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# Investor Testing Report on Registered Index-Linked Annuities


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On December 29, 2022, Congress enacted the Consolidated Appropriations Act, 2023 (Appropriations Act).[1] In the Appropriations Act, Congress indicated that "the Commission shall prepare and finalize, new or amended rules, as appropriate, to establish a new form . . . on which an issuer of a registered index-linked annuity may register that registered index-linked annuity, subject to conditions the Commission determines appropriate . . . with respect to the registered index-linked annuity."[2] In addition, Congress indicated that, in designing the form, "the Commission shall . . . engage in investor testing; and incorporate the results of the testing required . . . in the design of the form, with the goal of ensuring that key information is conveyed in terms that a purchaser is able to understand."[3] The investor testing discussed in this report was conducted in response to the Appropriations Act.

DISCLAIMER: The report was prepared by staff of the Office of the Investor Advocate at the U.S. Securities and Exchange Commission (SEC) but does not necessarily reflect the views of the Commission, the Commissioners, or other members of the staff. The results of simulation analysis contained in this report should not be construed to predict future performance of any registered index-linked annuities (RILA) product or promote any RILA.

[1] *See* U.S. House of Representatives, Consolidated Appropriations Act, H.R. 2617, Pub. Law No: 117-328 (Dec. 29, 2022), *available at* https://www.congress.gov/bill/117th-congress/house-bill/2617.
[2] *See id.*
[3] *See id.*

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# 1. Introduction and Executive Summary

Registered index-linked annuity (RILAs) are retirement investment products geared towards retail investors that have at times been suggested to offer higher growth potential than fixed-income instruments, combined with a degree of risk protection. Entering into a RILA agreement means that a retirement-oriented retail investor will have an annuity contract with an insurance company. Investors generally purchase RILA products through a financial professional. Despite the retail-focus, RILAs are arguably complex products that may be difficult for a retail investor to evaluate or understand and that typically require investors to make complex ongoing financial decisions, thereby raising interest in investor protection concerns. The benefits of investments in RILAs depend on exactly how these contracts are constructed and used, with investors having to choose (among other things): an insurance provider, the underlying linked index, the insurance features that may limit some risks and potential upsides, and the "investment term" – the period over which investment returns are calculated. These factors significantly affect the degree to which a RILA product may be an appropriate investment for a particular retail investor. RILAs typically have implicit fees and can also be associated with significant charges and penalties, including those assessed for withdrawals from the contract, withdrawals that occur in the middle of an investment term, and withdrawals before age 59½ (due to tax penalties).

In 2022, Congress directed the U.S. Securities and Exchange Commission (SEC) to "establish a new form . . . [to] register[] index-linked annuity" products.[1] Congress mandated that the form must be designed "in a manner to ensure that a purchaser using the form receives the information necessary to make knowledgeable decisions, taking into account (1) the availability of information; (2) the knowledge and sophistication of that class of purchasers; (3) the complexity of the RILA; and (4) any other factor the Commission determines appropriate."[2] Furthermore, "the Commission shall . . . engage in investor testing; and incorporate the results of the testing required . . . in the design of the form, with the goal of ensuring that key information is conveyed in terms that a purchaser is able to understand."[3] These activities were to be completed so that "not later than 18 months after the date of enactment of [the] Act, the Commission shall prepare and finalize[] new or amended rules, as appropriate . . ."[4]

This report presents the results of the research that fulfills the 2022 Congressional directive to "engage in investor testing." In this report, we discuss the research methods we used to examine RILAs and address issues raised by the 2022 directive. First, we examined the RILA market and how RILAs operate, providing information on the complexity of these products and the consequences of certain investor decisions. Additionally, we summarized the products

[1] *See* U.S. House of Representatives, Consolidated Appropriations Act, H.R. 2617, Pub. Law No: 117-328 (Dec. 29, 2022), *available at* https://www.congress.gov/bill/117th-congress/house-bill/2617.
[2] *See id*.
[3] *See id*.
[4] *See id*.

available on the market as of early 2023, thus providing an up-to-date view of RILA contract offerings. We used simulations to examine how specific features, such as the limits on upside and downside risk, may affect investor outcomes. This analysis illustrates the complexity of the products, the ways particular features work, and the importance of investor decisions about RILAs.

Following our market analysis, we engaged in qualitative and quantitative testing for a draft sample Key Information Table (KIT), a hypothetical disclosure that contains information about RILA contracts and their features and risks.[5] In our qualitative testing, consistent with best practices from communications design (see, e.g., Morgan et al., 2002), we aimed to understand investor responses to the KIT and to generate hypotheses about areas of confusion and impediments to investor understanding. Qualitative testing is critical to this project to better understand the barriers that everyday investors can experience in attempting to comprehend financial information. At the same time, because qualitative testing occurred with a limited sample of participants, it is essential for follow-up research to examine the KIT communications with a larger sample. As such, we also conducted quantitative testing with approximately 2,500 participants to examine specific design features of the KIT.

Throughout the research, our primary questions of interest were:

1. How do different features of RILAs affect investment outcomes in relation to these products?
2. What are investors' reactions to RILA disclosures? What areas of understanding and misunderstanding arise when viewing the KIT?
3. Does background information about a RILA affect understanding of key concepts about RILAs? Specifically, what background information engenders the highest levels of understanding as a lead-in to viewing the KIT: (1) information about the contract purpose, (2) a plain-language introduction to a RILA, (3) a benefits-only introduction, or (4) no additional information?
4. Does the design of the KIT affect consumers' understanding of RILAs? Specifically, does a question-and-answer (Q&A) format lead to higher comprehension than a statement-based format?
5. How does comprehension vary across investors with different levels of investment sophistication?

Ultimately, findings from these efforts provide insight regarding the extent to which investors have the information they need to make knowledgeable decisions about RILAs, and they suggest that there is potential for misunderstanding that could affect consumer welfare. We conclude by providing implications of our work for future research and policymaking.

[5] In this report, all references to the KIT refer to different hypothetical disclosures used for testing purposes. There may be modifications in the disclosure requirements that the Commission may propose for RILAs to fulfill the 2022 congressional directive.

# 2. RILAs: Structure of Contracts and Investment Options

Insurance companies offer RILA contracts, each of which is accompanied by a menu of investment options.[6] Over the life of a RILA contract, the investor picks from this set of investment options, making decisions about the underlying index, the "investment term" (i.e., the period during which investment returns are calculated), and the corresponding insurance features. Each time an investment is made (including at the end of an investment term), the investor can choose to allocate funds to one or more investment options. Throughout this report, we use the word "contract" to refer to the larger product that may include multiple investment options selected over the course of ownership. Investment options are typically characterized by an index; investment term; charges, fees, and penalties; and insurance features.

Importantly, certain decision-relevant attributes pertain to the overarching RILA contract (e.g., surrender charge period), whereas other attributes pertain to investment options (e.g., limits on upside and downside risks and investment term). The two-part structure, consisting of both the RILA contract and the investment options, adds a layer of complexity to RILA products, which may make investment decisions about RILAs difficult for potential investors and purchasers to understand.

RILAs generally have two phases: an accumulation phase and a payout phase. During the accumulation phase, the investor makes contributions to the RILA, chooses investment options, and accumulates returns through the investments. During the payout phase, the investor receives income from the RILA. Income may take the form of a lump-sum payment or, in some cases, the investor may choose to convert the lump sum to a stream of future income (an annuity).

## Indexes

The value of an individual investment option depends, in part, on the performance of the underlying index.[7] As noted below, certain indexes are relatively broad based (e.g., S&P 500), whereas others are more specialized (e.g., SPDR Gold Shares [GLD]). Certain insurance companies also use proprietary indexes. It is reasonable to assume that continued growth in the RILA market will lead to an expansion of the number of indexes used.

[6] A RILA can be offered either as a standalone product or as an option within an annuity contract that also offers other options (e.g., variable annuities).

[7] An underlying index could refer to any index, rate, or benchmark (such as an exchange-traded fund or product that tracks an index) used in the calculation of positive or negative interest credited to an investment option.

## Investment Terms

Each investment option is associated with an "investment term."[8] The investment term determines the time period during which changes in value of the investment option are calculated. In other words, gains or losses are calculated at the end of each term, and the associated value of the investment changes. As noted, the investment term is associated only with investment options, not the RILA contract overall (which could last longer). This difference means that the investor may select several investment options (each of which has its own investment term) over the life of the RILA contract.

The role of investment terms also creates a situation that may be unique for RILA purchasers compared to other investments they hold. In particular, RILA investors periodically realize gains or losses at the end of each investment term: essentially forcing liquidation (sale of the investment option) at a specified date, even if market conditions are unfavorable. In contrast, during a down market, a mutual fund investor, for example, could wait to sell the fund, avoiding realizing those losses. Thus, the investment term feature adds a "timing risk" for RILA investors compared to certain other investments.

## Value Calculations

There are two common methods for calculating the change in value for an investment term: the point-to-point method and the average method. For the point-to-point method, the change in value is calculated by comparing the value at the start of the investment term to the value at the end of the investment term. Various calculations, such as adjustments due to the insurance features, are then applied to this value calculation. For the average method, the change in value is calculated based on periodic evaluations of the index level within an investment term and then averages those periodic evaluations. Similarly, credits and deductions are then applied based on this average performance.

## Insurance Features

RILAs are distinctive because they offer insurance features that limit the potential losses of an investment relative to the underlying index. However, the insurance features also limit the potential gains. The insurance features apply only to the investment option, not to the RILA contract itself, and do not provide protections against penalties that might be applied for early withdrawals or other reasons.

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[8] In Registration for Index-Linked Annuities; Amendments to Form N-4 for Index-Linked and Variable Annuities, Investment Company Act Release No. 33-11250; 34-98624; IC-35028 (Sept. 29, 2023) (the "proposed rule"), the investment term is referred to as the "crediting period." However, the phrase investment term was used in the qualitative and quantitative testing. As a result, we use the phrase investment term throughout this report.

There are two insurance features that can limit the losses for an investment option:

- **Floors:** A floor is a maximum loss (percentage) on the investment option. For example, a 10% floor will protect the investor from any loss greater than 10%, but the investor bears any losses up to 10%. A 5% floor would provide greater protection than a 20% floor.
- **Buffers:** A buffer absorbs losses on the investment option up to a certain point. It does not turn losses into gains. For example, with a 20% buffer, the insurance company absorbs any losses up to 20%, but the investor bears any additional losses. In other words, if the index decreased by 25%, a 20% buffer would reduce the loss to 5%. Alternatively, if the index decreased by 15%, a 20% buffer would reduce the loss to zero. A larger buffer provides greater protection.

In general, a buffer protects the investor from experiencing small losses for the investment option, but it does not protect them completely against large losses. In contrast, a floor protects an investor from experiencing large losses but does not protect against small losses.

Insurance features can also limit gains for an investment option:

- **Caps:** A cap is a maximum gain (percentage) on the investment option. It reduces the potential gains from investing in the option compared with investing in the components of the index to which it is linked (such as through an investment in an index mutual fund).
- **Triggers:** A trigger fixes gains to a specific rate so long as the index's gain is over a corresponding trigger "threshold". For example, consider an 8% trigger with a trigger threshold of 0%. The RILA would return 8% as long as the index experienced any positive return (i.e., above 0%), including above 8%. Thus, a trigger is more valuable when index returns are between the threshold and the trigger percentage (in this case, between 0% and 8%). As a result, a trigger below the index returns during the investment period is likely to limit gains relative to the index, whereas a high trigger could boost gains above the returns experienced by the index.

In general, both caps and triggers limit returns to RILA investment options relative to large increases in the value of the underlying index. However, a trigger can provide higher returns than the underlying index, when index returns are low.

A final insurance feature may act on both gains and losses for an investment option, but may also act on gains or losses alone:

- **Participation rates**: The participation rate acts as a multiplier on index performance. For example, a two-sided 85% participation rate reduces both gains and losses to 85% of

the gains or losses on the underlying index. For example, a gain of 10% on the index would be reduced to a gain of 8.5% on the RILA and a loss of 10% on the index would be reduced to a loss of 8.5% on the RILA. A participation rate can be over 100%, in effect creating a leveraged investment product. An investment option with a participation rate may also have caps or other limits on gains.

## Charges, Penalties, and Fees

Both RILA contracts and investment options can be associated with significant, avoidable financial penalties for investors. For the purposes of this report, we concentrated on three financial penalties:

- **Surrender charges:** A RILA contract can define a "surrender charge period" and charges for withdrawing money from the contract during that period. These charges occur even when the initial investment option's term is shorter than the surrender period.
- **Interim Value Adjustment and mid-term withdrawals:** These penalties occur when money is withdrawn from an investment option before the end of its term (e.g., when money is moved out of an investment option to another option, even if the funds are not removed from the contract).[9] An interim value adjustment may be positive or negative. It has the potential to reduce the value of the investment option. In some situations, the investor could lose up to 90% of their investment.
- **Tax penalties:** In addition to other tax implications, penalties can occur when the investor withdraws money from the RILA contract before age 59½.

To avoid all these penalties, an investor would need to hold the investment throughout the full surrender period, hold the investment until after the investor turns 59 ½, and withdraw money only at the end of each investment option's investment term. As a result, to avoid charges and penalties, an investor must likely select and manage a RILA contract for several years, making decisions about several investment options over the life of the contract.

Annual fees are charged in some RILA investments, but the practice is not as prevalent as annual fees in the mutual fund industry, for example. As an alternative to charging annual fees, providers often make money in other ways such as by earning more on their investments than they promise to pay investors (Moenig, 2021).

[9]RILAs measure the change in index values between the first and last day of the investment term. If you withdraw money from an investment option before the end of the term, the annuity contract specifies how the value of the investment option is determined. In some contracts, the value will be a pro-rata portion of market performance, whereas other contracts will include complex formulas based on interest rates and derivatives pricing models. Losses can even exceed any floor or buffer that would be available if an investor held the investment option until the end of the term.

# 3. Overview of the RILA Market and Simulated Performance During Historical Periods

In this section, we provide an overview and examination of the RILA market, including descriptive statistics on RILA contracts and investment options, and how RILA investment options with different insurance features would have performed using simulations of various historical time periods. RILA products are complex, and the implications of their insurance features are not obvious. In particular, insurance features affect gains and losses depending on future index returns over the investment term. Unfortunately, at the time the investment is made, investors will not know these future returns. Additionally, insurance features are correlated with each other (as shown below), so a certain level of downside protection also limits possible gains.

For an investor considering a RILA product, natural questions include: Do RILAs offer higher returns than the underlying index over time? Does the protection of buffers or floors outweigh the foregone gains from caps? How do the insurance protections protect my investments? Although part of the answer to these questions relates to an investor's preferences, particularly their sensitivity to risk, those preferences can only be considered well informed if the implications of the RILA contract, the insurance features, and the payouts are understood and internalized. Our simulation analyses help illustrate how potential choices could have affected financial outcomes had an investor purchased a given RILA option at a particular time in the past. Ultimately, these simulations help examine the potential economic value and the risks associated with RILA investment options. While some form of these simulations may be helpful for investors to understand the implications of an investment option selection problem faced when choosing among the specific insurance feature options studied, they may not reflect the economic values and consequences over the course of the life of the contract. That is, these types of simulations could be difficult for potential RILA investors to understand, because RILA insurance features change frequently, making past performance of today's features irrelevant to current investors who are not able to access those particular features in future market conditions. This is particularly true at the end of an investment option's investment term while the investor is under age 59½ or within the surrender period: at future points in which they need to select new investment options, today's insurance protections may have been replaced with a less favorable set of features. Of course, our simulations are not conducted with "today's" features, but rather with the features offered as of our early 2023 data construction.

These analyses are important because there is very limited research on RILA products, their performance, and the extent to which they serve investors' needs. We are aware of only a few academic research studies on RILAs. These studies focused on understanding why RILAs may be popular with investors (Mezger, 2023) and how RILAs compare to fixed-income and variable annuities (Moenig, 2021).[10] Neither study fully explored the simulated performance of

[10] A recent paper also discusses topics related to RILAs, but the context of this work is not germane to the current research. See Ellis, Moenig, & Wise (2023).

RILAs nor how investors' understanding of RILAs may vary when reading various disclosures, both of which are topics that we examine in this report. Although historical performance is no guarantee of future investment results and the insurance features available in the future may change, historical performance simulations allow us to document how certain product features offered as of the time we constructed our data may affect investors' outcomes based on the historical record so that we may study the potential usefulness of the products to investors and gain a better understanding of the risk–reward tradeoff that RILA options offer. That understanding will remain somewhat incomplete so long as historical data on feature offerings is unavailable to researchers.

## Data

We used data from Morningstar Intelligence Annuity Tool, which were extracted in March 2023 (Morningstar, 2023a). The data included all RILAs that were open for new investments as per Morningstar's records of that date; our list of offerings may differ somewhat from other sources, such as the SEC's EDGAR database, because sources can use their own inclusion criteria.[11] The data contained information on the investment options, including insurance features (buffers, caps, triggers, participation rates, and floors). Because, to our knowledge, these data have not been used in prior academic research, the data were validated by manually reviewing prospectus reports. To better understand the performance of the underlying indexes, we merged this RILA information with index returns data, which we extracted from Morningstar Direct (Morningstar, 2023b). Our index returns data covered the period from 1990 through 2019.

## Methodology

To provide a manageable set of comparisons for simulating historical RILA performance, we focused on a common index, investment term, and insurance feature combination: an S&P 500 price return–linked index with an 18% cap, 10% buffer, and a 1-year investment term. We compared point-to-point returns under this investment option with the performance of the S&P 500 price return–linked index, which allowed us to highlight how insurance features may work to reduce downside risk while limiting upside potential. Some RILA providers illustrate the impacts of the insurance features with graphs that compare returns of the underlying index to the returns one would receive with a RILA. An investment in an index (e.g., through an index fund) would typically track a total return index, which would have greater returns than a price return–linked index due to dividends. However, comparing RILA returns to price return–linked indexes more clearly illustrates how RILA insurance features affect outcomes relative to the index returns.

[11] EDGAR contains information based on RILA registrations, but registration does not necessarily mean the RILA is in operation and accepting money from investors.

Note that analyses in this section were chosen to illustrate how a RILA could work and are not intended to be representative of actual investment performance during this period. In particular, we concentrated on a common investment option offering and traced out the hypothetical performance of these insurance features had they been offered in prior years.

To be explicit, our simulations provide a representation of how particular investment options would have evolved in value during the historical period. The simulations do not suggest a purchaser's actual returns during this period, because the insurance features may have evolved over time. For example, a person investing in a 1-year investment option with an 18% cap and 10% buffer may face a RILA investment menu with a different set of features after 1 year, in the case that the original 18% cap option is discontinued. Historical simulations for that new investment option could, therefore, show a markedly different historical simulation return profile than the original option—one that could be more or less favorable for the investor. And, unlike some other investment vehicles, the investor cannot simply walk away from the RILA contract without incurring surrender charges or other penalties. Because data on such variation of the insurance features over time are unavailable, even the savviest investor has limited tools available to ascertain the value of the RILA contract over the life of the contract. In essence, our simulations help understand the value of the momentarily available investment options, but they do not help shed light on the overall economic value and risks of the RILA contract over the investor's entire investment period.

Furthermore, the analyses discussed in this section did not address costs due to withdrawing money from an investment option during an investment term, surrender charges, or any tax implications (due to tax deferral or tax penalties for liquidating before the holder is 59½ years old). The assumption was that the investor purchased the RILA with the associated investment option on a given date and held it until the end of the investment term; the investor may have had to put the resulting funds into another investment option at the end of the term to avoid surrender charges or other penalties. Research on 401(k) retirement plans has suggested that withdrawals from retirement plans before the age of 59½ may be fairly common, with as many as 40% of retirement plan participants cashing out retirement savings when leaving an employer (Armour et al., 2017; Lu et al., 2017; Wang et al., 2022). If withdrawals from RILAs are similarly common, our results may overstate the returns from RILA investments because the analyses did not account for fees, charges, and penalties.

### Limitations

Caps and triggers vary frequently over time, and we are not aware of any data source that compiles historical rate sheets. Without historical data on insurance features, we cannot say whether these products would have been common—or even available—in the years since RILAs began being offered. Additionally, we cannot compare available rates on insurance features to historical rates, so the simulations may have over or understated RILA performance relative to what would have been available for an investor at the time of purchase. RILA products were not offered before 2010, so the performance simulations used periods during which RILAs were not

available in order to provide a more complete picture of how insurance features related to the historical performance of the accompanying index. (After all, for example, an investor evaluating a 10% buffer on the S&P 500 might reasonably be interested in how historically common it is for the S&P 500 to lose more than 10%, and that historical question would reasonably not be confined to the period in which a RILA product of that type was offered).[12] These limitations complicate the process of validating our data and highlight a critical lack of information about this market, potentially hampering investors' ability to obtain and make use of decision-relevant information for evaluating the economic value of and comparing products before they purchase and manage their investments. To the extent that inaccuracies remain in the data, reported statistics may have been affected; however, our individual simulations have reasonably approximated the performance of the stated insurance features over the historical period.

Despite these caveats, these simulation results provide a useful perspective on historical performance, allowing us to demonstrate how a particular (current) investment option would have performed during certain historical periods; in principle, this type of information could be informative for a potential investor.

## Descriptive Statistics on Overall RILA Market

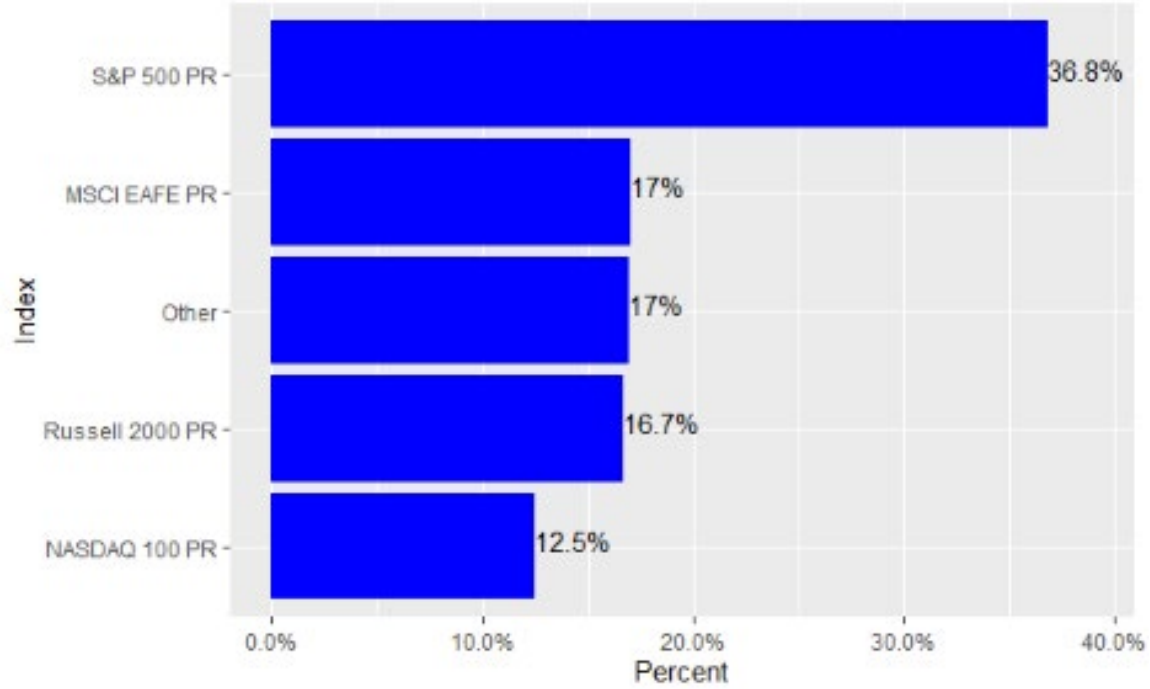
At the time of these data, 19 insurance companies offered RILAs, for a total of 71 RILA products and 1,832 different investment options. The number of investment options available for some contracts can be large, which may raise concerns about choice overload, especially because investors are unlikely to have previous experience with RILAs (Scheibehenne et al., 2010). In addition, when selecting from investment menus of this type, naive diversification (spreading money equally across menu options) is often a strategy that investors pursue (Benartzi & Thaler, 2001; Scholl, 2022), and the negative implications of too many choices in an investment context has been documented extensively (see review in Scholl & Fontes, 2022). Furthermore, most insurance companies only began offering RILAs within the past decade (with market entry between 2010 to 2023), meaning that there is limited performance history for these products.

