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Correspondence Memorandum

Date: January 22, 2021

To: Group Insurance Board

From: Jim Guidry, Director
 Benefit Services Bureau
 Division of Retirement Services

Subject: State Income Continuation Insurance (ICI) Experience Studies – Loss Ratios

This memo is for informational purposes only. No Board action is required.

The Department of Employee Trust Fund’s (ETF) disability program’s actuary, Milliman, Inc. (Milliman), recently conducted experience studies for the state ICI program. The Board was briefed on the first part of these studies at the August 2020 meeting. The information provided at that time was related to claim termination rate and estimated offset assumptions that are used in preparing annual program valuations. The information presented with this memo represents the second portion of the experience study and examines program loss ratios, participation rates, and claim incident rates. Experience studies such as these provide valuable insights into premium adequacy, enrollment, and claim characteristics and help identify how these characteristics can change over time. The information contained in these studies can assist the Board and ETF in making future decisions about program structure and premium changes.

This study is an update from an earlier study that Milliman performed in 2015. The updated study used claims and insurance file data from 2015 through 2019 provided by ETF. This memo summarizes the results of the updated study. Milliman’s letter describing the results of their study is attached.

Milliman’s first examination of state ICI loss ratios revealed that the state ICI program premium revenues were insufficient when compared to claim experience and resulted in a substantial actuarial deficit for the program. The overall loss ratio for the period from 2010 through 2014 was 132%. A typical target loss ratio for a plan like the ICI program would be in the range of 70-80% according to Milliman. Even more revealing, when claims experience was summarized at the employer level, four employers had loss ratios between 234 and 617%. Two employers had loss ratios that fell below the target range of 70-80% while the remainder fell in between these two extremes. This

Reviewed and approved by Matt Stohr, Administrator, Division of Retirement Services

Matt Stohr Electronically Signed 2/3/21

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information was used by the Board to approve a series of 20% premium increases from 2016-2020 to eliminate the deficit.

The updated study shows that the premium increases approved by the Board have helped drive the overall loss ratio down to the target range (75%). Loss ratios at the employer level are also well below previous levels, but some employers continue to show claims experience exceeding premium revenue. Overall, however, the message from Milliman's analysis is that premiums may be too high at this point and a reset of premium levels would be in order.

By approving a series of 20% increases over a period of five years, the Board was able to achieve the goal of returning the ICI reserves to a surplus position in 2019. It is conceivable that the December 31, 2020 state ICI reserve level will reach the targeted reserve set by the board in 2019 of 135% of actuarial liabilities. Milliman will present the reserve level for the end of 2020 in their annual valuation presentation to the Board in May. The improved financial condition in the state ICI program led the Board to hold the premium rates steady for the 2021 program year.

Looking ahead, Milliman and disability staff will use this information to determine the new level of premium rates and bring recommendations to the Board at its May meeting. One consideration is whether to introduce a degree of experience rating to the determination of ICI premium rates, which effectively sets premium rates by comparing historical loss ratio to the target loss ratio assumption. Milliman indicates that experience rating is an industry standard for group disability income insurance products.

Experience rating can be accomplished by applying experience factors to the different premium tables used by the University of Wisconsin faculty and academic staff (UW Faculty) and the tables used by all other state ICI enrollees. As a reminder, UW Faculty select elimination periods instead of being put into a rate category based on accumulated sick leave. The UW Faculty, which comprise a significant portion of the insured population, have traditionally had significantly lower loss ratios than most other state employers. Because the premium rates are different for UW Faculty than all other employers, it would be possible to adjust UW Faculty rates downwards without affecting the premiums for other members.

The Board's authority to determine ICI premiums would permit the use of experience factors in ICI premium rates. Under §40.03 (6) (d) 5. Wis. Stat. the Board:

40.03 (6) (d) May take any action as trustees which is deemed advisable and not specifically prohibited or delegated to some other governmental agency, to carry out the purpose and intent of the group insurance plans provided under this chapter, including, but not limited to, provisions in the appropriate contracts relating to:

5. The terms and conditions of the insurance contract or contracts, including the amount of premium.

Additionally, under §40.03 (6) (e) Wis. Stat. the Board:

40.03 (6) (e) Shall apportion all excess moneys becoming available to it through operation of the group insurance plans to reduce premium payments in following contract years or to establish reserves to stabilize costs in subsequent years. If it is determined that the excess became available due to favorable experience of specific groups of employers or specific employee groups, the apportionment may be made in a manner designated to benefit the specific employers or employee groups only, or to a greater extent than other employers and employee groups.

Since we anticipate that premiums will need to be reduced for the 2022 program year, we believe this would qualify as an apportionment of excess moneys that will become available.

Of the four disability programs currently administered by ETF, only two charge premiums directly to employers and employees. Along with the ICI program, the Duty Disability program is funded with employer (only) premiums. Duty disability premiums are required to be determined as a “percentage or percentages of those (protective) employees' earnings based on the experience rates determined to be appropriate by the board with the advice of the actuary” (§40.05 (2) (ar) Wis. Stat.) and are collected from employers as part of their required WRS contributions.

