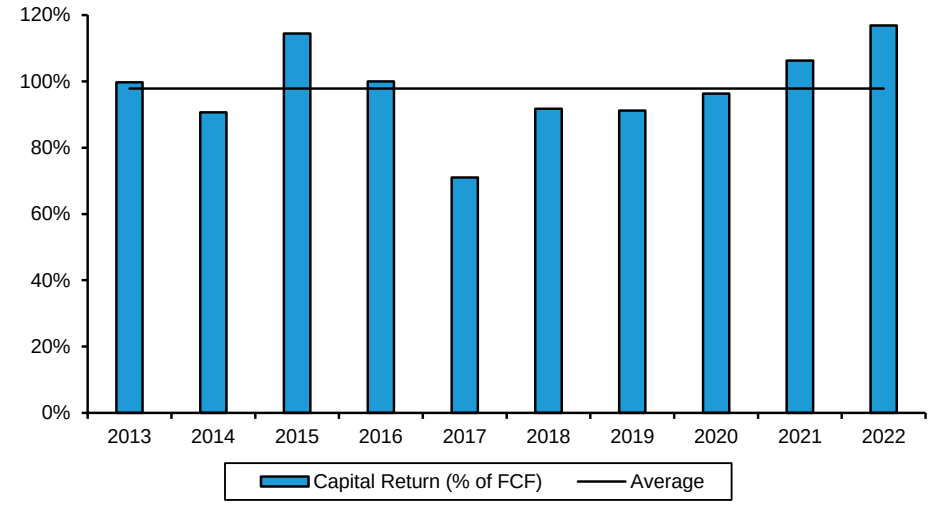
Chart 66: Life Sector has had an Average Payout Ratio of ~60%



Source: Bloomberg, Company reports, Autonomous Research

We have FCF data by company going back to 2013, and since that time the industry has returned ~98% of FCF to shareholders. While this payout ratio has been inflated by some one-off buybacks funded by asset sales, even adjusting for this the industry has essentially been returning all of the FCF it generates to investors. We expect this trend to continue and view FCF as the best predictor of future capital return.

Chart 67: Capital Return has been ~100% of FCF Over Time



Source: Company reports, Autonomous Research

Accounting 101: Key Concepts

Life insurance accounting is opaque and filled with idiosyncratic terms and concepts, so we spend the next few pages trying to distill the basics that investors need to understand.

Key GAAP Accounting Considerations

U.S. GAAP is based on accrual accounting, which means that it tries to align the timing of reported revenues and expenses with when they are incurred rather than when the cash changes hands. This can prove challenging for insurance since premiums are collected over time to pay for a potential claim which may occur well into the future. Therefore, GAAP accounting requires insurers to make significant estimates for financial reporting purposes. Below we walk through some of the key nuances for the major income statement items.

- **Premiums** are recognized in revenue when received, and this is generally matched with the associated build in reserves so that earnings emerge gradually over time. GAAP rules prohibit a day-one profit on new business, so in the event of a large single premium sale, the full amount of the premium would be recognized but offset by an equivalent increase in reserves (policy benefits expense).

- **Fee income** represents revenue generated by any fee-based charges (including fees on AUM for accumulation products or fees for services such as distribution agreements or claims management) and gets recognized as it's received. Insurers have discretion in how they charge fees on different products, so there may be differences between companies in terms of the accounting (e.g. one company may charge fees based on average daily AUM levels, while another may charge based on AUM at the beginning of the month).

- **Net investment income (NII)** reflects income generated from the insurer's investment portfolio and is typically shown net of expenses. For fixed income securities held as available for sale (the vast majority of most companies' portfolios), NII represents the interest payments received plus any accrual of principal, and there is no impact from changes in market value (which are reflected in OCI). If a bond gets called, any call premium or make-whole payment would be recorded in NII in the period it occurs. For equity securities and alternative investments, the change in market value each quarter (positive or negative) is reflected in NII. Due to lags in performance reporting for alts, most companies report private equity returns on a one-quarter lag. Insurers typically refer to the impact of bonds calls/prepays and alternative investment returns as variable investment income (VII) as it tends to be lumpy and less predictable.

Table 32: Investment Asset Classifications

Classification	Securities	Included in NII	How are gains recognized
Held to Maturity	Fixed Maturity	Interest	Typically not recognized
Available-for-sale	Fixed Maturity / Equity	Dividends + Interest	In OCI until realized
Trading	Fixed Maturity / Equity	Dividends + Interest	In Net Income
Equity Method	Alternatives	Dividends + Interest + Gains	In Operating Income

Source: Autonomous Research, CFA Institute, Company reports

- **Benefits and changes in reserves:** The benefits expense line includes paid claims, incurred-but-not-reported claims (IBNR), and changes to future claim reserves. Therefore, it does not just reflect actual claims experience during a quarter. Reserves can fluctuate based on sales/persistency, changes in assumptions, and the applied discount rate. If there are no changes in assumptions or unusual fluctuations, the build in reserves generally aligns with premium income.

- **Remeasurement gains (losses):** Under LDTI, traditional liabilities undergo quarterly net premium ratio testing to determine if there have been any changes to cash flow

assumptions. As part of this process, each block's net premiums are recalculated and used to derive an updated liability for future policy benefits (i.e. GAAP reserve). This liability is discounted to the present value using the original contract issuance discount rate and then compared to the prior period's liability. If there is a reduction in the liability q/q, this would generate a remeasurement gain, while an increase in the liability would generate a remeasurement loss. These gains and losses are included in operating earnings and help "smooth" headline claims experience in the benefits line as they reflect more real-time changes to reserves based off how actual experience is developing versus expectations. We calculate the benefits ratio as net of remeasurement gains (losses).

- **Interest credited:** Interest credited reflects the portion of NII that accrues to the policyholder based on contractual guarantees. For policies with fixed crediting rates, this will be a fixed percentage of account value, while policies with an indexed crediting rate will be credited as a percentage of index performance. Interest credited is expensed in the quarter it occurs. In the beginning of a rising rate environment, interest credited tends to increase slower than growth in NII, leading to spread expansion. However, as rates stabilize at higher levels, insurers begin paying out more to the policyholder, causing spreads to flatten out.

- **Deferred Acquisition Costs (DAC):** Insurers face significant upfront costs when a policy is sold, including paying a sales commission and underwriting expenses. Therefore, selling a new policy is often cash-flow negative in year one. GAAP accounting seeks to better align the expenses with the timing of revenues, so it allows insurers to capitalize acquisition costs and amortize them over time. Following the implementation of LDTI accounting, insurers now amortize DAC on a straight-line basis, with the amortization period specific to each type of product. Since the acquisition costs have already been paid, there is no cash impact from the change in DAC accounting.

Net income can differ significantly from operating income

Most life insurers report both net income and non-GAAP adjusted operating earnings which exclude certain items that are not part of core business results. Some of the notable items typically excluded from a company's definition of operating earnings include:

- **Realized investment gains (losses):** A realized gain/loss is triggered when an insurer either sells a security, changes its intent to hold to maturity, or takes an other-than-temporary impairment. Since these are lumpy and subject to management discretion, they can obscure core business results in any given period.

