Capital Markets Special Report

The **NAIC's Capital Markets Bureau** monitors developments in the capital markets globally and analyzes their potential impact on the investment portfolios of U.S. insurance companies. A list of archived Capital Markets Bureau Special Reports is available via the **index**.

Update on the Insurance Industry's Use of Derivatives and Exposure Trends

The NAIC Capital Markets Bureau has published several special reports since June 2011 concerning the insurance industry's use of derivative instruments. In addition to providing data on insurers' derivative exposure, prior reports have provided insight into credit default swaps, hedging with derivatives, changes in derivatives reporting requirements for insurers, and developments in derivatives regulation and trading resulting from the enactment of the federal Dodd-Frank Wall Street Reform and Consumer Protection Act (Dodd-Frank) and other global legislative and regulatory initiatives. This special report reviews U.S. insurers' derivatives holdings at year-end 2014 and highlights some changes and trends in derivatives exposure over the past five years.

Key Points:

- Derivatives activity in the insurance industry continued to grow in 2014. The total notional value of insurance industry derivative positions increased 8.6% over year-end 2013, to $2.02 trillion.

- An overwhelming 94% of total industry notional value pertains to hedging strategies, maintaining virtually the same proportion since year-end 2010, when the Capital Markets Bureau began analyzing the data. Out of that 94% of total notional value, nearly two-thirds was in positions hedging interest rate risk, the same as a year earlier, while 23% relates to hedging equity risk.

- From Dec. 31, 2010, through Dec. 31, 2014, total insurance industry exposure in book/adjusted carrying value (BACV) terms nearly tripled, while the total notional amount outstanding increased 87%, for a compound average growth rate (CAGR) of 17%.

- Life insurers accounted for approximately 94% of total industry notional value, compared to 93% at year-end 2013. P/C insurers accounted for 6%, down from 7% a year earlier. Derivatives exposure in the health and fraternal segments was minimal, and title insurers had no reported exposure to derivatives.

- Swaps accounted for the largest share (49%) of total industry notional value, followed by options (45%), futures (3%) and forwards (3%). Swaps exposure increased 13.1% in 2014, while options total notional exposure grew only 3.4%.

The Insurance Industry's Use of Derivatives: A Brief Overview

Within the statutory regulatory reporting framework, options, warrants, caps, floors, collars, forwards, futures, swaps and similar instruments are considered derivatives; their definitions are contained in the NAIC *Accounting Practices and Procedures Manual* (AP&P Manual), and additional discussion of derivatives from an operational standpoint can be found in the NAIC *Financial Analysis Handbook*.

From a statutory reporting perspective, derivatives can be used for hedging, income generation, replication of other assets, or other uses. Since 2010, when the Capital Markets Bureau began regularly analyzing the industry's derivatives exposure, hedging has been the primary purpose of derivatives among insurers; it accounted for 94% of total industry notional value outstanding as of year-end 2014, consistent with prior years. Further, a portion of the positions not reported as "hedging" in the tables that follow might fall outside of the definition of hedging under *SSAP No. 86—Accounting for Derivative Instruments and Hedging, Income Generation, and Replication (Synthetic Asset) Transactions*, but be intended to hedge certain risks nonetheless. Hedges can be constructed in different ways: Insurers may aggregate and hedge risks associated with certain blocks of invested assets or liabilities together (a portfolio hedge), or they may hedge individual assets (specific asset hedge) against one or more risks. Typical investment risks hedged by insurers include interest rate risk, equity market risk, foreign exchange risk and credit risk. Derivatives holdings and activity are reported on Schedule DB of the statutory financial statements.

U.S. Insurance Industry Derivatives Use in 2014

Derivatives activity in the U.S. insurance industry continued to grow in 2014. Total industry exposure to derivatives in BACV terms as of Dec. 31, 2014, totaled $57.1 billion (Chart 1), accounting for just less than 1% of the $5.76 trillion in total cash and invested assets, and representing an increase of 49.4% from the year-end 2013 amount. The total notional amount of insurance industry derivative positions increased 8.6% over year-end 2013, to $2.02 trillion. From Dec. 31, 2010, through Dec. 31, 2014, total insurance industry exposure in BACV terms nearly tripled, while the total notional amount outstanding increased 87%, for a CAGR of 17%.

