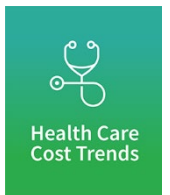


2022 Society of Actuaries Individual Life Waiver of Premium Experience Study

Paul Correia, FSA, MAAA
Milliman, Inc.



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2022 SOA ILWOP Experience Study

Objectives

- Compare recent industry experience for individual life waiver of premium (ILWOP) insurance products to the expected incidence and claim termination rates from the 1952 SOA Disability Table;
- Analyze actual-to-expected (A/E) incidence and claim termination ratios across key segments such as gender, attained age, etc.;
- Develop an illustrative experience basis for calculating policy and claim reserves based on the results from the A/E studies; and
- Compare reserves calculated using experience assumptions to the reserves calculated using the 1952 SOA Disability Table for an illustrative cohort of ILWOP business.

2022 SOA ILWOP Experience Study

Background

According to a survey performed by the SOA in 2018, most insurers use the 1952 SOA Disability Table for calculating statutory policy and claim reserves for ILWOP products.

Statutory Reserve Assumptions		
Source: 2018 Survey Sponsored by the Society of Actuaries		
Valuation Table	Incidence Rates	Claim Termination Rates
1952 SOA Disability Table	8	10
1964 CDT Table	0	0
1985 CIDA Table	2	1
2013 Individual Disability Table	0	0
Company experience	1	1
Other	1	1

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Summary of Experience Studies

A/E Incidence Study

- Gender
- Attained age
- Issue age
- Policy duration
- Face amount
- Observation year
- Smoker status
- Issue state
- Annualized premium
- Policy type
- Optional rider
- Underwriting methods
- Insurance type

A/E Claim Termination Study

- Gender and claim duration
- Attained age and claim duration
- Issue Age and claim duration
- Diagnosis and claim duration
- Smoker status and claim duration
- Annualized premium and claim duration

2022 SOA ILWOP Experience Study

Exposures

Policy Database

Life Years of Exposure Experience Period: 2002 through 2016			
Attained Age	Male	Female	Total
< 30	20,749,573	20,100,210	40,849,783
30-39	17,559,372	15,334,133	32,893,505
40-49	22,382,278	16,723,459	39,105,736
50 +	28,598,176	17,442,206	46,040,382
Total	89,289,398	69,600,008	158,889,406

Claim Database

Claim Terminations Experience Period: 2002 through 2016			
Claim Duration	Male	Female	Total
1	7,843	3,949	11,792
2	9,986	4,901	14,887
3	7,064	3,583	10,647
4	4,460	2,225	6,685
5-9	13,434	6,272	19,706
10+	55,151	15,294	70,445
Total	97,938	36,223	134,160

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A/E Incidence Study

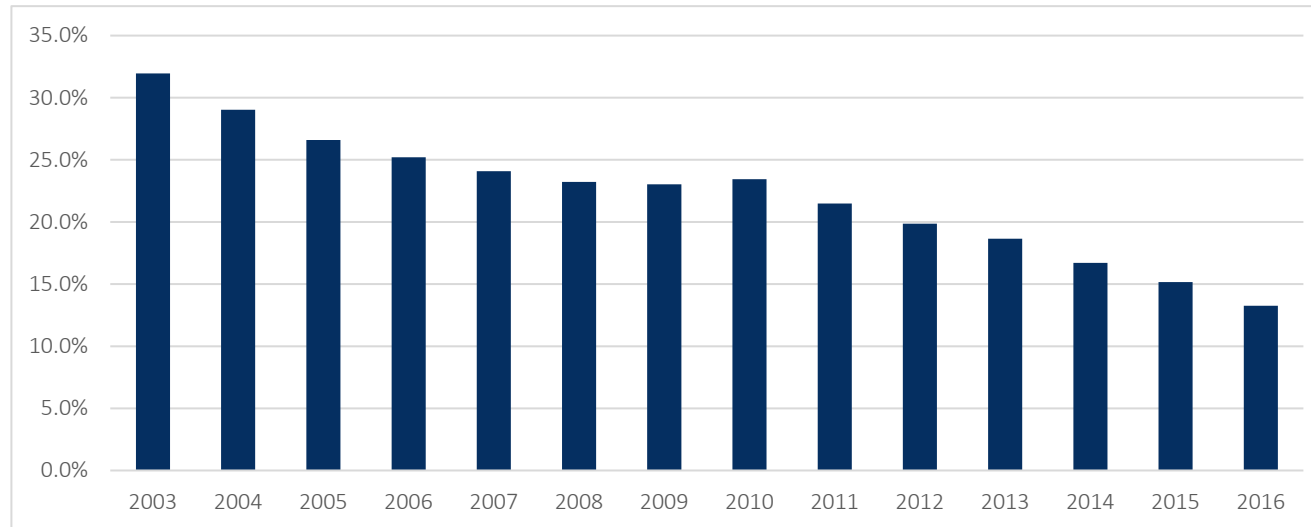
A/E Incidence Ratios by Gender and Attained Age			
Attained Age	Male	Female	Total
< 30	19.3%	14.6%	17.0%
30-39	32.7%	34.1%	33.4%
40-49	41.4%	39.5%	40.6%
50 +	19.6%	14.3%	17.6%
Total	23.4%	20.0%	22.1%

- Actual ILWOP incidence rates during the 2003-2016 experience period were significantly lower than the expected incidence rates from the 1952 Table.
- The A/E ratios are higher in total for males than females, and are lower at the youngest and highest attained age bands.