## RILA Indexes, Investment Terms, and Insurance Features

Each investment option comes with an underlying index. Figure 1 shows the frequency of the underlying offered indexes. As shown, common indexes are the S&P 500, Russell 2000, MSCI EAFE, and NASDAQ-100 price return indexes. These four indexes comprise over 80% of the indexes underlying investment options available in the market.

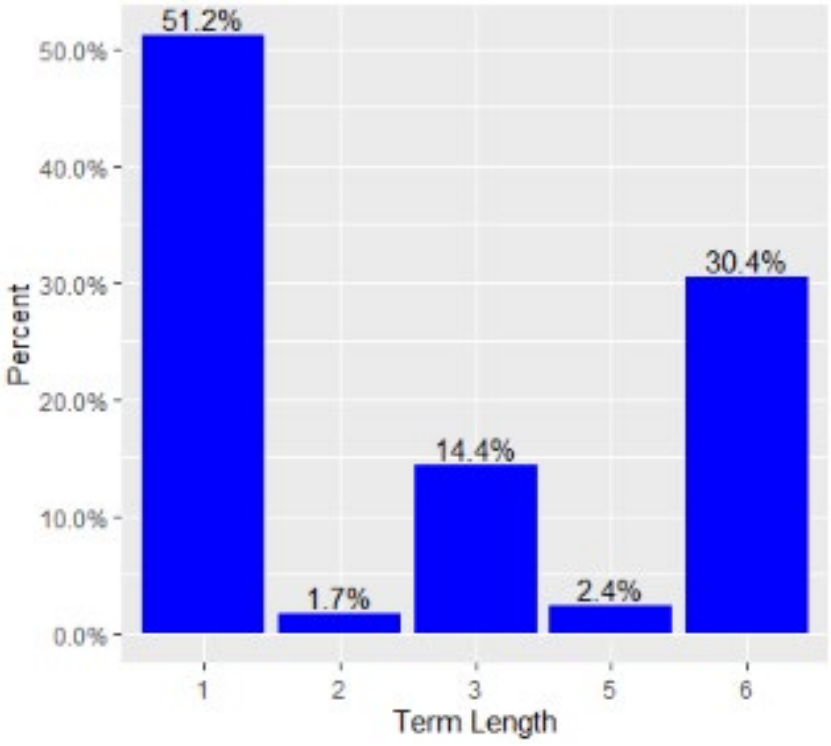
[12] Although this section presents the performance of investment options over realized historical periods, we also performed an analysis that simulated random draws of the index's return based on the historical distribution of index returns. The results presented in this section are similar to those constructed based on random draws using historical returns.

**Figure 1**. Indexes Offered.




The investment term length specifies the period during which the investment returns are calculated. Figure 2 shows that the most common term lengths are 1, 3, and 6 years. Investment options with 2- and 5-year terms are also available, but these are relatively rare.

**Figure 2.** Term Lengths Offered.



Investment options are typically associated with insurance features that can limit gains and losses, as described above. In Figure 3, these insurance features are categorized and described in terms of upside and downside combinations. As shown, the combination of a cap and a buffer is especially common, capturing nearly 80% of all investment options offered.

**Figure 3**. Insurance Feature Combinations Offered.

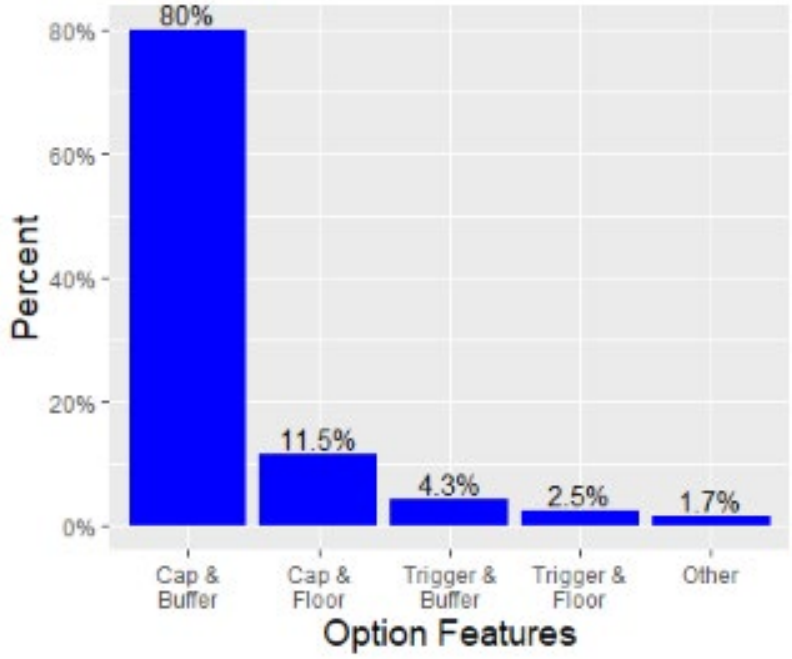



Figure 3 does not show the amount of insurance protection that is provided. In general, to offer more protection (e.g., a larger buffer percentage or a smaller magnitude floor), insurance companies usually impose a lower limit on gains. Tables 1 and 2 show the relationships between cap levels and the corresponding buffers or floors. These tables are limited to investment options with 1-year terms that are linked to the S&P 500 price return index, given that these investment options are relatively prevalent.

Both tables show that, in general, higher cap rates come with smaller downside protection. For example, cap rates between 10% and 20% are associated with buffers of up to 25%. In contrast, cap rates between 20% and 30% are only associated with buffers of 10% (Table 1). Table 2 displays a similar relationship; for example, cap rates that are less than 10% may limit losses entirely (i.e., a floor of 0%), but cap rates between 10% to 20% are most commonly associated with a floor of -10%.

**Table 1.** Comparing Caps and Buffers for Investment Options With 1-Year Terms and the S&P 500 Index.

| | Buffer | | | | | | |
|---|---|---|---|---|---|---|---|
| **Caps** | **10%** | **15%** | **20%** | **25%** | **30%** | **40%** | **Total** |
| 10% or less | 1.5% | 1.5% | 0% | 0% | 2.9% | 1.5% | 7.4% |
| 10.1% to 20% | 38.2% | 17.6% | 10.3% | 5.9% | 0% | 0% | 72.0% |
| 20.1% to 30% | 20.6% | 0% | 0% | 0% | 0% | 0% | 20.6% |
| Total | 60.2% | 19.1% | 10.3% | 5.9% | 2.9% | 1.4% | 100% |

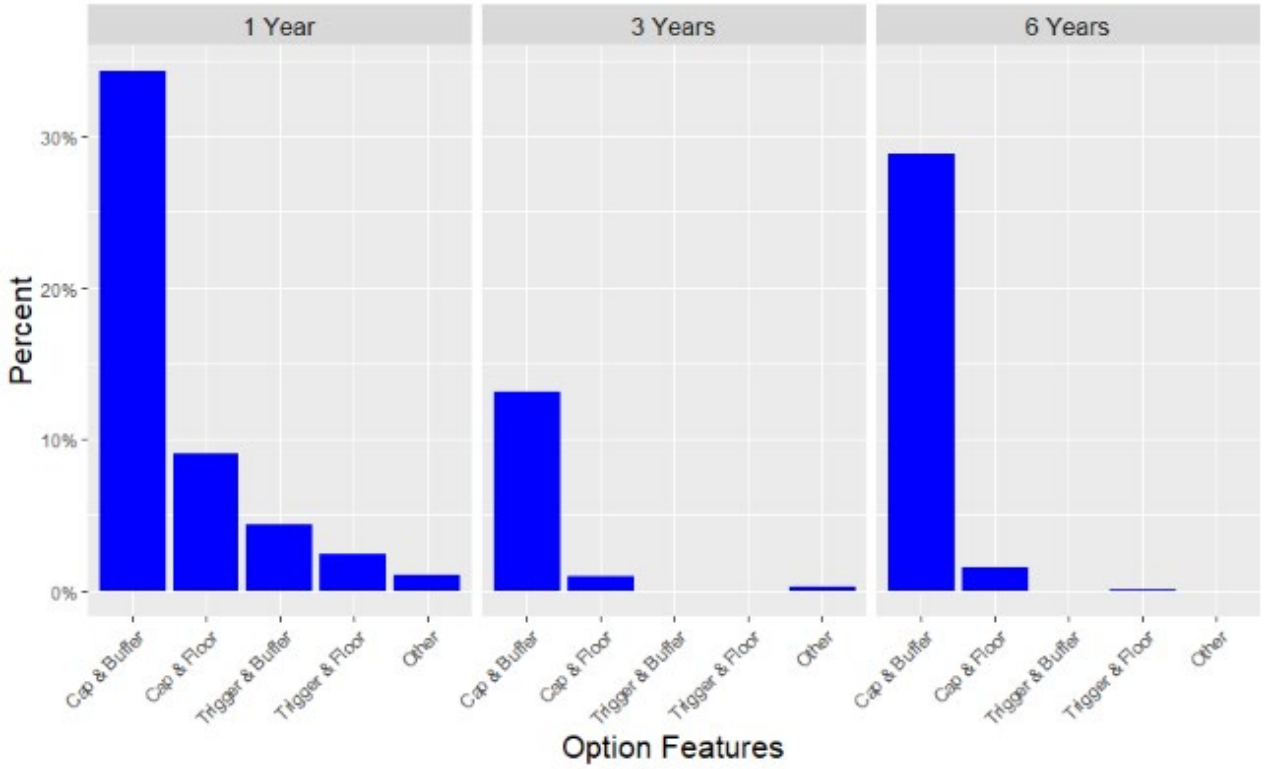
**Table 2.** Comparing Caps and Floors for Investment Options With 1-Year Terms and the S&P 500 Index.

| | Floor | | | | |
|---|---|---|---|---|---|
| **Caps** | **-20%** | **-10%** | **-5%** | **0%** | **Total** |
| 10% or less | 0% | 0% | 3.3% | 30% | 33.3% |
| 10.1% to 20% | 6.6% | 40% | 3.3% | 13.3% | 63.3% |
| 20.1% to 30% | 3.3% | 0% | 0% | 0% | 3.3% |
| Total | 9.9% | 40% | 6.6% | 43% | 100% |

Although there are tradeoffs between these features, Tables 1 and 2 also show there is considerable variation in the caps offered for a given buffer or floor across providers. Some of these differences could be attributed to differences in other dimensions of the RILA that are not shown. For example, the Interim Value Adjustments could vary between RILA providers.

Finally, the types of insurance features vary by investment term. Figure 4 shows the most common four combinations of insurance features that are available for options that have 1-, 3-, or 6-year terms. As shown, triggers are generally only available for investment options with 1-year terms (although there is a single offering for a 6-year term). The cap-and-buffer combination is the most common insurance feature for all three of these term lengths.

**Figure 4.** Insurance Features Offered by Term Length.




## Illustrative Examples Comparing Investment Option Value to an Index

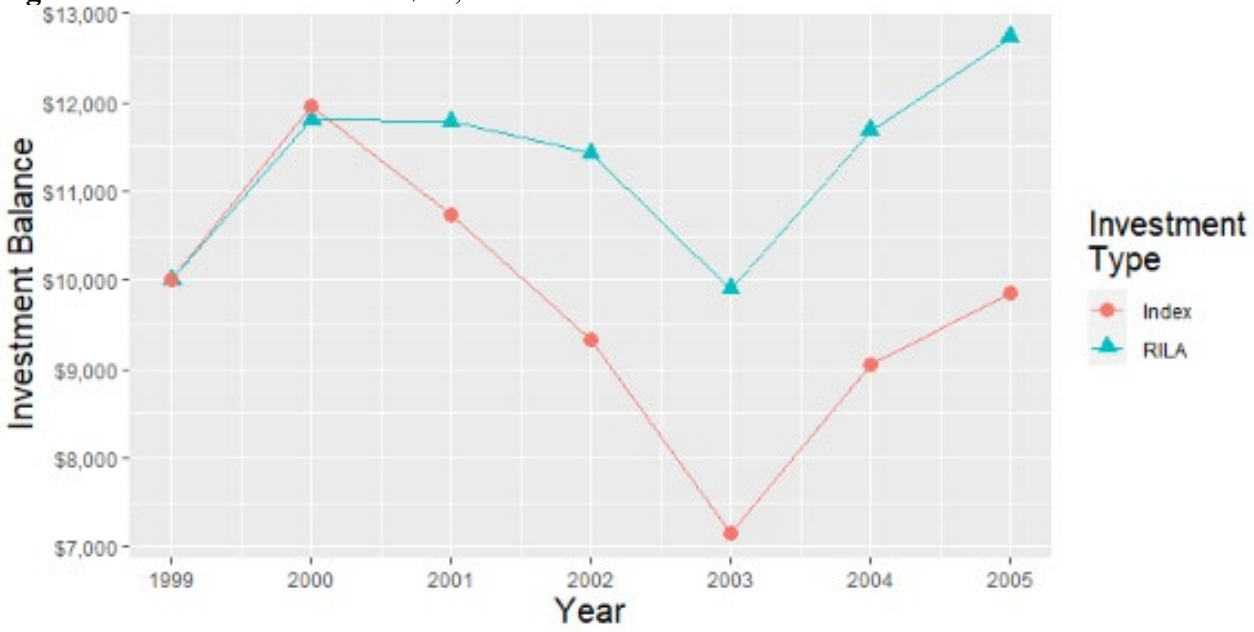
To illustrate how insurance feature choices can affect the contract value, Figure 5 presents the value of a $10,000 investment in our chosen investment option compared with an investment (outside of a RILA) in the S&P 500 index from 1999 to 2005 (as one might have realized through investment in an S&P 500 index fund).[13] Throughout this analysis, we used the price returns of the S&P 500 (or other relevant indexes), not total returns. This means that the returns on the index shown do not include any dividends that would have been received if one invested in the index outside of a RILA. As a result, our analysis understated the potential positive returns on an investment in an index. We note that the return earned from a RILA typically is based on the price returns, not the total returns of the index, but it is at the discretion of the insurance company.

From 1999 to 2000, the S&P 500 rose by 20%, but the RILA's returns would have been capped at 18%; thus, by 2000, the RILA would have slightly trailed the index. The situation changed from 2000 to 2002, when the S&P 500 dropped in value. Over that period, the RILA's buffer would have reduced losses, allowing its cumulative value to exceed that of the hypothetical S&P 500 investment. By 2005, at the end of the graph, the investment in this RILA

[13] Note, however, that index fund fees are not considered.

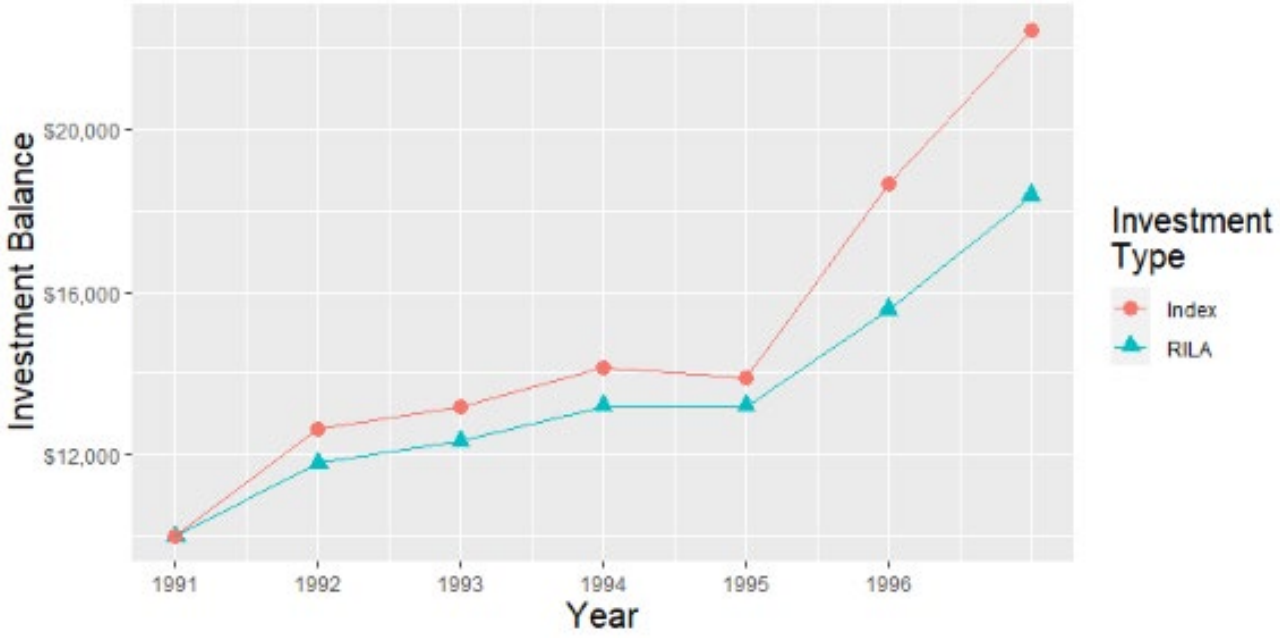
investment option would have increased by 27% (ending at $12,730), whereas the index lost 1.5% (ending at $9,857).

**Figure 5.** Simulated Value of a $10,000 Investment in the RILA and Index From 1999 to 2005.




As a comparison, Figure 6 shows the same RILA held for a 6-year period starting on January 1, 1991. In this instance, at the end of 6 years, the RILA would have underperformed the S&P 500 index due to the 18% cap, which would have limited the returns in certain years when the index gained value. The final investment value of the RILA in 1997 would have been approximately $4,000 lower than the index. Together, these two figures illustrate the fact that the value of a RILA (and the value of a RILA *relative* to its index) can vary significantly depending on the time period during which it is chosen, even holding constant the insurance features.

**Figure 6.** Simulated Value of a $10,000 Investment in the RILA and Index From 1991 to 1997.




## RILA Performance During Various Market Conditions

To provide a more general view of how the relative performance of the RILA and index (as shown in Figures 5 and 6) could have varied in different time periods, we explored a range of hypothetical starting investment dates. Figure 7 presents a histogram of 6-year RILA and index returns starting each month from 1990 to 2013. The pink bars capture returns for the index, whereas the overlaid blue bars present simulated returns for the RILA. Specifically, the histogram includes 276 return values, each of which represents a 6-year term starting in a particular month: January 1990 to January 1996, February 1990 to February 1996, and so forth, through January 2013 to January 2019. Although much of this time period includes periods when RILAs were not available (since RILAs were first offered in 2010), this analysis illustrates how returns can vary depending on the insurance features and the timing of the investment; they also illustrate how the insurance features relate to the historical performance of the index. As with Figures 5 and 6, the analytic assumption was that the 1-year RILA investment option was reinvested in an identical investment option for six consecutive 1-year investment periods.

**Figure 7.** Simulated Ending Values of $10,000 Investments After 6 Years.

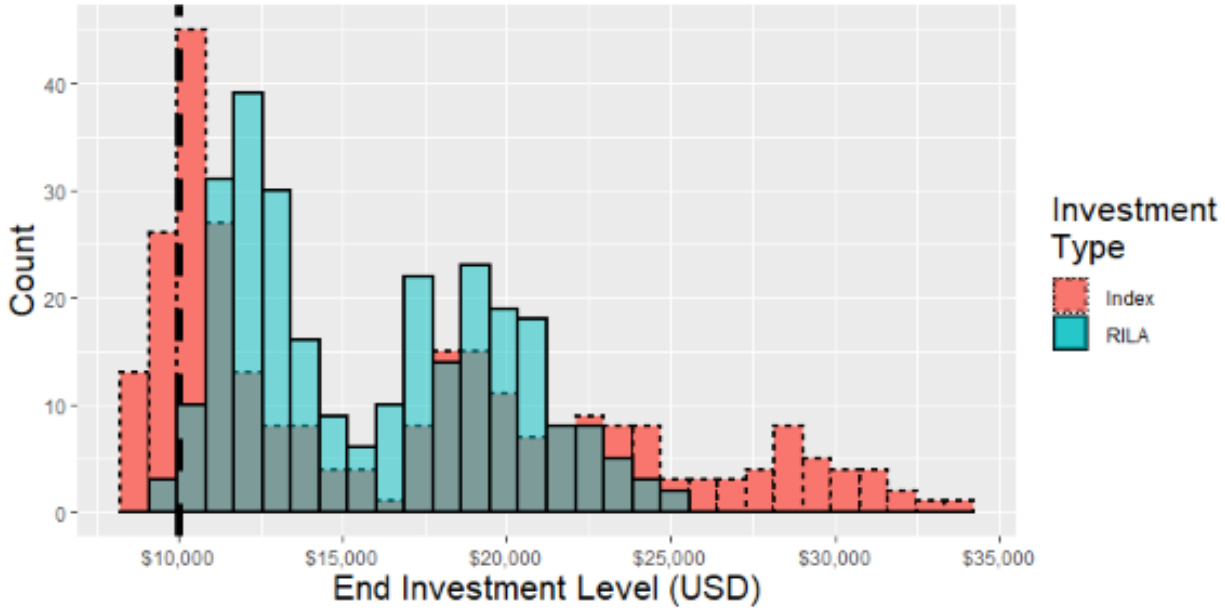
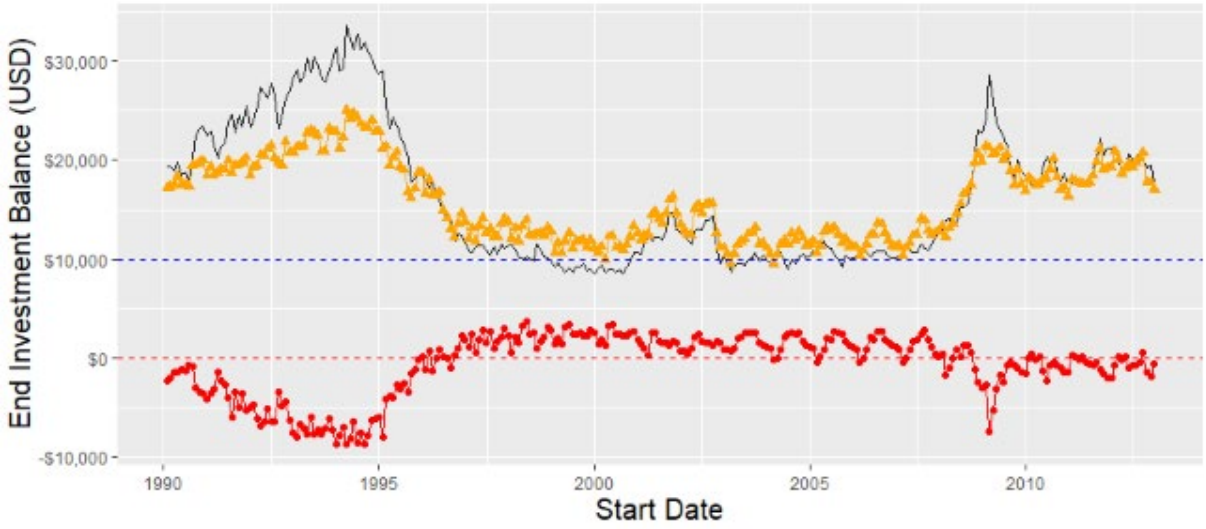



Figure 7 illustrates that the insurance features of the RILAs we have been considering (i.e., the 18% cap and 10% buffer) have the potential to attenuate the magnitude of both losses and gains. In particular, the height of each bar is proportional to the probability of that realized investment outcome. It is apparent that the distribution of the RILA returns in Figure 7 is more condensed than the distribution of index returns, with fewer observations with extremely positive or negative values. This result suggests that this RILA investment option has a narrower range of investment outcomes in the way one would expect: the purchaser experiences smaller gains, but also fewer losses of a smaller magnitude.