At this time, we would not consider extending experience rating to all employers. Given the complexity of the current rating tables and the relatively low cost of ICI premiums, there may not be enough difference in premiums among employers to justify the added complexity in creating rating tables for each employer. However, since the UW Faculty group is so large and the benefit and premium structures are unique, it would be possible to adjust UW Faculty premium rates without causing disruption to other employers. ETF will re-evaluate extending experience rating to all employers in the future.

Milliman will develop scenarios for the inclusion of experience factors as part of the state ICI valuation process and present that information to the Board in at its May 2021 meeting.

ETF staff and Milliman actuaries will be at the Board meeting to answer any questions.

**Report on Experience Studies for the
State Income Continuation Insurance Plan**

**Prepared For The State of Wisconsin
Department of Employee Trust Funds**

Prepared by: Paul L. Correia, FSA, MAAA
Principal and Consulting Actuary
Milliman, Inc.

August 28, 2020

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August 28, 2020

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

RE: Experience Studies for the State Income Continuation Insurance Plan

Dear Jim,

Thank you for asking Milliman to perform experience studies for the State ICI plan. The results from these studies highlight experience trends between 2015 and 2019, and can be useful for evaluating the plan's funding methods and contribution rate levels. The State ICI plan had been in a deficit for many years prior to 2020. The deficit was highest in 2015, and the Board approved a series of annual 20% rate increases beginning in 2016 through 2019. These rate increases have helped in returning the plan to a surplus position as of December 31, 2019. State ICI contribution rates were held level in 2020; however, based on the results from our experience studies, the current contribution rates may now be somewhat higher than necessary in the longer term, although there is some uncertainty in future claim trends given the current pandemic.

We have analyzed State ICI loss ratios, participation rates, and claim incidence rates from 2015 through 2019. The experience period captures the impact of the 20% annual rate increases on plan experience and participation. This letter provides the results from our analysis, along with detailed documentation of the study methods and data sources. We have organized this information in the following sections of this letter:

- Executive Summary
- Analytical Methods
- Incurred Loss Ratio Analysis
- Constant Loss Ratio Analysis
- Participation Rate Analysis
- Incidence Rate Analysis



This work product was prepared solely for Wisconsin ETF. It may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work.

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

Sincerely,



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 incurred loss ratio studies using State ICI experience from 2015 through 2019. These studies are useful in spotting premium adequacy issues because they relate the total cost of claims incurred in a given year (including both actual and estimated future benefit payments, net of administrative expenses) to the premium contributions in that year. An incurred loss ratio greater than 100% indicates that the total cost of claims was greater than the premium contributions in that year. Table 1 below shows incurred loss ratios for the State ICI plan from 2015 through 2019. The loss ratios have decreased significantly from 117% in 2015 to 52% in 2019, primarily due to the 20% annual rate increases.

Year	Incurred Loss Ratio
2015	117%
2016	91%
2017	77%
2018	63%
2019	52%
2015 - 2019	75%

- We also performed constant loss ratio studies in which we adjusted historical loss ratios to reflect current State ICI contribution rates. In other words, the premium contributions in every year were calculated using current premium rates. These studies are useful in determining whether current rates would have provided adequate funding for claims incurred in prior periods. The constant loss ratios are in the range of 52% to 56% throughout the experience period, as shown in Table 2 below. These results indicate that the current premium rates would have provided sufficient funding for claims incurred between 2015 and 2019, with a large portion of the premium (47% over the entire period) available for administrative expenses and risk margin.

Year	Constant Loss Ratio
2015	56%
2016	53%
2017	53%
2018	53%
2019	52%
2015 - 2019	53%

- The experience used in our loss ratio studies includes 5,145 claims incurred between January 1, 2015 and December 31, 2019. We consider this experience fully credible for evaluating experience trends. Therefore, based on the constant loss ratios shown above, and on average expenses for administering the State ICI plan, we feel that current rates may be overly conservative.
- A reasonable target loss ratio for this plan would be in the range of 75% to 80%, based on average expenses for administering the State ICI plan. This target range includes an explicit risk margin of 10% of premium, and assumes that annual expenses will be in the range of 10% to 15% of annual premium contributions. Given the current pandemic, however, it may be prudent to allow for some near-term uncertainty in the rates.
- We performed participation rate studies to analyze changes in State ICI enrollment between 2015 and 2019. As expected, the participation rates decreased from 2016 through 2019; however, the reductions were modest considering the magnitude of the rate increases between 2016 and 2019. We noticed greater variations by premium category and age. Table 3 below shows overall State ICI participation rates from 2015 through 2019.

Table 3 State ICI Participation Rates 1/1 2015 through 12/31/2019	
Year	Participation Rate
2015	58.1%
2016	60.4%
2017	58.2%
2018	57.3%
2019	55.4%

- We performed claim incidence rate studies to analyze the percentage of participating members who qualified for State ICI benefits between 2015 through 2019. The annual incidence rates were in the range of 1.8% to 2.5% from 2015 through 2019 as shown below. The 2019 incidence rates are likely understated because the claim data is as of December 31, 2019, which we would expect to be missing claims incurred in 2019 that were unreported as of December 31, 2019.