Chart 1: U.S. Insurance Industry Derivatives Exposure as of Dec. 31, 2014

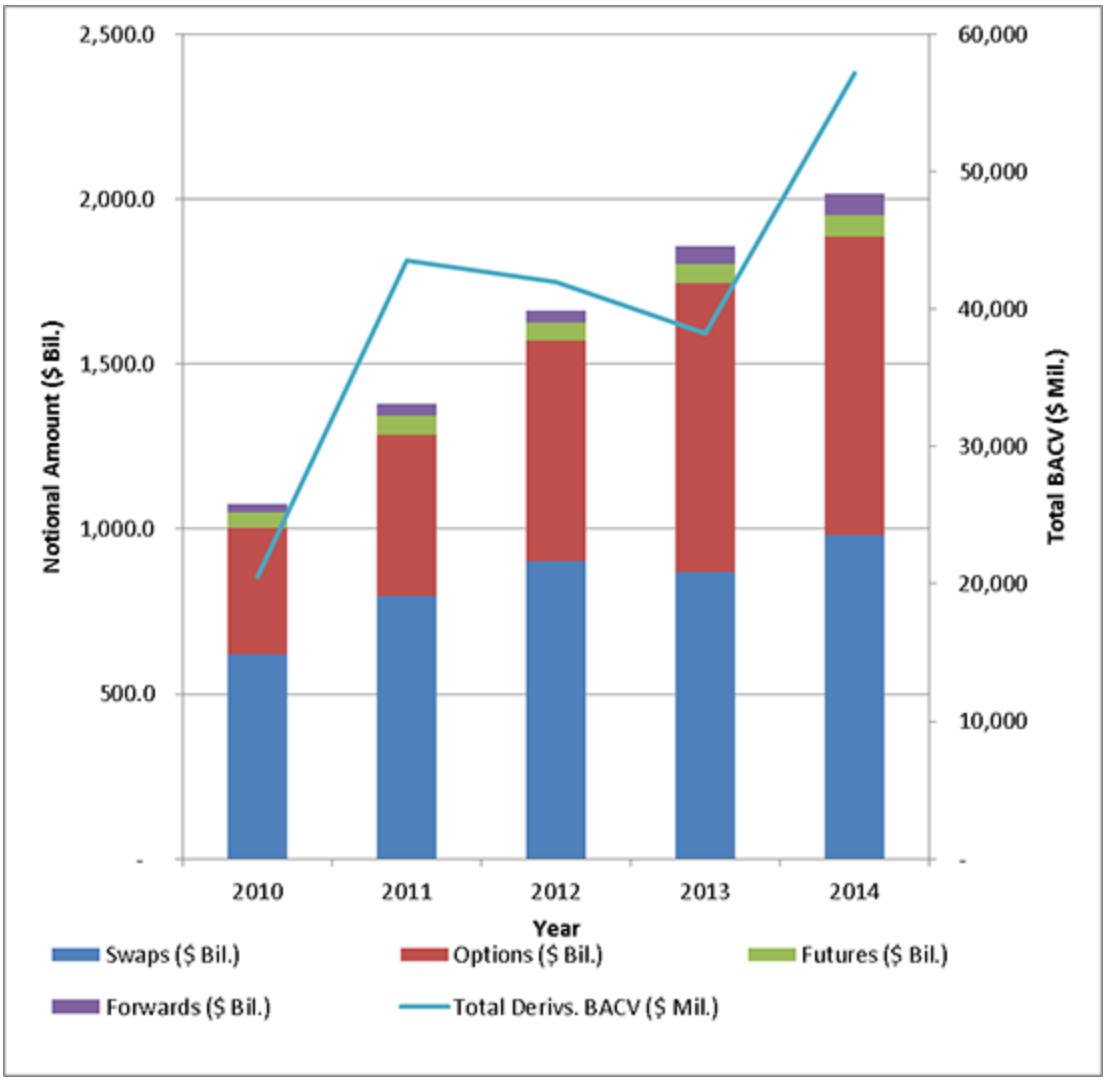

Table 1: Count of Insurers with Derivatives Exposure as of Dec. 31, 2014

Industry Segment	Number of Companies with Derivs. Exposure	Number of Companies: Total Industry	Percentage of Companies with Derivs. Exposure	Total Assets of Companies with Derivs. Exposure ($ Mil.)	Total Assets: Industry ($ Mil.)	Percentage of Assets: Companies with Derivs. Exposure
Life	138	763	18%	3,261,444	3,717,286	88%
P/C	61	2,673	2%	366,335	1,739,657	21%
Health	6	943	1%	2,334	177,021	1%
Fraternal	3	79	4%	63,693	119,542	53%
Title	-	53	0%	-	8,388	0%
Total	208	4,511	5%	3,693,806	5,761,895	64%

As Table 1 shows, 208 insurance companies—only 5% of all active insurance companies nationwide—have derivatives exposure. However, those companies involved with derivatives tend to be larger in terms of assets and, therefore, account for $3.69 trillion, or 64% of the insurance industry's total assets. Even in the life segment, where exposure is largest, derivatives use is concentrated among 138 companies, only 18% of the segment total, that

together account for $3.26 trillion in assets, or 88% of the life segment total. In all other segments, fewer than 5% of insurers participate in the derivatives markets. However, the three fraternal companies with derivatives positions account for 53% of segment assets, and the 61 P/C companies using derivatives account for 21% of that sector's assets. Insurers with derivatives exposure were domiciled in 41 states, but exposure is concentrated in a handful of states—Connecticut, Delaware, Iowa, Michigan and New York. This represents the largest notional amounts —$1.26 trillion in aggregate or about 62% of the industry total.

