Report on Experience Studies for the State and Local Income Continuation Insurance Plans

Prepared For The State of Wisconsin Department of Employee Trust Funds

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March 24, 2023

Table of Contents

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March 20, 2023

Mr. Jim Guidry
Director
Benefit Services Bureau
Wisconsin Department of Employee Trust Funds
Madison, WI 53707

RE: Experience Studies for the Income Continuation Insurance Program

Dear Jim,

Thank you for asking Milliman to perform experience studies for the Income Continuation Insurance program. The studies are based on State and Local ICI experience from 2017 through 2022. We used the results of these studies to develop new assumptions for performing the actuarial valuation of the State and Local ICI plans as of December 31, 2022.

We have analyzed ICI offset approval rates and amounts, claim termination rates, and overpayment recoveries which are the key components of our valuation basis. This report provides the results from our analysis, along with detailed documentation of the study methods and data in the following sections:

- Executive Summary
- Offset Study
- Claim Termination Rate Study
- Overpayment Study
- Runout Study

Please review this information and let us know if you have any questions. We look forward to discussing this information with you in the near future.

Sincerely,

Maxwell Berube, FSA, MAAA
Actuary

Paul Correia, FSA, MAAA
Principal and Consulting Actuary

cc: Gina Fischer, Erin Esser, Matt Nelson, Megan Jeffers (ETF)
Dan Skwire (Milliman)

I. Executive Summary

- We performed experience studies using State and Local ICI claim experience from 2017 through 2022[1] by analyzing recent trends in claim termination rates, offset approval rates and amounts, and overpayment recoveries. We also performed liability runout studies to evaluate the margins in historical ICI liabilities calculated using different claim termination and estimated offset assumptions. Based on the results from these studies, we developed new assumptions that we propose using for performing the December 31, 2022 valuation of the State and Local ICI plans.

- We developed a new claim termination basis for projecting future benefit payments that includes adjustment factors to the 2012 Group Long Term Disability Valuation Table. The adjustment factors are based on the results of our claim termination rate and runout studies. The new adjustment factors are shown below along with the current adjustment factors.

Table 1:
Claim Termination Rates Adjustment Factors to the 2012 GLTD Table

Duration (months)	Current Basis	New Basis
1-9	1.25	1.20
10-12	2.50	1.20
13-24	1.25	1.60
25-36	0.98	0.85
37-48	0.98	0.40
49-60	0.98	0.25
61-120	0.96	0.85
121+	0.96	1.30

- We developed new estimated offset assumptions for Social Security Disability Income (SSDI) benefits, Pension/Retirement benefits, and Other Disability benefits. The structure of the new assumptions is different than the current basis and varies by claim duration. We believe this new approach is an enhancement to the liability calculation as it reflects changes over time in the probability of being approved for benefits from other sources. The "Offset Study" section of this report contains the new estimated offset assumptions along with details of the underlying analysis.

- We performed an overpayment recovery study to estimate the proportion of overpayment balances that will eventually be recovered by The Wisconsin Department of Employee Trust Funds (ETF). Based on the results from this study, we believe the current valuation assumption is still reasonable.

[1] The experience period for the claim termination rate study is January 1, 2017 through June 30, 2022, whereas the experience period for the offset study and runout study is January 1, 2017 through December 31, 2021. We used a slightly shorter experience period for the offset and runout studies because the structure and data requirements for these studies are different than the claim termination study, and to ensure that experience was complete for performing the analysis. The experience period is at least five years for every study, which we consider reasonable for performing the studies. In addition, State and Local ICI experience was combined for performing the claim termination and offset studies, which is reasonable because the State and Local ICI plan designs are very similar, and standalone Local ICI experience would not be considered credible for performing these studies.