Table 4 State ICI Claim Incidence Rates 1/1 2015 through 12/31/2019	
Year	Incidence Rate
2015	2.5%
2016	2.2%
2017	2.3%
2018	2.1%
2019	1.8%

- The results from our studies show that claim experience and participation rates vary widely by employer, occupation, premium category, gender, and age. For example, the most favorable claim experience was from the University of Wisconsin (UW) System and the Department of Natural Resources, whereas the experience from the Department of Corrections, the Department of Health Services, the Department of Veterans Affairs, the Department of Workforce Development, and the UW Hospital Authority was significantly worse. Claim costs from teachers have been relatively low whereas general employees and protective occupations with Social Security have had significantly higher claim costs. The current rate structure does not capture this variation in experience by segment.
- The results from the experience studies also suggest potential issues with the State ICI plan's elimination period requirements and premium rate structure, which are closely connected since premium contributions by employees vary by their number of accumulated sick leave days. For example, historical experience from ICI premium category 1 (i.e. employees with fewer than 23 accumulated sick leave days and who pay for premiums in full) has been significantly worse than the experience from ICI premium category 6 (i.e. employees with over 130 days of accumulated sick leave and whose premiums are paid for in full by the State).
- Restructuring the elimination period requirements may help to manage the plan and stabilize the experience. Also, it might make sense to restructure the premiums to better align with experience, for example by developing different rates for UW faculty who represent a sizable portion of the plan and have very different experience than other members.

II. Analytical Methods

The analysis described in this letter was performed using claim data from 2015 through 2019 and member data from the insurance files from 2014 through 2018, which were provided to Milliman by ETF. We used the insurance file from a given year to estimate premium contributions in the next year, because the insurance files provide member data at the end of the reporting year.

We used the historical claim data to estimate incurred claims from 2015 to 2019. Incurred claims represent the present value of expected total benefits for all disabilities that begin in a given year, with the present value expressed as of the date of disability. For claims that were both incurred and closed within experience period, the incurred claims represent the present value of all of the benefit payments made on those claims. For claims that were incurred between 2015 and 2019 and were still open at the end of the experience period (i.e. as of December 31, 2019), the incurred claims include an estimated runoff of future benefit payments, as well as the present value of payments already made.

We used the ICI premium tables and the insurance files provided to us by ETF to estimate historical ICI premium contributions. For every member listed on the insurance file, we looked up the base contribution amount (i.e., the cost of basic insurance that provides benefits up to \$4,000 per month) and supplemental contribution amount (i.e., the cost of supplemental insurance providing an additional \$3,500 per month, if applicable) based on the member's salary and ICI premium category listed on the file. For example, if a member is listed on the file with ICI premium category 20 (i.e., supplemental coverage with over 130 days of accumulated sick leave), we summed the base and supplemental premium amounts corresponding to category 6 from the premium tables.

We used the insurance file from a given year to estimate premium contributions in the next year. For example, we used the 2015 insurance files to estimate 2016 contributions by looking up premium rates from the 2016 premium tables. Although this is a somewhat simplified approach for estimating historical contributions at the member level, since it doesn't take into account members who began or terminated employment in the middle of the year, we believe it is the best approach given the data that is available. For validation, we compared our estimated contributions to actual contributions from 2015 through 2019. Our estimates were within 2% of actual contributions for this period. The following table shows a comparison of estimated contributions to actual contributions from 2015 through 2019.



Table 5			
State ICI Contributions			
Comparison of Estimated to Actual Premium Contributions from 2015 through 2019			
Year	ETF Financials	Milliman	Difference
2015	\$16,788,715	16,727,395	0.4%
2016	\$20,353,951	20,315,879	0.2%
2017	\$24,320,814	23,886,857	1.8%
2018	\$28,393,397	28,503,944	-0.4%
2019	\$33,198,198	33,575,714	-1.1%



III. Incurred Loss Ratio Analysis

We performed incurred loss ratio studies using claim data from 2015 through 2019 and member data from the insurance files from 2014 through 2019. The loss ratios were calculated by dividing the total present value of claims incurred in a given year by total premium contributions in that year. The incurred claims exceeded the premium contributions in any segment for which the loss ratios are greater than 100%.

The key results from the loss ratio studies are summarized in the following tables. In each of the tables shown below, we have included total premium contributions between 2015 and 2019 in the final column in order to provide perspective on the size of each segment, and therefore the relative credibility of results for each segment. As a rough guideline, the higher the premium, the higher the credibility, meaning that smaller segments likely show greater volatility.

Table 6 shows the incurred loss ratios for the State ICI plan from 2015 through 2019 by employer group and in total.