Derivatives positions—particularly swaps—can be quite large; the average position size was $29.4 million (notional), virtually unchanged from the prior year's end. The largest single position open at Dec. 31, 2014, was a $10 billion (notional) interest rate cap purchased as a hedge against rising interest rates.

It should be noted that most of the quantities discussed in this special report are in terms of notional value, which is the nominal or face amount of a financial instrument that is used to calculate payments made on that instrument. Notional values are not always appropriate as indicators of true economic exposure, but they serve as a more consistent indicator of market activity and scale than BACV or fair value, both of which can be affected by other factors such as market prices and accounting treatment. With respect to economic exposure, however, neither notional value nor BACV nor fair value can be relied on as a consistent indicator, due to different market conventions and accounting practices for different instruments in different situations.

Table 2: Insurance Industry Derivatives Exposure by Derivative Type as of Dec. 31, 2014

Industry Segment	Swaps	Options	Futures	Forwards	Total Notional Value ($ Mil.)	% of Total
Life	957,598	807,041	64,862	60,517	1,890,018	94%
P/C	22,856	98,010	-	3,081	123,947	6%
Health	76	-	-	360	436	0%
Fraternal	125	518	-	-	643	0%
Total	980,655	905,569	64,862	63,958	2,015,043	100%
% of Total	49%	45%	3%	3%	100%	

Table 2 shows life insurers accounted for approximately 94% of total industry notional value, compared to 93% at year-end 2013. P/C insurers accounted for 6%, down from 7% a year earlier, but up from a low of 4% in 2011. Derivatives exposure in the health and fraternal segments has remained minimal in the past five years, and title insurers continue to have no exposure to derivatives.

Growth

Since year-end 2010, the total notional value of the industry's derivatives holdings has increased at a 17% CAGR, substantially outpacing the 4.2% CAGR in the insurance industry's total cash and invested assets. Table 3 shows that the total notional value of insurance industry derivative positions held as of Dec. 31, 2014, increased 8.6% over year-end 2013, to $2.02 trillion. This is a slightly smaller increase than in 2013, when notional value grew 11.7% to $1.85 trillion at year's end. The growth in total notional value, however, has decelerated in each of the past four years. All derivatives types showed year-over-year increases in total notional exposure. Swaps, which accounted for the largest share (49%) of notional value, increased 13.1% from a year earlier and reversed a 4% decline in 2013, while options claimed the second-largest share (45%), increasing 3.4% after three consecutive annual increases of at least 28%. Table 4 shows decelerating growth in life companies' derivatives exposure in 2013 and 2014

compared to 2011 and 2012, while P/C companies rapidly grew their derivatives exposure in 2012 and 2013 before leveling off in 2014. Health insurers curtailed their already-small exposure by 58% in 2014 after two years of growth in 2011 and 2012, while fraternal companies nearly quadrupled their still-modest derivatives holdings in 2014 after two years of significant retrenchment.

Table 3: Insurance Industry Derivatives Growth 2010–2014 (as of Dec. 31, 2014)

Type	2010	2011	2012	2013	2014	4-yr CAGR
Swaps ($ Bil.)	619.2	796.7	903.1	867.3	980.7	12.2%
Options ($ Bil.)	382.1	489.5	669.2	875.5	905.6	24.1%
Futures ($ Bil.)	47.2	57.0	52.5	59.8	64.9	8.3%
Forwards ($ Bil.)	27.4	35.1	35.7	52.3	64.0	23.6%
Total Notional ($ Bil.)	1,075.9	1,378.4	1,660.5	1,854.9	2,015.0	17.0%
Total Cash & Inv. Assets ($ Bil.)	4.88	5.08	5.31	5.52	5.76	4.2%
Total Derivs. BACV ($ Mil.)	20,536	43,511	41,934	38,236	57,141	29.2%
Year-over-Year Change by Type						
Swaps		28.7%	13.4%	-4.0%	13.1%	
Options		28.1%	36.7%	30.8%	3.4%	
Futures		20.7%	-7.9%	13.8%	8.5%	
Forwards		28.3%	1.5%	46.7%	22.3%	
Total Notional		28.1%	20.5%	11.7%	8.6%	
Total BACV		4.0%	4.6%	4.0%	4.4%	
Total Cash & Inv. Assets		111.9%	-3.6%	-8.8%	49.4%	