- **Changes in derivatives values:** A large portion of the derivatives used by insurers do not qualify for hedge accounting treatment, which means that they must be marked-to-market each quarter. Since most liabilities are not currently accounted for on a fair value basis, this can create timing mismatches and uneconomic noise. This item is most notable for companies with large VA books.

- **Changes in the fair value of market risk benefits:** As previously discussed, the portion of the change in FV of the MRB related to changes in own-credit risk runs through OCI while the remainder runs through net income. These changes in fair value are non-economic given this is a construct of GAAP accounting, insurers tend to run this as a below-the-line item to reduce operating income volatility.

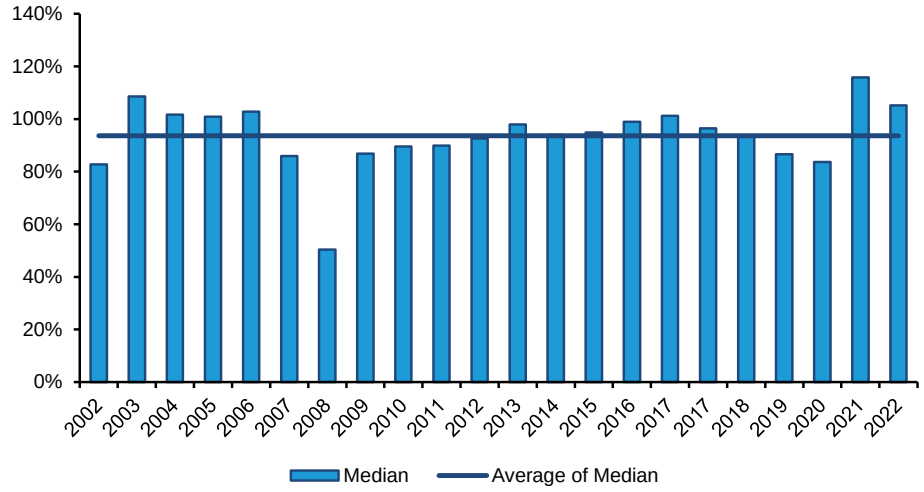
- **Restructuring and other one-time items:** Insurers often put restructuring charges below-the-line to avoid obscuring operating trends (and perhaps call less attention to them). This also may be done with separation or establishment costs that are incurred by a newly public company following an IPO or spin. Similar positive one-time items would also be excluded.

- **Discontinued operations:** The treatment of runoff blocks of business and discontinued operations is not consistent across companies, with some including them in operating earnings and others just reporting them in net income.

- **Pension expense:** Some insurers exclude their defined benefit pension costs from operating income, although this treatment also varies by company.

Ultimately, there can be wide variations in how companies define operating earnings, so it's important for investors to understand what is (and is not) included. In our view, operating earnings generally provide the best measure of performance in any given quarter, and this is what analysts forecast and evaluate companies against. However, net income is the ultimate driver of book value growth over time, so it can't be ignored. One concern about the life group is that there has historically been a gap between operating earnings and net income (of nearly 10% over time), which calls into question life insurers' quality of earnings and, in our view, contributes to low valuation multiples. However, the past two years have seen net income meaningfully outpace operating earnings.

Chart 68: Life Insurance Industry Net Income / Operating Income



Source: Company data, Autonomous Research

Different life insurance products fall into different accounting categories

For accounting purposes, life insurance products fall into two primary categories:

- **FAS 60:** Traditional products (including life insurance, fixed annuities, and other protection products) are accounted for under FAS 60. At policy issuance, all cash flow assumptions (expected mortality/morbidity, interest rates, policyholder behavior, etc.) are established. On a quarterly basis, the insurer calculates the net premium ratio for each block of business (aggregated in annual cohorts), and assumptions are updated if necessary (i.e. if there is enough credible experience to suggest that an assumption is no longer valid in supporting the previous cash flow projections). This is a significant change under LDTI accounting as previously assumptions for FAS 60 products were locked at issue for the life of a policy unless there was a loss recognition event.

- **FAS 97:** Products with market risk components (such as annuities and universal life) get accounted for under FAS 97. For these products, initial assumptions are not locked-in and can be adjusted over time as experience emerges. However, as these products are not traditional insurance products, they are not subject to net premium ratio testing, and thus assumption updates tend to occur during the annual assumption review process.

Table 33: FAS 60 vs. FAS 97 Product Breakdown

Protection		Savings	
FAS 60	**FAS 97**	**FAS 60**	**FAS 97**
Traditional Whole Life	Universal Life	Fixed Annuities	Variable Annuities
Term Life	Indexed Universal Life	Indexed Annuities	Buffered Annuities
Life Reinsurance	Variable Universal Life	Pension Risk Transfer	GICs
Group Life and AD&D		Structured Settlements	Funding Agreements
Group Disability			
Voluntary Benefits			
Long-Term Care			

Source: Autonomous Research

LDTI Accounting Changes a Net Positive for the Industry

The life insurance sector experienced the biggest change to GAAP accounting in a generation earlier this year when the FASB rolled out ASU 2018-12, or Targeted Improvements to the Accounting for Long-Duration Contracts (typically referred to as LDTI). The accounting standard became effective 1/1/23 with a retrospective adoption date of 1/1/21, requiring insurers to restate the prior two years of GAAP financials. Importantly, there was zero impact on statutory financials (P&L, reserves, and capital) or cash flow as the changes only affected GAAP accounting. LDTI made four primary changes:

- **Updating the liability discount rate:** Under prior GAAP, the discount rate used for reserving was locked in when a contract was issued and based on an assumed investment return. As a result, the liability values shown on the balance sheet did not reflect current interest rates. In addition, this created a mismatch as most of an insurer's investment assets were carried at fair value. Under LDTI, insurers are now required to update liability values each quarter using a single-A rated corporate bond yield as the proxy for a market discount rate, and changes in value run through AOCI. While this is not a perfect solution as the prescribed discount rate doesn't match most insurers' portfolio composition, we view it as an improvement that makes total book value a more meaningful number for life insurers.

- **Reserves for traditional products:** Under prior GAAP, traditional product reserve assumptions were "locked-in" at contract issuance and only unlocked if a block fell into "loss recognition" (expected premiums are below expected claims). In addition, cash flow testing was done on an aggregate basis across all product vintages. Under LDTI, all reserve assumptions are unlocked and can be updated quarterly, with changes affecting both current period results and the go-forward net premium ratio (net premiums required to pay claims / gross premiums). In addition, each policy vintage (issue year cohort) gets tested individually. If a block has a net premium ratio of 100% or more, any deviation in actual vs. expected claims experience gets reported immediately. For healthy blocks with a net premium ratio of <100%, deviations get amortized into earnings over the life of the block, smoothing results. In our view, the new accounting is an improvement as it forces companies to recognize deviations from original assumptions much earlier and provides more transparency on the health of their block. We also think the smoothing of results makes sense, but LDTI can create some funky impacts for insurers that have a chunk of blocks with net premium ratios of >100%.