Table 6 State ICI Incurred Loss Ratios by Year of Disability and Employer Group 1/1/2015 through 12/31/2019							
Employer Group	2015	2016	2017	2018	2019	Total 2015 - 2019	Total Premium (\$M)
Dept. of Administration	56%	23%	64%	24%	26%	35%	\$1.9
Dept. of Corrections	249%	190%	148%	134%	104%	154%	\$16.3
Dept. of Health Services	194%	145%	116%	89%	100%	120%	\$10.4
Dept. of Natural Resources	9%	21%	20%	44%	5%	20%	\$3.0
Dept. of Revenue	45%	96%	16%	55%	36%	47%	\$1.6
Dept. of Transportation	37%	32%	21%	44%	16%	29%	\$5.0
Dept. of Veterans Affairs	451%	250%	272%	140%	85%	211%	\$2.1
Dept. of Workforce Dev.	472%	132%	81%	115%	61%	148%	\$2.5
UW System	34%	32%	26%	33%	24%	29%	\$49.6
UW Hospital Authority	162%	132%	120%	57%	73%	99%	\$19.6
Other	81%	66%	92%	49%	34%	60%	\$10.9
Total	117%	91%	77%	63%	52%	75%	\$123.0

Generally speaking, incurred loss ratios have decreased between 2015 and 2019, which is primarily due to the annual 20% premium rate increases between 2016 and 2019. The 2019 loss ratios are not as reliable as other years because much of the claim cost in 2019 consists of the estimated liability for incurred but not reported claims.

The loss ratios shown above are significantly higher for the Department of Corrections, the Department of Health Services, the Department of Veterans Affairs, the Department of



Workforce Development, and the UW Hospital Authority. On the other hand, the loss ratios are much lower for the UW System, which makes up almost half of the State ICI plan in terms of premiums paid between 2015 and 2019.

We also analyzed loss ratio experience among different occupations. Table 7 shows the incurred loss ratios by occupation and in total.

Table 7 State ICI Incurred Loss Ratios by Year of Disability and Occupation 1/1/2015 through 12/31/2019							
Occupation	2015	2016	2017	2018	2019	Total 2015 - 2019	Total Premium (\$M)
General Employee	152%	103%	94%	66%	66%	89%	\$68.5
Court Reporters	147%	92%	0%	13%	11%	40%	\$0.5
Exec. Pay Plan	0%	0%	0%	0%	0%	0%	\$0.4
Protective Occ. With S.S.	204%	197%	156%	148%	96%	151%	\$14.1
Supreme Court Judges	0%	0%	0%	0%	0%	0%	\$0.0
Legislator/Officer	0%	0%	0%	0%	0%	0%	\$0.2
Court of Appeals Judges	0%	0%	0%	0%	0%	0%	\$0.0
Circuit Judges	0%	0%	0%	0%	0%	0%	\$0.6
Teachers	20%	22%	18%	21%	10%	18%	\$38.5
UW Exec. Teachers	0%	0%	0%	0%	0%	0%	\$0.1
Total	117%	91%	77%	63%	52%	75%	\$123.0

Loss ratio experience was significantly higher from members in protective occupations with Social Security. Loss ratios were relatively high for general employees in 2015 through 2017, but reduced in 2018 and 2019. These two occupational groups represent approximately two-thirds of premiums paid between 2015 and 2019. Teachers, on the other hand, who also make up a significant portion of the plan, had much lower loss ratio experience in every year.

Table 8 shows incurred loss ratios by State ICI premium category and in total:

Prem. Category	2015	2016	2017	2018	2019	Total 2015 - 2019	Total Premium (\$M)
1	281%	200%	187%	136%	121%	172%	\$32.9
2	84%	100%	73%	59%	40%	67%	\$10.4
3	93%	66%	92%	49%	52%	67%	\$11.8
4	151%	61%	26%	48%	57%	62%	\$6.7
5	110%	53%	21%	40%	63%	55%	\$5.9
6	13%	19%	6%	12%	5%	10%	\$17.5
7	20%	34%	4%	12%	13%	16%	\$13.3
8	16%	11%	28%	26%	13%	19%	\$13.3
9	0%	0%	6%	11%	2%	4%	\$1.8
10	17%	3%	4%	1%	1%	4%	\$9.5
Total	117%	91%	77%	63%	52%	75%	\$123.0

Categories 1 through 6 are for employees other than UW faculty, with category 1 corresponding to employees with the least accrued sick leave and who pay the full cost of insurance, and category 6 corresponding to employees with the most accrued sick leave and who pay the lowest premiums (base benefits are paid in full by the employer). Categories 7 through 10 are for UW faculty and vary by elimination period (category 7 = 30 days, category 8 = 90 days, category 9 = 125 days and category 10 = 180 days). The loss ratios are significantly higher for members in premium category 1. Also, we notice a decreasing trend in loss ratios from categories 1 through 6. The loss ratios were very low for categories 7 through 10, corresponding to UW faculty, throughout the experience period.

Table 9 shows the incurred loss ratios by gender and in total.