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A/E Incidence Study

A/E Incidence Ratios by Experience Year



- A/E incidence ratios are generally decreasing during the experience period.
- A flattening occurs in 2008-09 followed by a slight uptick in 2010, which may be linked to the economic recession in those years.

2022 SOA ILWOP Experience Study

A/E Incidence Study

A/E Incidence Ratios by Coverage Type

Coverage Type	A/E
Included with Base Policy	14.5%
Optional Rider	26.4%
Total	22.1%

- The A/E incidence ratios are higher when ILWOP benefits are offered as an optional rider than when benefits are included in the base policy.
- May indicate adverse selection risk, or that policyholders are not as aware of waiver of premium benefits when they are included in the base policy.

2022 SOA ILWOP Experience Study

A/E Claim Termination Study

A/E Claim Termination Ratios by Gender and Claim Duration

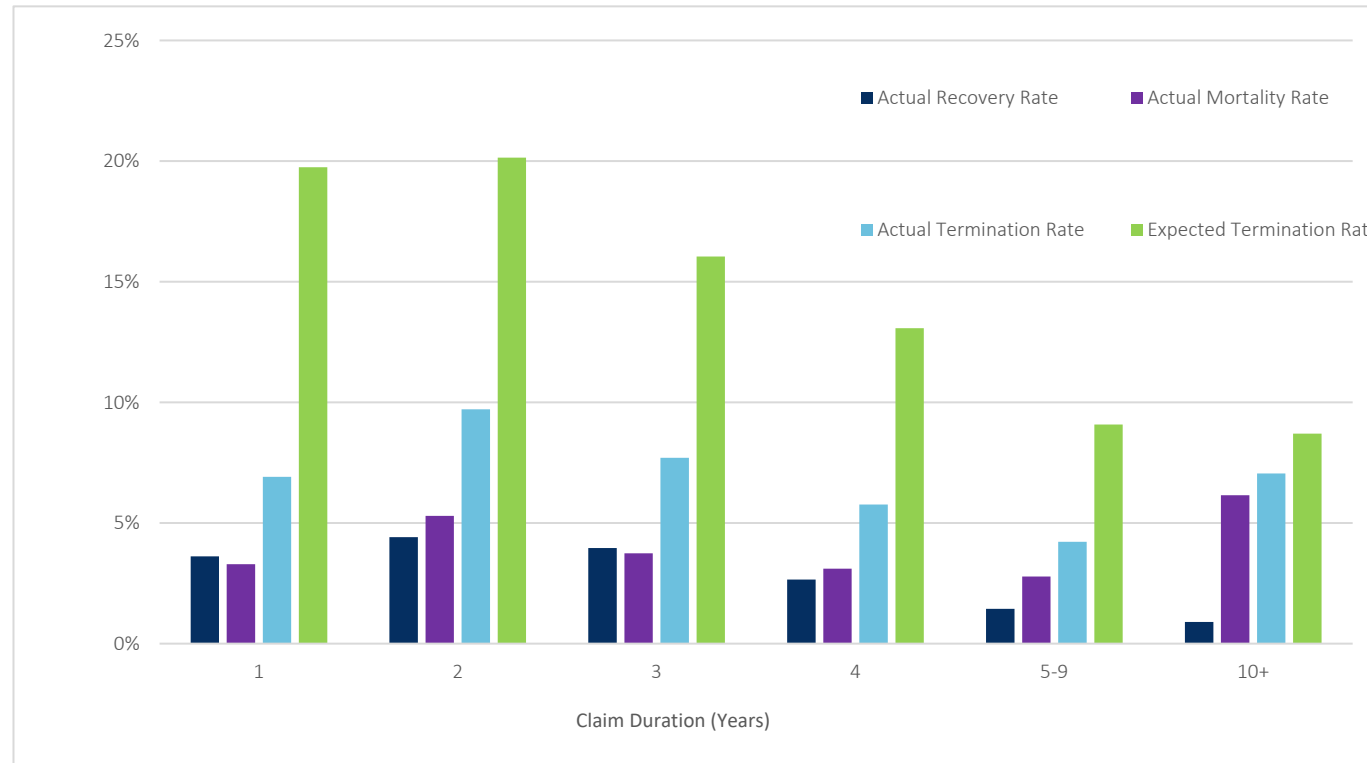
Gender	Claim Duration (Years)						Total
	1	2	3	4	5-9	10+	
Male	35.6%	45.1%	47.3%	42.2%	46.8%	82.2%	59.2%
Female	30.1%	36.0%	39.7%	35.5%	39.8%	69.6%	45.4%
Total	33.6%	41.6%	44.4%	39.7%	44.3%	79.1%	54.7%

- Actual ILWOP claim termination rates during the 2003-2016 experience period were lower than the expected claim termination rates from the 1952 Table.
- The overall A/E claim termination ratio is 54.7%, although the ratios are lower for claims in durations 1-9 years than in durations 10+ years.