- Our testing indicates that the new basis produces lower liabilities in aggregate than the current basis. The following table compares the State and Local ICI open claim liabilities as of December 31st, 2021 on the current basis and the proposed new basis:

Table 2: Open Claim Liabilities as of December 31st, 2021				
Liability Component	**State ICI**		**Local ICI**	
	Current	**New**	**Current**	**New**
Basic Benefits	$76,683,938	$73,500,612	$6,054,263	$5,764,866
Supplemental Benefits	$2,487,749	$2,417,086	$270,790	$270,975
$75 Add-on	$226,667	$235,573	$50,558	$54,095
Total	**$79,398,354**	**$76,153,271**	**$6,375,611**	$**6,089,936**

- We performed a runout study over calendar years 2017 through 2021 to test the new assumptions. The new assumptions produce margins consistently within our target 1-5% range at every duration and in total.

Table 3: Average Annual Liability Margin by Claim Duration Calendar Years 2017 through 2021	
Duration (months)	**Average Annual Margin % of Liability**
1-12	4.0%
13-24	3.7%
25-36	3.7%
37-48	1.1%
49-60	1.0%
61+	1.6%
Total	**2.2%**

II. ICI Benefit Offset Study

We performed an offset study based on State and Local ICI claims that received benefit payments between January 1, 2017 and December 31, 2021. We identified Social Security Disability Income (SSDI) benefits, Pension/Retirement benefits, and "Other" disability benefits as the most relevant offsets for estimating plan liabilities. These offsets are defined as follows in the ICI claim databases from The Hartford:

- SSDI offsets:
  - SS Disability Primary
- Pension / Retirement offsets:
  - Pension (Other)
  - Disability Pension
  - Service Pension
  - Employer Retirement
- Other Disability offsets:
  - Other Disability Benefit

For any given claim, any offsets that were identical to other offsets in terms of the offset name, amount, and start and end dates were considered to be duplicate records and were removed from the study if they appeared on the same calendar year file. Offsets were only counted if they were paid during the experience period based on the offset start and end dates.

The following table shows the number of ICI claims with benefit offsets and the total number of claims by duration between 2017 and 2021.

Table 4:
Number of Claims Approved for Offsets by Duration

Duration	Total Claims	SSDI	Pension	Other Disability
1	1126	24	68	7
2	547	129	192	41
3	459	175	163	101
4	415	205	130	127
5	360	227	78	143
6	348	238	64	163
7	322	231	52	166
8	298	207	47	145
9	279	195	43	138
10+	574	438	146	229
Total	4728	2069	983	1260

We used this data to develop the following metrics that show the proportion of ICI claims approved for benefit offsets from 2017 through 2021 by claim duration:

Table 5: Proportion Approved for Benefit Offsets by Claim Duration			
Duration (Years)	**SSDI**	**Pension/Retirement**	**Other Disability**
1	2%	6%	1%
2	24%	35%	7%
3	38%	36%	22%
4	49%	31%	31%
5	63%	22%	40%
6	68%	18%	47%
7	72%	16%	52%
8	69%	16%	49%
9	70%	15%	49%
10+	76%	25%	40%
Total	**44%**	**21%**	**27%**

We also compared the total offset amount to the total ICI gross benefit amount for claimants who were approved for benefits from other sources during the experience period, by duration. The final column in the tables below shows the offset amount as a percentage of the gross ICI benefit amount for claims that were approved for benefits from other sources. Table 6a corresponds to SSDI benefits, Table 6b corresponds to Pension/Retirement offsets, and table 6c corresponds to Other Disability offsets.

Table 6a: SSDI Offset as a Percentage of Gross Benefit			
Duration	**Total Gross Benefits**	**Total Offsets**	**Offset % of Gross**
1	$70,875	$36,177	51%
2	$429,675	$201,946	47%
3	$574,238	$270,320	47%
4	$669,050	$308,254	46%
5	$727,825	$331,508	46%
6	$772,975	$344,054	45%
7	$742,263	$324,598	44%
8	$640,713	$284,021	44%
9	$595,000	$261,126	44%
10+	$1,089,728	$489,199	45%
Total	**$6,312,341**	**$2,851,200**	**45%**

