

Report on the Electronics Industry Study

Excerpts from the WCIRB Classification and Rating Committee Minutes
November 14, 2023

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Electronics Industry Study

Executive Summary

I. Background and Objectives

The WCIRB conducted a multi-year comprehensive review of the 12 classifications in the Electronics Industry Group in the *California Workers' Compensation Uniform Statistical Reporting Plan—1995* to ensure the classification procedures still reflect current operations in the industry and align with the overall goals of the Standard Classification System.

The first phase of the study focused on the growing integration between computer programming and electronics manufacturing operations, particularly with respect to Classifications 3681¹ and 4112, *Integrated Circuit and Semiconductor Wafer Mfg.* As a result of the 2022 Study of Computer Programming in the Electronic Manufacturing Industry, the WCIRB recommended and the Insurance Commissioner approved the establishment of Classification 8874² as a companion classification to Classifications 3681 and 4112, effective September 1, 2022. Classification 8874 applies to hardware or software design or development, as well as clerical and outside sales operations, performed in connection with manufacturing operations assigned to Classifications 3681 and 4112.

In the second and final phase of the study, the WCIRB continued its analysis of the Electronics Industry Group and performed an in-depth operational review of the remaining classifications in the Electronics Industry Group resulting in several classification studies to determine:

1. Whether Classifications 3572, *Medical Instrument Mfg. – electronic*, and 3682, *Instrument Mfg. – non-electronic*, meet the criteria for companion Classification 8874.
2. Whether Classifications 3070, *Computer Memory Disk Mfg.*, and 3573, *Power Supply Mfg.*, should continue to be stand-alone classifications or if some or all of their operations should be combined with operations in other classifications.

II. Summary of Findings and Recommendations

Companion Classification Study (Classifications 3572 and 3682)

The key findings include:

1. Employers assigned to Classifications 3572 and 3682 typically retain computer programmers and/or design engineers that have similar job duties and average wages as those assigned to Classification 8874. The loss and payroll experience for hardware and software design and development, clerical and outside sales operations of Classifications 3572 and 3682 employers are much more similar to those of employers assigned to Classification 8874 than to those of the statewide clerical and outside sales experience. Similarities in the operations and loss and payroll experience suggest that Classifications 3572 and 3682 meet the criteria for use of the companion Classification 8874.

¹ Classification 3681 consists of four alternate phraseologies (or suffixes): 3681(1), *Instrument Mfg. – electronic – professional or scientific – all other employees – N.O.C.*; 3681(2), *Computer or Computer Peripheral Equipment Mfg. – all other employees – N.O.C.*; 3681(3), *Telecommunications Equipment Mfg. – all other employees*; and 3681(4), *Audio/Video Electronic Products Mfg. – all other employees*.

² Classification 8874 consists of five alternate phraseologies (or suffixes): 8874(1), *Instrument Mfg. – electronic – professional or scientific – hardware or software design or development*; 8874(2), *Computer or Computer Peripheral Equipment Mfg. – hardware or software design or development*; 8874(3), *Telecommunications Equipment Mfg. – hardware or software design or development*; 8874(4), *Audio/Video Electronic Products Mfg. – hardware or software design or development*; 8874(5), *Integrated Circuit and Semiconductor Wafer Mfg. – hardware or software design or development*.

2. The changes in the selected loss to payroll ratios for Classifications 8874, 8810 and 8742 after reassigning hardware and software design and development, clerical and outside sales experience are minimal (0%, +1.3% and +1.4%, respectively). Employers assigned to Classifications 3572 and 3682 with reported payroll currently in Classifications 8810 and/or 8742 would have, on average, a significant decrease (-65.3%) in the selected loss to payroll ratio under the proposed classification structure recommendation.