Gender	2015	2016	2017	2018	2019	Total 2015 - 2019	Total Premium (\$M)
Female	149%	113%	96%	77%	65%	93%	\$70.4
Male	76%	63%	52%	44%	35%	51%	\$52.6
Total	117%	91%	77%	63%	52%	75%	\$123.0

Loss ratio experience was higher for female members than male members in every year. This is not surprising since the contribution rates do not vary by gender, and because disability claim costs tend to be higher for females. The patterns in the table above are

very typical of disability plans that charge the same premiums for males and females, which is the case for most group plans.

Table 10 shows incurred loss ratios by age and in total.

Table 10 State ICI Incurred Loss Ratios by Year of Disability and Disability Age 1/1/2015 through 12/31/2019							
Disability Age	2015	2016	2017	2018	2019	Total 2015 - 2019	Total Premium (\$M)
Under 25	57%	115%	101%	48%	39%	70%	\$1.5
25-29	101%	54%	123%	64%	48%	75%	\$7.0
30-34	114%	46%	52%	41%	41%	54%	\$11.6
35-39	158%	105%	66%	77%	35%	79%	\$14.9
40-44	134%	135%	90%	77%	63%	92%	\$15.9
45-49	109%	121%	92%	71%	66%	87%	\$18.1
50-54	139%	118%	91%	63%	73%	91%	\$18.8
55-59	115%	69%	77%	69%	49%	72%	\$18.4
60-64	77%	48%	45%	48%	40%	49%	\$12.4
65+	16%	27%	19%	15%	9%	16%	\$4.3
Grand Total	117%	91%	77%	63%	52%	75%	\$123.0

Although loss ratio experience by disability age does not vary as much as the other segments, the patterns in Table 10 are not consistent, with higher loss ratios from members disabled between the ages 35 and 54 (representing approximately 50% of premiums paid between 2015 and 2019). Although State ICI premium rates do not vary by age, most voluntary disability plans feature premium rate structures that vary by attained age.

IV. Constant Loss Ratio Analysis

We performed constant loss ratio studies in which we adjusted historical loss ratios to reflect current ICI contribution rates. In other words, the premium contributions in every year were calculated using current premium rates. The constant loss ratios were then calculated by dividing the total amount of claims incurred in a given year by the estimated premium contributions in that year, assuming that current premium rates were effective throughout the experience period. The results from these studies are useful in determining whether current rates would have provided adequate funding for claims incurred in prior periods.

The constant loss ratios are shown below by employer group and in total. We did not add a column showing premiums paid between 2015 and 2019; however, they are the same as in the prior section of this letter.

Table 11 State ICI Constant Loss Ratios by Year of Disability and Employer Group 1/1/2015 through 12/31/2019						
Employer Group	2015	2016	2017	2018	2019	Total 2015 - 2019
Dept. of Administration	27%	13%	44%	20%	26%	26%
Dept. of Corrections	120%	110%	103%	112%	104%	110%
Dept. of Health Services	94%	84%	80%	74%	100%	86%
Dept. of Natural Resources	4%	12%	14%	36%	5%	14%
Dept. of Revenue	22%	55%	11%	46%	36%	34%
Dept. of Transportation	18%	18%	14%	37%	16%	21%
Dept. of Veterans Affairs	217%	145%	189%	116%	85%	151%
Dept. of Workforce Dev.	228%	76%	56%	96%	61%	106%
UW System	16%	18%	18%	28%	24%	21%
UW Hospital Authority	78%	76%	84%	47%	73%	71%
Other	39%	38%	64%	41%	34%	43%
Total	56%	53%	53%	53%	52%	53%

Overall, the constant loss ratios from 2015 through 2019 are in the range of 52% to 56% for all groups combined, meaning that current rates would have provided sufficient funding for claims incurred between 2015 and 2019. The constant loss ratios for the Department of Corrections and the Department of Veterans Affairs are greater than 100% in nearly every year, meaning that current premium rates would have been inadequate for funding these groups on a standalone basis.

Table 12 shows constant loss ratios by occupation and in total.



Table 12						
State ICI Constant Loss Ratios by Year of Disability and Occupation						
1/1/2015 through 12/31/2019						
Occupation	2015	2016	2017	2018	2019	Total 2015 - 2019
General Employee	73%	59%	65%	55%	66%	64%
Court Reporters	71%	53%	0%	11%	11%	29%
Exec. Pay Plan	0%	0%	0%	0%	0%	0%
Protective Occ. With S.S.	99%	114%	108%	124%	96%	108%
Supreme Court Judges	0%	0%	0%	0%	0%	0%
Legislator/Officer	0%	0%	0%	0%	0%	0%
Court of Appeals Judges	0%	0%	0%	0%	0%	0%
Circuit Judges	0%	0%	0%	0%	0%	0%
Teachers	9%	13%	13%	18%	10%	13%
UW Exec. Teachers	0%	0%	0%	0%	0%	0%
Total	56%	53%	53%	53%	52%	53%

The constant loss ratios are significantly higher (and greater than 100% in many years and in total) for members in protective occupations with Social Security (representing approximately 10% of the plan). On the other hand, the constant loss ratios are very low for many other segments including teachers.

Table 13 shows constant loss ratios by premium category and in total.