Table 4: Insurance Industry Derivatives Growth by Industry Segment 2010–2014 (as of Dec. 31, 2014)

Industry Segment	2010	2011	2012	2013	2014	4-yr CAGR
Life	1,017,770	1,320,983	1,584,247	1,731,668	1,890,018	16.7%
P/C	57,027	55,965	74,954	122,069	123,946	21.4%
Health	623	870	1,040	1,042	436	-8.5%
Fraternal	453	582	276	171	643	9.2%
Total Notional ($ Mil.)	1,075,873	1,378,400	1,660,517	1,854,950	2,015,043	17.0%
Year-over-Year Change by Segment						
Life		29.8%	19.9%	9.3%	9.1%	
P/C		-1.9%	33.9%	62.9%	1.5%	
Health		39.6%	19.5%	0.2%	-58.2%	
Fraternal		28.5%	-52.6%	-38.0%	276.0%	
Total ($ mil)		28.1%	20.5%	11.7%	8.6%	

Hedging

From Table 5, Table 6, Table 7 and Table 8, we glean some important insights into insurers' collective derivatives usage; an overwhelming 94% of total industry notional value pertains to hedging strategies, virtually the same proportion as in the prior four years.

Table 5: Insurance Industry Derivatives Exposure by Segment and Purpose/Strategy at Dec. 31, 2014

Industry Segment	Hedging	Replication	Income Generation	Other	Total Notional ($ Mil.)	% of Total
Life	1,811,583	31,670	3,990	42,775	1,890,018	94%
P/C	73,031	688	75	50,152	123,946	6%
Health	436	-	-	-	436	0%
Fraternal	268	-	375	-	643	0%
Total	1,885,318	32,359	4,440	92,927	2,015,044	100%
% of Total	94%	2%	0%	5%	100%	

Table 6: Insurance Industry Derivatives Exposure by Type and Purpose/Strategy as of Dec. 31, 2014

Derivative Type	Hedging	Replication	Income Generation	Other	Total Notional ($ Mil.)	% of Total
Swap	940,353	32,040	-	8,263	980,655	49%
Options	819,005	319	4,440	81,804	905,569	45%
Futures	63,365	-	-	1,497	64,862	3%
Forwards	62,595	-	-	1,363	63,958	3%
Total	1,885,318	32,359	4,440	92,927	2,015,044	100%
% of Total	94%	2%	0%	5%	100%	

Table 7: Insurance Industry Derivatives Used for Hedging Purposes by Risk Type as of Dec. 31, 2014

Industry Segment	Interest Rate	Equity	FX	Credit	Other	Hedging Total Notional Value ($Mil.)	% of Total
Life	1,217,693	422,176	105,925	8,475	57,313	1,811,583	96%
P/C	12,642	3,153	1,854	3,658	51,723	73,031	4%
Health	76	-	360	-	-	436	0%
Fraternal	50	93	125	-	-	268	0%
Total	1,230,462	425,422	108,264	12,134	109,036	1,885,318	100%
% of Total	65%	23%	6%	1%	6%	100%	

Table 8: Insurance Industry Growth in Hedging with Derivatives by Risk Type 2010–2014

Risk Type	2010	2011	2012	2013	2014	4-yr CAGR
Interest rate	505,499	879,852	1,072,973	974,228	1,230,462	24.9%
Equity	154,044	235,818	288,621	380,597	425,422	28.9%
FX	75,023	96,013	118,269	316,639	108,264	9.6%
Credit	27,172	24,325	23,404	17,747	12,134	-18.3%
Other	24,654	68,816	64,446	55,979	109,036	45.0%
Total ($ Mil.)	786,392	1,304,824	1,567,713	1,745,190	1,885,318	24.4%
Year-over-Year Change in Hedging by Risk Type						
Interest rate		74.1%	21.9%	-9.2%	26.3%	
Equity		53.1%	22.4%	31.9%	11.8%	
FX		28.0%	23.2%	167.7%	-65.8%	
Credit		-10.5%	-3.8%	-24.2%	-31.6%	
Other		179.1%	-6.4%	-13.1%	94.8%	
Total ($ Mil.)		65.9%	20.1%	11.3%	8.0%	
Year-end Values						
2-year Treasury Yld. (%)	0.61	0.25	0.25	0.38	0.67	
10-year Treasury Yld. (%)	3.30	1.89	1.78	3.04	2.17	
Trade-weighted Dollar Index	99.566	100.747	99.059	101.997	111.219	