Based on the findings, WCIRB staff recommends:

1. Establishing two alternate phraseologies (or suffixes) to Classification 8874 to apply to the hardware and software design and development, clerical and outside sales operations performed in connection with manufacturing operations assigned to Classifications 3572 and 3682:
 - a. Classification 8874(6), *Medical Instrument Mfg. – electronic – diagnostic or treatment – hardware or software design or development – including Clerical Office Employees, Clerical Telecommuter Employees and Outside Salespersons*, which will be included in the Electronics Industry Group; and
 - b. Classification 8874(7), *Instrument Mfg. – non-electronic – scientific or medical – hardware or software design or development – including Clerical Office Employees, Clerical Telecommuter Employees and Outside Salespersons – N.O.C.*, which will not be included in the Electronics Industry Group.
2. Amending the following classifications to reference the corresponding proposed companion classifications:
 - a. Classification 3572, *Medical Instrument Mfg. – electronic – diagnostic or treatment*
 - b. Classification 3682, *Instrument Mfg. – non-electronic – scientific or medical – N.O.C.*

Low Credibility Studies

Computer Memory Disk Mfg. (Classification 3070)

The key findings include:

1. The business operations and loss and payroll experience of computer memory disk manufacturing assigned to Classification 3070 are similar to those of computer or computer peripheral equipment manufacturing assigned to Classification 3681(2), *Computer or Computer Peripheral Equipment Mfg. – all other employees*. Reassigning Classification 3070 operations to Classification 3681(2) would improve the statistical credibility and stabilize the advisory pure premium rate for 3070.
2. Employers assigned to Classifications 3070 and 3681(2) both typically retain design or development engineers, clerical staff and outside salespersons that support manufacturing operations. These employees share similar loss and payroll experience, indicating a good fit between the computer programming, design engineering, clerical and outside sales operations in support of Classification 3070 operations and Classification 8874(2), which includes similar operations that support Classification 3681(2).
3. Reassigning Classification 3070 employers to Classification 3681 would lead to a large increase (+82.8%) in the classification relativity for employers currently assigned to Classification 3070 and a slight reduction (-0.6%) for employers assigned to Classification 3681. The year-to-year classification relativity for Classification 3070 will be limited to a 25% increase, in accordance with standard WCIRB classification ratemaking procedures. Applying the companion Classification 8874(2) to include computer programming, design engineering, clerical and outside sales

operations of employers assigned to Classification 3070 would have no impact on employers assigned to Classifications 8810, 8742 and 8874.

Based on the findings, WCIRB staff recommends:

1. Combining Classification 3070, *Computer Memory Disk Mfg.*, with Classification 3681(2), *Computer or Computer Peripheral Equipment Mfg. – all other employees*, for ratemaking purposes and limiting the advisory pure premium rate relativity change for constituents of Classification 3070 to 25% each year until the advisory pure premium rate for Classification 3070 better aligns with that of Classification 3681, at which time Classification 3070 would be eliminated and Classification 3070 employers would be assigned to Classification 3681(2).
2. Reassigning the hardware and software design and development, clerical and outside sales operations performed in connection with computer memory disk manufacturing operations assigned to Classification 3070 from Classifications 8810, 8871 and 8742 to 8874(2) in conjunction with the elimination of Classification 3070 and assignment of Classification 3070 employers to Classification 3681(2).

Power Supply Mfg. (Classification 3573)

The key findings include:

1. The low wattage and high wattage power supply manufacturing operations assigned to Classifications 3573 and 3643(1) share some similarities, particularly with respect to employees' job duties, but require the use of different manufacturing tools. In addition, only about a quarter of inspected employers with operations assigned to Classification 3643(1) manufacture high wattage power supplies, while the remaining employers manufacture other types of electric power or transmission equipment, use different raw materials and have different manufacturing processes.
2. The loss to payroll ratios for Classification 3573 are much lower than those for Classifications 3643 and 3643(1) and high wattage operations in Classification 3643(1). The typical causes of injury were generally dissimilar between claims of Classification 3573 and those of Classification 3643. In addition, the payroll, number of employers and advisory pure premium rates for Classification 3573 have been stable historically, suggesting a further reduction in credibility for Classification 3573 is unlikely.

Based on the findings, WCIRB staff does not recommend any changes to the operations assigned to Classification 3573, *Power Supply Mfg.*, at this time.

Companion Classification Study

3572, Medical Instrument Mfg. – electronic – diagnostic or treatment

3682, Instrument Mfg. – non-electronic – scientific or medical – N.O.C.

8874(1), Instrument Mfg. – electronic – professional or scientific – hardware or software design or development – including Clerical Office Employees, Clerical Telecommuter Employees and Outside Salespersons

8874(2), Computer or Computer Peripheral Equipment Mfg. – hardware or software design or development – including Clerical Office Employees, Clerical Telecommuter Employees and Outside Salespersons – N.O.C.