Table 13						
State ICI Constant Loss Ratios by Year of Disability and Premium Category						
1/1/2015 through 12/31/2019						
Prem. Category	2015	2016	2017	2018	2019	Total 2015 - 2019
1	135%	116%	130%	114%	121%	123%
2	40%	58%	51%	49%	40%	48%
3	45%	38%	64%	41%	52%	48%
4	73%	35%	18%	40%	57%	45%
5	53%	31%	15%	33%	63%	39%
6	6%	11%	4%	10%	5%	7%
7	9%	20%	3%	10%	13%	11%
8	8%	6%	19%	21%	13%	14%
9	0%	0%	4%	9%	2%	3%
10	8%	2%	3%	1%	1%	3%
Total	56%	53%	53%	53%	52%	53%

The constant loss ratios are significantly higher (and greater than 100% in every year and in total) for members in premium category 1 (representing approximately 25% of the plan).



This means that the current rates would not likely provide adequate funding for premium category 1 claims on a standalone basis.

Table 14 shows constant loss ratios by gender and in total, and Table 15 shows constant loss ratios by disability age and in total. As with tables 9 and 10 above, the constant loss ratios were higher for female members than male members, and the constant loss ratios by disability age do not vary as much as the other segments.

Table 14 State ICI Constant Loss Ratios by Year of Disability and Gender 1/1/2015 through 12/31/2019						
Gender	2015	2016	2017	2018	2019	Total 2015 - 2019
Female	72%	65%	67%	64%	65%	66%
Male	37%	36%	36%	37%	35%	36%
Total	56%	53%	53%	53%	52%	53%

Table 15 State ICI Constant Loss Ratios by Year of Disability and Disability Age 1/1/2015 through 12/31/2019						
Disability Age	2015	2016	2017	2018	2019	Total 2015 - 2019
Under 25	27%	66%	70%	40%	39%	50%
25-29	48%	31%	85%	53%	48%	53%
30-34	55%	27%	36%	34%	41%	38%
35-39	76%	61%	46%	64%	35%	56%
40-44	65%	78%	62%	64%	63%	66%
45-49	53%	70%	64%	59%	66%	62%
50-54	67%	68%	63%	53%	73%	65%
55-59	55%	40%	53%	58%	49%	51%
60-64	37%	28%	31%	40%	40%	35%
65+	8%	16%	13%	13%	9%	12%
Grand Total	56%	53%	53%	53%	52%	53%

V. Participation Rate Analysis

We performed participation rate studies to analyze changes in State ICI enrollment between 2015 and 2019. We used the insurance files from 2014 through 2018 to tabulate the total number of active members and the number of members who participated in the State ICI plan from 2015 through 2019. We then calculated participation rates by dividing the number of participating members by the number of active members, both in total and by segment.

Generally speaking, the percentage of members who participated in the plan decreased from 2016 through 2019, both in total and across different segments. However, the reductions in enrollment were relatively modest considering the magnitude of rate increases between 2016 and 2019. Table 16 below shows State ICI participation rates from 2015 through 2019 by employer.

Employer Group	2015	2016	2017	2018	2019
Dept. of Administration	69.3%	78.1%	75.3%	73.0%	72.0%
Dept. of Corrections	75.3%	75.8%	74.7%	73.1%	72.2%
Dept. of Health Services	73.9%	77.1%	74.8%	73.3%	70.3%
Dept. of Natural Resources	41.5%	56.6%	55.0%	51.7%	50.7%
Dept. of Revenue	57.0%	62.8%	60.3%	58.4%	55.7%
Dept. of Transportation	74.4%	75.3%	72.7%	71.0%	71.3%
Dept. of Veterans Affairs	70.4%	79.1%	80.1%	80.0%	77.6%
Dept. of Workforce Dev.	66.8%	70.2%	69.5%	69.6%	69.9%
UW System	50.5%	50.0%	49.1%	48.0%	46.8%
UW Hospital Authority	69.6%	69.2%	58.9%	63.4%	56.0%
Other	50.4%	60.0%	57.7%	55.1%	54.4%
Total	58.1%	60.4%	58.2%	57.3%	55.4%

Participation rates are highest for the Department of Administration, the Department of Corrections, the Department of Health Services, the Department of Transportation, and the Department of Veterans Affairs. Many of these groups also had higher loss ratio experience over the same period.

Table 17 shows participation rates by occupation from 2015 through 2019.

Occupation	2015	2016	2017	2018	2019
General Employee	69.1%	69.1%	65.6%	65.0%	61.9%
Court Reporters	78.0%	79.1%	77.7%	74.0%	72.0%
Exec. Pay Plan	75.0%	44.8%	41.9%	45.1%	64.1%
Protective Occ. With S.S.	77.7%	77.1%	75.3%	73.1%	72.0%
Supreme Court Judges	42.9%	57.1%	57.1%	57.1%	42.9%
Legislator/Officer	37.9%	47.9%	42.6%	41.5%	38.9%
Court of Appeals Judges	73.3%	62.5%	62.5%	75.0%	75.0%
Circuit Judges	78.5%	75.5%	71.3%	65.9%	67.9%
Teachers	64.4%	63.8%	62.5%	61.2%	60.1%
UW Exec. Teachers	75.8%	79.4%	82.9%	81.8%	78.1%
Total	58.1%	60.4%	58.2%	57.3%	55.4%

Approximately three fourths of members in protective occupations with Social Security participate in the State ICI plan. Court reporters and judges also have relatively high participation rates, but these groups are relatively small and represent less than 1% of the plan.