Table 6b: Pension / Retirement Offset as a Percentage of Gross Benefit			
Duration	**Total Gross Benefits**	**Total Offsets**	**Offset % of Gross**
1	$226,625	$116,770	52%
2	$630,488	$278,672	44%
3	$518,387	$213,755	41%
4	$397,037	$148,490	37%
5	$231,350	$69,512	30%
6	$182,988	$45,584	25%
7	$147,338	$35,069	24%
8	$133,213	$32,282	24%
9	$114,287	$23,374	20%
10+	$323,470	$83,871	26%
Total	**$2,905,182**	**$1,047,379**	**36%**

Table 6c: Other Disability Offset as a Percentage of Gross Benefit			
Duration	**Total Gross Benefits**	**Total Offsets**	**Offset % of Gross**
1	$28,500	$13,004	46%
2	$138,138	$69,149	50%
3	$328,888	$164,397	50%
4	$423,275	$210,714	50%
5	$486,038	$243,942	50%
6	$568,288	$287,117	51%
7	$570,263	$289,945	51%
8	$475,688	$238,226	50%
9	$448,600	$222,392	50%
10+	$647,709	$301,638	47%
Total	**$4,115,384**	**$2,040,524**	**50%**

Based on the results of our analysis, we have developed new estimated offset assumptions for the three offset types for estimating plan liabilities. The new structure is different than the current basis which only includes an estimated SSDI offset assumption. In addition, we changed the methodology for estimating the probability of being approved for benefits from other sources by applying probabilities at every duration in our projection of future benefits. The current basis does not vary by projected claim duration. We believe the new approach provides a more precise estimate of future offset experience than the current basis.

The new estimated offset assumptions are summarized in Table 7 below:

Table 7a: Cumulative SSDI Approval Probabilities by Duration								
Projected Duration	**Duration as of Valuation Date**							
	1	2	3	4	5	6	7	8+
1	0%							
2	11%	0%						
3	29%	10%	0%					
4	43%	26%	9%	0%				
5	55%	43%	29%	13%	0%			
6	65%	55%	45%	32%	7%	0%		
7	69%	61%	52%	41%	19%	5%	0%	
8+	71%	63%	54%	44%	24%	11%	0%	0%

Table 7b: Cumulative Other Disability Approval Probabilities by Duration								
Projected Duration	**Duration as of Valuation Date**							
	1	2	3	4	5	6	7	8+
1	0%							
2	3%	0%						
3	14%	8%	0%					
4	26%	20%	6%	0%				
5	35%	30%	17%	7%	0%			
6	39%	35%	23%	13%	0%	0%		
7	39%	35%	23%	13%	0%	0%	0%	
8+	39%	35%	23%	13%	0%	0%	0%	0%

Table 7c: Cumulative Pension / Retirement Approval Probabilities by Duration			
Projected Duration	**Duration as of Valuation Date**		
	1	2	3+
1	0%		
2	10%	0%	
3+	21%	0%	0%

In addition, we propose using new estimated offset amount assumptions equal to the ratios in the final column of Tables 6a, 6b, and 6c – i.e., 45% of the gross benefit amount for estimated SSDI benefits, 36% of the gross benefit amount for estimated Pension/Retirement benefits, and 50% of the gross benefit amount for estimated Other Disability benefits.

III. Claim Termination Rate Study

We performed an actual to expected (A/E) claim termination rate study using ICI claim data from January 1st, 2017 through June 30th, 2022. We compared actual claim terminations over this period to expected claim terminations based on the current valuation basis. We performed the study both by count and gross monthly indemnity, although the results were very similar and we focused primary on the study by count for developing new assumptions. The results of this study are provided below and show that the number of actual terminations was greater than expected during the experience period for claims in early durations and overall:

Table 8:
Actual to Expected Claim Termination Study Weighted by Lives
Expected Terminations based on Current Basis
Study Period: 1/1/2017 to 6/30/2022

Claim Duration (months)	Actual Terminations	Expected Terminations	A/E Ratio
2-9	1,734	947	1.83
10-12	206	236	0.87
13-24	161	282	0.57
25-36	59	66	0.90
37-48	42	37	1.14
49-60	19	25	0.75
61-120	40	59	0.68
121+	42	49	0.86
Total	**2,303**	**1701**	**1.35**