- **Market risk benefits:** For policies with guaranteed contracts that have exposure to market risks (interest rates and/or equities), LDTI introduced the concept of market risk benefits. This can either be an asset or liability and reflects the aggregate amount policyholders would receive in addition to the account value balance upon the occurrence of a specific event, such as death, annuitization, or periodic withdrawal. The portion of the change in MRB fair value related to updates to own credit risk runs through AOCI, while the remainder flows through retained earnings. Under LDTI, all annuity guarantee liabilities are carried

at fair value (previously, only VA GMWBs had been accounted for under fair value, with the remainder under SOP-03 insurance accounting), which eliminates a confusing source of inconsistency.

- **DAC amortization:** Under LDTI, DAC gets amortized on a straight-line basis (based on the expected term of the contract) rather than as a percentage of premiums or expected gross profits. In addition, LDTI eliminated DAC recovery tests and the concept of "shadow DAC". Overall, this makes financial reporting simpler and eliminates a historical source of significant earnings volatility, which we view as a positive for the industry.

While it's still early days, we're hopeful that the LDTI accounting changes will improve transparency and comparability of results. Below we summarize the impact of adopting LDTI on insurers' book value and go-forward GAAP earnings.

Table 34: Summary of LDTI Impacts by Company

	YE22 BV (Old)	YE22 BV (LDTI)	Book Value (% change)	YE22 BV ex. AOCI (Old)	YE22 BV ex. AOCI (LDTI)	BV ex. AOCI (% change)	Earnings Impact
AEL	$29.11	$19.45	-33%	$54.52	$37.05	-32%	Significant positive (>15%)
AFL	$36.35	$32.73	-10%	$43.51	$43.18	-1%	Small positive
AMP	$33.42	$35.18	5%	$54.90	$57.10	4%	Neutral
BHF	$55.11	$56.15	2%	$142.04	$145.58	2%	Neutral
CNO	$12.25	$15.47	26%	$27.22	$29.25	7%	Significant positive (+8-10%)
CRBG	$14.18	$14.54	3%	$33.10	$40.69	23%	Neutral to modest positive
EQH	$0.26	$26.37	10042%	$24.46	$23.21	-5%	Modest negative (-5%)
GL	$49.65	$40.05	-19%	$64.00	$68.35	7%	Significant positive (+15%)
JXN	$97.97	$100.56	3%	$137.23	$115.35	-16%	Neutral to modest negative
LNC	$24.24	$24.33	0%	$69.56	$65.72	-6%	Neutral
MET	$29.81	$33.45	12%	$56.34	$54.30	-4%	Neutral
PFG	$41.07	$40.97	0%	$52.27	$57.37	10%	Modest negative (-4%)
PRU	$97.27	$82.48	-15%	$99.22	$94.69	-5%	Neutral
RGA	$62.16	$106.20	71%	$146.22	$134.25	-8%	Modest positive
UNM	$46.51	$44.17	-5%	$60.45	$61.61	2%	Significant positive (+6-8%)
VOYA	$38.63	$59.59	54%	$41.19	$59.59	45%	Neutral

Source: Company reports, Autonomous Research

GAAP vs. Statutory Accounting

While investors primarily focus on GAAP accounting, life insurers also file statutory financial statements on a quarterly basis, and it is important to understand the key differences. Statutory accounting principles (SAP) were developed by state insurance regulators whose primary concern is companies having enough money to pay claims, even under extreme scenarios. Consequently, SAP is closer to cash accounting and typically more conservative than GAAP. As discussed earlier, statutory earnings and capital are the primary drivers of annual subsidiary dividend capacity and holding company cash flow.

Some of the key differences between GAAP and SAP include the treatment of:

- **Policy acquisition costs:** Acquisition costs (primarily commissions) are immediately expensed in stat accounting versus typically being capitalized under GAAP (and amortized into earnings over time). This has the effect of reducing stat earnings during periods of growing sales, which also lowers ordinary dividend capacity.

- **Reserves:** Statutory reserves are calculated in accordance with guidelines established by the Actuarial Standards Board. Therefore, reserves tend to be more prescriptive, and companies have limited ability to adjust assumptions. On the other hand, GAAP reserves represent a best estimate of future costs, providing more latitude in setting assumptions. As a result, statutory reserves tend to be more conservative for most products. This results

in lower statutory earnings in the early years of a policy's life and higher earnings in later years.

- **Invested assets:** Under stat, investment grade bonds are held at amortized cost, and all non-investment grade bonds are held at the lower of amortized cost or market value. Therefore, the full amount of an impairment or realized gain (loss) on the sale of a security affects stat surplus. Under GAAP, assets are typically carried at market value (unless designated as held-to-maturity).
- **Non-admitted assets:** Certain non-liquid assets (e.g. receivables > 90 days past due, loans, and portions of deferred tax assets and goodwill) are not included when calculating an insurer's surplus under statutory accounting.

Insurance Regulation

Insurance is a highly regulated industry with oversight from many different bodies charged with evaluating solvency, market conduct, consumer protection, and financial reporting. The US is somewhat unique in that primary regulatory responsibility resides at the state level, and most insurers have no Federal regulator. In addition, regulation is done on a bottom-up basis, with each individual insurance entity having capital and solvency requirements (rather than a top-down approach focused on the holding company). While this diffuse structure is relatively inefficient, it has generally done a good job limiting solvency problems across the industry, although the financial crisis exposed some gaps. Currently there is no global capital standard for insurers, and while there are efforts to develop one, we don't see this being a binding constraint for US insurers in the foreseeable future and expect regulation to remain predominantly local.

The State Regulatory System

Each state in the U.S. has its own insurance department which is charged with overseeing the solvency of insurance companies domiciled in the state, approving product and rate filings, and monitoring market practices. The states are typically guided by the insurance laws developed by the National Association of Insurance Commissioners (NAIC), which is comprised of the chief regulators from each state and tries to encourage greater uniformity in regulation. However, states have flexibility to adopt their own approach. Model legislation is developed at the sub-committee level, and industry participants can submit comment letters during exposure draft periods. Regulators vote to adopt proposed legislation throughout the year, with final amendments confirmed at the NAIC's summer and fall conventions, typically with effective dates for the current calendar year-end.

Table 35: Primary State Insurance Regulatory Functions

Financial Regulation - Solvency	Market Regulation - Fairness
Capital Standards	Rate and Form Regulations
Reserve Requirements	Market Conduct
Investment Restrictions	Monitoring Competition
Financial Reporting	Residual Market Administration
Intervention & Guaranty Funds	Consumer Protection

Source: NAIC, Autonomous Research

Solvency supervision

State regulators' primary focus is protecting policyholders against insolvency risk. To do this, regulators employ a broad range of tools and techniques, including:

- **Capital standards:** Regulators require insurers to meet certain financial standards and limit their financial risk. All states have fixed minimum capital and surplus requirements (ranging from $500,000 to $6,000,000), as well as risk-based capital (RBC) requirements. As discussed earlier, regulators begin taking action if a company's RBC ratio dips below 200% and can seize the company if the RBC falls below 100%.