Table 18 shows participation rates by premium category for non-UW members only. We used the sick leave balances reported in the insurance files to assign premium categories for non-participating members. For example, if a member was reported with a sick leave balance of 10 days on an insurance file, and that member did not participate in the State ICI plan in that year, then we counted this member in the total exposure for members in premium category 1. We did not assign the special premium category 3 to non-participating members, because it is our understanding that members rarely begin in premium category 3 when coverage first becomes effective. We also excluded UW from this analysis because it would be subjective to assign a specific plan (i.e., different elimination periods) to non-participating members.

Prem. Category	2015	2016	2017	2018	2019
1	36.8%	47.7%	42.2%	42.7%	38.6%
2	55.1%	50.6%	48.7%	45.7%	43.3%
4	87.9%	85.7%	82.5%	81.5%	79.4%
5	91.7%	91.0%	89.8%	88.5%	87.2%
6	95.1%	95.0%	94.6%	95.2%	95.9%
Total	64.9%	70.0%	66.3%	65.8%	63.3%

The participation rates increase with increasing premium category. The rates are significantly higher for premium categories 4 - 6. This is not surprising because members in categories 1 and 2 pay premiums in full, whereas members in categories 4 through 6 get premium subsidies from their employer. Members in category 6 do not pay any premiums for basic benefits—i.e., the employer contributes the full cost of coverage—and (not surprisingly) we notice very high participation from members in premium category 6.

Table 19 shows participation rates by gender from 2015 through 2019.

Gender	2015	2016	2017	2018	2019
Female	60.1%	62.2%	59.4%	58.7%	56.4%
Male	56.0%	58.3%	56.8%	55.6%	54.2%
Total	58.1%	60.4%	58.2%	57.3%	55.4%

The participation rates for male members are slightly lower than the participation rates for female members.

Table 20 shows State ICI participation rates by attained age from 2015 through 2019.

Disability Age	2015	2016	2017	2018	2019
Under 25	12.4%	18.4%	15.9%	16.9%	13.2%
25-29	25.8%	26.8%	24.8%	25.3%	22.9%
30-34	41.2%	42.6%	40.9%	40.1%	38.1%
35-39	57.5%	58.2%	56.2%	55.1%	52.5%
40-44	68.1%	69.2%	66.9%	66.4%	63.8%
45-49	73.6%	75.0%	73.2%	71.8%	70.3%
50-54	78.1%	78.8%	77.6%	76.7%	75.4%
55-59	80.3%	82.0%	80.9%	79.9%	78.6%
60-64	76.3%	80.7%	80.0%	80.0%	78.6%
65+	48.6%	58.6%	57.4%	54.6%	56.5%
Grand Total	58.1%	60.4%	58.2%	57.3%	55.4%

The participation rates are lower for younger members, and generally increase through age 64.

VI. Incidence Rate Analysis

We performed claim incidence rate studies to analyze the percentage of participating members who qualified for State ICI benefits between 2015 through 2019. For this analysis, we counted a claim as any claim that was incurred between January 1, 2015 and December 31, 2019 that had received at least one benefit payment as of December 31, 2019. We calculated claim incidence rates as the number of claims incurred in a given year divided by the number of participating members in that year, both in total and by segment.

Table 21 shows claim incidence rates by employer group from 2015 through 2019. The 2019 incidence rates are likely understated because the claim data is as of December 31, 2019, which we would expect to be missing claims incurred in 2019 that were unreported as of December 31, 2019.

Employer Group	2015	2016	2017	2018	2019
Dept. of Administration	1.4%	1.3%	1.3%	1.4%	1.0%
Dept. of Corrections	4.1%	4.2%	4.2%	4.4%	4.5%
Dept. of Health Services	5.0%	5.1%	5.2%	5.3%	5.5%
Dept. of Natural Resources	0.3%	0.4%	0.4%	0.4%	0.4%
Dept. of Revenue	1.1%	1.0%	1.1%	1.1%	1.2%
Dept. of Transportation	0.9%	1.0%	1.0%	1.0%	1.1%
Dept. of Veterans Affairs	7.6%	7.6%	7.8%	8.3%	9.1%
Dept. of Workforce Dev.	4.0%	4.4%	4.5%	4.6%	4.6%
UW System	0.0%	0.0%	0.0%	0.0%	0.0%
UW Hospital Authority	4.7%	4.5%	4.7%	4.6%	4.9%
Other	1.6%	1.7%	1.7%	1.8%	1.8%
Total	2.5%	2.2%	2.3%	2.1%	1.8%

The incidence rate patterns are similar to the patterns observed in our loss ratio studies, because claim incidence rates are highly correlated with loss ratios.