Although Figure 7 presents the distribution of returns, it does not illustrate how the market conditions related to the performance of the RILA investment option and the index. Extending this analysis, Figure 8 allows us to examine the simulated performance of the investment option (yellow line) against the corresponding performance of the index (black line); the investment option's relative gain or loss against the index's performance is also provided (red line). To be more precise, each point on the yellow line represents the final investment value that would have been obtained by investment in the 1-year term, 18% cap, 10% buffer RILA investment option on the specified date, if it were rolled over for 6 total years. For example, the left-most 1990 value of approximately $19,332 shows that a $10,000 RILA investment with these features made on February 1, 1990, would have achieved gains of $9,332 six years later. The black line similarly represents the value of a 6-year investment in the corresponding index. Thus, the performance presented in line graphs in Figures 5 and 6 are condensed in Figure 8 to single points at the beginning of 1999 and 1991, respectively.

**Figure 8.** Simulated Historical Investment Values by Initial Investment Date.




*Note. The figure compares the RILA investment option (1-year term, 18% cap, 10% buffer, invested for six successive 1-year investment periods) and the index returns over the same 6-year investment period. The black line is the values of a $10,000 investment over a 6-year investment period in the index; the yellow line (triangles) is an analogous line for the RILA investment option. The red line (circles) is the difference between the yellow and black lines. Dates correspond to the start date of the investment. Results are not adjusted for inflation.*

In Figure 8, we can see that the high returns for the 6-year periods starting in the early 1990s would have been limited by the RILA investment option. Conversely, the relatively poor returns for the 6-year periods starting in the late 1990s would have been somewhat mitigated by the buffer in our chosen RILA. For a hypothetical investor, that means they would have had a very small chance of experiencing a negative nominal return from the RILA investment option during these historical periods, but they would have also missed some of the strong returns that the index experienced in the early and late parts of the historical period.

The difference between the index and the RILA investment option (red line) would have been negative over periods of market growth (e.g., starting dates of 1990–1995) and greatest for investments starting in 1994. Put another way, RILA investments would have had a good chance of experiencing a marginally better performance than the index, primarily during the 6-year periods starting in the late 1990s to late 2000s. The RILA investments also would have reduced investors' chances of a slightly negative return during that same period (as losses maxed out at 15% but average losses during loss periods were only 6.8%). However, the RILA investments would have foregone considerable investment gains for the 6-year periods starting in the early 1990s and following the 2008 financial crisis. Figure A1 in Appendix A shows an analogous graph for a 12-year investment period (i.e., rollovers for 12 years) and finds similar patterns with respect to the RILA investment option and the index, insofar as returns and relative returns would have varied over time.

## Comparing RILA Features

Thus far, we have explored a RILA investment option with one set of parameters (1-year investment term, 18% cap, 10% buffer, and linked to the S&P 500 price return index). However, as noted above, there is tremendous variation in indexes, investment terms, and insurance features available to potential investors that may affect their outcomes (Figures 1–4). In this section, we explore how differences in these choices can affect simulated returns.

We identified a set of RILA investment options with different features than our previously considered case. Our intention was to vary a single feature at a time to isolate the effect of one change, such as a change in the level of a cap holding the buffer constant. However, for many RILA options, multiple dimensions of the bundle of features change together (as shown in Tables 1 and 2). Additionally, we attempted to select from a set of investment options offered by companies that also offered our focal option (i.e., 1-year investment term, the 18% cap, 10% buffer, and linked to the S&P 500 price return index). Our intent was to capture realistic alternative options that an investor may encounter. All investment options were linked to the S&P 500 price return index, so that the differences would be due solely to their other features. In the end, we identified the following alternative investment options:

1. An investment option with a 15% buffer (instead of a 10% buffer), thus providing more protection on the downside. As a consequence of this greater protection, the cap for this option decreased to 13.5%.
2. An investment option with a trigger instead of a cap. The trigger was 10.9%, with a corresponding threshold of 0%. The buffer remained at 10%.
3. An investment option with a floor of -20% (instead of a buffer of 10%) and a cap of 19.5%. This option was chosen because it offered the closest cap to the RILA presented in this section among all investment options with a floor.

In addition, we considered the role of the investment term. In general, caps tend to get larger with longer investment terms, since cap rates are described in terms of overall changes over the term (not annualized rates). Also, since market returns have historically often been positive in the long run, returns for RILAs with longer investment terms are less often in the range for which a 10% buffer would reduce losses. As a consequence, higher caps can be offered. To examine the role of RILAs with longer investment terms, we also simulated:

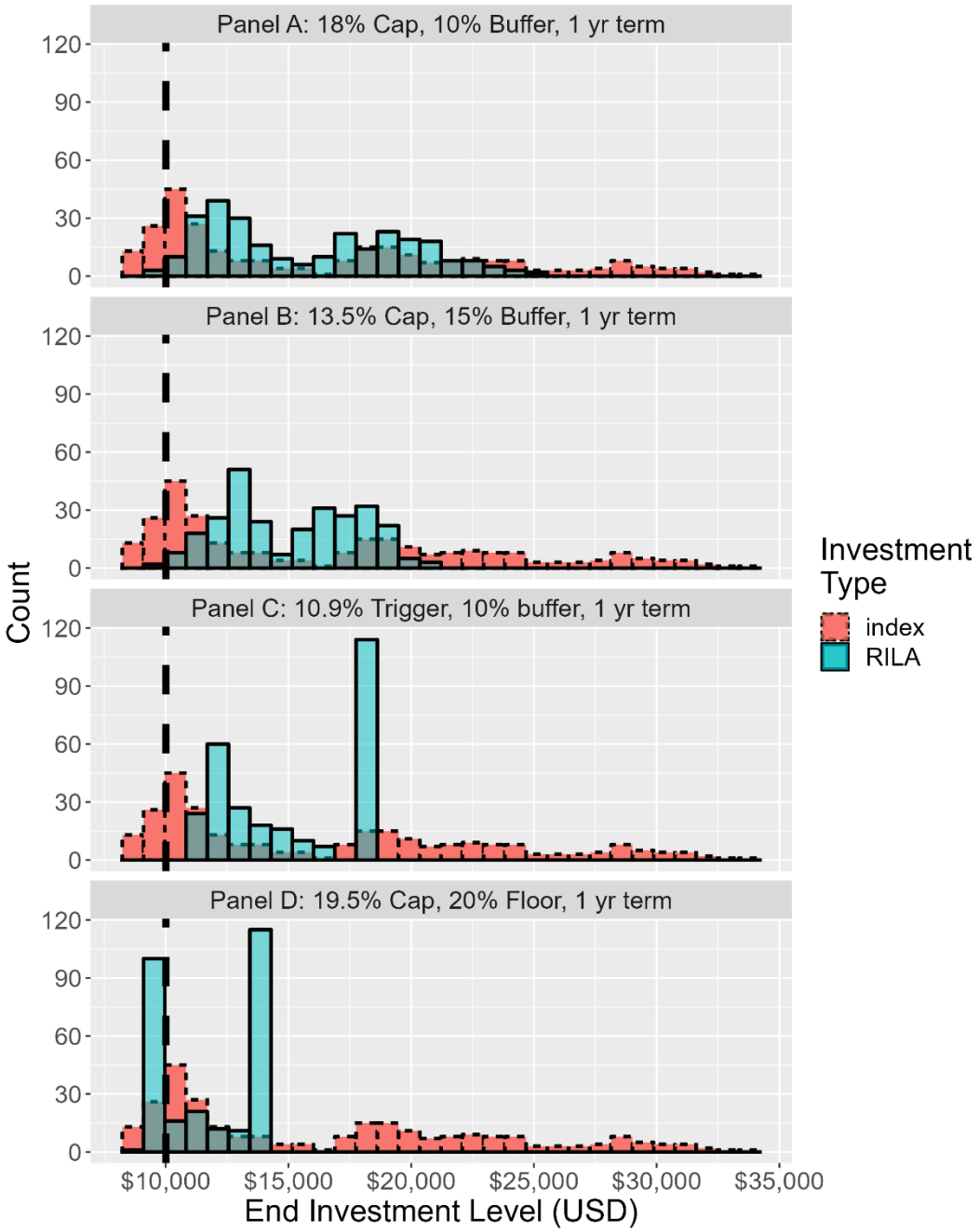
4. An investment option with a 3-year term maintaining a 10% buffer and a cap of 130%.
5. An investment option with a 6-year term maintaining a 10% buffer and a cap of 500%.

### Variations in Insurance Features and Simulated Returns

The histogram in Figure 9 was constructed analogously to Figure 7. Because all simulated investment options were linked to the S&P 500, the past returns of the index (pink bars) are the same for all panels in Figure 9. The effect of increasing the buffer from 10% to 15% and decreasing the cap from 18% to 13.5% is seen by comparing Panels A and B. As shown, the increased buffer and lower cap (Panel B) are associated with more compressed

returns. In particular, the frequency of returns over 80% would have reduced from 35% to 18%, and the frequency of returns over 20% would have increased from 79% to 85%. Both the 10% buffer and 15% buffer examples (Panel A and Panel B) would have reduced the likelihood of losing money to about 1% compared to a direct investment in the index (which, during the time period from 1990 to 2013, lost money about 15% of the time; see Table 3 on page 29). On net, this scenario presents a more conservative set of outcomes than our original investment option.

**Figure 9.** Distribution of Returns with Other Combinations of Insurance Features.



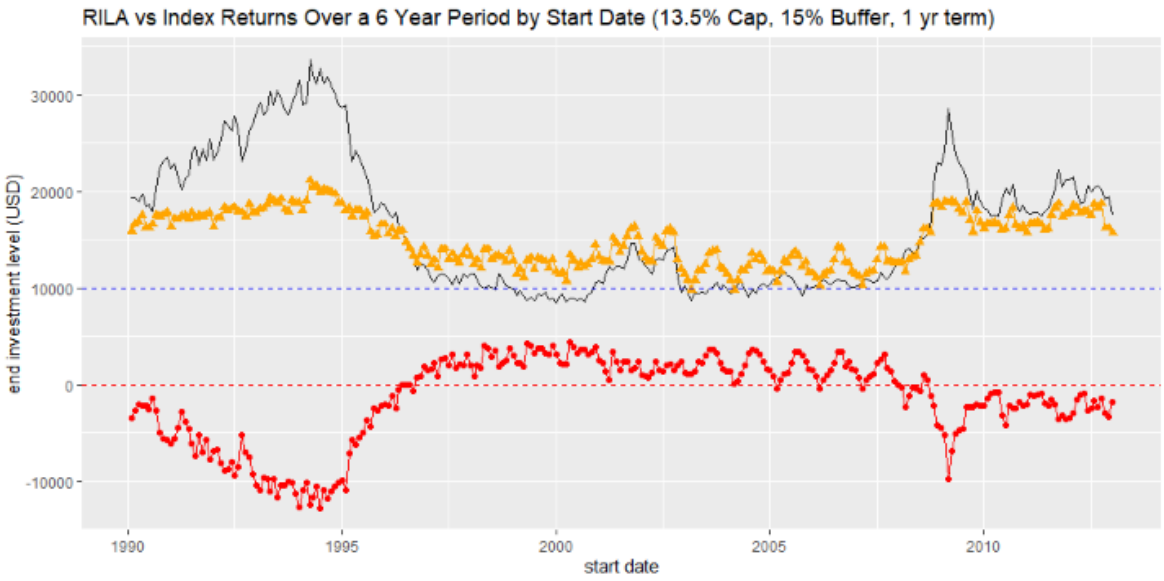
Panel C in Figure 9 provides the distribution of simulated historical returns for a RILA investment option with a 10.9% trigger and a 10% buffer. This combination of features would have provided the most downside protection out of our presented investment options; the investment option featuring a trigger would have never lost value over a 6-year investment period for any of our start dates. On the other hand, with a 10.9% trigger, the maximum return over 6 years would have been 86%, which this option would have reached for 43% of the simulation start dates. The index return exceeded the investment option's return for 37% of the start dates, which shows that it would not have been uncommon for the RILA option to miss out on index gains.

Panel D provides the returns distribution for a RILA investment option with a 20% floor and a slightly increased cap at 19.5%. This distribution is also relatively truncated, with the maximum investment gain reaching $14,280. The distribution is bimodal, meaning that the distribution shows two highly frequent outcomes: one in which investors would have lost money relative to their initial investment, and one in which they would have gained money. Whereas the probability of a loss with direct investment in the index was 15%, the probability of losing money was 37% under this combination of features. This difference is because small losses (which would have been relatively common) would have been incurred by the forced liquidation of the investment at the end of the term (whereas with many investments, such as in an index fund, the loss remains a paper loss until the investor decides to sell). The highest gain for the option in Panel D was 43%, which it would have reached 38% of the time. Clearly, however, the cap would have limited upside returns relative to the index.

Figure 10 traces the historical simulation return results over time for these three variants on our baseline case. The line graphs display the same data as the histograms but offer a different view in that they highlight the relationship between index returns and investment option returns over time so that it is clearer how the investment option would have performed given a particular realization of index performance. Panels A and B suggest a moderating of returns, but the option presented in Panel C highlights an example with very little historical downside protection, an increase in the probability of losing money, and a very limited upside in terms of returns.

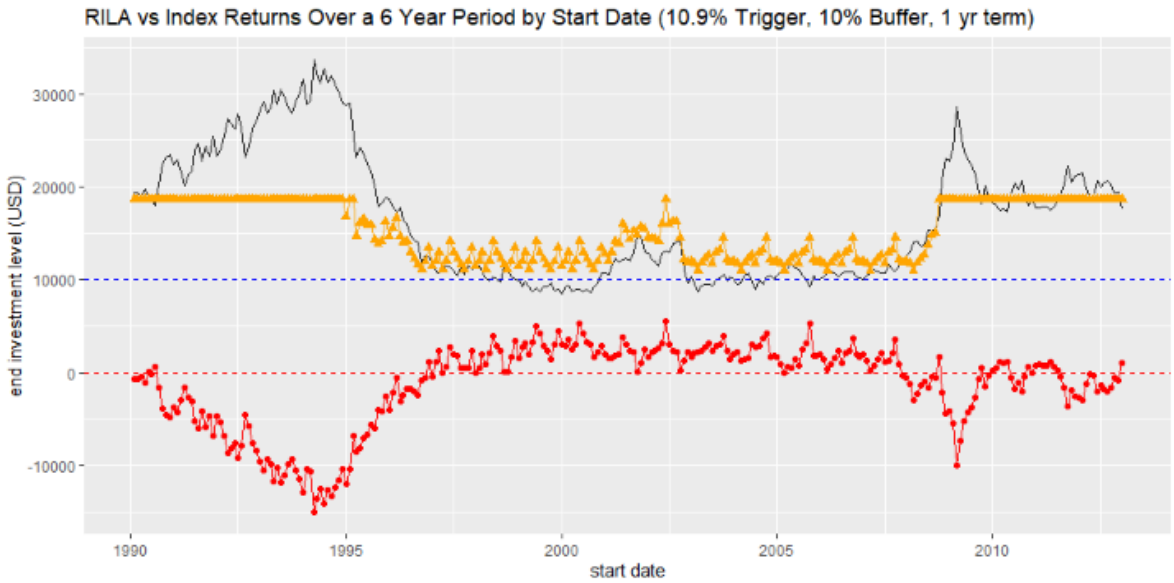
**Figure 10.** Simulated Historical Investment Values by Initial Investment Date, Comparing Different Insurance Features.

*Panel A*



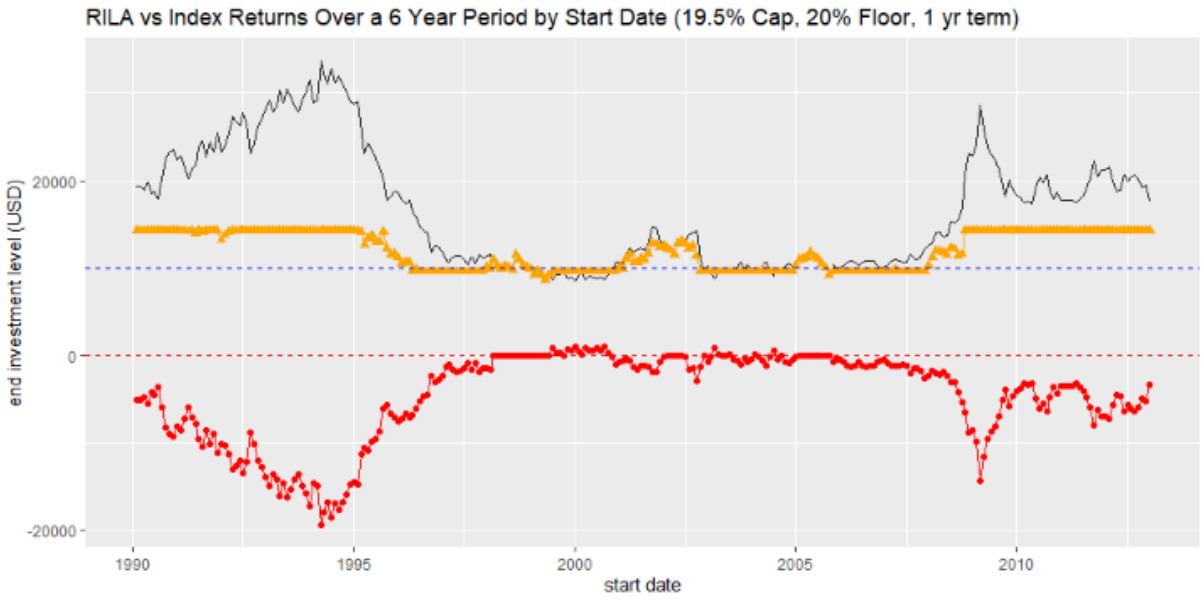

*Note. Panel A compares the RILA investment option and the index returns over the same 6-year investment period. The black line is the values of a $10,000 investment over a 6-year investment period in the index; the yellow line (triangles) is an analogous line for the RILA investment option. The red line (circles) is the difference between the yellow and black lines. Dates correspond to the start date of the investment. Results are not adjusted for inflation.*

*Panel B*




*Note. Panel B compares the RILA investment option and the index returns over the same 6-year investment period. The black line is the values of a $10,000 investment over a 6-year investment period in the index; the yellow line (triangles) is an analogous line for the RILA investment option. The red line (circles) is the difference between the yellow and black lines. Dates correspond to the start date of the investment. Results are not adjusted for inflation.*

*Panel C*




*Note. Panel C compares the RILA investment option and the index returns over the same 6-year investment period. The black line is the values of a $10,000 investment over a 6-year investment period in the index; the yellow line (triangles) is an analogous line for the RILA investment option. The red line (circles) is the difference between the yellow and black lines. Dates correspond to the start date of the investment. Results are not adjusted for inflation.*

## Variations in Term Length and Simulated Returns

Turning to the effect of varying the term length, Figure 11 presents returns under 1-, 3-, and 6-year terms, assuming a total investment period of 6 years. Note that, as term lengths grow longer, the caps also tend to increase to accommodate potentially higher growth over a longer period of time; cap rates are described in terms of point-to-point changes and are not annualized growth rates. In practice, the higher caps are rarely applied because they would require substantial returns in the underlying index.

A perhaps surprising result was that there would have been a greater chance of losses with these examples under the 3- and 6-year terms (Panels E and F) than under the 1-year term (each diagram again presents an investment for a total of 6 years). At the same time, the 3- and 6-year investment options would have tracked the upper part of the returns distributions quite closely to the index; these results differ from the RILA investment option with the 1-year term, which simulated returns that were significantly more likely to forego higher returns.

When comparing the 3-year and 6-year investment term options, there would have been differences at values between $10,000 and $15,000. In particular, the 6-year investment option would have created a concentrated mode in the $10,000 bin and would have had an increased probability of a negative return. For this example, the 3-year term may have allowed for more protection than the 6-year term, since the same 10% buffer could have been applied twice during the investment period.

**Figure 11.** Distribution of Returns With Different Term Lengths.

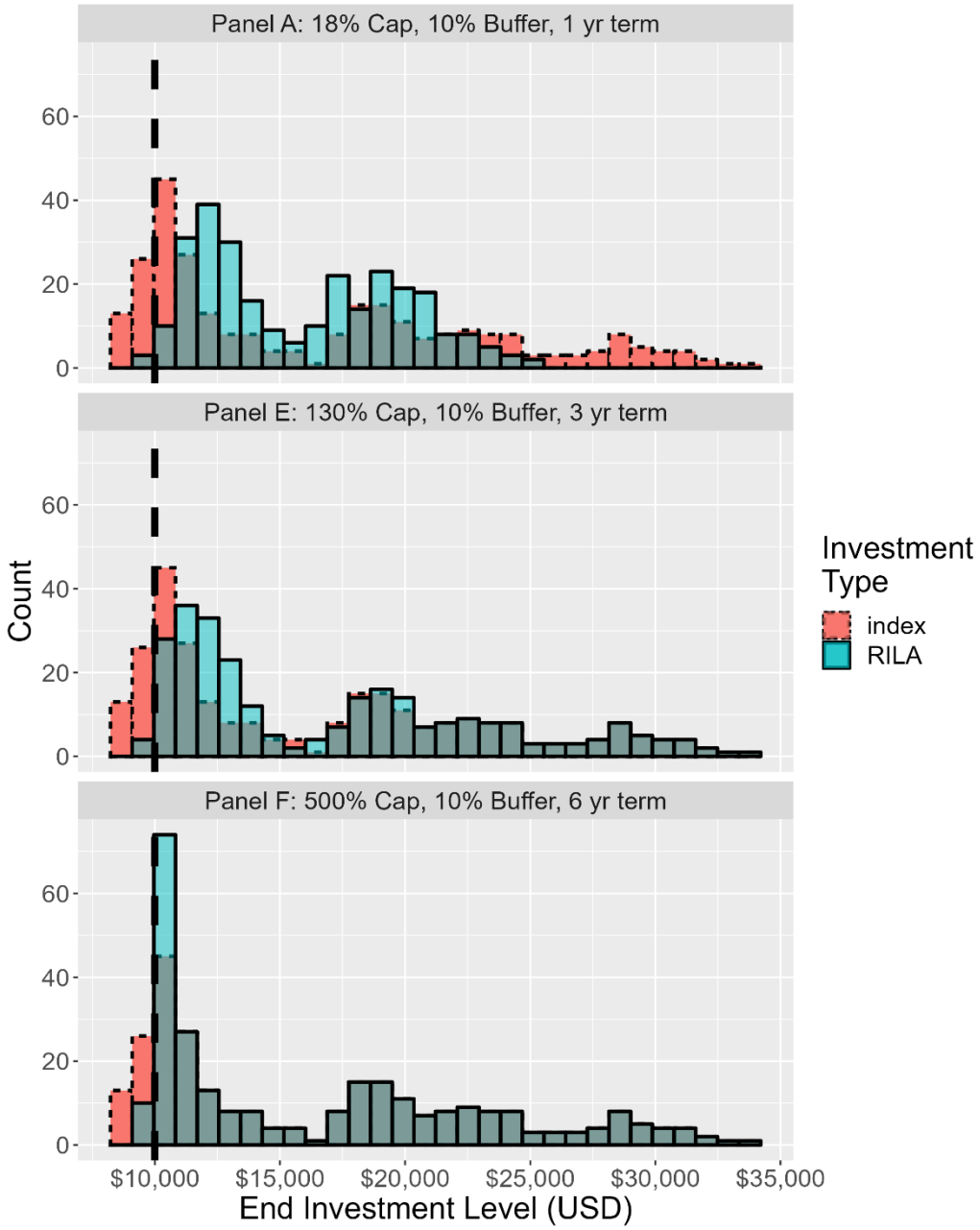
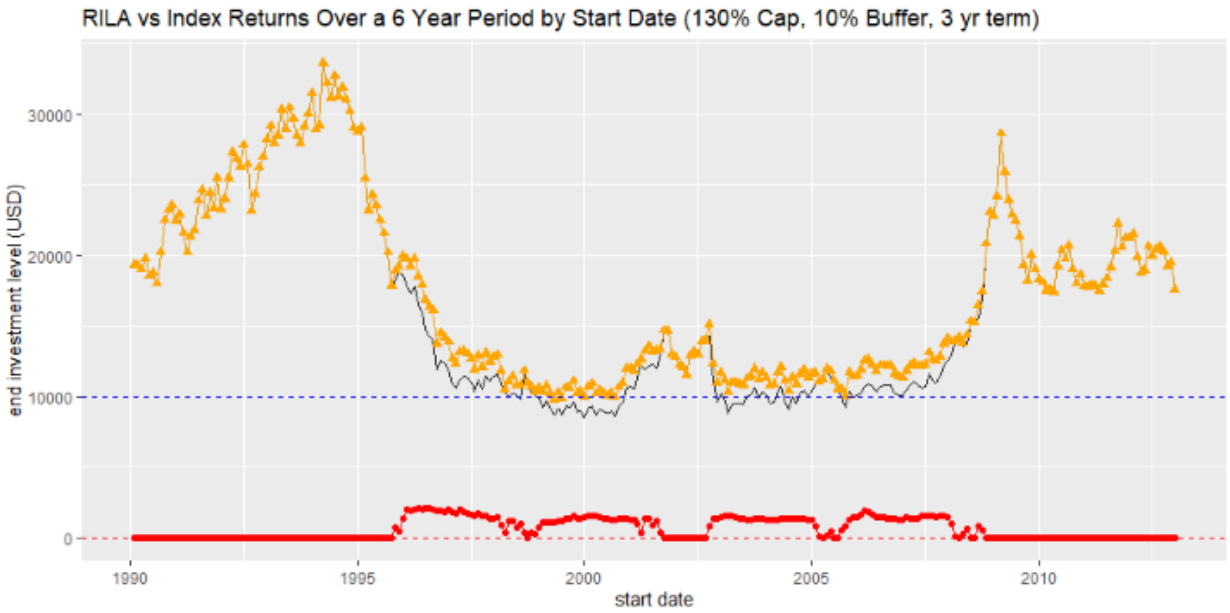



Figure 12 illustrates the simulated returns for these comparisons by start date. In this figure, we see that the 3- and 6-year products (with caps of 130% and 500%, respectively) would have been largely unconstrained from capturing the full gains of the index during growth periods. They also would have provided protection against some of the losses that would have occurred on the downside, with the chance of a negative return much lower for the 3-year product than for the 6-year product.