- **Other financial requirements:** Regulators require insurers to maintain minimum statutory reserves levels and can prohibit dividends from being paid to the parent if certain thresholds aren't maintained. The regulator can also place restrictions on the types of investments an insurer can buy, and the RBC formula pushes insurers toward less risky securities by applying progressively higher capital charges as credit risk increases.

- **Solvency monitoring:** Insurers are required to file standardized annual and quarterly financial reports containing both qualitative and quantitative information that regulators

(and investors) use to assess an insurer's risk and financial condition. Regulators also conduct on- and off-site examinations to monitor solvency on an ongoing basis.

- **Intervention and guaranty funds:** If an insurer encounters financial difficulty, regulators will intervene and attempt to resolve problems through informal action. If this does not remedy the situation, regulators can place an insurer into formal receivership and either rehabilitate, sell, or liquidate it. In the event an insurer fails, states establish "guaranty associations" which cover its policy obligations (up to a limit). The guaranty funds are funded by assessments against other insurers operating in the state.

Market regulation

The fundamental objective of market regulation is to provide fair and functioning insurance markets in each state. Some of the key focus areas include:

- **Rate and policy form regulation:** Insurers are required to file proposed policy forms with each state and need approval before sales can commence. Regulators also must approve the pricing structure for certain products (notably auto insurance and health products), although this isn't the case for most life insurance and annuity products. Pricing for most life products is fixed at the time of sale, but for long-term care insurance (which is viewed as a form of health insurance), insurers can apply to regulators for actuarially-justified rate increases.

- **Market practices and consumer protection:** Regulators respond to customer complaints, conduct market analysis, and perform market-conduct examinations to monitor insurers' behavior. Some forms of abuse that regulators are particularly focused on include aggressive sales practices, inadequate monitoring and record-keeping, or improper claims denials. Regulators can issue fines or, in extreme cases, suspend or revoke an insurer's license if they uncover violations.

- **Producer licensing & monitoring:** Regulators require anyone selling insurance in a state to be licensed and meet certain minimum requirements. Regulators also monitor producer marketing procedures, including advertisements and policy illustrations. This may be done in conjunction with a handful of federal agencies (including the CFPB, SEC, and Department of Labor).

NAIC regulatory priorities

Like all regulatory bodies, the NAIC is consistently evolving its model legislation to stay current with industry dynamics. Some of the notable items on the regulatory docket include:

- **Alternative asset manager backed life insurers:** As the number of insurance platforms backed by alternative asset managers has expanded, regulators have taken notice and begun doing work to better understand these platforms' risk profiles and how they may differ from traditional life insurers. At this time, there isn't any formal regulatory proposal, and it's not clear if something will develop. In our view, it's not fair to lump all alts-backed insurers together given often vast differences in business models. We believe the key focus for regulators should be making sure that all companies have the necessary insurance and risk management acumen to be successful and not pose a threat to the industry (regardless of who the owner is).

- **Structured securities:** Structured securities account for ~15% of life insurers' investment portfolio, and the NAIC is examining whether the current credit risk factors are appropriate for the asset class. Structured securities are currently lumped together with other fixed maturities for C-1 factors, with a AA-rated tranche of a CLO, for example, receiving the same risk factor as a AA-rated public corporate bond. The NAIC's exploratory work has been done under the belief that risk-tranching via securitization puts additional risk on the insurer's balance sheet that is not appropriately captured by the current C-1 charge, and

that applying corporate credit default experience to these securities is inappropriate. There is also some concern that securitized credit is improperly rated by certain NRSO agencies. To date, the only approved change has been to apply higher charges to residual equity tranches of certain structured securities, but the regulators continue to look at potential changes for CLOs and other securities.

- **Pension risk transfer:** The corporate pension risk transfer market has exploded in recent years as funding levels have improved, and there has been a swath of new entrants to the market. This has drawn concern from the NAIC and several U.S. Senators who worry that as the pension risk transfer marketplace grows, lower-rated counter-parties could endanger retiree's financial security if they take excess investment risk. At this point, the regulatory review is in the very early stages and is primarily focused on examining the industry, the primary participants, investment risk trends, and changing market dynamics.

The Role of the Federal Government

The state regulatory system has generally done a good job limiting solvency problems across the industry. However, a shortcoming of the system is that no one is responsible for regulating an insurer's holding company or monitoring its non-insurance activities. This became an issue during the financial crisis as several insurers, most prominently AIG, nearly went bankrupt and required government support. As a result, the Federal government began taking a more active role in insurance and established the Federal Insurance Office (FIO) in 2010. The FIO was charged with recommending reforms to the U.S. insurance regulatory system as well as representing the US in international negotiations on insurance regulatory matters. In addition, the Federal Reserve became a direct regulator for insurers that owned banks or thrifts or which were deemed systemically important (initially AIG, MetLife, and Prudential). However, since 2016, the push toward broader federal regulation of insurance has notably slowed. AIG, Met, and Pru have each been de-designated as SIFIs, and while the FIO has expressed support for group-wide oversight and the NAIC has moved to incorporate elements of group supervision into its existing model, there has been little substantive change to date.

International Regulation & Supervision

The financial crisis also prompted international supervisors to begin developing global capital standards for large insurance groups with operations in numerous regulatory jurisdictions. Specifically, the International Association of Insurance Supervisors (IAIS) has been developing a framework for the group-wide supervision of internationally active insurance groups (IAIGs) since 2010. While they initially identified nine companies as global systemically important insurers (Aegon, Allianz, AIG, AXA, Aviva, MetLife, Ping-An, Prudential Financial, and Prudential Plc), the IAIS has shifted its focus from individual companies to the systemic risk that may arise from insurers' collective activities and exposures sector wide. Any framework created by the IAIS would only be binding to a US company if enforced by its local prudential regulator, and with the US largely preferring to take its own approach, we do not see international capital standards being a binding constraint in the foreseeable future.

International insurance regimes

Beyond the U.S. statutory capital regime, there are several other international capital regimes that play important roles in how U.S. life insurers manage their capital adequacy. We provide detail on the main three below.

- **Japan FSA:** Any insurance company operating in Japan is regulated by the FSA, which enforces capital and solvency requirements and can approve or deny dividend payments. The FSA's primary capital measure is the solvency margin ratio (SMR), which reflects both insurance and investment risk. FSA accounting, which drives dividend capacity, tends to be much more conservative than U.S. GAAP and has slower profit emergence. The

FSA expects to transition to a new economic solvency ratio (ESR), which uses a fair value approach more akin to Solvency II, beginning with the 2025 fiscal year. While U.S. insurers operating in Japan do not seem that concerned about the pending transition, we expect it will have some implications for product design and capital management, so we'll be watching for more details as the effective date approaches.

- **Solvency II:** Solvency II is a fair-value based capital framework that covers insurers domiciled in the European Union and in other countries that have opted for Solvency II equivalency (such as Mexico). Given the capital and risk charges applied, it can be punitive for long-dated policies with significant interest rate or longevity exposure. Most US insurers have minimal exposure to Solvency II, but it serves as the basis for much of the international discussion on global capital regimes.