8874(3), Telecommunications Equipment Mfg. – hardware or software design or development – including Clerical Office Employees, Clerical Telecommuter Employees and Outside Salespersons

8874(4), Audio/Video Electronic Products Mfg. – hardware or software design or development – including Clerical Office Employees, Clerical Telecommuter Employees and Outside Salespersons

8874(5), Integrated Circuit and Semiconductor Wafer Mfg. – hardware or software design or development – including Clerical Office Employees, Clerical Telecommuter Employees and Outside Salespersons

I. Introduction and Study Objective

Following the 2022 Study of Computer Programming in the Electronics Manufacturing Industry¹, the WCIRB further performed an in-depth operational review of the remaining classifications in the Electronics Industry Group and suggested conducting a data-driven study of Classifications 3572, *Medical Instrument Mfg.*, and 3682, *Instrument Mfg. – non-electronic*,² to assess whether either classification meets the following criteria for utilizing Classification 8874 as a companion classification:

1. Employers retain computer programmers and/or design engineers in support of their manufacturing operations, and those hardware and software design and development operations, as well as clerical and outside sales operations are operationally similar to those currently assigned to Classification 8874; and
2. The loss and payroll experience of hardware and software design and development, clerical and outside sales in support of the manufacturing operations are similar to that of those currently assigned to Classification 8874.

¹ The Study of Computer Programming in the Electronic Manufacturing Industry focused on the increasing integration between computer programming and electronics manufacturing operations, particularly with respect to Classifications 3681 and 4112, *Integrated Circuit and Semiconductor Wafer Mfg.* Based on the study findings, the WCIRB recommended and the Insurance Commissioner approved the establishment of Classification 8874, as a companion classification to Classifications 3681 and 4112, effective September 1, 2022. Classification 8874 applies to hardware or software design or development, as well as clerical and outside sales operations, performed in connection with manufacturing operations assigned to Classifications 3681 and 4112.

² While Classification 3682, *Instrument Mfg. – non-electronic*, is not part of the Electronics Industry Group, the WCIRB found it may operationally be similar to the electronic product manufacturing classifications and thus merit consideration of the companion classification approach. A footnote in Classification 3682 directs that it applies to employers that design a proprietary product and subcontract manufacturing to other concerns provided the employer also manufactures the prototype or subcontracts the manufacture of the prototype or receives the manufactured product and performs quality control operations prior to shipment. The Special Industry Classification Procedures for Electronic Products Design and Manufacturing direct that employers engaged in these same operations be assigned to the appropriate Electronics Industry Group manufacturing classification.

II. Analysis Results

- **Operational Analysis**

Classification 3572 applies to employers engaged in the manufacture of electronic medical equipment used for diagnostic or treatment purposes. Classification 3682 applies to employers engaged in the manufacture of non-electronic instruments used for scientific or medical purposes. Although employers assigned to Classification 3572 (Classification 3572 employers) and employers assigned to Classification 3682 (Classification 3682 employers) manufacture different types of products, these employers typically retain computer programmers and/or design engineers who support their manufacturing operations by developing software for their hardware products and associated applications and performing hardware design for new products or existing product iterations.³ The job duties and average wages of these computer programmers and/or design engineers are very similar to those of the computer programmers and/or design engineers of employers assigned to Classification 8874 (Classification 8874 employers).

The outside sales operations performed in connection with manufacturing operations of Classifications 3572 and 3682 employers are generally comparable to the outside sales activities of Classification 8874 employers. In addition, Classification 3572 employers also typically retain medical device sales representatives who have large sales territories and engage in operations such as post-sale product demonstration, training and clinical trial monitoring, which indicates outside salespersons of Classification 3572 employers may have more frequent and longer-distance travel than those of Classification 3682 employers.⁴

- **Comparison of the Loss and Payroll Experience of Computer Programming, Design Engineering, Clerical and Outside Sales Operations in Support of Classifications 3572 and 3682 and that of Classification 8874**

In addition to the operational analysis, the WCIRB also compared the loss and payroll experience of computer programming, design engineering and the typical clerical and outside sales operations in support of employers with payroll reported in Classifications 3572 and 3682 to that of Classification 8874 and to the statewide clerical and outside sales experience.