Table 9:
Actual to Expected Claim Termination Study Weighted by Indemnity
Study Period: 1/1/2017 to 6/30/2022

Claim Duration (months)	Actual Terminations	Expected Terminations	A/E Ratio
2-9	5,718,339	3,084,160	1.85
10-12	697,455	770,713	0.90
13-24	520,595	874,834	0.60
25-36	183,955	202,104	0.91
37-48	116,526	112,738	1.03
49-60	49,225	77,826	0.63
61-120	122,133	176,685	0.69
121+	90,729	110,718	0.82
Total	**7,498,957**	**5,409,778**	**1.39**

We also analyzed experience from a shorter study period from January 1, 2017 through December 31, 2021 to determine if results from 2022 can be considered fully reported. If historical experience is a good predictor of future experience, we would expect to see similar results in this study when compared to the full study period. Significant differences could indicate that insufficient time has elapsed for claim terminations in 2022 to be fully reported. The results are shown below:

Table 10:
Actual to Expected Claim Terminations Weighted by Lives
Study Period: 1/1/2017 to 12/31/2021

Claim Duration (months)	Actual Terminations	Expected Terminations	A/E Ratio
2-9	1,572	858	1.83
10-12	181	210	0.86
13-24	148	260	0.57
25-36	51	62	0.83
37-48	38	34	1.11
49-60	16	23	0.69
61-120	33	54	0.62
121+	35	44	0.80
Total	**2,074**	**1,544**	**1.34**

Table 11:
Actual to Expected Claim Terminations Weighted by Indemnity
Study Period: 1/1/2017 to 12/31/2021

Claim Duration (months)	Actual Terminations	Expected Terminations	A/E Ratio
2-9	5,123,967	2,755,341	1.86
10-12	601,643	672,162	0.90
13-24	471,178	796,295	0.59
25-36	159,230	188,301	0.85
37-48	104,476	103,933	1.01
49-60	41,688	71,039	0.59
61-120	99,171	161,415	0.61
121+	78,212	99,106	0.79
Total	**6,679,564**	**4,847,592**	**1.38**

Since the results are reasonably similar to the full study period that includes 2022 experience, they provide evidence that 2022 claim experience is reasonably complete and is reasonable to include in the study.

The claim data includes records for both STD (claim durations less than 12 months) and LTD (claim durations of 12 months or greater) claims that received payments within the period, and we excluded any STD record with a corresponding LTD record for a given claim to avoid double-counting individual claims. We also did not count any claims that closed within 45 days of the expiration date as a claim termination (i.e., recovery or death) and assumed these claims closed because they reached the maximum benefit period. Please note that while CTR studies are a valuable tool for determining the valuation claim termination rate assumptions, they do not take all variables into account (offsets are a notable example). Therefore, although claim termination rate studies provides useful information on historical recovery and mortality trends, a runout study is our preferred approach for setting the final claim termination rate assumptions.

IV. Overpayment Study

We performed an overpayment study to estimate the proportion of overpayments recovered by ETF for open claims with overpayment balances. We projected claims with known overpayment balances as of December 31st, 2021, using the proposed new valuation assumptions. Of the 304 claims with overpayment balances as of December 31st, 2021, we were able to link 57 to a record on the December 31st, 2021 open claim listing. We then developed two separate projections for these claims: one that assumes the overpayments are offset by the net benefit amount, and another that assumes the overpayments are not offset by the net benefit amount. The difference between these balances is the present value of the assumed overpayments recovered as of December 31st, 2021. We then compared the projected overpayment recovered to the total overpayment balance as of December 31, 2021, as shown below:

Table 12:
Projected Overpayment Balance Recovered for Open Claims with Known Overpayment Balances as of December 31st, 2021

Program	State	Local	Total
Projected Overpayment Recovered	$495,364	$65,422	$560,787
Total Overpayment Balance	$659,433	$79,488	$738,921
Percent Recovered	75%	82%	76%

Our prior assumption was that 75% of overpayments would be recovered for open claims with overpayment balances, which is consistent with the results of this recent study. Therefore, we do not propose changing this assumption for performing the December 31, 2022 actuarial valuation of the State and Local ICI plans.