- **BMA rules in Bermuda:** Bermuda is a popular offshore jurisdiction for life insurers as it offers a more capital efficient framework for many activities than the U.S. and has Solvency II equivalency. The primary capital framework (BSCR) is similar to U.S. RBC in that it is also a covariance-based calculation that applies various factors to different asset classes and types of risk. However, the BSCR uses a more economic-oriented model which can result in lower required reserves versus U.S. statutory accounting, and the capital requirements may be different, particularly for the investment portfolio. As a result, we've seen a number of insurers reinsure asset-intensive business (particularly fixed and indexed annuities) to Bermuda. Following 2018 tax reform, few life insurers use Bermuda for tax purposes as most companies elect to be full U.S. taxpayers. However, there still can be tax benefits for individual investors participating in sidecar (co-investment) vehicles, which is why many companies set these up in Bermuda.

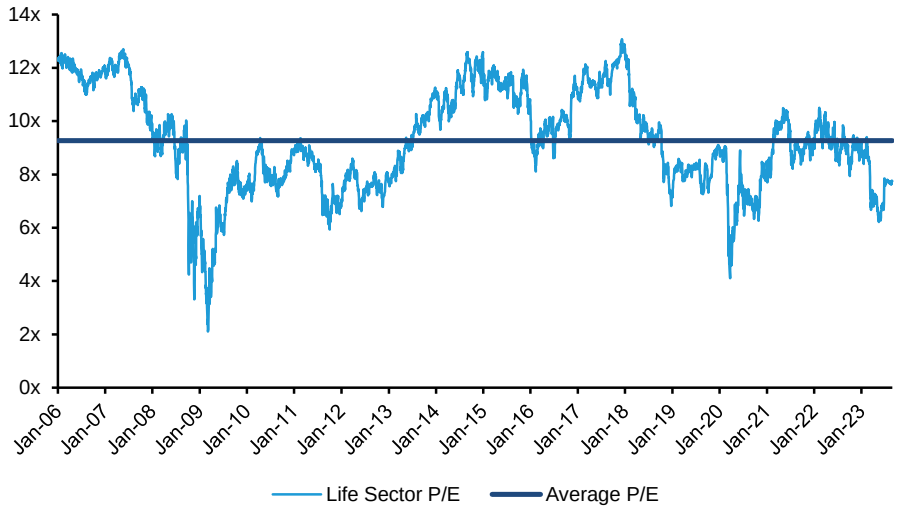
Valuing Life Insurers

Life insurance companies traditionally were valued on a price-to-book value basis, but as business mixes have shifted toward accumulation and asset management products, investors have increasingly focused on price-to-earnings multiples. In addition, alternative metrics such as price-to-free-cash-flow (or FCF yield) have gained prominence given the focus on capital return and distrust of GAAP operating earnings. We examine each of these metrics in more detail and put life insurers' historical valuations in context relative to other financials and the broader market.

Price to Earnings has Become the Sector's Primary Valuation Metric

In making historical comparisons, we focus on the period from 2005-present since there was a relatively small universe of public companies prior to that point, and valuations were skewed by the wave of de-mutualizations that occurred in the early 2000s. Since 2005, the median industry P/E has been ~9x forward EPS, with valuations peaking at ~12x prior to the financial crisis and during the post-2016 election rally. Valuations troughed at <5x in early 2009 and March 2020.

Chart 69: Life Sector Historical P/E

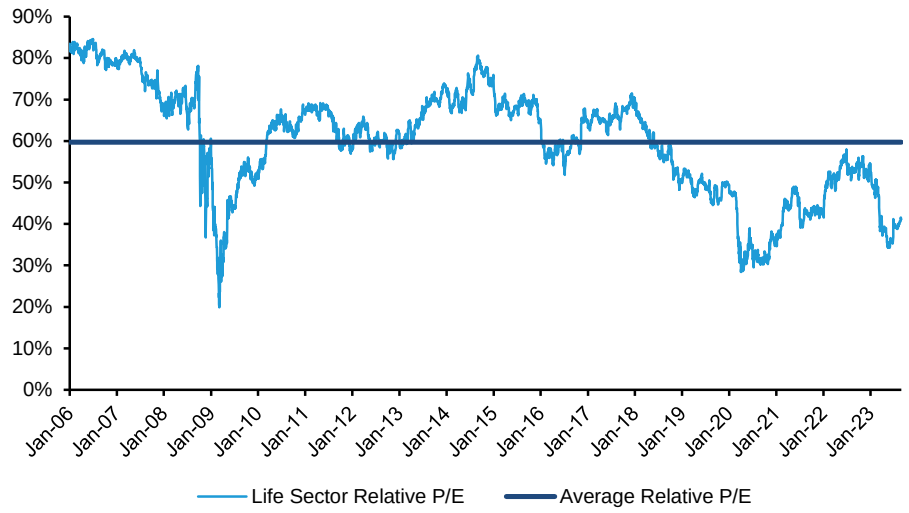


As of 8/28/23.
Source: Bloomberg, Autonomous Research

Life's valuation discount versus the broader market has been increasing

Relative to the S&P500, the sector has traded at a ~40% average discount, and this has become wider in recent years. We attribute this discount to several factors, including: 1) the historic gap between net income and operating earnings, 2) life insurers' relatively low cash earnings as a percentage of operating earnings compared to other sectors, 3) the black box nature of many life companies, and 4) the sector's high market sensitivity.

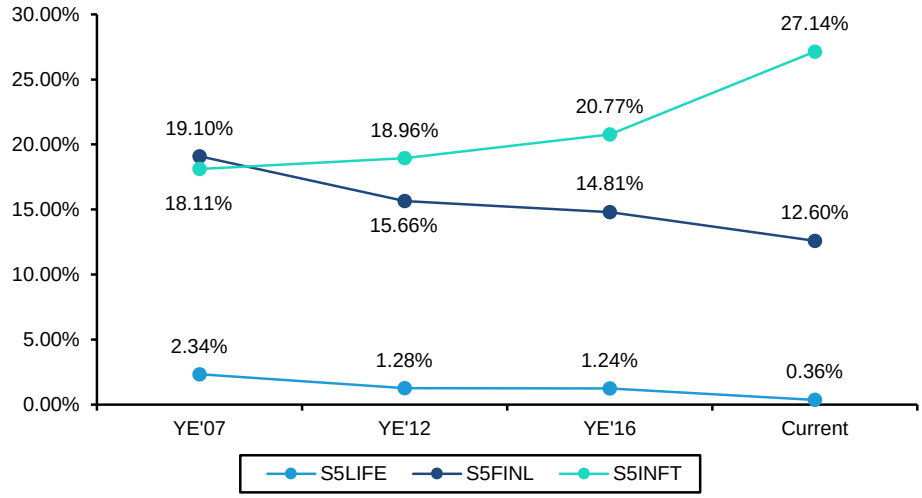
Chart 70: Life Sector P/E Relative to the S&P 500



As of 8/28/23
Source: Bloomberg, Autonomous Research

In addition, the changing constitution of the S&P 500, with declining allocations to financials and increased weighting to tech, has likely played a role in the recent relative de-rating of the Life sector.