The overall claim incidence rates (final row in Table 21) have been relatively stable from 2015 through 2019, and potentially decreasing depending on the ultimate incidence rate from 2019. Note that the claim incidence rates for the UW System shown above should be interpreted as less than 0.05% in every year, and not as zero percent.

Table 22 shows claim incidence rates by occupation from 2015 through 2019.



Table 22 State ICI Incidence Rates by Year and Occupation 2015 through 2019					
Occupation	2015	2016	2017	2018	2019
General Employee	3.1%	2.7%	2.9%	2.7%	2.4%
Court Reporters	1.3%	0.9%	0.0%	1.0%	0.5%
Exec. Pay Plan	0.0%	0.0%	0.0%	0.0%	0.0%
Protective Occ. With S.S.	3.8%	3.4%	3.3%	3.2%	2.3%
Supreme Court Judges	0.0%	0.0%	0.0%	0.0%	0.0%
Legislator/Officer	0.0%	0.0%	0.0%	0.0%	0.0%
Court of Appeals Judges	0.0%	0.0%	0.0%	0.0%	0.0%
Circuit Judges	0.0%	0.0%	0.0%	0.0%	0.0%
Teachers	0.4%	0.4%	0.5%	0.4%	0.3%
UW Exec. Teachers	0.0%	0.0%	0.0%	0.0%	0.0%
Total	2.5%	2.2%	2.3%	2.1%	1.8%

The highest incidence rates correspond to general employees and members in protective occupations with Social Security.

Table 23 shows claim incidence rates by premium category from 2015 through 2019.

Table 23 State ICI Incidence Rates by Year and Premium Category 2015 through 2019					
Prem. Category	2015	2016	2017	2018	2019
1	8.7%	7.5%	7.6%	7.6%	6.6%
2	2.9%	2.2%	2.5%	1.8%	1.7%
3	2.4%	2.2%	2.5%	2.4%	1.5%
4	1.4%	1.1%	0.8%	0.9%	0.8%
5	0.6%	0.6%	0.5%	0.3%	0.7%
6	0.2%	0.3%	0.1%	0.3%	0.0%
7	0.9%	0.8%	1.3%	0.9%	0.8%
8	0.2%	0.2%	0.2%	0.2%	0.1%
9	0.0%	0.0%	0.2%	0.2%	0.2%
10	0.0%	0.1%	0.1%	0.0%	0.0%
Total	2.5%	2.2%	2.3%	2.1%	1.8%

The incidence rates decrease with increasing premium category for categories 1 through 6 (i.e., non-UW). For UW members, the highest incidence rates correspond to premium category 7 (i.e., the plan option with the shortest elimination period – 30 days).



Table 24 shows incidence rates by gender from 2015 through 2019.

Table 24 State ICI Incidence Rates by Year and Gender 2015 through 2019					
Gender	2015	2016	2017	2018	2019
Female	3.4%	3.1%	3.2%	3.0%	2.5%
Male	1.4%	1.2%	1.2%	1.0%	0.8%
Total	2.5%	2.2%	2.3%	2.1%	1.8%

The claim incidence rates are higher for female members. In general, disability incidence rates are higher for females than males, and can be significantly higher for short-term coverage that includes maternity benefits, such as State ICI benefits.

Table 25 shows claim incidence rates by attained age from 2015 through 2019.

Table 25 State ICI Incidence Rates by Year and Attained Age 2015 through 2019					
Disability Age	2015	2016	2017	2018	2019
Under 25	3.5%	3.9%	3.1%	4.3%	3.9%
25-29	4.1%	4.4%	4.4%	4.5%	4.3%
30-34	4.8%	4.2%	4.4%	4.0%	3.8%
35-39	2.8%	2.7%	2.8%	2.5%	1.9%
40-44	2.1%	1.9%	1.8%	1.8%	1.2%
45-49	1.8%	1.6%	1.7%	1.5%	1.3%
50-54	2.3%	1.9%	1.8%	1.4%	1.5%
55-59	1.9%	1.7%	2.0%	1.8%	1.1%
60-64	1.9%	1.3%	1.4%	1.6%	1.4%
65+	1.3%	1.5%	1.4%	1.3%	0.6%
Grand Total	2.5%	2.2%	2.3%	2.1%	1.8%

The higher incidence rates at younger ages may be driven by maternity claims, and by disabilities due to accident or injury. Also, participation rates are lower at younger ages which may exacerbate adverse selection risk. Disability incidence rates typically increase starting at age 40 or 45, but this is not a trend for the State ICI plan. This could be related to the fact that the participation rates are relatively high for older members in premium category 6 and for UW teachers, whose experience has been favorable.

VII. Limitations of Analysis

The analysis in this letter has been prepared solely for the use of Wisconsin ETF, for analyzing State ICI experience from 2015 through 2019, under the terms of Amendment 10 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 ICI plan. 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, enrollment 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 that were derived, in large part, from an historical analysis performed by Milliman in the spring of 2020. 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.

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