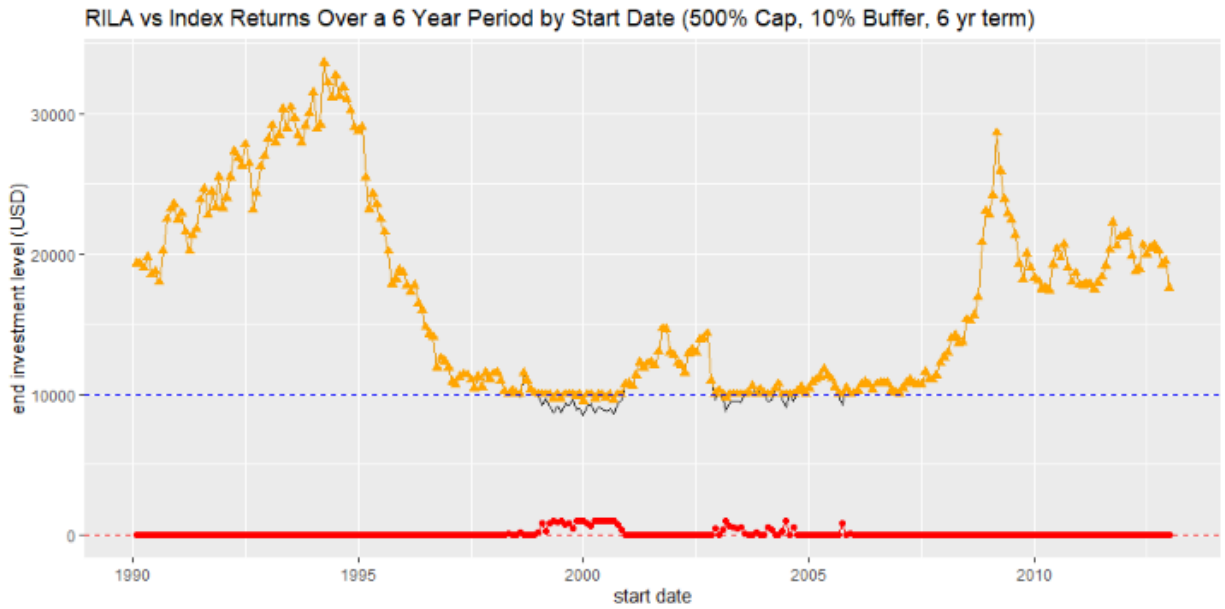
**Figure 12.** Simulated Investment Values by Initial Investment Date, Comparing 3- and 6- Year Term Products.

*Panel A*




*Note. Panel A compares the RILA investment option and the index returns over the same 6-year investment period. The black line is the values of a $10,000 investment over a 6-year investment period in the index; the yellow line (triangles) is an analogous line for the RILA investment option. The red line (circles) is the difference between the yellow and black lines. Dates correspond to the start date of the investment. Results are not adjusted for inflation.*

*Panel B*




*Note. Panel B compares the RILA investment option and the index returns over the same 6-year investment period. The black line is the values of a $10,000 investment over a 6-year investment period in the index; the yellow line (triangles) is an analogous line for the RILA investment option. The red line (circles) is the difference between the yellow and black lines. Dates correspond to the start date of the investment. Results are not adjusted for inflation.*

## Summary Performance Statistics

Table 3 reinforces these points with summary statistics about the simulated record of these investment options compared to the index. The table presents the mean returns of a hypothetical $10,000 investment, the mean gains over the index, the percentage of the time the RILA investment would have underperformed the index, and the percentage of time the RILA investment returns would have been above certain thresholds (columns "> 0%" through "> 80%"). Our baseline investment option (1-year term, 18% cap, 10% buffer) worked in the expected way relative to the index: lowering the probability of (typically small) losses and shifting the distribution of returns so that, for example, the probability of a gain greater than 40% was higher with the RILA investment option; however, the likelihood of a gain in excess of 80% was attenuated.

The bottom two rows of Table 3 show the 3-year and 6-year investment options. It seems that the 6-year term product would have had a similar returns profile as the index, whereas the 3-year product would have increased the probability of no loss (> 0%) and the probability of a small positive gain (> 20%) compared to the index. On average, investors would have seen a higher investment performance from direct investment in the index (outside of a RILA) than with most of these examples, but the RILA investment options would have helped avert small losses that occurred at particular times. The floor insurance feature largely had more problematic performance in the historical period: relative to the index, it was frequently more likely to incur losses and to fail to achieve high investment performance. On average, an investor choosing this product would have lost 45% of their initial investment compared with a direct investment in the index.

**Table 3.** Summary Performance Statistics of Selected RILA Investment Option Examples.

| Features | Mean | SD | Mean Gain | SD Gain | < Index | > 0% | > 20% | > 40% | > 60% | > 80% |
|---|---|---|---|---|---|---|---|---|---|---|
| S&P 500 Index | $16,494 | 6,791 | - | - | - | 85% | 58% | 51% | 46% | 40% |
| 18% Cap, 10% Buffer, 1-yr term | $15,878 | 3,968 | -$616 | 3,125 | 45% | 99% | 79% | 55% | 48% | 35% |
| 13.5% Cap, 15% Buffer, 1-yr term | $15,100 | 2,707 | -$1,395 | 4,415 | 51% | 99% | 85% | 57% | 44% | 18% |
| 10.9% Trigger, 10% buffer, 1-yr term | $15,256 | 3,032 | -$1,238 | 4,509 | 47% | 100% | 78% | 57% | 44% | 41% |
| 19.5% Cap, 20% Floor, 1-yr term | $11,930 | 2,135 | -$4,565 | 5,058 | 86% | 63% | 48% | 40% | 0% | 0% |
| 130% Cap, 10% Buffer, 3-yr term | $17,129 | 6,305 | $635 | 712 | 19% | 98% | 71% | 53% | 48% | 41% |
| 500% Cap, 10% Buffer, 6-yr term | $16,588 | 6,693 | $94 | 257 | 34% | 85% | 58% | 51% | 46% | 40% |

*Note. The mean column is the average end-dollar amount of a $10,000 investment in the RILA for a 6-year rollover period across all start months. The columns with "gain" compare the RILA returns to the index. The "< Index" column shows the percentage of start months that the RILA would have underperformed the index. The "> 0" column shows the percentage of start months for which the end-investment level would have been greater than the initial investment. The "> 20%" column shows the percentage of start months for which the return would have been greater than 20%.*

Once again, we stress that these examples are provided to illustrate that RILA investment options can have nonintuitive implications, such as an investment option with a floor underperforming an index in the majority of simulated historical cases. The examples were chosen by identifying a common investment product option and examining deviations in features from that option for the purpose of understanding how RILA products can serve investment and investment–insurance functions. As illustrative examples, they are in no way intended to be representative of how the insurance features work across a broader set of products.

## Risk

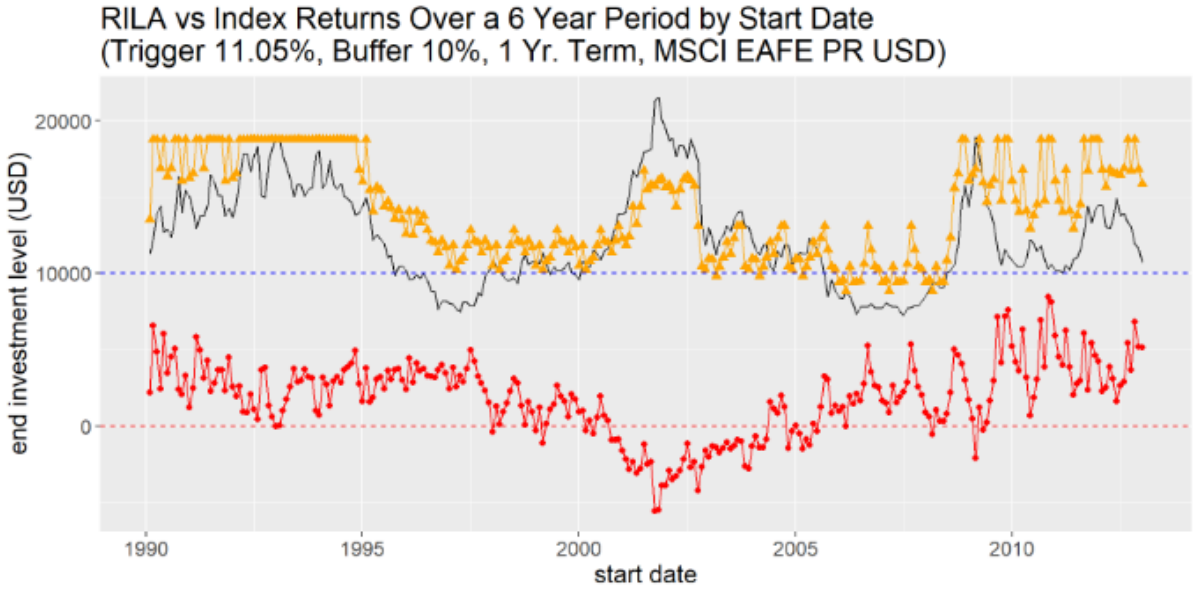
The insurance protections that the RILA investment options provide suggest a natural interest in RILA products' ability to mitigate risk. The examples considered previously suggested that some RILA investment options could be helpful at mitigating downside while limiting the upper distribution of returns.

Standard economic and finance theory typically conceptualizes risk in terms of the variation in outcomes such as the standard deviation of returns or the Sharpe Ratio. For some investors, particularly retail investors, different formulations of risk may be relevant or more intuitive (Holzmeister et al., 2020); for example, some investors might prioritize a definition of risk related to the chance of losing investment dollars over a variation in returns, which in some circumstances might represent variation in the degree of positive returns.

Bearing this in mind, in this section, we examine cases in which the RILA investment option would have had a higher risk in terms of the variation in returns and in terms of an increased probability of losing money. Of course, other variations of risk concepts might be of interest to other potential investors, but we confined our discussion to the above for the present analysis.

It is important to note that although in some cases, these higher risk levels for the investment option may be adverse for the investor, in other cases, they may not be. For example, Figure 13 provides an example of an investment option that would have demonstrated a much higher implied volatility than the associated index. By visual inspection, for much of the historical period, the RILA investment option would have outperformed the index, but there would have been high variability in the realized returns across start dates. The investment option would have avoided some of the index's cumulative losses during the investment start dates in the late 1990s and would have cushioned some of the index's cumulative losses during the investment start dates in the latter 2000s.

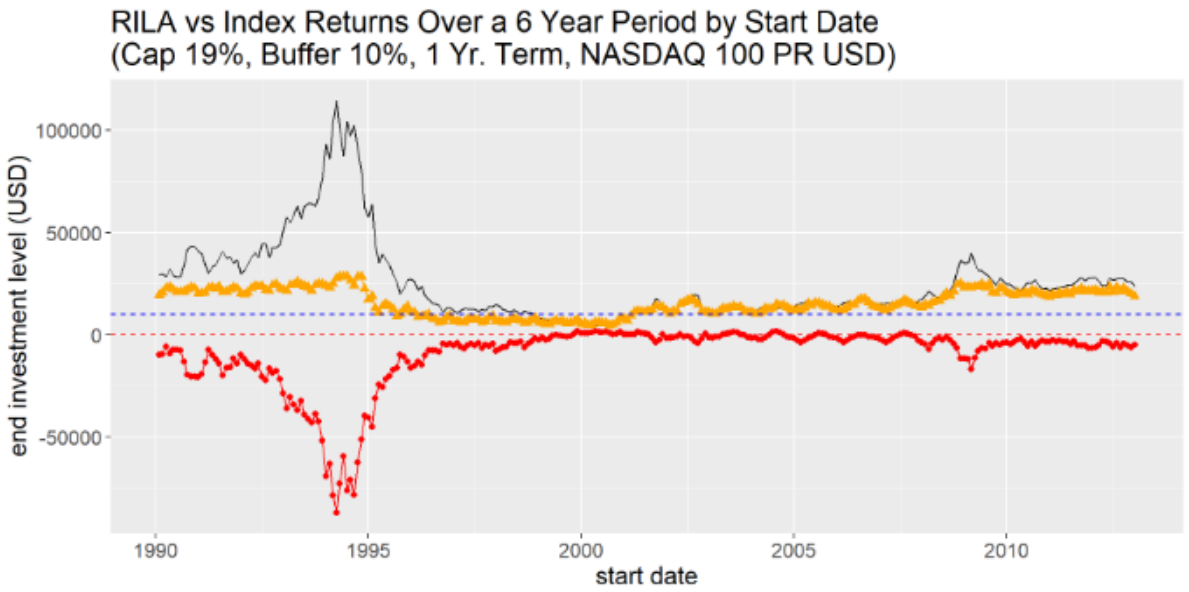
**Figure 13.** Examples of RILAs With Higher Risk Than the Underlying Index.




*Note. The figure compares the RILA investment option and the index returns over the same 6-year investment period. The black line is the values of a $10,000 investment over a 6-year investment period in the index; the yellow line (triangles) is an analogous line for the RILA investment option. The red line (circles) is the difference between the yellow and black lines. Dates correspond to the start date of the investment. Results are not adjusted for inflation.*

Figure 14 provides an example of an investment option that, during the historical period, would have increased the probability of loss while forgoing substantial gains. In addition, it would have provided only slight protection against losses that would have been incurred for investment terms originating in the late 1990s and very early 2000s. In fact, when experiencing a loss, the average value of a loss for the investment option would have been about 3% higher compared to the index. In other words, the investment option would have been more likely to lose money and, on average, would have had a higher magnitude of loss when there was a loss compared to the index (note that this is on average when the investment option or the index independently dipped negative, so the "average loss if loss" magnitudes were not computed over comparable time periods). This particular pattern would have emerged with, among other things, the substantial gains in the NASDAQ followed by a large crash, which is displayed in Figure 14, for the investment periods starting in the late 1990s. In these circumstances, the cap would have greatly limited gains for periods starting in the 1990s, but the buffer would have only slightly tempered losses experienced during the crash. Moreover, this example highlights some of the cumulative effects of the insurance provisions over successive periods: Some initiation dates would have resulted in a capping of the upside, followed by a realization of sometimes successive years of downside. As such, foregone gains and losses would have compounded considerably.

**Figure 14.** Examples of RILAs With Higher Risk Than the Underlying Index.




*Note. The figure compares the RILA investment option and the index returns over the same 6-year investment period. The black line is the values of a $10,000 investment over a 6-year investment period in the index; the yellow line (triangles) is an analogous line for the RILA investment option. The red line (circles) is the difference between the yellow and black lines. Dates correspond to the start date of the investment. Results are not adjusted for inflation.*

Figures 13 and 14 make clear that some RILA investment options may increase investors' risk rather than mitigate investors' risk compared to direct investment in the market, even when early withdrawal penalties are not applied, which may be concerning for investors given that RILAs are marketed as a risk mitigation device. Further research and more transparency are needed in order to document the prevalence of such patterns in the marketplace as a whole and determine the extent of any investor protection concerns they may raise.

## Summary and Discussion

Overall, our results suggest that the choices that purchasers make about RILA investment options can significantly impact returns. We also identified investment options that would have demonstrated potentially adverse risk and return properties for investors, as reflected in simulated historical performance.

These results underestimate the possibility that actual investors would have experienced investment losses over the historical simulation period with RILAs to the extent that we did not account for investor withdrawals before the end of an investment term (which may incur Interim Value Adjustments), before the end of the surrender period (which may incur surrender charges), or before age 59½ (which would incur tax penalties). Previous research has found that as many as 40% of 401(k) retirement plan participants liquidate their accounts upon job transition (Armour et al., 2017; Lu et al., 2017; and Wang et al., 2022), suggesting that using retirement funds for other purposes can be common. If investors were to withdraw money from their RILA

contracts as often as they do with their retirement funds, mid-term withdrawal penalties and surrender charges could apply with some frequency. Further research and data transparency are needed to understand and monitor the impact of such penalties on investors. For example, if in the extreme, most RILA investors need to liquidate a RILA investment, incurring associated tax penalties, Interim Value Adjustments, and surrender charges, these charges and penalties could limit the economic value of the products, or create other balance sheet stresses for households. Given that some penalties may be significant, one would hope that they are rarely levied in practice; even if the penalties paid do not affect the financial system systemically, their impact on individual investors could still be significant. Data on RILA withdrawals and penalties are thus likely to be relevant to investors, financial intermediaries, and other stakeholders. Such data seem critical to an investor's ability to make informed investment decisions, and for understanding the extent to which RILA recommendations result in beneficial outcomes for investors.

# 4. Review of RILA Marketing

To better understand RILA products and the information investors may receive, we reviewed the websites of 13 insurance companies that sell RILAs. Although this was not a review of all RILAs available in the market, it provided us with a picture of how RILAs are marketed to consumers. These companies were identified using the 2021 Secure Retirement Institute's U.S. Individual Annuities Sales Survey (LIMRA, 2022). This review included the web pages, product brochures, videos, prospectuses, fact sheets, and other accompanying promotional material available to retail investors. The reviewed marketing materials presented the balance between the opportunity for growth and the reduced risk of losses on the investment relative to savings alone or more conservative investments as one of the main benefits of a RILA. If comparisons were made to the returns on the underlying index, they were typically based on an example or a figure that highlighted the loss protection, not the caps on gains. The reviewed materials were typically marketed toward those who are nearing retirement, featuring photos and vignettes that suggested that the product is relevant for individuals nearing retirement, although some materials discussed end-of-life issues for investors dealing with terminal illness. Prospectuses were readily available for most companies, although some were absent or challenging to locate. Among the 12 companies that had prospectuses available, the number of pages in the prospectuses ranged from 75 to 262, at an average of 174 pages. The length and language of these documents could be daunting to an average investor.

As we saw in the simulations in Section 3 of this report, insurance features (including caps, triggers, floors, and buffers) are important choices for investors. Many of the reviewed companies emphasized that RILAs can be customized to fit the investor's needs. However, to make informed choices, potential purchasers need to understand the offered features and their actual implications for investing over long periods of time. Although all companies described these features, they differed in how information about features was presented, using hypothetical scenarios or vignettes, definitions, interactive tools, or graphs to illustrate the different insurance features. The placement of information also varied, with some displaying information prominently and others only providing technical information in a prospectus or rate sheet. Other key topics such as early withdrawal charges, investment terms, and index options were included in many but not all materials.

# 5. Qualitative Testing

We conducted two rounds of in-depth interviews to assess potential RILA disclosure, most notably a hypothetical KIT, for areas of confusion or misunderstanding, and to gain insight on investors' mental models regarding the way RILA products function, including potential benefits, risks, and drawbacks. Our qualitative testing used a semi-structured, open-ended format so that participants could express their reactions and beliefs, regardless of accuracy. This method is important for uncovering how everyday investors reason about RILA products and for understanding their reactions to potential RILA disclosures.

## Methods

To recruit participants for the in-depth interviews, the research team developed a screening survey to target two groups of participants: annuity owners and annuity "shoppers." Owners reported currently having an annuity, whereas "shoppers" reported actively shopping for —or planning to shop for—"a financial product to manage income flow after retirement."[14] Additionally, participants needed to have at least $25,000 in retirement assets. We aimed for an even mix of participants across demographic characteristics, locations, and (in Round 2 only) mutual fund literacy (Scholl & Fontes, 2022).[15] Potential participants expressed interest in participating in a 1-hour virtual interview on annuities. In total, we recruited nine participants for the first round of interviews and 11 participants for the second round of interviews. In Round 2, several participants were significantly more sophisticated than the average investor, having worked in the field of finance, potentially as investment professionals, and several participants were high net-worth individuals. Participants consented to participate in the interviews.

In both rounds, over the course of an hour, the interview proceeded with questions in five major sections: First, there was a warm-up section during which participants were asked about their experience with investments, which allowed moderators to ask general questions and establish rapport. Second, participants were asked about their experiences with annuities and RILAs, if any. All participants viewed a short introduction to RILAs. Third, participants were shown select rows of a hypothetical KIT, one at a time. They were asked to read the displayed text, identify areas of confusion, and discuss how that information affected their interest in RILAs. The rows and content of the KITs differed in the two rounds of interviews, to cover more topics across both rounds. Fourth, participants were asked to apply their knowledge of RILAs by assessing the appropriateness of RILAs for hypothetical investors (both rounds),

[14] Because of the relative newness of RILA products, their relatively narrow niche, the timeframe available for research, and the potential for misidentification during the recruitment process, the research team did not deem it feasible or favorable to focus on current RILA owners. To maintain focus on disclosure development, our intention was to focus on potential purchasers rather than others who might have substantial pre-existing knowledge of the products.

[15] Respondents had the following demographic characteristics: 11 were male and 9 female, the average age was 50.9, 11 were white, 4 were Hispanic, 3 were Black, 1 was Native American, and 1 was Asian. 12 were currently annuity owners, and 8 were currently or planning to shop for annuities. 5 of 20 either reported over $1 million in retirement assets or stated that they were very knowledgeable about personal finances.

definitions of key terms (Round 2 only), and tradeoffs between investing in a RILA and in a stock market index (Round 2 only). The final section allowed for any final comments and reminded participants that moderators had presented only limited information about RILAs, so more investigation would be necessary before making an investment decision regarding those products. Our interview guides were reviewed and approved by an Institutional Review Board (IRB) that reviews research to ensure that research plans are ethical and follow applicable policies.

During each round, pilot interviews were conducted to ensure that the protocol functioned well and to train the moderators on the interview guide. All moderators had interviewing and moderating training through either the RIVA Training Institute or the University of Maryland Joint Program in Survey Methodology (JPSM). Round 1 interviews took place between March 27th, 2023 and March 31st, 2023, with Round 2 interviews taking place from June 5th, 2023 to June 16th, 2023.

### Limitations

Note that our qualitative research had several limitations. Due to time limitations, we asked participants to focus on specific information about RILAs. Thus, we were not able to ascertain if participants would have been able to identify and apply key information from a longer KIT document that might include many pages. In Round 1, participants received an informative introduction to RILAs, which may have increased their RILA understanding compared to a typical investor. However, in Round 2, participants received different information about RILAs to keep our focus on participants' interpretation of the material directly presented in the KIT. In both rounds, the interview participants were neither nationally representative nor randomly selected; thus, the findings should not be considered representative of all consumers or used for statistical analysis.