Chart 71: The S&P 500 Weighting to Financials has been Declining

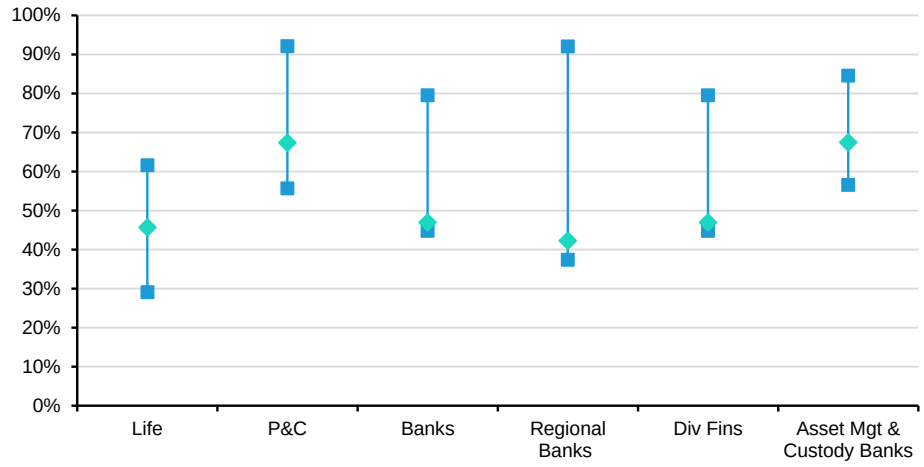


As of 8/22/23
Source: Bloomberg, Autonomous Research

Life's valuation versus other financials

We also look at life insurers' valuations relative to other financials. Life stocks have historically been among the cheapest stocks in the sector, which we attribute to many of the same factors noted above. In the current environment, life is trading near the midpoint of its trailing 5-yr P/E range, but this puts it roughly in-line with banks, which have de-rated as a result of concerns about rates, credit, and regulation.

Chart 72: Financials Subsectors NTM P/E Ratio as % of S&P500 NTM P/E

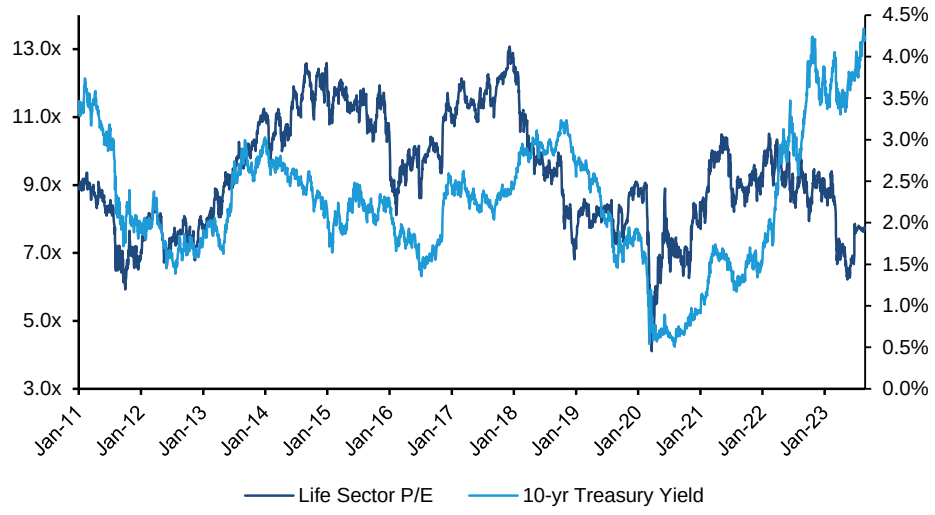


As of 8/29/23
Source: Bloomberg, Autonomous Research

The sector's valuation has historically been correlated with interest rates

Over the past 10+ years, the life sector's P/E multiple was highly correlated to the 10-year treasury yield, and the rise in rates during 2022 helped drive a positive re-rating for the sector. However, while rates have continued to move higher in 2023, the sector's P/E multiple has gone in the opposite direction. We attribute this primarily to concerns about credit and commercial real estate exposure, particularly following the regional bank crisis in March/ April (we have also seen the correlation break down in other periods of credit fear, such as 2015/16 and 4Q18). In addition, the market appears to be assuming that rates are reaching a peak and a likely to move lower in the future. While there is clearly macro uncertainty, if rates remain above 3%, current Life P/E multiples look quite depressed.

Chart 73: Life Sector P/E vs. 10-yr Treasury Yield



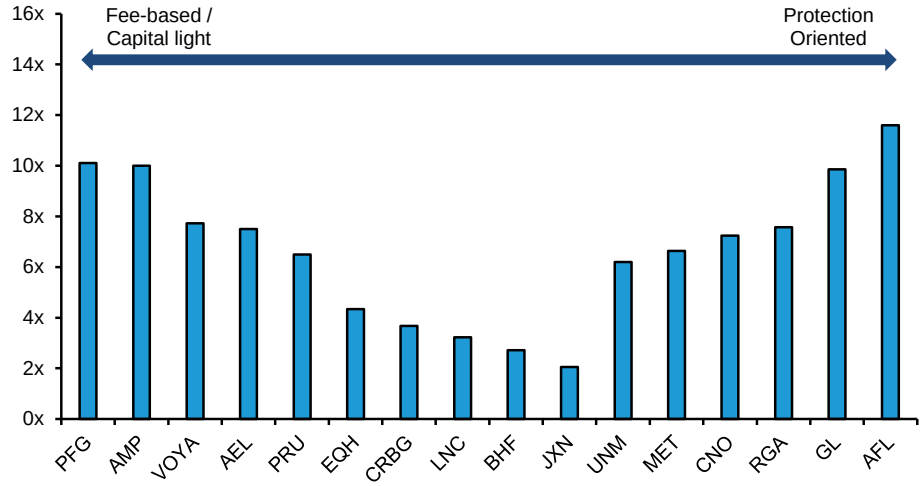
As of 8/28/23.
Source: Bloomberg, Autonomous Research

Wide range of P/E valuations at a company level

While we have so far focused on the median P/E multiple for the sector, in reality there are only a handful of companies trading around that level. Instead, there is a wide range of valuations,

with a group of companies trading at >10x and another bunch trading at <5x. As shown in Chart 74, two types of companies have been able to garner higher valuations: 1) insurers with capital-light, fee-based businesses; and 2) insurers primarily focused on basic protection products which generate consistent earnings and cash flow. By contrast, companies with macro-sensitive U.S. life and annuity businesses currently receive little love from the market. We had expected higher interest rates to help narrow this gap, but so far that hasn't been the case.