At Dec. 31, 2014, 65% of the $1.885 trillion in notional value pertaining to hedging purposes was in positions hedging interest rate risk, while 23% relates to hedging equity risk (both figures roughly consistent with prior years). A closer look at Table 8, however, shows that in aggregate, insurers increased their hedging of interest rate risk from year-end 2010 to 2012 as long-term interest rates fell, backed off in 2013 as rates rose, and then increased interest rate hedging again in 2014 as long rates resumed their decline. By contrast, insurers have increased their hedging of equity risk each year since 2010. Insurers increased the notional value of their foreign exchange hedges by more than 20% per year in 2011 and 2012, even though currencies of the major developed economies had traded in a relatively tight range for much of that time. In 2013, however, on the heels of currency devaluations in Japan and Latin America and volatility in certain emerging-market currencies, total foreign exchange (FX)-related notional exposure spiked 168%, before returning in 2014 to a level more consistent with recent years. Finally, the total notional value of credit risk hedges has trended steadily lower since 2010, while the increase in notional pertaining to "other" risks has increased, nearly doubling in 2014.

Insurers can choose from a variety of tools to manage interest rate risk. From additional analysis of statutory filings data, we observe that when hedging interest rate risk, as of year-end 2014, insurers tended to favor interest rate swaps (66% of total interest rate risk hedges' notional value) and options (31%), including interest rate caps (15%), as well as other vehicles such as floors and swaptions. To hedge equity risk, the primary tools used by insurers as of Dec. 31, 2014, were put options (44%), call options (24%) and collars (12%). FX risk was hedged primarily with currency swaps (60%) and forwards (30%), and credit risk was hedged primarily with credit default swaps (CDS) (93%).

Hedge Effectiveness

Since 2010, hedges have been classified as either "hedging effective" or "hedging other." According to SSAP No. 86, a hedge generally is considered effective when "the change in fair value of the derivative hedging instrument—or the change in cash flows or present value of those cash flows—is within 80% to 125% of the opposite change in fair value or cash flows of the hedged item attributable to the hedged risk." Hedge effectiveness, typically expressed as a percentage, must be calculated and documented at the inception of the hedge and then monitored quarterly. Insurance companies report hedge effectiveness on Schedule DB for each derivative position that is considered an effective hedge. In instances where hedge

effectiveness cannot be specifically calculated, insurance companies will disclose the financial or economic impact of the hedge in the footnotes of Schedule DB.

Given the strict criteria and the extensive documentation required, many hedges are not deemed effective for accounting purposes but still provide strategic value by managing and reducing risk. A derivative position entered into for hedging purposes that does not qualify as an effective hedge as defined above would be reported as “hedging other” in Schedule DB.

Table 9: Hedging Positions by Type and Statutory Accounting Treatment as of Dec. 31, 2014

Derivative Type	Hedging Effective	Hedging Other	Total Notional ($ Mil.)	% of Total
Swaps	101,812	838,541	940,353	50%
Options	8,070	810,936	819,005	43%
Futures	38	63,326	63,365	3%
Forwards	16,086	46,510	62,595	3%
Total	126,005	1,759,312	1,885,318	100%
% of Total	7%	93%	100%	

According to SSAP No. 86, derivative instruments used in effective hedges are valued and reported in a manner consistent with the hedged asset or liability (“hedge accounting”). For instance, if a position qualifies as hedging effective and the instrument being hedged is reported at amortized cost, then the hedging instrument would also be reported at amortized cost. Derivative instruments used in hedging transactions that are not deemed hedge-effective are reported at fair value, and changes in fair value are recorded as unrealized gains or losses (“fair value accounting”). Hedge accounting, then, helps limit the volatility in financial reporting. As shown in Table 9, the proportion of hedges classified as hedging effective as of Dec. 31, 2014, was 7%, unchanged from the prior year’s end. The remaining 93% is categorized as “hedging other.” The proportion of hedging effective positions has declined in recent years, from 8% at year-end 2012 and 12% at year-end 2011.

Swaps

Table 10 breaks down the insurance industry’s exposure to swaps by type of contract and insurance industry type. Interest rate swaps are the most common type of swap contract (83% of notional value for all open insurance industry swap positions), followed by FX swaps (7%), total return swaps (4%) and CDS (4%). Similar to overall derivatives exposure, life insurance companies accounted for the overwhelming majority of swap exposure within the insurance industry, with a 98% share at year-end 2014. Year-over-year, insurers increased their swaps exposure 8%.