## Results From Round 1

In Round 1, participants discussed four rows from a hypothetical KIT: "What is the purpose of the contract?" "Who may the contract be appropriate for?" "Are there charges for early withdrawal from the contract?" and "Are there other penalties for mid-term withdrawals?" (See Table B1 in Appendix B.) For the purposes of this report, we highlight three broad categories of results from these interviews: (1) whether participants could identify when a RILA product may be appropriate, (2) difficulties with key RILA terminology, and (3) perceived limited information.

We used scenarios to assess whether participants could determine the appropriateness of a RILA product for hypothetical investors (see Appendix B for scenario text). The scenarios attempted to emphasize a mix of RILA product features, including their potential benefits, potential charges and penalties for hypothetical purchasers, and other factors. In many, but not all cases, participants were able to identify the appropriateness of a RILA for investors in the

scenarios, although some scenarios were easier than others. In their explanations, participants often identified only a single charge or penalty that would apply (i.e., only surrender charge, early withdrawal tax penalty, or Interim Value Adjustment), rather than all the losses that would occur (e.g., one scenario involved all three charges). This finding raises the concern that participants demonstrated only a partial understanding of the relevant RILA penalties and how to quantify them. However, for the most part, participants recognized that there would be penalties associated with early withdrawal and that a RILA product would not be appropriate for people with a short-term investment horizon or the potential need for liquidity.

Participants struggled to explain and understand key jargon used to describe RILAs. Many reported that specific terminology is confusing, including language such as "index," "Interim Value Adjustment," and "buffer." In particular, the concept of the investment term seemed to create significant and highly consequential confusion for participants. Several participants seemed to equate "investment term" or "term" with the length of the insurance contract rather than the length of the investment product options within the RILA contract; in other words, they thought that they could liquidate their investment and get cash back after only 1 year without incurring any penalties. When discussing the Interim Value Adjustment and buffer, participants generally reported that they did not understand these concepts. Overall, this difficulty with RILA-related jargon is consistent with past research showing that investment jargon can engender significant confusion in participants (Chin et al., 2023).

Several participants said they would need to do more research or would need more specific information to make a decision about investing in a RILA. Areas of interest included more specific information about the index being used; the amount of the cap, floor, or buffer; or a graph or chart that might help them understand the concept of a floor and buffer.

These Round 1 results informed several modifications to the hypothetical KIT and follow-up research questions for quantitative testing. In particular, before Round 2, the KIT was modified to use the phrase "investment term" rather than "term," to include a table to show how the investment term interacts with the contract length, to examine various graphs to provide more information about RILA insurance features like buffers, and to include expanded links to additional information to indicate that more information could be available. As we discuss below, we chose to include questions about key areas of confusion, such as the long-term nature of RILAs and RILA jargon, in quantitative testing.

### Results From Round 2

In Round 2, participants discussed five rows from the KIT: "What is the purpose of the contract?" "What is the time period for measuring growth (or loss) on my contract value?" "Are there charges for early withdrawal from the contract?" "Are there other penalties for mid-term withdrawals?" and "Is there a risk of loss from poor market performance?" (See Appendix C.) Three of these topics overlapped with those covered in Round 1, but the presentation and content

of the information differed based on modifications to the KIT made between the rounds. The results from Round 2 of the qualitative testing fall into five broad categories: (1) concern about penalties stemming from mid-term withdrawals, (2) understanding the long-run nature of RILAs, (3) difficulties with key RILA terminology, (4) perceived limited information, and (5) difficulties with introductory information about RILAs.

Regarding charges, the KIT that was tested in Round 2 emphasized that significant charges can be incurred if money is withdrawn mid-term. Nearly all participants were concerned about the "up to 90%" Interim Value Adjustment that was displayed in the KIT (row titled "Interim Value Adjustment maximum loss potential (% of contract value)" (see Table C1 in Appendix C). Participants indicated wanting to understand this text better and wanting more information about how this value is calculated, as many expressed incredulity and could not comprehend how an investment could have such a large loss or large charges associated with it. However, attention to the amount of the charge was not an indicator of understanding. At the time it was initially introduced, participants indicated being confused, and later in the interview, they were generally not able to describe the Interim Value Adjustment.

Attention to the Interim Value Adjustment affected interview participants' understanding of the long-term nature of RILAs. In particular, after carefully reviewing the text about Interim Value Adjustments, the 90% potential loss was so salient that most participants were able to identify that a RILA is not a short-term investment and should only be used if an investor will not make early withdrawals. This observation was particularly evident in the discussion of the scenarios.

At the same time, participants indicated that they did not understand other contract details. As mentioned above, several participants in Round 2 were significantly more sophisticated than the average investor, having worked in the field of finance, and several were high net-worth individuals. Even these participants struggled to correctly apply the concepts discussed in the KIT.

With the goal of helping potential investors better understand key concepts that were difficult for Round 1 participants, a table was introduced to illustrate how charges are applied over the surrender period of the contract, the difference between the investment term and the contract length, and how charges could vary over the course of the contract. This table was confusing for even the most sophisticated investors, as participants could not understand the potential total losses from charges and penalties nor distinguish between surrender charges and the Interim Value Adjustment.[16] If participants were able to define the Interim Value Adjustment when they initially saw they table, they were not necessarily able to define the concept later in the interview or to apply their knowledge. Round 2 also introduced several

[16] It is possible that alternative visualizations could yield different results; in these interviews, we only tested a single design.

graphics to illustrate how a buffer works. Most participants were unable to correctly apply the definition of the buffer.

Participants indicated wanting information that was not part of the tested KIT rows, such as the specific investment index options. This desire may have been an artifact of the more limited information that was provided to participants about RILAs before viewing the KIT in Round 2 compared to in Round 1. Some of the more sophisticated participants said they wanted information about past RILA returns. Several participants wanted additional information about other fees that might be charged. In this round, we did not focus on caps on gains, which may have contributed to some participants wondering what other fees there might be, with some participants noting that the insurance company has to make money somehow. Some participants noted that if they needed additional information they would turn to a financial professional, which speaks to the importance of understanding the incentives associated with sales of RILAs and any potential conflicts of interest.

To introduce participants to the RILAs, all interviews contained a short explanation of RILA contracts (see Appendix C). The introduction to the RILA contract that was provided in the interviews did not always help people understand the purpose of a RILA or who a RILA might be appropriate for. In particular, many participants did not seem to understand that RILAs are intended as a retirement savings vehicle and that there may be tax penalties for withdrawal before age 59½. To further explore how introductory information may help individuals understand RILAs, we return to this question in the quantitative testing.

### Summary of Qualitative Testing

Qualitative testing was instrumental to the research team's ability to understand participants' responses to the RILA products and the provision of information about the products. Across both rounds of interviews, we found that many interview participants struggled to understand the details of the RILA contract presented in the hypothetical KIT. These difficulties manifested both in their explanations of what they read and in how they applied the information to the hypothetical scenarios. Often, participants reported that the information was clear, but when they were asked to explain or apply that information later in the interviews, their responses suggested incorrect interpretations. Specific terms such as "index," "buffer," and "Interim Value Adjustment" were often cited as confusing, suggesting that RILA jargon causes difficulties but also that the underlying concepts also create significant challenges. Furthermore, many participants did not seem to understand the distinction between the investment term and the contract length, which seemed to create additional downstream confusion: Participants appeared to carry forward their mistaken understanding of contract length to their interpretations of how insurance provisions or other product features work. However, after being asked to concentrate on Interim Value Adjustments, they were able to identify that a RILA is not an appropriate option for someone with a short-term investment horizon or for someone who may need more liquidity. Across both rounds, many participants noted that they would need more

information to fully understand the product. The results of the qualitative interviews helped inform the design of the quantitative study.

# 6. Quantitative Testing

Our quantitative testing was designed to assess whether the organization of the hypothetical KIT and other information provided to participants impacts their comprehension of the disclosed information. In particular, we sought to answer the following research questions: (1) Does providing introductory text to a disclosure impact comprehension of the disclosed information? and (2) Does the structure of the topic headings, either in a question-and-answer (Q&A) format or statement format impact comprehension?

Interest in these research areas arose because of the overall complexity of the products, the commensurate complexity of the KIT, and the findings of the foregoing analysis—particularly our qualitative inquiry. Among other things, the qualitative research suggested substantial difficulty in understanding basic product features, jargon, more technically challenging features (e.g., definitions of insurance features and charges), and the implications of such features in terms of risk, payouts, and other factors. The introduction variants we tested were informed by the qualitative interviews, during which we found that the KIT did not always provide participants with sufficient background information to understand RILAs. The Q&A versus statement format was intended to test whether framing information as a question would help participants identify and locate relevant information. Because of the difficulty of the material, our design also included various alternative incentives to test whether incentivizing people to read more carefully could improve comprehension.[17]

## Methods

### Sample

We had 3,078 participants start the survey from the Prodege opt-in panel, and 2,564 completed it.[18] An additional 42 participants were excluded because they had the same IP address as other participants.[19] The quantitative testing was fielded from June 16 to June 23, 2023. The average response time was 14.7 minutes. Participants were compensated for their time, with compensation varying from $3 to $12, depending on whether the respondent was in a particularly hard-to-reach group based on annuity ownership and financial experience, as well as incentives provided based on the number of questions they answered correctly. The survey targeted participants who were more likely to have some experience with financial products. Participants consented to participate in the survey panel. Our experimental survey design was reviewed and approved by an Institutional Review Board (IRB).

Table 4 summarizes the demographic characteristics of our sample, and Table 5 summarizes the sample's financial characteristics. Compared to the overall U.S. population, our

[17] Although such incentives are unlikely to be contemplated as a policy instrument, they enable us to gain some insight on the burden associated with reading complex RILA disclosures. Furthermore, these incentives can help assess whether low levels of comprehension measured in a survey occur because the material is too difficult or because participants are not motivated to attend to the details.
[18] For more information on the Prodege panel, see https://www.prodege.com/.
[19] Non-independent observations, such as those arising from a single participant completing the study twice, violates one of the assumptions of ordinary least squares regression analysis used below.

sample was more highly educated, more likely to be female, older, and more likely to be White. Given the potential difficulty in recruiting annuity owners—a particular group of interest—we did not formally target demographic representativeness in this study. We asked additional financial background questions to measure the financial characteristics shown in Table 5. Approximately 68.4% of our sample had income under $100,000 per year, 25.5% had income between $100,000 and $200,000, and 6.1% had income greater than $200,000. Approximately 7% of our sample reported being in debt, 12% reported being neither in debt nor having any assets, 22% reported having positive but less than $100,000 in assets, 43% reported having assets between $100,000 and $1,000,000, and 16% reported having assets greater than $1,000,000. We found that 62% of our sample were classified as an Independent Investor, meaning that they held some financial assets outside of a retirement account; 31% of our sample were classified as a Retirement-Only Investor, meaning that they held financial assets only in a retirement account; and approximately 7% were Non-Investors.

**Table 4.** Summary of Demographic Sample Characteristics.

| | Count (%) |
|---|---|
| Overall | 2,522 |
| Education (%) | |
| BA or above | 1,710 (68.1%) |
| Some college | 456 (18.2%) |
| High school or equivalent | 308 (12.3%) |
| No high school diploma | 36 (1.4%) |
| Missing | 12 (0.5%) |
| Gender (%) | |
| Female | 1,492 (62.2%) |
| Male | 900 (37.5%) |
| Nonbinary | 7 (0.3%) |
| Missing | 123 (4.9%) |
| Age (mean [SD]) | 57.79 (13.83) |
| Race and Ethnicity (%) | |
| American Indian or Alaska Native | 11 (0.5%) |
| Asian | 117 (4.9%) |
| Black or African American | 155 (6.5%) |
| Hispanic | 143 (6.0%) |
| Pacific Islander | 2 (0.1%) |
| White | 1,882 (78.5%) |
| Some other race | 26 (1.1%) |
| Prefer not to answer | 60 (2.5%) |
| Missing | 126 (5.0%) |

**Table 5.** Summary of Sample Financial Characteristics.

| | Count (%) |
|---|---|
| Household Income (%) | |
| <$5,000 | 28 (1.1%) |
| $5K –$14,999 | 34 (1.3%) |
| $15K–$24,999 | 124 (4.9%) |
| $25K–$39,999 | 314 (12.5%) |
| $40K–$59,999 | 417 (16.5%) |
| $60K–$74,999 | 354 (14.0%) |
| $75K–$99,999 | 453 (18.0%) |
| $100K–$149,999 | 459 (18.2%) |
| $150K–$174,999 | 108 (4.3%) |
| $175K–$199,999 | 77 (3.1%) |
| > = $200K | 154 (6.1%) |
| Net Worth (%) | |
| -$75,001 or more debt | 12 (0.6%) |
| -$50,001, to -$75K | 11 (0.5%) |
| -$40,001 to -$50K | 8 (0.4%) |
| -$30,001 to -$40K | 6 (0.3%) |
| -$20,001 to -$30K | 13 (0.6%) |
| -$10,001 to -$20K | 38 (1.8%) |
| -$5,001 to -$10K | 37 (1.8%) |
| -$1 to -$5K | 22 (1.1%) |
| 0 | 256 (12.3%) |
| $1 to $10K | 103 (4.9%) |
| $10,001 to $50K | 182 (8.7%) |
| $50,001 to $100K | 168 (8.1%) |
| $100,001 to $200K | 194 (9.3%) |
| $200,001 to $400K | 239 (11.5%) |
| $400,001 to $650K | 218 (10.5%) |
| $650,001 to $1M | 248 (11.9%) |
| $1,000,001 to $2.5M | 226 (10.9%) |
| > $2.5M | 100 (4.8%) |
| Missing | 441 (17.5%) |
| Investor Type (%) | |
| Independent Investor | 1,564 (62.0%) |
| Retirement-Only Investor | 783 (31.0%) |
| Non-Investor | 175 (6.9%) |
| Owns Annuity (%) | |
| Yes | 1063 (42.1%) |
| No | 1,458 (57.8%) |
| Missing | 1 (0.0%) |

*Note. The count of participants in each category is followed by the percentage of participants by category in parentheses. Historical Prodege screening variables were used to target an oversample of annuity owners. Annuity ownership and investor type classifications were constructed using survey measures within our study.*

## Study Design and Overview

To examine our research questions, we employed a 4x2x2 between-subjects experimental design. We included four different introductions to RILAs, two formats for the KIT, and two variants of variable compensation. Our four introductions were designed to mimic different

information that individuals might be presented with about RILAs before reading the KIT. The first introduction was a control scenario in which participants were given no information about RILAs, which provided a baseline comparator for the other introductions ("***control***"). The second introduction was designed to introduce participants to key terminology and was similar to the introduction used during Round 2 of the qualitative interviews ("***key terms***"). The third introduction described potential benefits of owning a RILA, was informed by our review of the marketing materials provided to consumers, and used similar wording to the wording that a consumer might encounter while shopping for a RILA ("***benefits only***"). The fourth introduction was designed to present participants with information that could influence the decision to purchase a RILA, focusing on conditions that would help a consumer identify whether a RILA is appropriate for them ("***decision focus***"). The ***decision focus introduction*** was intended to provide a jargon-free introduction informed by the qualitative interviews, during which we found that participants were hampered by jargon and often did not seem to understand basic features of RILAs such as their use as a retirement investment, or other aspects relevant to when RILAs may or may not be an appropriate investment.

After seeing the introduction, participants were presented with one of two sets of KIT rows, with each row presented one at a time. In the first set, each row label of the KIT was framed as a question, whereas in the second set, the information was presented with each row labeled as a statement. The material in the KITs was identical other than the Q&A or statement format (see Appendix D for materials).

Next, participants answered a series of questions to gauge their understanding of the presented material and its implications, and their ability to situationally apply the material in settings that approximated key aspects of RILA decision making. Participants were also randomly assigned to various incentive conditions. The study concluded by asking participants for background information about themselves, such as demographics and financial asset ownership (including annuities). Throughout the survey, we measured the amount of time spent on each page in the background.

### Comprehension Measures

Our main outcome of interest in this study was the comprehension of key concepts about RILAs. Academic literature suggests that comprehension can be classified into multiple skills, including basic comprehension and more advanced application of that knowledge (Bloom et al., 1956); existing financial disclosure and financial literacy research also makes distinctions between types of knowledge (e.g., Chin & Bruine de Bruin, 2019; Chin et al., 2022b; Scholl & Fontes, 2022; Warmath & Zimmerman, 2019). As such, we made sure to include both factual statements about RILA features and scenario-based questions that required participants to make inferences about how RILAs would work for investors in certain situations. We included multiple choice, true–false, and check-all-that-apply questions. The scenarios used in the testing were based on those shown to participants in our qualitative interviews.

Our primary overall comprehension score is the percentage of comprehension questions answered correctly. For the true–false questions, participants earned one point for correctly selecting true or false. Participants could also select "Don't know," which was always scored as incorrect. The check-all-that-apply questions were split into their individual response options and scored one or zero for each possible response, due to the difficulty of these questions. For example, a choose-all-that-apply question asking whether Interim Value Adjustments, surrender charges, rollover fees, tax penalties, or none of the above applied in a certain scenario would be recoded into five separate items. Participants could earn one point for each item by correctly marking whether the charge, penalty, or fee applied. Incorrect responses, either for selecting the wrong response or leaving the answer blank, would result in zero points for that item. This recoding resulted in a total of 44 points that a participant could earn across all the comprehension questions. Total points were then converted into a percentage of total points that a participant earned. Given this recoding, someone guessing randomly among the response options would expect to earn 22 points, or 50% of the total, on our overall comprehension measure. Additionally, we created different sub-scores to examine four conceptual areas: (1) the appropriateness of RILAs for investors based on their characteristics; (2) How a RILA Works; (3) how the charges and penalties associated with RILAs affect liquidity; and (4) the insurance protection offered by RILAs.

### Moderating Characteristics

We considered several moderating variables: subjective financial literacy, investor status, and ownership of an annuity. The subjective financial literacy scale was composed of three self-reported items measured on a 5-point scale: ability to deal with day-to-day financial matters, assessment of math ability, and proficiency in dealing with saving and investing financial matters. All three questions had outcomes from *Strongly disagree* to *Strongly agree*, with a *Don't know* option. Investor status questions asked participants about their ownership of employer-sponsored retirement plans, then outside-employer retirement accounts, and finally investments outside of any retirement accounts, such as a non-retirement brokerage or advisory account (following the method discussed in Chin et al., 2022a; Chin et al., 2023). Participants were directly asked if they owned an annuity, with some details of annuity products provided to make the question easier to answer. If participants stated that they own an annuity, they were asked which type of annuity (fixed, immediate, deferred, RILA, or I don't know).

### Limitations

There were several limitations to our study and analysis. First, we used an opt-in panel, which did not allow us to make generalized statements about the comprehension of the population as a whole. We prioritized distinguishing between annuity owners and non-annuity owners and needed to use a panel large enough to target a significant number of annuity owners. Second, we were limited in the disclosure documents that we could test based on both policy priorities and our sample size. Alternative variations to the presented disclosures could have impacted comprehension differently. Third, multiple rounds of quantitative testing were

infeasible because of time limitations and the need to incorporate qualitative testing before designing the quantitative instrument. Best practices for research dictate starting with qualitative testing to discuss RILAs with participants and to understand initial reactions to the disclosures. Fourth, for practical reasons, we were unable to study the impact of a full KIT, which would include many more rows and pages. Our study instrument needed to target an average response time of 15 minutes for data-quality reasons. A KIT mock-up that included full information could have taken the full 15 minutes (or more) to review in detail, leaving no time available for the measurement of comprehension and application of knowledge. Fifth, as a new disclosure proposal, the KIT that was used was not a KIT for a real RILA product. Product providers generally have discretion in what information is presented, and as such, insurance companies might choose to design KITs that differ substantially from what we presented. Sixth, our main interest was to understand the information presented rather than all possible information about investing and RILAs that may be important. Although comprehension is crucial for decision making, we did not measure decision-making quality related to RILAs (neither regarding the choice to purchase a RILA nor which insurance features to select). Finally, future product innovations may change which features of a RILA have the largest impact on investor outcomes, making additional and ongoing research important for knowing how disclosures convey the most decision-relevant information.

## Results

Across all questions and participants, the average percentage of questions scored as answered correctly was 58% (see Table 6 for average sub-scores), which is statistically significantly higher than 50% (one sample proportion test, $p < 0.001$), the score that would occur through random guessing on true/false questions. To be considered fully informed, however, a purchaser should arguably be able to answer a substantially higher percentage of the comprehension questions. Furthermore, as shown in Tables 7–10, there was significant variation in correct responses by question. For example, only 12.6% of participants correctly identified in the How a RILA Works sub-score that RILAs are investment vehicles that are intended purely as retirement savings vehicles rather than for achieving other goals (e.g., education and home purchasing). Only 21% of participants correctly identified that a floor applies to a RILA investment option rather than to the RILA contract overall (see Table 9). In contrast, 80.7% of participants correctly identified that if an investor purchases a RILA, they cannot access their money whenever they need it at no cost (see Table 10).

**Table 6.** Comprehension Overall and by Sub-score.

| | Mean (SD) |
|---|---|
| Overall comprehension | 58% (13) |
| Appropriateness sub-score | 57% (28) |
| How RILA Works sub-score | 49% (20) |
| Insurance sub-score | 57% (16) |
| Liquidity sub-score | 62% (14) |

## Testing Impacts

We estimated the impacts of the different experimental factors on our main outcome variables: overall comprehension and four separate conceptual sub-scores.[20] Full question text, categories, and jargon classification are presented in Tables 7–10. To increase interpretability, results are reported for analyses that did not include interaction terms between all experimental factors but controlled for all of them using ordinary least squares (OLS) regression. The results focus on both the relative differences between different experimental factors and the absolute levels of comprehension, since comprehension is crucial for informed decision making. For most of the analyses and unless otherwise specified, the control group was the group assigned to receive no introduction (i.e., ***control introduction***), the Non-Q&A KIT format, and no variable incentives.

**Table 7.** Appropriateness Sub-score.

| Question Text | Jargon | Average Score |
|---|---|---|
| Pat and Jean are in their early 40s. Their daughter is in seventh grade and will go to college in six years. They have saved some money for college but are worried it won't be enough, so they would like to invest and make it grow. At the same time, they are not confident about the stock market and are worried about losses. | No | 48.7% |
| Taylor is 50 years old with a steady job. She has a retirement account with stocks and bonds that she started 30 years ago. Taylor doesn't plan to use any of that money before retirement. However, she is still worried about having enough given the rising cost of living and the chance that the stock market could face a major drop in five or six years | No | 54.1% |
| Uncle Bob is 85 years old. He lives on his own, but expects to move to an assisted living community in five years because he is increasingly forgetful. Assisted living is expensive, and Bob is not sure if he'll have enough money. He currently has some money in a retirement account in very low-risk investments. His financial professional recommended a RILA to him with a 5-year investment term. Uncle Bob thinks this will allow for some stock market gains, with limited downside risk. | Yes | 57.3% |
| John is 55 years old and does not think he will ever have enough money to retire. He doesn't want to risk losses on his investments because if an emergency comes up, he will need to withdraw that money and use it immediately. Right now he has a small, conservative portfolio with mostly bonds. | No | 69.1% |

*Note. Question text includes the type of question: True–false questions are labelled (T/F), multiple choice questions are labelled (M/C), and choose-all-that-apply questions are labeled (CATA), with the individual option listed after the colon (e.g., CATA: Cap Rate). Jargon indicates whether the question used jargon specific to RILAs. The average score is the percentage of all participants who got the question correct.*

[20] There were additional preregistered analyses, which occasionally had different levels of significance, but the magnitude of the differences between the testing impacts was quite small. The largest difference in testing effects between the outcome variables analyzed here and the preregistered analyses was about 2 percentage points, which is small enough not to change the overall substantive conclusions.