V. Runout Study

We performed a retrospective runout study to determine what historical margins would have looked like under the proposed new valuation assumptions. The runout study methodology is the same as the methodology for the runout studies routinely performed in our valuation analysis. We calculated open claim liabilities as of prior valuation dates using the new valuation assumptions, then we compared these liabilities to the present value of benefits paid during the study period plus the present value of any remaining liabilities for claims still open at the end of the study period. We performed the runout study using State ICI experience from calendar years 2017 through 2021 and we summed the results in each year. The results of this study are shown below:

Table 13:
Combined 12-month Runout Studies from 2017 through 2021
New Basis

Duration	Beginning Liability	PV Paid	PV Ending Liability	Annual Margin	Margin %
1 - 12 months	$46,609,542	$14,761,389	$29,998,085	$1,850,068	4.0%
13 - 24 months	$42,491,681	$8,487,738	$32,451,458	$1,552,485	3.7%
25 - 36 months	$39,517,778	$6,574,360	$31,494,717	$1,448,701	3.7%
37 - 48 months	$65,096,052	$9,069,508	$55,356,977	$669,567	1.0%
49 - 60 months	$117,890,035	$15,574,647	$100,186,812	$2,128,575	1.8%
61+ months	$86,203,149	$14,277,959	$70,806,006	$1,119,184	1.3%
Grand Total	**$397,808,236**	**$68,745,601**	**$320,294,054**	**$8,768,581**	**2.2%**

For comparison, the results from the runout study based on the current valuation assumptions are provided below:

Table 14:
Combined 12-month Runout Studies from 2017 through 2021
Current Basis

Duration	Beginning Liability	PV Paid	PV Ending Liability	Annual Margin	Margin %
1 - 12 months	$49,932,224	$14,761,389	$33,226,174	$1,944,661	3.9%
13 - 24 months	$47,188,107	$8,487,738	$34,131,028	$4,569,341	9.7%
25 - 36 months	$41,294,424	$6,574,360	$32,578,312	$2,141,751	5.2%
37 - 48 months	$35,683,542	$5,006,791	$30,230,517	$446,234	1.3%
49 - 60 months	$31,540,071	$4,062,717	$27,455,687	$21,667	0.1%
61+ months	$211,505,548	$29,852,606	$177,163,176	$4,489,767	2.1%
Grand Total	**$417,143,916**	**$68,745,601**	**$334,784,894**	**$13,613,422**	**3.3%**

The new basis may be considered a closer fit than the current basis because it brings margins consistently within the target 1-5% range in every duration. Note that the total beginning liability balance is approximately 5% lower than the balance under the current basis, which is consistent with the relationships in Table 2.

VI. Limitations of Analysis

The analysis in this letter has been prepared solely for the use of Wisconsin ETF, for analyzing State and Local ICI experience from 2017 through June 30th, 2022, under the terms of our contract as amended between Milliman and ETF. It may not be appropriate for other purposes. It may not be shared with any other party without the prior written consent of Milliman. It is a complex, technical analysis that assumes a high level of knowledge concerning the State and Local ICI plans. It is not for the use or benefit of any third party for any purpose. Any third party recipient of Milliman's work product who desires professional guidance should not rely upon Milliman's work product, but should engage qualified professionals for advice appropriate to its own specific needs.

In preparing this analysis, we have relied on data provided to us by ETF, including historical claim data and plan design information. We have not audited or verified this information, but we have reviewed the information for reasonableness. To the extent that any of this information is incomplete or inaccurate, the results of our analysis may be materially affected.

This report contains results from various studies performed by Milliman based on historical plan experience. The results discussed in this letter are based on actuarial assumptions about future claim experience and models developed for the purpose of generating these assumptions and projections. It is highly likely that future experience will vary from these assumptions, meaning that the actual claim costs may be either higher or lower than those described in this letter.

We, Maxwell Berube and Paul Correia, are actuaries at Milliman, Inc. and members of the American Academy of Actuaries. We meet the qualification standards from these organizations to render the actuarial opinion contained herein.