Table 10: Insurance Industry Swaps Exposure by Contract Type as of Dec. 31, 2014

Contract Type	Life	P/C	Health	Fraternal	Total Notional ($ Mil.)	% of Total
Interest Rate	805,789	12,498	76	-	818,363	83%
FX	67,338	2,024	-	125	69,486	7%
Credit Default	30,888	4,042	-	-	34,930	4%
Total Return	35,605	4,292	-	-	39,897	4%
Other	17,978	-	-	-	17,978	2%
Total	957,598	22,856	76	125	980,655	100%
% of Total	98%	2%	0%	0%	100%	

Table 11 shows that hedging accounted for 96% of total insurance industry swaps' notional value as of Dec. 31, 2014, approximately the same proportion as a year earlier, and was the primary purpose for all types of swaps except CDS, which were employed primarily for replication purposes.

Table 11: Insurance Industry Swaps Exposure by Type and Purpose/Strategy as of Dec. 31, 2014

Contract Type	Hedging	Replication	Income Generation	Other	Total Notional ($ Mil.)	% of Total
Interest Rate	807,108	9,123	-	2,132	818,363	83%
FX	65,256	-	-	4,230	69,486	7%
Credit Default	11,323	22,641	-	966	34,930	4%
Total Return	38,758	275	-	863	39,897	4%
Other	17,907	-	-	71	17,978	2%
Total	940,353	32,040	-	8,263	980,655	100%
% of Total	96%	3%	0%	1%	100%	

Table 12 breaks down the insurance industry's use of swaps by type according to the risks they are attempting to hedge. Not surprisingly, interest rate, FX and CDS are overwhelmingly employed to manage their risk namesakes, while total return swaps are predominately used to manage equity risk.

Table 12: Insurance Industry Swaps Exposure (for Hedging Purposes) by Type of Contract and Risk Hedged, as of Dec. 31, 2014

Contract Type	Interest Rate	Equity	FX	Credit	Other	Hedging Total Notional ($ Mil.)	% of Total
Interest Rate	806,879	229	-	-	-	807,108	86%
FX	120	-	65,137	-	-	65,256	7%
Credit Default	-	-	-	11,323	-	11,323	1%
Total Return	8,688	28,774	-	706	591	38,758	4%
Other	8,276	1,839	45	-	7,747	17,907	2%
Total	823,962	30,841	65,182	12,029	8,338	940,353	100%
% of Total	88%	3%	7%	1%	1%	100%	

Options

Table 13 and Table 14 provide a breakdown of the insurance industry's options exposure by type of contract, purpose and insurance industry type. Put options are the most commonly used (26% of total notional value) followed by caps and call options/warrants. Given the stock market's strong performance in recent years, insurers probably purchased put options as hedges against potential declines in market prices; put options for hedging accounted for 96% of all put options transactions. Caps and call options accounted for 21% and 20%, respectively, of all option transactions. Similar to overall derivatives exposure, life insurance companies accounted for the overwhelming majority of options exposure, with an 89% share of the industry total at year-end 2014.

Table 13: Insurance Industry Options Exposure by Type of Contract as of Dec. 31, 2014

Option Type	Life	P/C	Health	Fraternal	Total Notional ($ Mil.)	% of Total
Put options	222,457	9,866	-	-	232,323	26%
Caps	190,141	311	-	50	190,501	21%
Call options / warrants	182,604	77	-	467	183,149	20%
Floors	61,907	49,916	-	-	111,823	12%
Collars	63,824	-	-	-	63,824	7%
Other	86,108	37,840	-	1	123,948	14%
Total	807,041	98,010	-	518	905,569	100%
% of Total	89%	11%	0%	0%	100%	

Table 14: Insurance Industry Options Exposure by Type and Purpose/Strategy as of Dec. 31, 2014

Option Type	Hedging	Replication	Income Generation	Other	Total Notional ($ Mil.)	% of Total
Put options	222,474	172	10	9,667	232,323	26%
Caps	190,501	-	-	-	190,501	21%
Call options/war	169,029	127	4,430	9,563	183,149	20%
Floors	111,823	-	-	-	111,823	12%
Collars	63,795	-	-	29	63,824	7%
Other	61,383	20	0	62,545	123,948	14%
Total	819,005	319	4,440	81,804	905,569	100%
% of Total	90%	0%	0%	9%	100%	

Table 15 breaks down the insurance industry's use of options by type according to the risks they are attempting to hedge. Here, the story is a bit more complex than in the case of swaps. Interest rate risk is the largest category in terms of notional exposure, followed closely by equity risk. With respect to interest rate hedging, caps appear to be the prevailing choice in terms of notional value, followed by floors, call options and other instruments. Most likely also included in call options are swaptions (which are options to enter into a swap contract at a future date), another tool to manage interest rate risk, particularly with respect to certain life products where the duration of liabilities can depend on customer behavior in response to interest rates (so-called lapse or surrender risk). With respect to equity risk, put options are the top choice for insurers, followed by call options and collars.