**Table 8**. How a RILA Works Sub-score.

| Question Text | Jargon | Average Score |
|---|---|---|
| RILAs provide an opportunity to save for a variety of investing goals (for example education, homebuying, or retirement). (T/F) | No | 12.6% |
| The investment term is the life of your contract with the insurance company. (T/F) | Yes | 16.1% |
| At the end of the initial RILA investment term, you will receive a check from the insurance for the current value of your investment. (T/F) | Yes | 32.9% |
| RILAs are among the safest annuity products one can buy. (T/F) | No | 46.5% |
| Your investment options are guaranteed to stay the same even if you stay in a RILA for multiple terms. (T/F) | Yes | 51.5% |
| RILAs provide tax advantages for retirement savers. (T/F) | No | 58.6% |
| A RILA does not have the same limits on contributions as a 401(k) or IRA. (T/F) | No | 59.1% |
| RILAs cannot lose money. (T/F) | No | 82.6% |
| RILAs are a long-term investment. (T/F) | No | 83.9% |

*Note. Question text includes the type of question: True–false questions are labelled (T/F), multiple choice questions are labelled (M/C), and choose-all-that-apply questions are labeled (CATA), with the individual option listed after the colon (e.g., CATA: Cap Rate). Jargon indicates whether the question used jargon specific to RILAs. The average score is the percentage of all participants who got the question correct.*

**Table 9.** Insurance Sub-score.

| Question Text | Jargon | Average Score |
|---|---|---|
| 3 years ago, Sally invested $10,000 in a RILA investment product. The investment she selected is linked to the S&P 500 and has a 3-year investment term. There is a cap rate of 10%, and a buffer of 10%. If the S&P 500 decreased by an average annual rate of 4% per year, for a total loss of 12.5% over 3 years, how much would Sally's contract be worth at the end of the term? (MC) | Yes | 13.4% |
| What features in RILAs reduce potential gains from the market? (CATA: Participation Rate) | Yes | 16.2% |
| If you own a RILA with a 10% floor, you can lose a maximum of 10% over the time that you are invested in the annuity. (T/F) | Yes | 20.9% |
| What features in RILAs reduce potential losses from market declines? (CATA: Floor) | Yes | 51.6% |
| What features in RILAs reduce potential gains from the market? (CATA: Cap Rate) | Yes | 52.1% |
| What features in RILAs reduce potential losses from market declines? (CATA: Buffer) | Yes | 54.4% |
| A RILA may limit your investment gains compared to investing in a fund that tracks the same market index. (T/F) | No | 62.6% |
| What features in RILAs reduce potential gains from the market? (CATA: Buffer) | Yes | 76.8% |
| What features in RILAs reduce potential gains from the market? (CATA: Protection Level) | Yes | 81.3% |
| What features in RILAs reduce potential gains from the market? (CATA: None of the above) | Yes | 83.7% |
| What features in RILAs reduce potential losses from market declines? (CATA: None of the above) | Yes | 85.2% |
| What features in RILAs reduce potential losses from market declines? (CATA: Ceiling) | Yes | 87.2% |

*Note. Question text includes the type of question: True–false questions are labelled (T/F) and choose-all-that-apply questions are labeled (CATA), with the individual option listed after the colon (e.g., CATA: Cap Rate). Jargon indicates whether the question used jargon specific to RILAs. The average score is the percentage of all participants who got the question correct.*

**Table 10.** Liquidity Sub-score.

| Question Text | Jargon | Average Score |
|---|---|---|
| At the end of the investment term, you may withdraw your money without penalty. (T/F) | Yes | 17.5% |
| If she had to pay the highest possible fees, about how much should she expect to receive if she were to pull out all of her money today? (MC) | No | 20.2% |
| If your RILA investment has reached the end of its term, which of the following penalties could apply if you withdraw your money (CATA: Surrender charges) | Yes | 31.5% |
| To avoid paying penalties on withdrawals, you may need to reinvest your money for several investment terms. (T/F) | Yes | 36.3% |
| Tori is 51 years old and has had a RILA for 15 years. She most recently contributed money three years ago. Recently, there was a family emergency, and she needs access to the money now. (CATA: IVA) | Yes | 45.4% |
| Tori is 51 years old and has had a RILA for 15 years. She most recently contributed money three years ago. Recently, there was a family emergency, and she needs access to the money now. (CATA: Tax Penalties) | Yes | 51.3% |
| Surrender charges, interim value adjustments and tax penalties are all waived if the investor is over age 59.5. (T/F) | Yes | 55.9% |
| An investor who is 85 years old faces no penalties for withdrawing funds. (T/F) | No | 57.1% |
| If your RILA investment has reached the end of its term, which of the following penalties could apply if you withdraw your money (CATA: None of the above) | Yes | 58.4% |
| If the surrender period is 9 years, the surrender charge applies only if you withdraw money within 9 years of your last payment. (T/F) | Yes | 67.8% |
| Tori is 51 years old and has had a RILA for 15 years. She most recently contributed money three years ago. Recently, there was a family emergency, and she needs access to the money now. (CATA: Surrender) | Yes | 68.4% |
| An investor who is 58 years old faces no tax penalty for withdrawing funds. (T/F) | No | 73.7% |
| If your RILA investment has reached the end of its term, which of the following penalties could apply if you withdraw your money (CATA: Transfer fees) | Yes | 79.1% |
| If your RILA investment has reached the end of its term, which of the following penalties could apply if you withdraw your money (CATA: IVA) | Yes | 79.4% |
| If you invest in a RILA, you can access your money whenever you need it at no cost. (T/F) | No | 80.7% |
| Tori is 51 years old and has had a RILA for 15 years. She most recently contributed money three years ago. Recently, there was a family emergency, and she needs access to the money now. (CATA: Transfer fees) | Yes | 85.1% |
| If your RILA investment has reached the end of its term, which of the following penalties could apply if you withdraw your money (CATA: Rollover fees) | Yes | 87.5% |
| Tori is 51 years old and has had a RILA for 15 years. She most recently contributed money three years ago. Recently, there was a family emergency, and she needs access to the money now. (CATA: None of the above) | Yes | 93% |
| Tori is 51 years old and has had a RILA for 15 years. She most recently contributed money three years ago. Recently, there was a family emergency, and she needs access to the money now. (CATA: Rollover fees) | Yes | 93.5% |

*Note. Question text includes the type of question: True–false questions are labelled (T/F), multiple choice questions are labelled (M/C), and choose-all-that-apply questions are labeled (CATA), with the individual option listed after the colon (e.g., CATA: Cap Rate). Jargon indicates whether the question used jargon specific to RILAs. The average score is the percentage of all participants who got the question correct.*

In Table 11, we compare results across treatment arms for overall comprehension scores. The different introductions to the KIT rows did not have a significant impact on this measure (all *p values* > 0.21). Neither the Q&A format nor the bonus payments resulted in significantly different average comprehension (KIT structure: $p = 0.37$; bonus payments: $p = .24$).

**Table 11.** Summary of Results Across Treatment Arms.

| Testing Condition | Overall Comprehension Mean % Correct (SD) |
|---|---|
| Introduction | |
| Decision focus | 60.2 (13.7) |
| Key terms | 58.5 (14.3) |
| Benefits only | 58.7 (12.9) |
| Control | 59.1 (12) |
| KIT Structure | |
| Non-Q&A | 58.8 (13.4) |
| Q&A | 59.4 (13.1) |
| Bonus Payments | |
| No | 59.5 (13.4) |
| Yes | 58.7 (13) |

When splitting out comprehension by the four conceptual sub-scores (see Tables 7–10 for question classification), we found a few significant differences between the treatment conditions, when controlling for the other testing factors, but these were relatively small in magnitude (see Table 12 for condition means). For the Appropriateness sub-score analyses, we changed the reference category to be the ***decision focus introduction*** without the Q&A structure and no variable incentives. The ***decision focus introduction*** was intended to explain the conditions that would likely make a RILA an appropriate choice and to explain the basic structural features and key aspects of the contract without using jargon. As such, the other introductions were expected to lead to worse comprehension of this specific conceptual area. Although participants in the ***key terms introduction*** (4.5 percentage-point decrease; $p = 0.005$) and the ***control condition*** (3.3 percentage-point decrease; $p = 0.04$) fared significantly worse than those in the ***decision focus introduction*** condition, the difference between the ***decision focus introduction*** and the ***benefits-only introduction*** conditions demonstrated only marginally statistically significant differences (3.1 percentage-point decrease; $p = 0.053$). These results suggest the ***decision focus introduction*** shows some promise, although the overall levels of comprehension leave room for improvement. The Q&A versus Non-Q&A variations that were tested on the KIT did not significantly affect comprehension on the Appropriateness sub-score (0.2 percentage points; $p = 0.88$), nor did the variable incentives ($p = 0.22$).

**Table 12.** Summary of Results by Sub-Score and Treatment Arms.

| | Sub-Score Comprehension (Mean % Correct [SD]) | | | |
|---|---|---|---|---|
| Testing Condition | Appropriateness | How a RILA Works | Liquidity | Insurance |
| Introduction | | | | |
| Decision focus | 60.1 (27.7) | 52.9 (20.7) | 62.7 (13.9) | 56.6 (15.7) |
| Key terms | 55.5 (28.1) | 48.0 (20.5) | 61.1 (15.1) | 58.4 (16.3) |
| Benefits only | 57.0 (28.1) | 48.5 (19.3) | 62.2 (13.9) | 56.6 (15.1) |
| None | 56.8 (28.4) | 48.3 (18) | 62.9 (13.2) | 56.9 (15.5) |
| KIT Structure | | | | |
| Non-Q&A | 57.1 (27.9) | 48.4 (19.4) | 62.1 (14.4) | 56.9 (15.8) |
| Q&A | 57.4 (28.4) | 50.2 (20) | 62.3 (13.7) | 57.3 (15.6) |
| Bonus Payments | | | | |
| No | 58.0 (28.2) | 49.9 (19.8) | 62.2 (14.1) | 57.8 (15.8) |
| Yes | 56.5 (28.1) | 48.7 (19.6) | 62.2 (14) | 56.4 (15.5) |

For the How a RILA Works sub-score, overall comprehension was about 49%, which is not different from what we would expect if everyone randomly guessed on these questions (one sample proportion test; $p = 0.08$). We analyzed comprehension on this sub-score using the typical analysis structure, where the ***control introduction*** was the reference category in the regression. Using that structure, we again observed higher scores for those who received the ***decision focus introduction*** compared to the ***control introduction*** (by 4.4 percentage points; $p < 0.001$). There were no differences between the ***control introduction*** and the other two introductions (*p values* > .72). In addition, participants who received the Q&A format demonstrated higher scores (by 1.6 percentage points [$p = 0.04$]) than did participants who received the Non-Q&A KIT format. Again, the results only represent a slight increase in comprehension for participants in the ***decision focus introduction***, but the direction of change demonstrates some promise.

For both the Liquidity and Insurance sub-score, we only saw one significant difference for each sub-score. The ***key terms introduction*** had significantly lower average comprehension on the Liquidity sub-score (1.8 percentage-point decrease, $p = 0.025$) compared to the ***control introduction***. As for the Insurance sub-score, the variable incentive condition had statistically significantly higher comprehension than the condition without an incentive (1.5 percentage-point increase, $p = 0.02$). These small differences were economically very modest improvements given the absolute comprehension levels on these sub-scales.

One potential concern is that the use of jargon inhibits investors' ability to understand RILA investment options and features. To test this hypothesis, we compared how many questions participants answered correctly when the questions did or did not include jargon. Our experiment was not designed to test this hypothesis; thus, the use of jargon was not randomized or balanced within sub-scores, so our results should be considered exploratory analysis. When pooling the How a RILA Works questions into groups that did or did not use jargon in the question text, we found that the average percentage correct for the questions without jargon was

substantially higher (non-jargon average percentage correct = 57.2%; jargon average percentage correct = 33.5%; paired one-sample *t*-test $p < 0.001$). This finding is suggestive evidence that jargon may create substantial barriers to comprehension. Additional research on the use of jargon in disclosures, particularly for such a technical product, is necessary to understand potential negative effects on comprehension and associated remedies (see Chin et al., 2023 for further discussion).

## Subgroup Analysis

Given the complexity of the RILA products, it is reasonable to believe that more sophisticated investors might fare better in terms of comprehension, since they may have more background knowledge that could help contextualize the disclosed information. As such, we conducted subgroup analysis for four subgroups that were defined according to subjective financial literacy levels, investor status, annuity ownership, and our initial recruitment groups. These analyses were performed by interacting indicator variables for subgroups with the testing factors.

### *Subjective Financial Literacy*

Three questions on a 5-point scale that captured subjective financial literacy were summed together (self-assessed ability to deal with day-to-day financial matters, self-assessed math ability, and self-assessed proficiency in dealing with saving and investing financial matters), creating a score that ranged from 3 to 15.[21] There was a positive correlation between subjective financial literacy and overall comprehension. On average, a 1-point increase in subjective financial literacy was associated with a 1.3 percentage-point increase in overall comprehension ($p < 0.001$). In other words, for the lowest score, we would predict the average comprehension to be 47%, whereas at the median of the scale (12), we would expect average comprehension to be 59%. We did not find that treatment effects varied across conditions based on subjective financial literacy.[22]

### *Investor Status*

Participants were classified into three groups: those with no investments in stocks, bonds, mutual funds, or other securities ("Non-Investors"); those with investments exclusively in retirement savings accounts ("Retirement Only"); and those with investments outside of retirement accounts ("Independent Investors").[23] In prior research, these categories have been associated with increasing financial sophistication, including investment knowledge and trading behavior (Chin et al., 2022a; Chin et al., 2023).

[21] There were five people in the sample who did not respond to at least one of the three subjective financial literacy questions, so we could not calculate a sum score for them; thus, they were excluded from the moderation analysis.

[22] Subjective financial literacy was mean centered and interacted with indicator variables for each of the treatment conditions. For example, there was an estimated coefficient for the ***key terms introduction***, subjective financial literacy, and the interaction between the ***key terms introduction*** and subjective financial literacy. Interactions between the different testing factors were not included.

[23] Note that by definition, the Independent Investors group consisted of individuals who may or may not have retirement savings accounts. This is consistent with the definition used in Chin et al., (2021) and Chin et al., (2022).

In the current context, investor types are relevant for two reasons: First, Independent Investors likely have more knowledge about investing compared to members of the other groups, which may make it easier for them to understand the structure and features of RILAs. Retirement-Only Investors likely have more knowledge about investing than Non-Investors, but less knowledge than Independent Investors. The retirement savings design of RILAs is also likely to be more familiar to those with retirement savings (Retirement-Only and some Independent Investors). Second, Independent and Retirement-Only Investors are more likely than Non-Investors to purchase these products given that they have financial assets (by definition), and there are minimum purchase amounts required for RILAs. From an investor protection standpoint, it is relevant to understand how comprehension may vary by investor type, including when viewing different disclosures.

On average, Independent Investors had a higher overall comprehension, with an average score of 61%, which is 3.4 percentage points higher than the average for the Retirement-Only Investors ($p < 0.001$, not controlling for testing factors) and 11.7 percentage points higher than the average for the Non-Investors ($p < 0.001$, not controlling for testing factors). As for moderation of the testing effects by investor status, we only saw one significant interaction between investor status and the impact of conditions. The effect of the Q&A KIT structure on overall comprehension (vs. Non-Q&A structure) was larger for certain groups, estimated at a 0.5 percentage-point increase for Independent Investors versus a 5.7 percentage-point increase for Non-Investors ($p = 0.011$). None of the other differences by experimental condition were significant, nor were the effects different between the Independent Investors and the other two groups (Retirement-Only Investors and Non-Investors). Given the number of statistical tests in the moderation analyses, this difference would likely not remain significant if we controlled for the number of statistical tests conducted.

#### *Annuity Ownership*

Participants were classified into two groups: those with annuities and those without annuities. There was a small but statistically significant difference in the average overall comprehension, with annuity owners scoring 2.6 percentage points higher on overall comprehension ($p < 0.001$). We did not see any variation in the effects of the experimental conditions for participants of different annuity ownership.

### Time

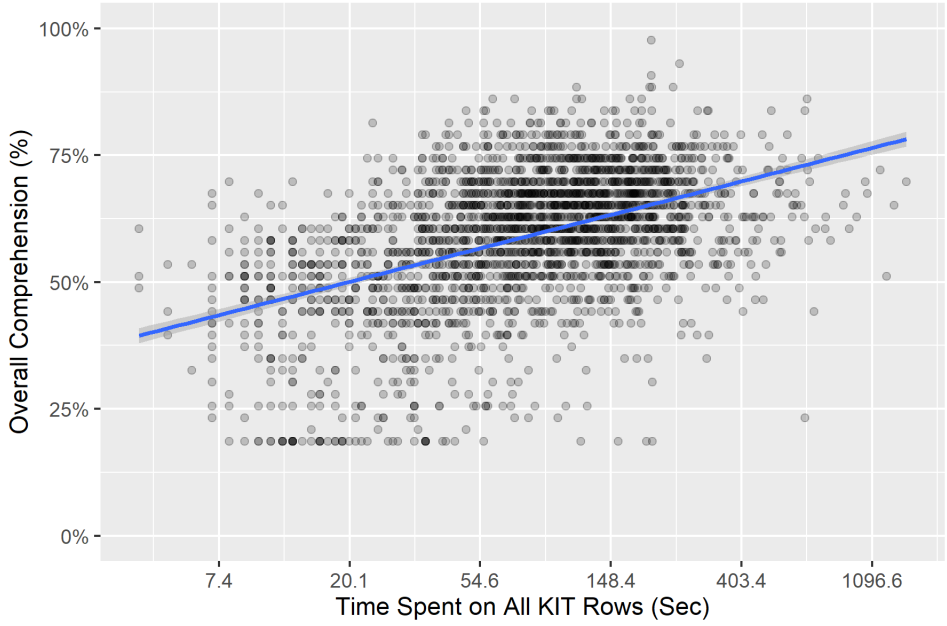
As exploratory analysis, total time spent on the survey and time spent on the four KIT rows were compared across the experimental conditions;[24] this analysis helps to understand if the introduction and KIT experimental conditions affected efficiency and engagement. The median time spent on the KIT rows was 87 seconds, or just shy of one and half minutes, whereas the

[24] Given the distribution of time spent on the whole survey and on all KIT rows, we log-transformed the time outcome (using natural log) to better satisfy the modeling assumptions of the OLS regression.

median total survey time was 12.4 minutes. Both time spent on the KIT rows and time spent on the entire survey were positively correlated with overall comprehension (Figure 15).

The amount of time spent on the KIT was highly skewed with a median of 87 seconds, but a max over 23 minutes.[25] As a result, in our analysis we focus on the median and the log of KIT time, and in the graph below we use a log scale on the x-axis; we used a simple least squares regression to describe the relationship between time spent and the log of the percent of questions correct (the log of KIT time better accounts for the dispersion in values). An individual who spent the median amount of time on the KIT rows (87 seconds) is associated with an average score of 59.7% of the comprehension questions correct. Someone spending an additional 10 seconds on the KIT rows (97 seconds), is associated with an average score of 60.4% of the questions correct. As for total survey time, having spent the median amount of time (12.4 minutes), is associated with an average score of 59.1% of the overall comprehension questions correct. Spending 1 minute longer on the entire survey is associated with an average comprehension score of 59.8% of the questions correct.

**Figure 15**. Relationship Between Transformed KIT Time and Comprehension.




*Note. Figure 15 shows the relationship between time spent on all KIT rows and overall comprehension. The time spent on all KIT rows was log-transformed and then relabeled with the actual number of seconds someone spent on the KIT row pages. The blue line is the ordinary least squares regression of the variables plotted.*

There was no statistically significant difference across the experimental conditions (varying the introduction or KIT format) in the total amount of time spent completing the survey

[25] Given the online format of survey administration, it is possible that the longer survey response times do not reflect active engagement. For example, a participant could start a survey and pause to run a household errand. Trimming of observations was considered, but not pursued here given that our evidence on timing is purely exploratory. The log transformation helps to deal with some of the resulting time dispersion.

or the total combined time spent in the survey reviewing the respective introduction and the KIT rows together (all *p values* > 0.1). However, time spent on the KIT rows alone (omitting time spent on introductions) varied somewhat. Compared to those in the ***control introduction*** condition, participants who saw the ***decision focus introduction*** spent less time on the four KIT rows (b = -.32, $p < 0.001$). Similarly, the ***key terms*** and ***benefits-only introductions*** led to significantly less average time spent on the four KIT rows (***key terms***: b = -.24, $p < 0.001$, ***benefits only***: b = -.16, $p = 0.002$). Translating these values into seconds, the average time spent on the KIT rows in the ***control introduction*** condition was about 134 seconds. For the ***decision focus introduction***, the average time spent on all KIT rows was approximately 102 seconds. The average time spent on all KIT rows was 112 seconds for the ***key terms introduction*** and 121 seconds the ***benefits-only introduction***. Concretely, these results overall mean that on average, the reduction in time spent on the KIT rows for the ***non-control introductions*** was reallocated to time spent on the introductory text.

These results linking time spent and comprehension are descriptive in nature and not intended for causal interpretation. Nevertheless, they suggest an interest in this relationship for further study as there are at least two interpretations that are consistent with our observations. First, it is possible that the introductory materials allowed participants to more efficiently process subsequent information about the RILAs, accelerating reading of the information presented in the KIT rows with limited detrimental effects. On the contrary, the introductions, which provide an alternative source of some of the KIT information, could have simply increased participants' subjective sense of familiarity, leading them to speed through the KIT while retaining less information presented in the KIT. Additional research is needed to identify how common either of these effects may be and what kinds of introductions are more likely to result in better comprehension.

## Summary of Quantitative Testing

The quantitative testing suggests that understanding RILAs is challenging for many consumers. Overall comprehension was low, and there were no statistically significant differences in the percentage of correct responses for overall comprehension across treatment arms. In terms of our sub-score concepts, the ***decision focus introduction*** variant demonstrated some promise in terms of basic RILA concepts and appropriateness, but it did not affect overall scores or scores on the Liquidity and Insurance sub-score. The Q&A KIT format demonstrated a statistically significant, albeit quantitatively small, improvement over the Non-Q&A KIT format. Finally, more sophisticated respondents demonstrated higher (though still arguably low) levels of comprehension. Even with the most promising variants of the introduction and the KIT (the ***decision focus introduction*** and the Q&A KIT), there were only modest improvements, and no variation in treatment effects across subgroups. We are unaware of any disclosure that has achieved perfect levels of comprehension in quantitative testing. However, it is possible that additional variants could further increase investors' comprehension and decision-making quality.

Jargon demonstrated a clear barrier in our quantitative testing. We found that comprehension was substantially lower for our jargon-laden questions relative to the non-jargon questions. Yet, even the questions without jargon yielded average comprehension levels of at most 65%. This suggests that substantial conceptual barriers surround RILAs. Some comprehension questions highlight how hard these products were to understand. For example, only 12.6% of participants correctly identified that RILAs are investment vehicles that are intended purely as retirement savings vehicles rather than intended for achieving other goals (e.g., education, home purchasing). This question was intended to be among our most basic questions about the products.[26] From the qualitative results, we found that people had trouble understanding what features apply to the overall contract versus the individual RILA investment. This pattern was confirmed, as only 21% of participants correctly identified that a floor applies to a RILA investment option rather than to the insurance contract.[27]

To the extent that disclosure is the policy instrument of choice for addressing investor protection concerns, future research may choose to build on the potential merits of the ***decision focus introduction*** condition (and, to a limited extent, the Q&A KIT format). In particular, as the ***decision focus introduction*** was designed to provide decision-relevant information up front, further research could seek to understand what factors are most important to the actual decisions the investor needs to make (e.g., *Should I invest in a RILA?*), followed by designing a disclosure that is organized with that structure in mind. If pursued, these materials should also follow other principles of good communications (e.g., Bruine de Bruin & Bostrom, 2013; Sunstein, 2010) to avoid information overload (Scheibehenne, 2010). At the same time, the fact that these products are typically professionally sold and highly complex suggests that policy attention to investment professionals' conduct and marketing standards may merit consideration, at least as a complement to disclosure.

[26] On this item, an OLS regression model showed that comprehension was significantly higher for the ***decision focus introduction*** condition relative to the ***control introduction*** condition (a difference of 5.9 percentage points, $p = 0.002$)
[27] There were no differences between the conditions on this item.

# 7. Conclusions

## Summary of Methods

This report presents the results of research and investor testing that fulfills the 2022 Congressional directive to "engage in investor testing" regarding RILAs.[28] In particular, we conducted (1) a simulation analysis to understand how RILA products and their insurance features affect investment results and potential investor outcomes when no early withdrawals are made, (2) a review of common marketing practices, (3) qualitative testing, and (4) quantitative testing. By examining RILAs from multiple angles, we provide more holistic, multidisciplinary insight regarding these products.