Chart 74: Life P/E by Company

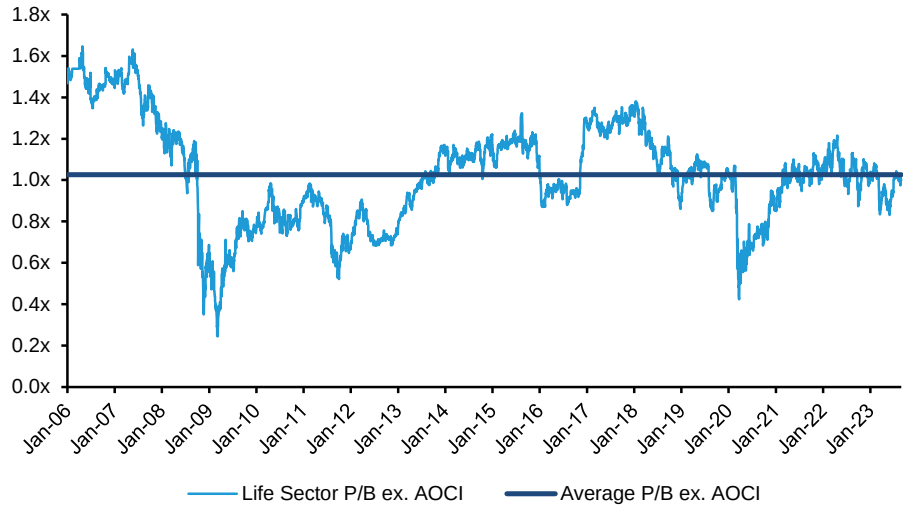


As of 8/29/23
Source: Bloomberg, Autonomous Research

Price-to-Book Value has Become Less Meaningful

Historically, investors predominantly valued insurers using price-to-book value since they have "real" assets and liabilities with quantifiable value. For life insurers, we focus on book value excluding AOCI for a couple of reasons. The largest component of AOCI is usually unrealized gains or losses in the insurer's investment portfolio. Since life companies are predominantly buy-and-hold investors, we believe these should be largely ignored, especially if driven by changes in interest rates. Additionally, while LDTI improves the utility of book value as traditional liabilities are now marked-to-market, the discount rate used does not match an insurer's actual investment portfolio. Since 2005, the life sector has traded at an average P/BV multiple (ex. AOCI) of 1.0x and a range of 0.3x-1.7x. The trough came during the financial crisis and the peak came pre-crisis (when companies were holding less capital and had under-appreciated risks), and, in our view, both should be considered outside the range of normal expectations. We project a median sector ROE of 10-12% across a market cycle and assume an average cost of equity of 10%. In our view, this warrants a normal trading range for the group of 0.8x-1.2x book value (ex. AOCI), with current median valuations at the lower end of this range.

Chart 75: Life Sector Historical P/B ex. AOCI

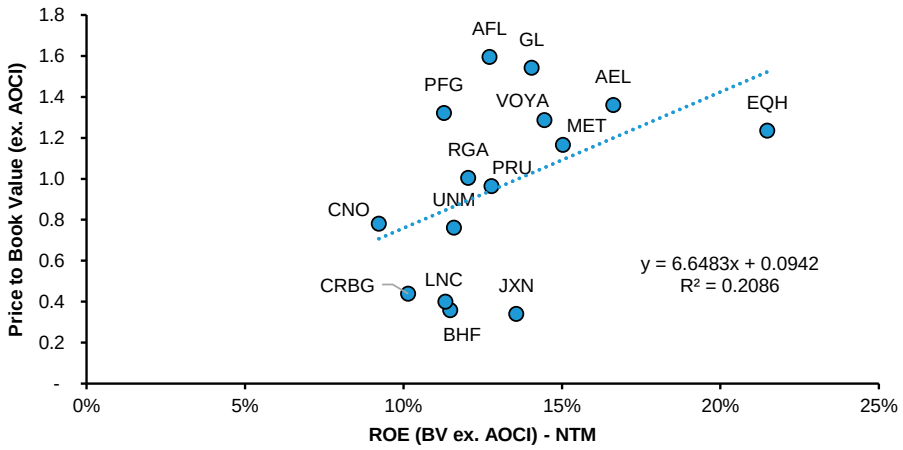


As of 8/28/23.
Source: Bloomberg, Autonomous Research

As business models have changed, P/BV has become less relevant

Over the past 10-15 years, several life insurers have taken steps to shift their business mix toward capital-light and/or fee-based products. In our view, products such as asset management or defined contribution retirement make little sense to evaluate on a P/BV basis given their low capital requirements. In addition, the accounting for many variable annuity products creates significant volatility in book value, which we believe makes P/BV irrelevant for several insurers. In our view, using P/BV only makes sense for insurers that focus predominantly on traditional protection or spread-based businesses, which in our coverage includes AEL, Aflac, Globe Life, MetLife, RGA, and Unum. Chart 76 shows a regression of P/BV (ex. AOCI) versus ROE for our coverage. Historically this would have shown high correlation, but the R^2 has declined as companies like Principal and Voya have de-emphasized insurance, insurers with large VA businesses like Brighthouse and Jackson have come public, and the most defensive names (Aflac and Globe) have seen relative valuations expand. As a result, we no longer view this as a useful way to compare valuations across the sector.

Chart 76: P/BV ex. AOCI vs. NTM ROEs



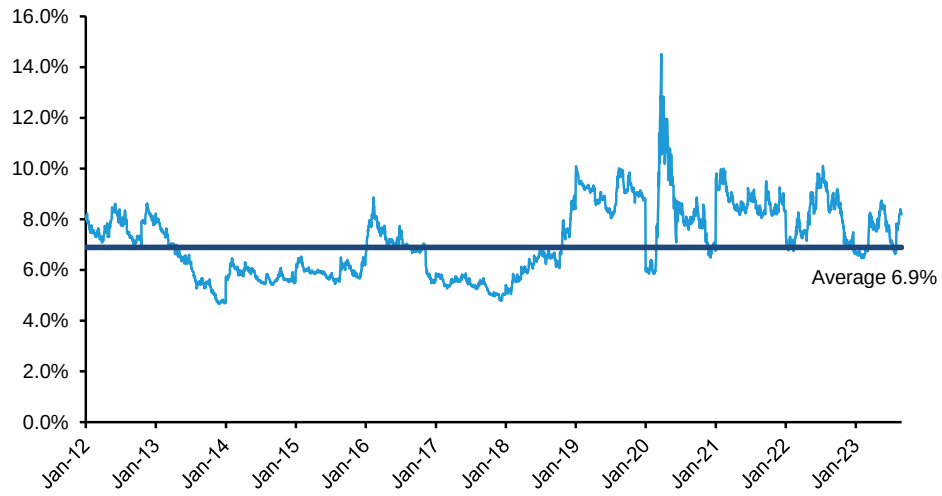
As of 8/29/23
Source: Bloomberg, Autonomous Research

Cash Flow Metrics Continue to Gain Prominence

Given the flaws and limitations of P/E and P/BV valuations for life insurers, investors have increasingly begun to value companies on a cash flow basis. This is especially true for insurers with large variable annuity businesses or run-off blocks (such as Brighthouse and Jackson), but we've also seen FCF yield and P/FCF become the basis of valuation for more traditional insurers (notably Lincoln). As discussed earlier, free cash flow represents unencumbered capital which is available to fund returns to shareholders via dividends and buybacks. With capital return being a key source of value for life stocks, it makes sense that companies with higher FCF generation garner higher valuations. Free cash flow yield (and, inversely, price to FCF) have become the primary metrics used by investors, and we expect them to continue becoming more prominent.