Table 15: Insurance Industry Options Exposure (for Hedging Purposes) by Type of Contract and Risk Hedged, as of Dec. 31, 2014

Contract Type	Interest Rate	Equity	FX	Credit	Other	Hedging Total Notional ($ Mil.)	% of Total
Put options	17,493	187,613	3,280	-	14,089	222,474	27%
Caps	190,150	271	-	-	80	190,501	23%
Call options / warr	54,157	102,183	905	-	11,783	169,029	21%
Floors	58,545	-	-	-	53,278	111,823	14%
Collars	9,920	52,329	1,500	-	46	63,795	8%
Other	50,133	10,953	-	-	297	61,383	7%
Total	380,398	353,350	5,685	-	79,573	819,005	100%
% of Total	46%	43%	1%	0%	10%	100%	

As of year-end 2014, the notional value of CDS held by the U.S. insurance industry totaled $34.9 billion, a 5% decrease from $36.9 billion in notional value at year-end 2013. Life and P/C companies were the only participants in the CDS market in 2014, as was the case in 2013.

In CDS nomenclature, to buy protection is to reduce or be short credit risk, and to sell (or write) protection is to assume/add or be long credit risk. Table 16 illustrates that, as of year-end 2014, about $18.6 billion (or 53%) of the $34.9 billion in insurance industry CDS exposure was as a seller of protection (or long credit). The remaining balance was to buy protection (short credit).

Credit risk can be hedged by buying protection on a specific entity (single-name CDS) or on a specified index. The industry's ratio of bought/total protection was 47% at the end of 2014, up from 37% a year earlier, indicating that credit sentiment among insurers has shifted from quite positive to a more neutral stance.

Most insurers electing to sell protection (assume credit risk) are engaging in replication, effectively packaging sold CDS positions with U.S. Department of the Treasury securities or other bonds in their portfolios to create synthetic securities that give them the desired risk exposures and terms, irrespective of any availability, liquidity and price constraints they may face in the cash bond markets.

Table 16: Insurance Industry CDS Exposure as of Dec. 31, 2014

Industry Segment	Buyer	Seller	Total Notional ($ Mil.)	% of Total
Life	13,930	16,959	30,888	88%
P/C	2,391	1,651	4,042	12%
Total	16,321	18,609	34,930	100%
% of Total	47%	53%	100%	

Counterparty Exposure

Typically, there are two parties to a derivatives contract; this gives rise to counterparty risk—the risk faced by one party that the other party will not satisfy the obligations of the contract. Insurance companies mainly face counterparty risk when entering into derivatives contracts that are traded over the counter (OTC), such as certain options, swaps and forwards. Historically, these instruments have been bilateral, negotiated contracts that settle between parties. When facing an exchange or central clearinghouse, counterparty risk is still a concern but relatively less than under bilateral contracts because of the strict collateral requirements and risk-neutral objective that they follow. Futures and listed options trade on exchanges, which provide a similar clearing function as central clearinghouses; "standardized" OTC derivatives will be required to clear through central clearinghouses with the implementation of Dodd-Frank.

Table 17 summarizes exposures in notional value to the top 10 counterparties as of year-end 2014. As in the overall derivatives market, the insurance industry's counterparty exposure is concentrated amongst relatively few financial institutions. The 10 counterparties listed in Table 15 represent 67% of the notional value outstanding in the insurance industry as of year-end 2014, down from 72% in 2013. (As before, one should remember that notional value does not necessarily accurately depict an insurer's true exposure to a given risk.)

Table 17: Insurance Industry Exposure to Top 10 Counterparties as of Dec. 31, 2014 ($ Mil.)