In our **simulation analysis,** we measured the benefits and risks of hypothetical RILA products over different time periods, and we measured how highly complex sets of insurance features would have operated under various market environments. These simulations enabled us to estimate purchaser outcomes for up to 3 decades of market history, using current product offerings, even though we were unable to access direct information on actual investor outcomes and true historical RILA insurance features. Part of the simulation work concentrated on commonly offered insurance features and on how variants of those features could affect outcomes. Overall, the simulation results are crucial to understanding the economic features and economic value of RILA products—particularly performance and risk—that might be worth consideration in product disclosure. We identified investment options that increase certain risk measures in historical simulations despite the products largely being sold as risk mitigation instruments, raising concerns that some investment options may not operate as consumers expect. More investigation along these lines and additional transparency is needed to fully understand RILAs and how the market evolves over time.

In our review of product providers' common **marketing practices**, we explored the advertised benefits of RILAs for potential investors. This component of our research set the stage for our qualitative and quantitative testing and helped provide basic information about how the products are presented to potential purchasers.

In our **qualitative testing**, using an in-depth interview approach with 20 annuity owners and potential owners, we explored familiarity with RILAs and how consumers approach the terminology and features of RILA products. These interviews provided initial information on how well consumers understood the RILA disclosures and applied the information they received to the scenarios. The open-ended approach also allowed participants to raise questions about the materials, bringing up issues that were relevant for them. Ultimately, the qualitative study was crucial to our ability to design our quantitative testing.

[28] See Section 1 of this report for more information.

Finally, the **quantitative testing** allowed us to formally test certain variants of the disclosure formats and introductory texts. The testing, which employed a nonprobability sample, provided additional information on the ability of these variants to affect investors' understanding of the products and their ability to apply knowledge of the products.

## Summary of Findings and Discussion

Each of our research efforts yielded insight into RILA products or disclosure.

**Simulations.** In our exploration of the insurance features, we identified that, as expected, certain insurance features (such as caps) can, in some cases, limit returns relative to the underlying index and that downside protections may avert relative losses. However, the benefits of such risk reduction should not be overstated: An identical set of insurance features was associated with a wide variety of investment outcomes (and relative outcomes), depending on when the investment occurred, due to the timing risk associated with RILA investing. We also identified some instances in which RILA options would have *increased* both the probability and magnitude of loss, while substantially reducing the upside gain.

The simulations helped highlight the conditions under which relative gains and losses occur. Despite the fact that many of the insurance features appear to operate mechanically (e.g., caps limit returns), it is difficult to fully understand the implications of the insurance features. The insurance features only activate under specific index movements, and the time-limited investment terms mean that gains or losses over a prolonged period of time may not be the same as a series of repeated investments that span the same period. For instance, a RILA contract consisting of two 3-year investment options may differ from a single 6-year investment option over the same period. In the first case (with two 3-year terms), the relative value is determined by the index movements halfway through the 6-year period, since a RILA with a 3-year term would have returns credited or removed after each investment term. This midstream evaluation of returns means that the ultimate value may be higher, lower, or the same.

**Marketing Practices.** Overall, our review of RILA marketing materials suggests that the number of choices an investor needs to make when investing in a RILA and when selecting among available investment options (e.g., choices of index, buffer, floor, cap rate, participation rate, term length) could easily be overwhelming. There are many individual decisions to make with RILA products and while the promotional materials focus on the highly important decision of whether an individual should consider a RILA, they often do not include information that could aid decisions about which specific options to choose within that RILA. This complexity might increase investors' dependence on other sources of information, including professionals to identify whether a RILA is appropriate for them, to explain the pros and cons of the different menu of investment options, and to aid the investor in determining which combination of features is likely to be in their best interests. However, Scholl et al. (2018) report that fewer than half of investors report using professional financial advice.

**Qualitative Testing.** We identified a range of barriers to investors' understanding of RILAs and associated disclosures. In our study, one recurring issue was the terminology used to describe RILA contracts and the investment options. The jargon was confusing and led to incorrect beliefs for some study participants. For example, many participants interpreted the phrase "term" or "investment term" largely to mean the length of time in which they are locked into the RILA contract, whereas it actually refers to the length of time they are locked into a particular investment option. Use of this terminology led many participants to the wrong impression about how other features of the product work and misdirected interpretations of the disclosures about those features; for example, the structural distinction between the RILA contract itself (for which surrender charges and tax penalties may apply for withdrawing money even after a term has completed) and the investment options (for which an early withdrawal would additionally require payment of an Interim Value Adjustment) remained unclear.

There was significant confusion about the features and expenses associated with RILAs, including concepts like the buffer and the Interim Value Adjustment. Our participant pool targeted annuity owners and shoppers and had several highly sophisticated investors. Even these individuals demonstrated confusion or lost interest in RILAs once that confusion was abated.

Several variants of the disclosures were examined, including variations on the KIT as well as inclusion of graphics or tables to illustrate several key points, but each of these variants pointed to the difficulty in communicating key features of RILAs to the investing public, including the communication of basic aspects such as how the products work and what purpose they are intended to serve for the investor. The ineffectiveness of the graphical and tabular information we presented may be considered specific to the graphical and tabular designs we used: we did not study whether the graphics or tabular presentations in general could be effective, which was not possible given the limited time available for this research; such testing would require examining many different types of each display.

**Quantitative Testing.** Our testing examined a set of KIT variations, different introductions to the RILA products, and the role of variable incentives in affecting comprehension. We largely observed that there were no significant differences, on average, among any of the treatment conditions. Even when we found significant differences, their magnitudes were modest (e.g., 1 to 5 percentage points), particularly considering the average comprehension levels observed, with the ***decision focus introduction*** showing promise and the Q&A KIT format having a slight improvement in certain sub-scores. Certain subgroups of participants varied in their comprehension but not differentially across treatment conditions. Our results do not indicate that disclosures writ large are ineffective at communicating relevant information to investors. Rather, they suggest that the range of options we tested did not differentially impact comprehension. Moreover, our results suggest that misunderstanding permeated a variety of conceptual issues regarding RILAs. There were relatively low levels of comprehension regarding both technically difficult questions about the insurance features and basic questions regarding the purpose of a RILA.

Although our variations on the KIT were somewhat limited and a broader range of options could be explored, the limited effects of the alternative introductory texts suggest that disclosure variants may not be a complete solution for investors who are interested in RILAs. We provided participants with one of four introductory texts (no introduction, a ***benefits-only introduction***, and two substantive introductions). These different introductions did not result in improved participant outcomes on overall comprehension despite a wide variation in not only clarity, but also in the information provided. Along certain sub-score dimensions, the ***decision focus introduction*** demonstrated the most promise. Nevertheless, further pursuit of alternatives may be worth consideration.

## Implications of the Research: The Economics of RILAs

To make an informed decision about purchasing a RILA, investors need to have a full understanding of the economics of RILAs—the costs, benefits, and how future behavior may affect subsequent outcomes. By understanding the aspects of RILAs that most affect investor outcomes, policy activities can be more targeted. Our research suggests that RILAs are highly complex financial instruments with features that are difficult to understand. Investors may need additional information and assistance to understand these products' likely financial outcomes. In some cases, the relevant information is lacking in extant documents. Further testing may be warranted to determine the best ways to communicate with investors:

- A clearer **distinction between the contract and the investment term**: Many of our study participants reported that it is difficult to reconcile the 1-, 3-, and 6-year terms with the statement that a RILA is "a long-term investment product." Many assumed that their funds could be liquidated without penalty at the end of a 1-year term, and many had different subjective interpretations of the period implied by "long term." Information about the typical or anticipated contract length and the minimum contract duration to withdraw money without penalty could be helpful for investors to understand the distinction between the contract and the investment option term.
- The **financial implications of caps, floors, buffers, and other insurance features**: Insurance features are particularly confusing when a RILA contract contains multiple investment options that are renewed at the end of the investment term. To better illustrate those features, investors may benefit from information about the relationship between premium payments (invested) and money out (e.g., the investment balance or funds distributed) and about how those relationships vary in different market conditions. Relatedly, an understanding of how a given insurance feature works in a single point-to-point investment term does not imply an understanding over the life of an investor's RILA contract (due to value recalculation at the end of an investment term, the potential reinvestment at the end of the investment term, and the repeated timing risk from these adjustments). Better illustration of these relationships may be necessary.

- Information on **investment alternatives**: Investors may benefit from seeing comparative information about hypothetical investments in the underlying index, a plausible alternative to investing in a RILA. In previous research, investment-related attributes have been compared to performance benchmarks (Chin et al., 2022a) or the market overall (Scholl, Craig, & Chin, in press) to provide context. However, without future research, we cannot determine whether benefits from comparisons would outweigh other potential costs, such as those stemming from information overload.
- The **financial consequences of early withdrawals**: Given the substantial penalties associated with early withdrawals (i.e., Interim Value Adjustments, surrender charges, and penalties), additional consideration should be given to the presentation of quantifying these costs and how they affect investment value. Investors may be interested in the extent to which others have made early withdrawals and how a given RILA balance could change when the investment is withdrawn mid-term.
- **Information on risks**: Although the hypothetical KIT discussed risks, the descriptions did not always provide information on the likelihood and magnitude of the risks. We believe a more direct and decision-relevant discussion of risk merits consideration, especially because RILA advertisements prominently mention risk mitigation. Financial models may concentrate on the standard deviation of returns or some function thereof (e.g., the Sharpe ratio), but risk in the common vernacular may be quite different (Holzmeister et al., 2020) and may include the chances of any loss, the chances of a loss greater than 25%, or some other concept. In our simulations, we found that over 6- and 12-year investment durations, some of the indexes underlying the RILAs rarely lost money, and when they did, the losses tended to be small in magnitude. Some of the RILA insurance options we explored mitigated these losses at the cost of considerable upside, raising questions about whether investors are fully informed about returns. Some examples exacerbated risk in the sense of certain risk definitions. Bearing this in mind, the historical probability of a negative return on a RILA product versus the historical probability of a negative return in the index over the lifetime of a RILA contract might be informative. Further research could continue to explore how investors conceive of risks and how such risks can be effectively communicated (for existing research, see e.g., Holzmeister et al., 2020; Morgan et al., 2002; Okan, Stone, & Bruine de Bruin, 2018).
- **Information on the annuitization payout structure and clients' propensity to annuitize**: This information speaks to the economic value of the RILA products as long-term annuity payout streams, one of the key purported aspects of their value propositions.

On an aggregate level, the scarcity of information regarding past RILA performance presented enormous challenges to our research, both to understanding the implications of RILA products for investors and to identifying the risks, consequences, and implications for investors so that a disclosure and its contents can be effectively designed. More data transparency in terms of actual investor outcomes for these complicated products is important to identifying and communicating decision-relevant information to investors. Such information would certainly be

of interest to researchers and regulators as they consider appropriate investor protection policy responses.

## Implications of the Research: Considerations for Disclosure Design

Our options for disclosure testing were constrained both by the available time and the range of possible policy options that could be reasonably considered. With additional resources and disclosure variants, more testing could be conducted. Better design of the KIT and other aspects of the disclosure could conceivably improve investors' ability to comprehend the information and apply it to make better decisions. Some considerations for further development include:

- **Identifying clear goals**: The KIT and other disclosure documents could be restructured with clear, measurable, and coherent decision-making goals in mind. "Providing information" may not be a sufficient objective; indeed, risk communicators sometimes critique this strategy as "inadequate" relative to changing beliefs or behavior (Brewer, 2011). Further, providing information does not imply a strategy for evaluating the efficacy of a disclosure in the context of helping investors make investment decisions that are aligned with their needs and preferences. Longer disclosures, such as a statutory prospectus, might be made available as reference material or for certain users such as financial professionals.
- **Decision-making–centered design approach**: Disclosure materials could be designed and revised to include information that is relevant to decisions that an investor has to make. For example, relevant questions in the RILA decision-making process might include: What is a RILA? Is a RILA right for me? Which insurance company is best for me? Which RILA is right for me? What investment option is best for me? Each disclosure could provide, in an organized framework, the information that would be relevant to understanding each particular question. To simplify the disclosure, irrelevant information could be removed.
- **Timing of delivery**: Providing a point-of-sale decision document could increase the relevance of the information compared to a situation in which information is presented after an investment decision has already been made. Indeed, past research has shown that disclosing information in advance of a decision can increase attention (Chin & Beckett, 2021). If detailed information is only available in the RILA prospectus, it may not help support consumers when they are making a decision, particularly when the decision may be economically, socially, or emotionally costly to unwind.
- **Length**: Although having access to full information about a RILA product is crucial for an investor to be informed, key information related to an investor's decision could be provided in a short form. A long disclosure is unlikely to be read and may in fact deter investors' engagement with the disclosed material (see Sunstein 2010 for further discussion of optimal disclosure design; Plaut & Bartlett, 2012, who found that shorter

disclosures can encourage greater reading time in the context of click-through agreements).

- **Avoiding jargon**: Terminology can present an enormous barrier to investors' understanding and engagement in financial decision making (Chin et al., 2023). Moreover, as our testing on RILAs has highlighted, poor terminology can cause investors to interpret key concepts in an erroneous way. This may be particularly true for cases in which the terminology is used to describe different concepts across financial products (e.g., the "term" of loan vs. the "term" of an investment option as distinct from the RILA contract).
- **Frequency of communication**: Given that RILA terms may conclude episodically over long periods of time and that there are severe penalties for accessing funds mid-term, good practice could require issuers to inform investors that an investment term is about to end so that the investor can reallocate or withdraw money according to their needs and preferences.

## Concluding Thoughts

RILAs are a complex financial product. Beyond the decision of whether to invest in a RILA, purchasers must make choices about (among other things) an insurance provider, the underlying index, the insurance features, and the investment term. The lack of flexibility with regard to the end of an investment term causes investors to realize returns on a fixed schedule, which will affect performance even for RILAs with otherwise identical contract features. Additionally, this inflexibility means that returns can be difficult to predict and different from those seen in the underlying index, where investors have more flexibility on the timing of withdrawals. The terminology and jargon used in describing RILAs makes it difficult for consumers to understand these products. However, the underlying concepts also present serious challenges, even for sophisticated retail investors. Our research and testing findings document the complexity of RILAs and demonstrate that investors and other stakeholders are likely to need significant additional information about RILAs in order to assess them, evaluate them, monitor them, and make appropriate investment decisions. Further research is needed to continue to promote investor welfare in the RILA market.

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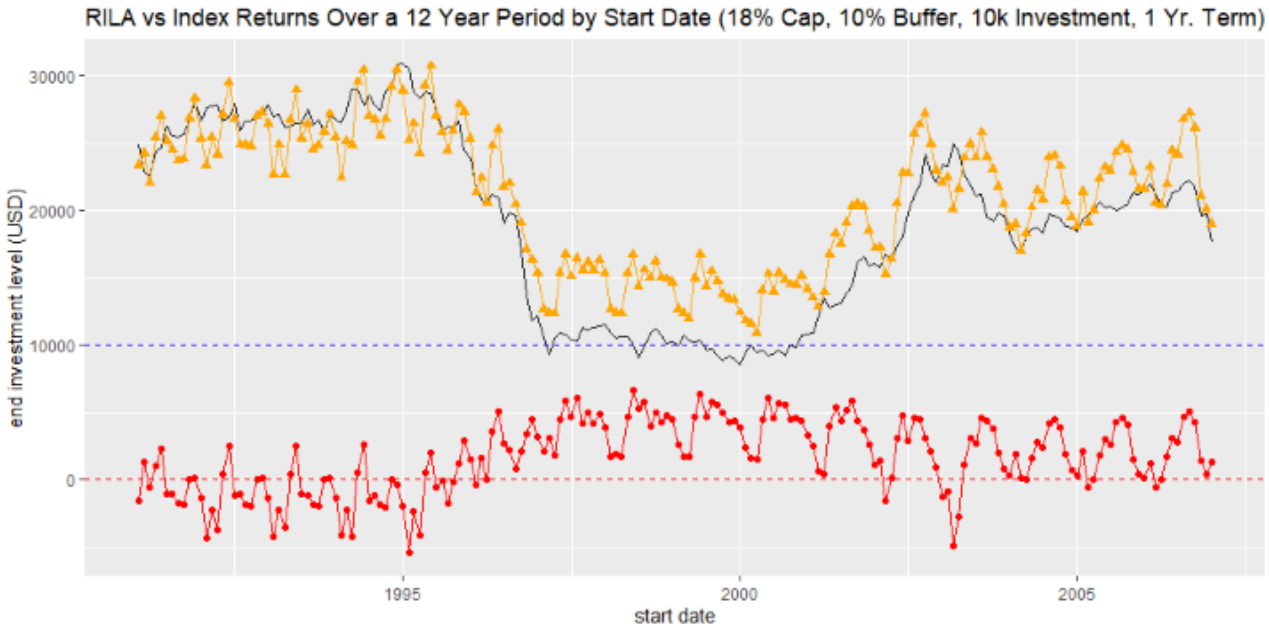
# Appendix A. Supplementary Analyses on the RILA Market

**Figure A1.** Simulated RILA and S&P 500 PR Index Returns Over a 12-Year Period by Start. Date.




*Note. The figure compares the RILA investment option and the index returns over the same 12-year investment period. The black line is the values of a $10,000 investment over a 12-year investment period in the index; the yellow line (triangles) is an analogous line for the RILA investment option. The red line (circles) is the difference between the yellow and black lines. Dates correspond to the start date of the investment. Results are not adjusted for inflation.*

# Appendix B. Materials Used in Round 1 of Qualitative Testing

## KIT Disclosure

**Table B1.** Important Information You Should Consider About the Contract.

**Important Information You Should Consider About the Contract**

| CONTRACT PURPOSE | | Location in Prospectus |
|---|---|---|
| **What is the purpose of this contract?** | This is an annuity contract between us, an insurance company, and you, the investor. It is a retirement savings option that provides the opportunity for tax-deferred growth based on an "***index option***," which is linked in part to the performance of a specified index. You pay one or more premium payments, and then growth (or loss) on your contract value is measured during a defined time period, or investment "***term***." A term could be 1, 3, or 6 years and resets periodically over the lifetime of the investment. You may lose a significant portion of your investment if you withdraw your money early.<br><br>At the end of the term, we will credit "***interest***" to your contract value that is based, in part, on the investment performance of the specified index. If there was positive index performance, we add money to your contract value. If there was negative index performance, we deduct money from your contract value. In exchange for some protection against market losses, there are some limits placed on market gains. | Overview of the Contract |
| **Who may the contract be appropriate for?** | • A person with a long-term investment time horizon.<br>• A person who can afford to lose money and who understands that the potential loss on this contract may be much greater than the potential gain.<br>• A person who understands that, in exchange for some loss protection, there are some limits placed on potential gains. | Overview of the Contract |
| **FEES & EXPENSES** | | |
| **Are there charges for early withdrawals from the contract?** | **Yes**. If you withdraw money from your contract within 9 years following your last premium payment, you will be assessed a ***surrender charge*** of up to 9% on the value of the withdrawal, declining to 0% over 9 years.<br><br>For example, if you purchase a contract and withdraw $100,000 during the surrender charge period, we would charge you up to $9,000 on the amount withdrawn (so you would receive $91,000, assuming no other fees or penalties apply). | Charges (Surrender Charge) |
| **Are there other penalties for mid-term withdrawals?** | **Yes**. If you take money out from an index option for any reason (such as by withdrawing money from the contract, or moving your money to a different index option) before the end of the investment term, we will apply an adjustment to your contract value, called an ***"interim value adjustment,"*** which may be negative. You could lose up to 90% of your investment, even if the index has increased in value.<br><br>For example, if you allocate $100,000 to an index option and withdraw the entire amount before the end of the term, you may lose up to $90,000 (so you would receive $10,000 of your original $100,000 investment, assuming no other fees or penalties apply).<br><br>This penalty applies in addition to any surrender charge.<br><br>**[Consider adding or linking to an illustration here.]** | Charges (Interim Value Adjustments) |
| **Are there ongoing fees and expenses?** | While we do not charge any ongoing fees and expenses, we limit the amount you can make on the index option. For example, there can be ***caps*** limiting positive returns. And an index option could give you a limited percentage of the gain of the index (called a "***participation rate***"). | Fee Table and Expense Examples |

**Table B2.** Risk of Loss From Poor Market Performance.

| RISKS | | Location in Prospectus |
|---|---|---|
| **Is there a risk of loss from poor market performance?** | **Yes**. You can lose money by investing in this contract, including loss of principal.<br>The index options offer different features for limiting your losses, but you can still lose money on the investment with either feature.<br>For example, some index options feature a "***floor***," which limits the amount you can lose on the index option if the index goes down. You could lose up to 20% of your investment (but no more than 20%) over the term from poor index performance under the index options featuring a floor that this contract offers.<br>As another example, some index options feature a "***buffer***," which means you will experience losses from a decline in the index in excess of the buffer percentage. You could lose up to 90% of your investment over the term from poor index performance under the index options featuring a buffer that this contract offers. | Principal Risks |

**Table B3.** Risks Regarding Short-Term Investment.

| RISKS | | Location in Prospectus |
|---|---|---|
| **Is this a short-term investment?** | **No**. This contract is not designed for short-term investing and is not appropriate for an investor who needs ready access to cash.<br>• Taking money out of the contract may result in ***surrender charges***, discussed above.<br>• This also can result in taxes and, depending on your age at withdrawal, tax penalties.<br>• Taking money from an index option before the end of the investment term (such as by withdrawing the money, or moving it to another index option) may also result in an ***interim value adjustment*** and the loss of positive returns. This can result in a reduction to the values under the contract that exceed the amount withdrawn.<br>• **We will not return your money at the end of the investment term unless you tell us to.** At the end of a term, your money may automatically be allocated to another index strategy that, if available, uses the same term, index, and downside protection level, or to another index option you select. If you instruct us to return your money, it may be subject to any applicable fees, such as a surrender charge if it is within 9 years following your last premium payment, as well as taxes and tax penalties. | Principal Risks |

**Table B4.** Tax Implications.

| TAXES | | Location in Prospectus |
|---|---|---|
| **What are the tax implications?** | • The contract is designed to provide tax deferral on any growth in your contract value.<br>• However, if you purchase the contract through a tax-qualified plan or individual retirement account (IRA), you do not get any additional tax deferral.<br>• Earnings on your contract are taxed at ordinary income tax rates when you withdraw them, and you may have to pay a penalty if you take a withdrawal before age 59 ½.<br>• Consult with a tax professional to determine the tax implications of an investment in and payments received under this contract. | Taxes |

## Scenario Text

Scenario 1: Uncle Bob is 85 years old and a veteran. He lives on his own but is expecting to move to an assisted living community during the next couple of years because he is increasingly forgetful. Getting around and taking care of himself is getting harder every year; if he's honest with himself, he probably should be in assisted living right now, but his current plan is to wait another five years. Assisted living is expensive, and Bob is unsure if he'll have enough money. He has some money that he wants to invest, which is in a regular investment account. His financial professional recommended a RILA product to him with a 5-year term, which Uncle Bob thinks will allow for stock market gains, with limited downside risk.

Scenario 2: John is 55 years old and doesn't think he will ever have enough money to fully retire. He doesn't want to take any losses on his portfolio, especially because if an emergency comes up, he will need to withdraw that money and use it immediately. Right now he has a small, conservative portfolio with mostly bonds and CDs. He is considering a RILA with maximum gains of 5% over the term and maximum losses of 1% over its 3-year term.

Scenario 3: Pat and Jean are a couple in their early 40s. They have a daughter in seventh grade who is looking to go to college in seven years. They have saved some money for college but are worried it won't be enough, so they would like to invest to try to make it grow a bit. At the same time, they are not confident about where the stock market has been going lately and they are worried about losing out more than they are putting in.

Scenario 4: Taylor is a working professional and is almost 50 years old. Taylor has been saving for retirement for nearly 30 years. Taylor has a nice nest egg from a savings account and a retirement savings account with stocks and bonds. She doesn't plan to use any of that money before retirement. However, she doesn't think it will be enough for retirement given inflation and the rising cost of living. Taylor is also worried that the stock market is going to be overvalued and could face a major drop in five or six years.