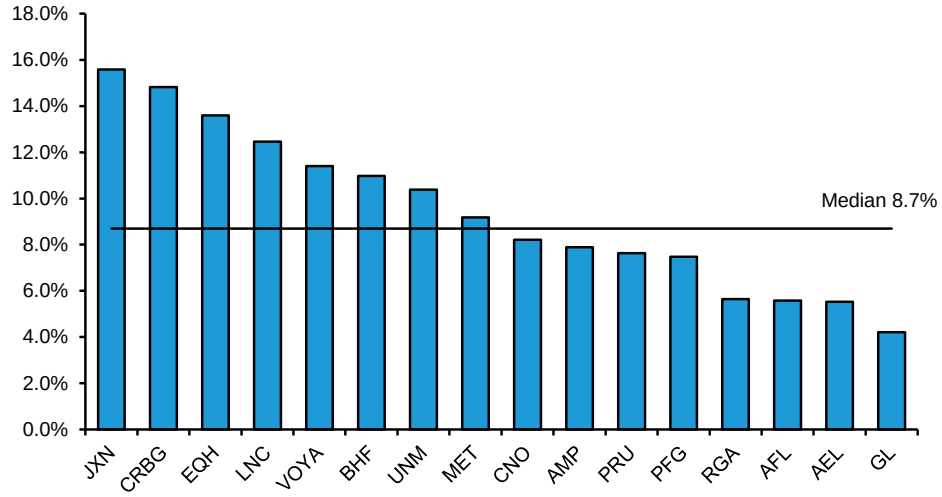
The median FCF yield for the U.S. life sector is currently ~9%. Outside the March-October period of 2020 (peak pandemic uncertainty), the life sector has consistently traded with a median FCF yield in the 6-9% range. This range has shifted modestly higher in recent years, which we note is due in part to Brighthouse, Corebridge, Equitable, and Jackson coming public as each trades at an above-average FCF yield.

Chart 77: Sector Median FCF Yield



As of 8/29/23
Source: Bloomberg, Company reports, Autonomous Research

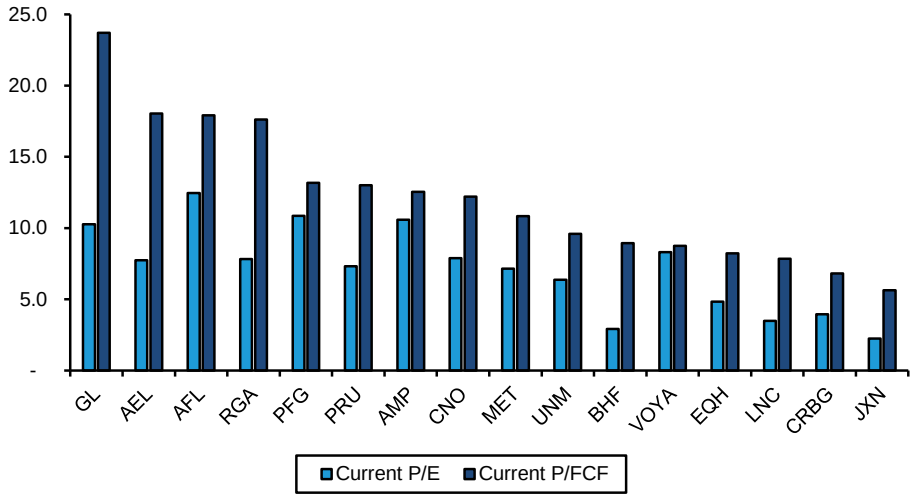
Chart 78: Current FCF Yields (2024E)



As of 8./2923.
Source: Bloomberg, Company reports, Autonomous Research

The median P/FCF multiple is ~14x, which compares to a median P/E of ~8x on NTM EPS and the S&P 500 P/E of ~19x. Therefore, on a cash basis, the sector trades at substantially less of a discount to the broader market than it does on a P/E basis.

Chart 79: Life Insurers Typically Trade at a P/FCF Premium Relative to P/E



As of 8/29/23.
Source: Bloobmerg, Autonomous Research

Limitations of FCF valuation analysis

In our view, the big drawback to focusing on current FCF is that it undervalues the long duration of cash flows for capital-intensive product lines like individual life and annuities. While these products consume capital in their early years, they will produce significant cash flow over time. Arguably, investors should pay a higher FCF multiple for these products given the long-duration, locked-in cash flows. We see this for companies like Aflac and Globe where investors have a high degree of confidence in future earnings and cash flow. However, this is not the case for companies like Lincoln, Brighthouse, or Jackson where there is more skepticism about future cash flows. We expect investors to continue requiring a high yield on products with long-term guarantees and above-average capital markets exposure.

AUTONOMOUS TICKER TABLE

Ticker	Rating		29 Aug 2023 Closing Price	Price Target		Reported EPS 2022A	Reported EPS 2023E	Reported EPS 2024E	Reported P/E (x) 2022A	Reported P/E (x) 2023E	Reported P/E (x) 2024E
AFL US	N	USD	74.66	80.00	USD	5.67	6.04	6.40	13.2	12.4	11.7
AEL US	N	USD	53.76	55.00	USD	4.27	6.70	7.15	12.6	8.0	7.5
AIG US	OP	USD	58.35	75.00	USD	5.12	6.87	7.55	11.4	8.5	7.7
AMP US	OP	USD	340.43	370.00	USD	25.38	30.33	33.40	13.4	11.2	10.2
BHF US	N	USD	49.47	53.00	USD	16.10	15.45	17.65	3.1	3.2	2.8
CNO US	N	USD	23.35	26.00	USD	3.06	2.65	3.20	7.6	8.8	7.3
CRBG US	OP	USD	17.75	24.00	USD	3.66	4.15	4.80	5.1	4.2	3.7
GL US	N	USD	111.74	120.00	USD	9.71	10.49	11.30	11.5	10.6	9.9
JXN US	UP	USD	39.43	33.00	USD	16.44	14.40	16.55	2.4	2.7	2.4
LNC US	UP	USD	25.98	27.00	USD	(6.90)	7.40	7.90	(3.8)	3.5	3.3
MET US	OP	USD	62.85	75.00	USD	7.16	7.76	9.40	8.8	8.1	6.7
PFG US	UP	USD	77.55	76.00	USD	6.34	6.50	7.55	12.2	11.9	10.3
PRU US	UP	USD	94.43	95.00	USD	10.31	12.05	13.45	9.2	7.8	7.0
RGA US	OP	USD	139.63	175.00	USD	13.70	18.53	18.50	10.2	7.5	7.5
UNM US	OP	USD	49.44	60.00	USD	6.75	7.75	7.90	7.3	6.4	6.3
VOYA US	OP	USD	71.39	85.00	USD	7.32	8.00	9.15	9.8	8.9	7.8
S5LIFE			446.25			--	--	--	--	--	--
S5INSU			--			--	--	--	--	--	--
SPF			572.28			--	--	--	--	--	--

OP - Outperform, N - Neutral, UP - Underperform, NR - Not Rated, CS - Coverage Suspended

CRBG US valuation is Adjusted P/E (x);

Source: Bloomberg, Autonomous estimates and analysis.

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