Counterparty	Life	P/C	Health	Fraternal	Notional Value ($ Mil.)	% of Notional Value
Deutsche Bank	175,286	19,841	-	-	195,127	10%
Citigroup	118,153	74,952	75	19	193,199	10%
Goldman Sachs	153,328	1,316	-	-	154,644	8%
Credit Suisse	144,671	2,134	-	-	146,805	7%
Bank of America	129,226	3,934	-	48	133,207	7%
Barclays plc	108,489	1,646	-	-	110,136	5%
JP Morgan	102,894	5,638	-	67	108,600	5%
BNP Paribas	106,535	210	-	-	106,745	5%
Morgan Stanley	100,120	1,298	-	-	101,418	5%
Soc Gen	74,661	110	-	-	74,771	4%
Total Top 10	1,213,363	111,079	75	135	1,324,652	66%
Total Notional Value	1,890,018	123,946	436	643	2,015,043	100%
Total Top 10 % of Notional Value	64%	90%	17%	21%	66%	

Counterparty exposure is expected to change in the years ahead as more derivatives trading moves from bilateral to central counterparty clearing. According to the International Swap Dealers Association (ISDA), on average, 77% of the total average daily notional volume of interest rate derivatives (63% by trade count) was centrally cleared in 2014. As of year-end 2014, however, only about 14% of the insurance industry's total notional derivatives exposure (as reported in Schedule DB) was in centrally cleared instruments, reflecting the large proportion of legacy or non-standardized uncleared positions on insurers' books. Such contracts can be quite long-dated—20 or more years in some cases—but the percentage of centrally cleared instruments will rise over time, as more derivative instruments transition to central clearing and legacy positions run off.

Posted Collateral

To mitigate the risk that they may not meet all or a portion of their payment obligations under a derivative contract, counterparties generally are required to post collateral. Insurers report counterparty exposure for derivative instruments open as of year-end on Schedule DB, Part D, including the fair value of acceptable collateral. Beginning with year-end 2013 filings, a new section (Part D, Section 2) was added to the schedule to include more information on collateral posted by and to the reporting entity. The new data provides regulators with better insight into the nature of the assets used for collateral. Collateral posted by insurers and to insurers is reported in BACV and fair value terms; collateral reported to insurers is best measured in fair value because, according to the 2014 Annual Statement Instructions, "book/adjusted carrying value does not apply to collateral pledged to a reporting entity in which there has not been a default (i.e., Off-Balance Sheet Collateral)."

Table 18: Insurance Industry Posted Collateral (BACV) as of Dec. 31, 2014 ($ Mil.)

	Industry Segment					
Collateral Type	Fraternal	Life	P/C	Total BACV ($ Mil.)	% of Total	% of Insurance Industry Exposure to Asset Type
Cash (U.S. $)	-	1,812	258	2,070	17%	0.9%
Corporate Bonds - U.S.	-	1,684	55	1,739	14%	0.1%
Foreign Government	-	127	-	127	1%	0.1%
Loan-Backed and Structured (ABS)	-	450	50	499	4%	0.2%
MBS - Agency	-	1,640	-	1,640	14%	0.5%
Municipal	-	-	232	232	2%	0.0%
Other / NA	-	374	1	374	3%	NA
U.S. Treasury and Agency	41	5,004	384	5,428	45%	2.2%
Grand Total	41	11,091	979	12,111	100%	1.2%
% of Total	0%	92%	8%	100%		

Table 18 shows that, as of year-end 2014, insurers posted about $12.1 billion BACV of collateral with counterparties ($13.0 billion fair value). Insurers received collateral with a fair value of about $36.3 billion from counterparties. Life companies account for 92% of the total BACV of collateral posted with counterparties, as they are the primary users of derivatives in the industry. P/C accounted for 8%, and fraternal accounted for less than 1%.

U.S. Treasury and agency securities were the prevalent asset types posted as collateral by insurance companies, comprising 45% of the total BACV as of Dec. 31, 2014. The remaining significant collateral types were cash (17%), U.S. corporate bonds (14%) and agency mortgage-backed securities (14%). Together, these types accounted for 90% of the collateral posted by insurers at the end of 2014.

In the case of collateral posted by the industry to the counterparties, even though these assets are pledged as collateral, they remain on insurers' balance sheets. Any liquidity concerns should be mitigated by the fact that the amount of collateral posted by insurers is a minuscule portion of the total BACV of such assets held by those insurers, even for U.S. Treasury and agency securities—the most prevalent collateral type.

Conclusion

The notional amount of insurance industry derivatives exposure continues to grow, although the actual economic exposure to the industry remains small. Life insurers consistently have the largest derivatives exposure within the industry, followed by P/C, health and fraternal companies, while title companies have none. Concern over the size of total notional exposure should be mitigated by its focus. Rather than income generation or replication, which do not reduce risk, the stated purpose of the vast majority of the industry's derivatives exposures continues to be hedging, chiefly of interest rate risk, as well as equity risk and other risks to a small extent.

The NAIC Capital Markets Bureau will continue to track derivatives usage trends among insurers, and will monitor developments in the derivatives market and their impact on insurance industry investments. We will report on any developments as deemed appropriate.

Questions and comments are always welcomed. Please contact the Capital Markets Bureau at CapitalMarkets@naic.org

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