# Appendix C. Materials Used in Round 2 of Qualitative Testing

## Introduction to RILAs

**What is a RILA?**

If you get a RILA, you will enter into an annuity contract with an insurance company. It will provide a retirement savings option with the opportunity for tax-deferred growth. Under the contract, you will allocate premium payments to one or more "***index options.***" Under these options, your returns—that is, your gains as well as your losses—are based on a formula that is linked in part to the performance of a particular index. Growth (or loss) on the contract value is measured during a defined time period, or "***investment term***." When one investment term ends, another investment term will begin.

**What is a RILA?**

At the end of each investment term, you may receive "interest" based, in part, on the investment performance of the specified index. If there was positive index performance, money will be added to your contract value. There are limits placed on market gains, in exchange for some protection against market losses. If there was negative index performance, money may be deducted from your contract value. Regardless of how the index performs, you may lose a significant portion of your investment if you withdraw your money before the end of an investment term.

## KIT Document Tested: Important Information You Should Consider About the Contract

**Important Information You Should Consider About the Contract**

| CONTRACT OVERVIEW | | Location in Prospectus |
|---|---|---|
| **What is the purpose of this contract?** | This is an annuity contract between us, an insurance company, and you, the investor.<br>Under the contract, you will allocate purchase payments to one or more specific "***index options***." Under these options, your returns—that is, your gains as well as your losses—are linked to the performance of a particular ***index***.<br>We will credit "***interest***" to your contract value that is based, in part, on the investment performance of the specified index. If there is positive index performance, we add money to your contract value. If there is negative index performance, we deduct money from your contract value.<br>You can pick the bounds for limiting loss if the performance of the index goes down in value (such as a loss "***floor***"). In exchange for some protection against market losses, there are some limits placed on market gains (such as a "***cap***" in gains). | More information can be found at:<br>Overview of the Contract |
| **What is the time period for measuring growth (or loss) on my contract value?** | Growth (or loss) on your contract value is measured during a defined time period, or "***investment term***." Each of the index options has a term that you can select. Common investment terms available under the contract are 1, 3, or 6 years.<br>We credit interest to your contract value at the end of the investment term. When one investment term ends, another investment term will begin.<br>**We will not return your money at the end of the investment term unless you tell us to.** At the end of an investment term, your money may automatically be allocated to another index option that, if available, uses the same term, index, and downside protection level, or to another index option you select.<br>**You may lose up to 90% of your investment if you withdraw your money before the end of an investment term. This loss can be greater if there is a surrender charge, taxes, and/or tax penalties.** | More information can be found at:<br>Overview of the Contract<br>Charges (Interim Value Adjustments) |
| **Are there charges for early withdrawals from the contract?** | **Yes**. In addition to the charges that can be charged if you with withdraw your money before the end of an *investment term*, if you withdraw money from your *contract* at any time within 9 years following your last premium payment, you will be assessed a ***surrender charge*** of up to 9% on the value of the withdrawal, declining to 0% over 9 years.<br>For example, if you purchase a contract and withdraw $100,000 during the surrender charge period, we would charge up to $9,000 on the amount withdrawn (so you would receive $91,000, assuming no other fees or penalties). | More information can be found at:<br>Charges (Surrender Charge) |
| **Are there other penalties for mid-term withdrawals?** | **Yes**. If you take money out from an index option for any reason before the end of the *investment term*, we will apply an adjustment to your contract value, called an ***"interim value adjustment,"*** which may be negative. You could lose up to 90% of your investment, even if the index has increased in value.<br>For example, if you allocate $100,000 to an index option and withdraw the entire amount before the end of the term, you may lose up to $90,000 (so you would receive $10,000 of your original $100,000 investment, assuming no other fees or penalties apply).<br>This penalty applies in addition to any surrender charge.<br>**Illustration of surrender charges and maximum possible loss (assuming a 3-year investment term, a 9-year surrender period, and a 20% floor)** | More information can be found at:<br>Charges (Interim Value Adjustments) |

| | 1st 3-year term | | 2nd 3-year term | | 3rd 3-year term | |
|---|---|---|---|---|---|---|
| Time of surrender | Prior to end of term | End of term | Prior to end of term | End of term | Prior to end of term | End of term |
| Surrender charge (% of contract value) | Up to 9% | | Up to 6% | | Up to 3% (none at end of term) | |
| Interim Value Adjustment maximum **loss** potential (% of contract value) | Up to 90% | Up to 20% | Up to 90% | Up to 20% | Up to 90% | Up to 20% |
| Maximum Combined **loss** potential (% of contract value) | Up to 90.9% | Up to 27% | Up to 90.6% | Up to 24% | Up to 90.3% | Up to 20% |

## Graphics and Table Shown in Testing

**Table C1.** Illustration of Surrender Charges and Maximum Possible Loss.

**Illustration of Surrender Charges and maximum possible loss (assuming a 3-year investment term, a 9-year surrender period, and a 20% floor)**

| | 1st 3-year term | | 2nd 3-year term | | 3rd 3-year term | |
|---|---|---|---|---|---|---|
| Time of surrender | Prior to end of term | End of term | Prior to end of term | End of term | Prior to end of term | End of term |
| Surrender charge (% of contract value) | Up to 9% | | Up to 6% | | Up to 3% (none at end of term) | |
| Interim Value Adjustment maximum **loss potential** (% of contract value) | Up to 90% | Up to 20% | Up to 90% | Up to 20% | Up to 90% | Up to 20% |
| Maximum Combined **loss potential** (% of contract value) | Up to 90.9% | Up to 27% | Up to 90.6% | Up to 24% | Up to 90.3% | Up to 20% |

**Figure C1.** How Floor and Buffer Features Could Affect an Investor's Losses Across Different Negative Market Scenarios.

**The illustration below provides an example of how floor and buffer features could affect an investor's losses across different negative market scenarios:**

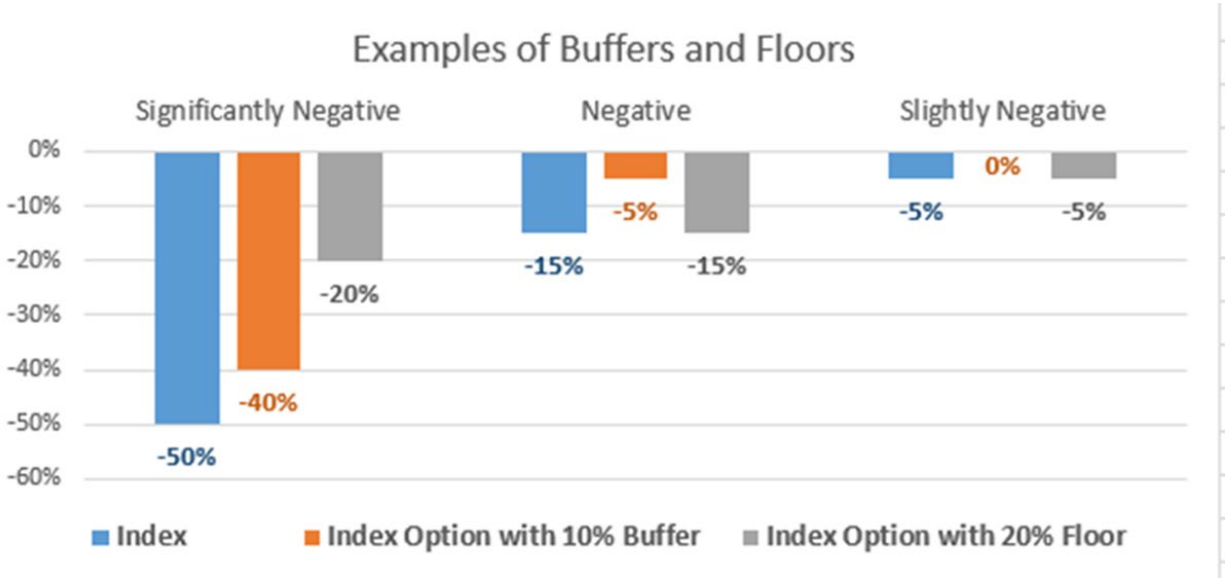


**Figure C2.** How Floor and Buffer Features Could Affect an Investor's Losses Across Different Negative Market Scenarios.

**The illustration below provides an example of how floor and buffer features could affect an investor's losses across different negative market scenarios:**

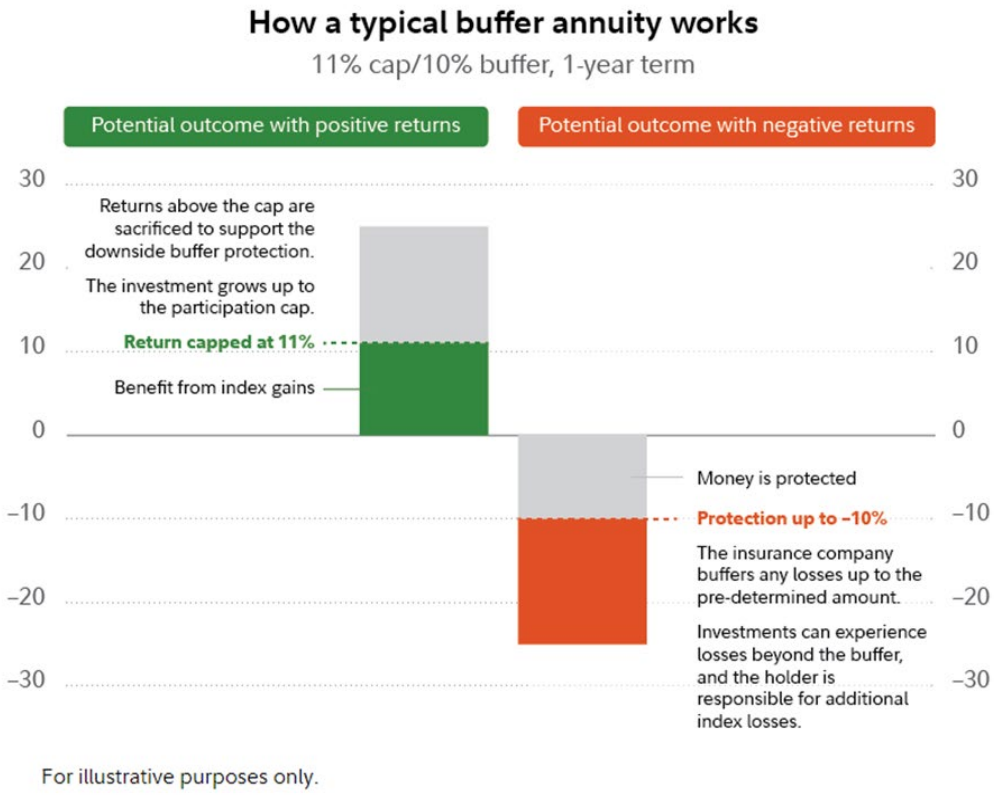


**Figure C3.** An Example of How 12% Cap and 10% Buffer Features Could Affect an Investor's Losses Across Different Negative Market Scenarios.

**The illustration below provides an example of how cap and buffer features could affect an investor's losses across different negative market scenarios:**

| Index Return | Your Return at the end of the Period |
|---|---|
| 80% | 12% |
| 70.0% | 12% |
| 60.0% | 12% |
| 50.0% | 12% |
| 40.0% | 12% |
| 30.0% | 12% |
| 20.0% | 12% |
| 10.0% | 10% |
| 0.0% | 0% |
| -10.0% | 0% |
| -20.0% | -10% |
| -30.0% | -20% |
| -40.0% | -30% |
| -50.0% | -40% |
| -60.0% | -50% |
| -70.0% | -60% |
| -80.0% | -70% |
| -90.0% | -80% |
| -100.0% | -90% |

**Table C2.** Comparing S&P 500 Index to RILA.

| | Index Mutual Fund being offered | RILA being offered |
|---|---|---|
| Investment | Invested in S&P 500 companies | Indexed to S&P 500 Price Return |
| Upside Limits | None | Cap rate of 10% (on investment gains from start to end of each 3-year investment term) |
| Downside Limits | None | Buffer of 10% (on investment losses from start to end of each 3-year investment term) |

## Scenario Text

Julie and Matt are a couple in their 50s. Up until last year, they felt confident about their retirement savings, and were considering some higher-risk assets with the hopes that their money could grow faster. However, they now think that they could face an emergency medical expense for Matt's parents, and the associated costs. They are considering a RILA option with a cap on maximum gains of 50% and a floor on maximum losses of 20% over the initial six-year term. The RILA's returns are based on a formula that is linked to the S&P 500.

Now imagine instead that Julie and Matt waited for 12 years – the initial 6 year term, plus another 6 year term to withdraw all of the money they invested in the RILA. For both investment terms, the RILA had a cap on maximum gains of 50% and a floor on maximum losses of 20%, and the RILA's returns were based on a formula that is linked to the S&P 500 index.

# Appendix D. Materials Used in Quantitative Testing

## Introductions Presented in Quantitative Testing

This section contains the introductions used to provide background information on RILAs. A fourth condition did not contain any introductory text.

### Introducing Participants to Key Terminology

This is an annuity contract between an insurance company and you, the investor.

Under the contract, you will allocate premium payments to one or more specific "***index options***." Under these options, your returns—that is, your gains as well as your losses—are linked to the performance of a particular ***index***.

We will credit "***interest***" to your contract value that is based, in part, on the investment performance of the specified index. If there is positive index performance, we add money to your contract value. If there is negative index performance, we deduct money from your contract value.

You can pick the bounds for limiting loss if the performance of the index goes down in value (such as a loss "***floor***"). In exchange for some protection against market losses, there are some limits placed on market gains (such as a "***cap***" in gains).

### Marketing Materials That Could Be Presented to Consumers When Shopping for a RILA

- Some people want to find ways to grow their retirement income without facing too much risk.
- There is a product called a RILA that lets you earn income from the stock market.
- It reduces risk by providing a level of protection against market downturns.
- A RILA is a tax-deferred saving vehicle, so you won't pay taxes until you take your money out.
- There is flexibility. You get to choose how your money is invested and the level of protection you want.

### Plain Language Introduction to Factors That Could Influence Participants' Decision to Purchase a RILA

- A RILA (Registered Index-Linked Annuity) is a long-term annuity contract with an insurance company.
- A RILA is a way to save money for retirement. There may be tax benefits from these savings, even if you already save as much as you can in a 401(k) or IRA.
    - If you buy a RILA, you invest in set of short-term investments that are linked to a stock market index, like the S&P 500. These investments typically offer insurance that may protect you against some losses when the index goes down. But they also limit your gains when the index goes up.

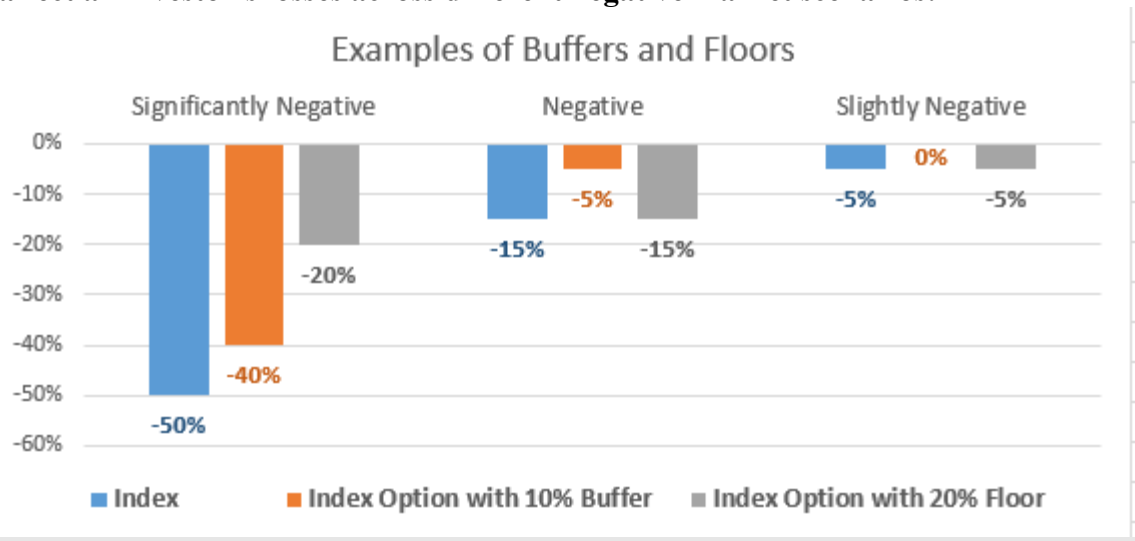
- RILAs charge large penalties for taking money out early. You can lose 100% of your investment to penalties. The insurance protections against market losses do not protect you money against these penalties. So, you should be sure that you will not need to access your money for a long time.
- Early withdrawal penalties arise if you take your money out:
    - Within nine years of last investing money
    - If your investment option is not expiring, and
    - Before you turn 59 ½.
- If you invest in a RILA, you will make several complex decisions, both now and in the future, about how you want to invest your money. These include what index to follow, the length of the short-term investment options, the limits on gains and losses that you have in place, and how you will repeatedly reinvest money.

## Versions of the KIT That Were Shown in Quantitative Testing

**Table D1.** Key Information Table for RILA (Q&A Format).

| **FEES & EXPENSES** |
|---|
| **Are there charges for early withdrawals from the contract?** |
| **Yes**. In addition to the charges that can be charged if you with withdraw your money before the end of an *investment term*, if you withdraw money from your *contract* at any time within 9 years following your last premium payment, you will be assessed a ***surrender charge*** of up to 9% on the value of the withdrawal, declining to 0% over 9 years.<br>For example, if you purchase a contract and withdraw $100,000 during the surrender charge period, we would charge up to $9,000 on the amount withdrawn (so you would receive $91,000, assuming no other fees or penalties). |
| More information can be found at:<br>Charges (Surrender Charge) |
| **Are there other penalties for mid-term withdrawals?** |
| **Yes**. If you take money out from an index option for any reason before the end of the *investment term*, we will apply an adjustment to your contract value, called an ***"interim value adjustment,"*** which may be negative. You could lose up to 90% of your investment, even if the index has increased in value.<br>For example, if you allocate $100,000 to an index option and withdraw the entire amount before the end of the term, you may lose up to $90,000 (so you would receive $10,000 of your original $100,000 investment, assuming no other fees or penalties apply).<br>This penalty applies in addition to any surrender charge. |
| More information can be found at:<br>Charges (Interim Value Adjustments) |
| **RISKS** |
| **Is there a risk of loss from poor market performance?** |

**Yes**. You can lose money by investing in this contract, including loss of principal.
The index options offer different features for limiting your losses, but you can still lose money on the investment with either feature.
For example, some index options feature a "***floor***," which limits the amount you can lose on the index option if the index goes down. You could lose up to 20% of your investment (but no more than 20%) over the term from poor index performance under the index options featuring a floor that this contract offers.
As another example, some index options feature a "***buffer***," which means you will experience losses from a decline in the index in excess of the buffer percentage. You could lose up to 90% of your investment over the term from poor index performance under the index options featuring a buffer that this contract offers.
**The illustration below provides an example of how floor and buffer features could affect an investor's losses across different negative market scenarios:**




More information can be found at:
Principal Risks

**Is this a short-term investment?**

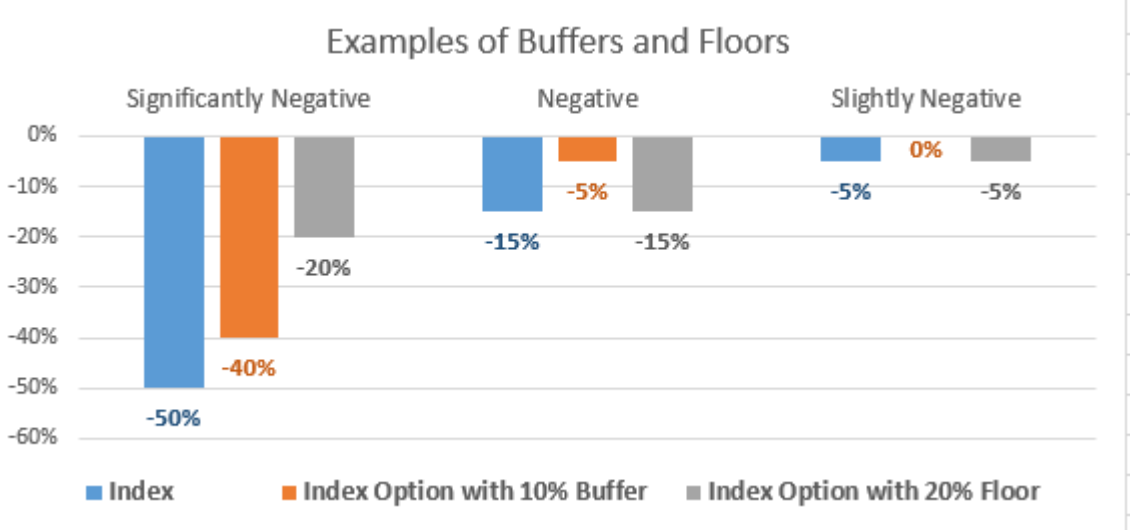
**No**. This contract is not designed for short-term investing and is not appropriate for an investor who needs ready access to cash.

- Taking money out of the contract may result in ***surrender charges***, discussed above.
- This also can result in taxes and, depending on your age at withdrawal, tax penalties.
- Taking money from an index option before the end of the investment term (such as by withdrawing the money, or moving it to another index option) may also result in an ***interim value adjustment*** and the loss of positive returns. This can result in a reduction to the values under the contract that exceed the amount withdrawn.

More information can be found at:
Principal Risks

**Table D2.** Key Information Table for RILA (Non-Q&A Format).

| **FEES & EXPENSES** |
|---|
| **Charges for Early Withdrawals** |
| In addition to the charges that can be charged if you with withdraw your money before the end of an *investment term*, if you withdraw money from your *contract* at any time within 9 years following your last premium payment, you will be assessed a ***surrender charge*** of up to 9% on the value of the withdrawal, declining to 0% over 9 years.<br>For example, if you purchase a contract and withdraw $100,000 during the surrender charge period, we would charge up to $9,000 on the amount withdrawn (so you would receive $91,000, assuming no other fees or penalties). |
| More information can be found at:<br>Charges (Surrender Charge) |
| **Other Penalties for Mid-Term Withdrawals** |
| If you take money out from an index option for any reason before the end of the *investment term*, we will apply an adjustment to your contract value, called an ***"interim value adjustment,"*** which may be negative. You could lose up to 90% of your investment, even if the index has increased in value.<br>For example, if you allocate $100,000 to an index option and withdraw the entire amount before the end of the term, you may lose up to $90,000 (so you would receive $10,000 of your original $100,000 investment, assuming no other fees or penalties apply).<br>This penalty applies in addition to any surrender charge. |
| More information can be found at:<br>Charges (Interim Value Adjustments) |
| **RISKS** |
| **Risk of Loss** |
| You can lose money by investing in this contract, including loss of principal.<br>The index options offer different features for limiting your losses, but you can still lose money on the investment with either feature.<br>For example, some index options feature a "***floor***," which limits the amount you can lose on the index option if the index goes down. You could lose up to 20% of your investment (but no more than 20%) over the term from poor index performance under the index options featuring a floor that this contract offers.<br>As another example, some index options feature a "***buffer***," which means you will experience losses from a decline in the index in excess of the buffer percentage. You could lose up to 90% of your investment over the term from poor index performance under the index options featuring a buffer that this contract offers.<br>**The illustration below provides an example of how floor and buffer features could affect an investor's losses across different negative market scenarios:** |




More information can be found at:
Principal Risks

**Not a Short-Term Investment**

This contract is not designed for short-term investing and is not appropriate for an investor who needs ready access to cash.

- Taking money out of the contract may result in ***surrender charges***, discussed above.
- This also can result in taxes and, depending on your age at withdrawal, tax penalties.
- Taking money from an index option before the end of the investment term (such as by withdrawing the money, or moving it to another index option) may also result in an ***interim value adjustment*** and the loss of positive returns. This can result in a reduction to the values under the contract that exceed the amount withdrawn.

More information can be found at:
Principal Risks