The NAIC Capital Markets Bureau monitors developments in the capital markets globally and analyzes their potential impact on the investment portfolios of U.S. insurance companies. Previously published [NAIC Capital Markets Bureau Special Reports]() are available via its web page and the NAIC archives (for reports published prior to 2016).

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Executive Summary

- At year-end 2021, the U.S. insurance industry reported derivatives positions with a total notional value of $3 trillion, an increase of 6% compared to the prior year.
- Insurers primarily use derivatives to reduce risks in their asset and liability portfolios, with [illegible].
- [illegible], while property/casualty (P/C) [illegible] has been on a declining trend in the last two years.
- Swaps and options were the most used derivatives, accounting for approximately 50% and 40% of [illegible] total exposure, respectively.
- Derivatives are not broadly used across U.S. insurance companies, with only 7.2% of all active insurers reporting derivatives activity at year-end 2021.
- U.S. insurance companies that practice derivatives strategies tend to be large insurers with more than $10 billion in invested assets.

Derivatives are an important tool for U.S. insurance companies, used primarily to manage and hedge risks on both the asset and the liability sides of their balance sheets. Risks hedged by insurers include interest rate risk, credit risk, currency risk, and equity risk (e.g., related to variable annuities). Insurers also use derivatives to replicate assets and generate additional income but to a much lesser extent.

Table 1: U.S. Insurance Companies with Derivatives Exposure at Year-End 2021

U.S. insurance companies that practice derivatives strategies tend to be the larger companies in terms of invested assets. Insurers with more than $10 billion in invested assets accounted for 94% of the ƛyŘdzăŰǁèŒă total notional value of derivatives, and insurers with invested assets between $5 billion and $10 billion represented 4% of total notional value.

Insights into Insurer Derivatives Uses and Strategies

Life insurers accounted for the majority, or 98.3%, ƻŦ ǘKŜ ƛyŘdzăŰǁèŒă Þo ǘǁƛŧŧƛƻy notional value of derivatives exposure at year-end 2021 (see Table 2). Their exposure increased by 6.9% compared to year-end 2020. On the other hand, P/C insurersŒ ŘŜǁƛØl·ǘƛØŜs exposure has been on a declining trend, decreasing by 21.4% to $51 billion at year-end 2021 compared to the prior year and down almost 40% from $84 billion at year-end 2017. Health companies continue to have minimal exposure.

Table 2: Total U.S. Insurance Industry Derivatives Exposure by Derivatives Type, Year-End 2021 (Notional $ in millions)

U.S. insurance companies used options and forwards more frequently in 2021 compared to the prior year to manage risks. Exposure to options and forwards as measured by notional value increased by 12% and 11%, respectively, to $1.2 trillion and $106 billion at year-end 2021 (see Table 2). The notional value of swaps at year-end 2021 totaled $1.5 trillion, an increase of 3% compared to the previous year. Meanwhile, the notional value of futures declined by 4% YOY to $177 billion.

Insurers primarily use derivatives to reduce inherent risks in their asset and liability portfolios

Exposure to credit default swaps totaled $85 billion at year-end 2021 (see Table 5). Approximately 68% of the exposure was used in hedging strategies and 32% in replication strategies.

Table 5: U.S. Insurance Industry Credit Default Swap Exposure by Purpose/Strategy, Year-End 2021 ($ in millions)

Purpose/Strategy	Notional Value	% of Total
Hedging	57,227	67.6%
Replication	27,431	32.4%
Other	5	0.0%
Total	84,662	100.0%

The total notional value of options was $1.2 billion at year-end 2021, increasing by approximately 11% compared to the prior year. U.S. insurers used call options and put options more frequently in 2021, with their notional value increasing by 21% and 45%, respectively, on a YOY basis. They used option contracts primarily for hedging. Call options were the most used options contract, accounting for 53% of ŭKŜ ʎẙŘdzăŭǸèǾă ŭ2ŭŀƒ ẙ2ŭʎ2ẙlŀƒ Øŀƒdzŝ Ŧ2Ǹ ŀƒƒ 2ǈŜẙ ̸2ǈŭʎ2ẙã Ŏ2ẙŭǸŀŎŭă ŀŭ èŜŀǸ-end 2021 (see Table 6). Put options were the second largest option contract, at 27% of notional value. Caps, floors, collars, and other options represented the remaining options exposure at year-end 2021.

Table 6: U.S. Insurance Industry Options Derivatives Exposure by Type of Contract, Year-End 2021 (Notional $ in millions)

Purpose/Strategy	Call Options	Put Options	Caps	Floors	Collars	Other	Total	% of Total
Hedging	620,848	318,796	118,112	35,463	29,969	64,621	1,187,809	97.3%
Income Generation	481	80	-	-	-	55	616	0.1%
Replication	178	-	-	-	-	-	178	0.0%
Other	22,208	9,426	69	-	-	11	31,714	2.6%
Total	643,715	328,302	118,181	35,463	29,969	64,687	1,220,317	100%

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Questions and comments are always welcome. Please contact the Capital Markets Bureau at [CapitalMarkets@naic.org.](mailto:CapitalMarkets@naic.org)