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A/E Claim Termination Study

Actual and Expected Claim Terminations for attained age group 50+



- Actual claim terminations in later durations are dominated by deaths.

2022 SOA ILWOP Experience Study

A/E Claim Termination Study

A/E Claim Termination Ratios by Disability Diagnosis			
Disability Diagnosis	Actual Terminations	Expected Terminations	A/E Ratio
Cancer	8,358	8,638	96.8%
Circulatory	4,334	9,573	45.3%
Musculoskeletal	7,656	20,323	37.7%
Mental & Nervous	3,457	9,941	34.8%
Nervous System	2,563	7,541	34.0%
Other	18,164	49,530	36.7%
No Diagnosis	89,628	139,660	64.2%
Total	134,160	245,206	54.7%

- The A/E ratio for cancer claims is much higher than the overall A/E ratio of 54.7%.
- The A/E ratios for musculoskeletal, mental & nervous, and nervous system claims are lower than the overall result

2022 SOA ILWOP Experience Study

ALR Reserve Comparisons

Illustrative ILWOP Active Life Reserve Comparisons

Reserves in \$ Millions

Attained Age	1952 Table			Experience Basis			Ratio: Experience / 1952		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
<30	\$0.29	\$0.24	\$0.53	\$0.21	\$0.21	\$0.42	72%	87%	79%
30-39	\$5.65	\$3.59	\$9.24	\$3.77	\$2.56	\$6.34	67%	71%	69%
40-49	\$17.01	\$8.97	\$25.98	\$9.95	\$5.27	\$15.22	58%	59%	59%
50+	\$14.43	\$6.39	\$20.82	\$7.20	\$3.12	\$10.31	50%	49%	50%
Total	\$37.38	\$19.19	\$56.57	\$21.13	\$11.16	\$32.29	57%	58%	57%

- Experience Basis reserves were calculated using adjustment factors to the 1952 Table that reflect the results from the A/E incidence and claim termination studies.
- Illustrative reserves were calculated for an illustrative cohort of ILWOP business that includes 1,500,000 inforce policies and 10,000 open claims. The assumed inforce policy and open claim distributions were developed from the industry data provided for the 2022 SOA ILWOP Experience Study.

2022 SOA ILWOP Experience Study

DLR Reserve Comparisons

Illustrative ILWOP Disabled Life Reserve Comparisons

Reserves in \$ Millions

Duration (Years)	1952 Table			Experience Basis			Ratio: Experience / 1952		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
1	\$1.15	\$0.51	\$1.65	\$2.03	\$1.01	\$3.04	177%	200%	184%
2	\$1.35	\$0.61	\$1.96	\$2.04	\$1.02	\$3.06	151%	167%	156%
3	\$1.38	\$0.65	\$2.03	\$1.96	\$0.99	\$2.95	142%	153%	145%
4	\$1.38	\$0.66	\$2.04	\$1.85	\$0.93	\$2.78	134%	142%	136%
5-9	\$5.27	\$2.73	\$8.00	\$6.74	\$3.55	\$10.29	128%	130%	129%
10+	\$5.26	\$2.59	\$7.86	\$6.56	\$3.21	\$9.77	125%	124%	124%
Total	\$15.80	\$7.75	\$23.54	\$21.19	\$10.71	\$31.90	134%	138%	136%

- Experience Basis reserves were calculated using adjustment factors to the 1952 Table that reflect the results from the A/E claim termination study.

2022 SOA ILWOP Experience Study

Limitations

The results in this report are technical in nature and are dependent on certain assumptions and methods. No party should rely upon these results without a thorough understanding of those assumptions and methods. Such an understanding may require consultation with qualified professionals. This report should be distributed and reviewed only in its entirety.

In conducting the analysis, Milliman relied upon the policy and data provided by contributors to the ILWOP Experience Study. Milliman did not audit or independently verify any of the information furnished, except for reviewing the data for reasonableness and consistency. To the extent that any of the data or other information supplied to us was incorrect or inaccurate, the results of this analysis could be materially affected.

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This report includes illustrative reserve estimates that are based on a variety of assumptions about ILWOP incidence and claim termination experience. It is highly likely that actual experience on any given block of ILWOP business will vary from the assumptions, and that the illustrative reserves may be higher or lower than reserves calculated using a different set of assumptions. Also the illustrative reserves are presented on a best estimate basis without any added valuation margins.

I, Paul Correia, FSA, MAAA am a consulting actuary for Milliman, Inc and a member of the American Academy of Actuaries. I meet the qualification standards of these organizations to render the actuarial opinion contained herein.