Following Classifications 3681 and 4112, Classification 3572 is the third largest classification in the Electronics Industry Group, accounting for 10% of the industry payroll.⁵ While Classification 3682 is not part of the Electronics Industry Group, its reported payroll for policy year (PY) 2020 was slightly lower than that for Classification 3572. Accordingly, the share of payroll for the computer programming, design engineering, clerical⁶ and outside sales operations in support of Classifications 3572 and 3682 employers is much lower than that for the same operations in support of Classifications 3681 and 4112 employers currently assigned to Classification 8874 (see Figure 1). Around 1% of the statewide payroll in both Classifications 8810 and 8742 was reported for Classifications 3682 and 3572 employers, while Classification 8874 employers⁷ constitute a significantly higher payroll share for both Classifications 8810

³ A review of WCIRB Inspection Reports indicated that 82% of Classification 3572 employers and 44% of Classification 3682 employers had computer programming and/or design engineering operations at the time of the inspection. Classification 3682 employers were more likely to have design engineering operations than computer programming operations.

⁴ Information based on feedback from employer outreach.

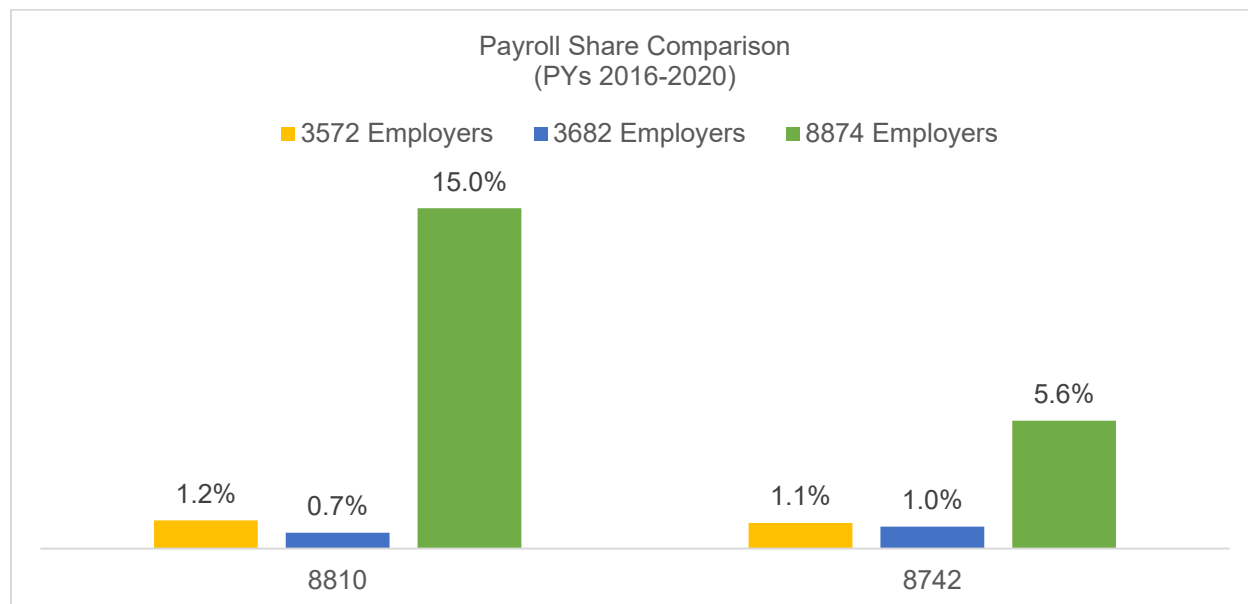
⁵ Classifications 3681 and 4112 account for 65% and 11%, respectively, of the Electronics Industry Group payroll.

⁶ Classification 8874 also applies to clerical telecommuting operations supporting Classifications 3681 and 4112's manufacturing operations. These clerical telecommuting operations were previously assigned to Classification 8871, *Clerical Telecommuter Employees*. Since Classification 8871 became effective as of January 1, 2021, there is insufficient data available for this classification at the time of this study. Thus, the data for clerical operations in support of employers assigned to Classifications 3681 and 4112 for this study is solely based on the experience reported in Classification 8810.

⁷ Because Classification 8874 was established effective September 1, 2022, the payroll for Classification 8874 is based on the reported experience of computer programming, clerical and outside sales operations assigned to Classifications 8810 and 8742 performed in connection with manufacturing operations assigned to Classifications 3681 and 4112 between PYs 2016 and 2020. Such experience was used in this study.

and 8742⁸, which suggests the impact will not be significant, as further discussed in the Impact Analysis section.

Figure 1. Statewide Payroll Share of Classifications 8810 and 8742 for Classifications 3572, 3682 and 8874 Employers (PYs 2016-2020)

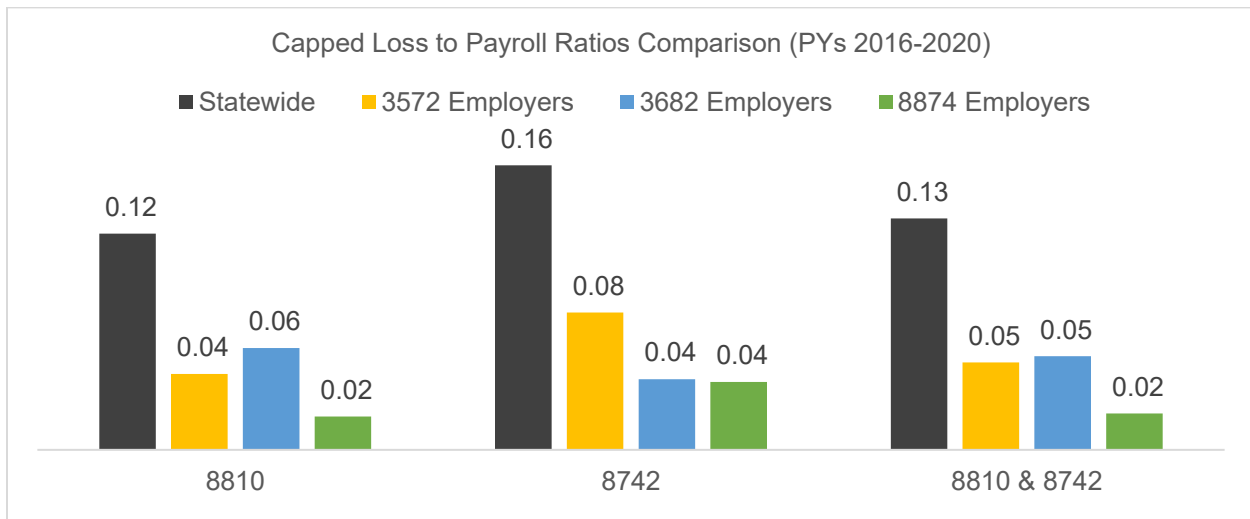


The levels of workers' compensation risk exposure for the hardware and software design and development, clerical and outside sales operations currently assigned to Classifications 8810 and 8742 and in support of Classifications 3572 and 3682 operations are much more similar to those of hardware and software design and development, clerical and outside sales operations assigned to Classification 8874 and lower than those of statewide Classifications 8810 and 8742.⁹ As shown in Figure 2, the 5-year combined loss to payroll ratios, including both 8810 and 8742 operations of Classifications 3572 and 3682 employers, are around \$0.05 per \$100 of payroll, which are more similar to those for Classification 8874 (\$0.02 per \$100 of payroll) than to those for statewide Classifications 8810 and 8742 experience combined (\$0.13 per \$100 of payroll).

⁸ The experience of Classification 8859, which consists of two alternate phraseologies (or suffixes): 8859(1), *Computer Programming or Software Development*; 8859(2), *Internet or Web-Based Application Development or Operation*, was not included in the analysis. If an employer's business, conducted at one or more locations, consists of two or more distinct operations that do not normally prevail in the business described by a single classification, then the distinct operations shall be separately classified. See *California Workers' Compensation Uniform Statistical Reporting Plan—1995* (USRP), Part 3, *Standard Classification System*, Section III, *General Classification Procedures, Rule 3, Multiple Enterprises*. In this study, computer programming operations assigned to Classification 8859 are for a separate enterprise not connected to any manufacturing operations assigned to Classifications 3572 and 3682 and thus would not be impacted by the companion classification.

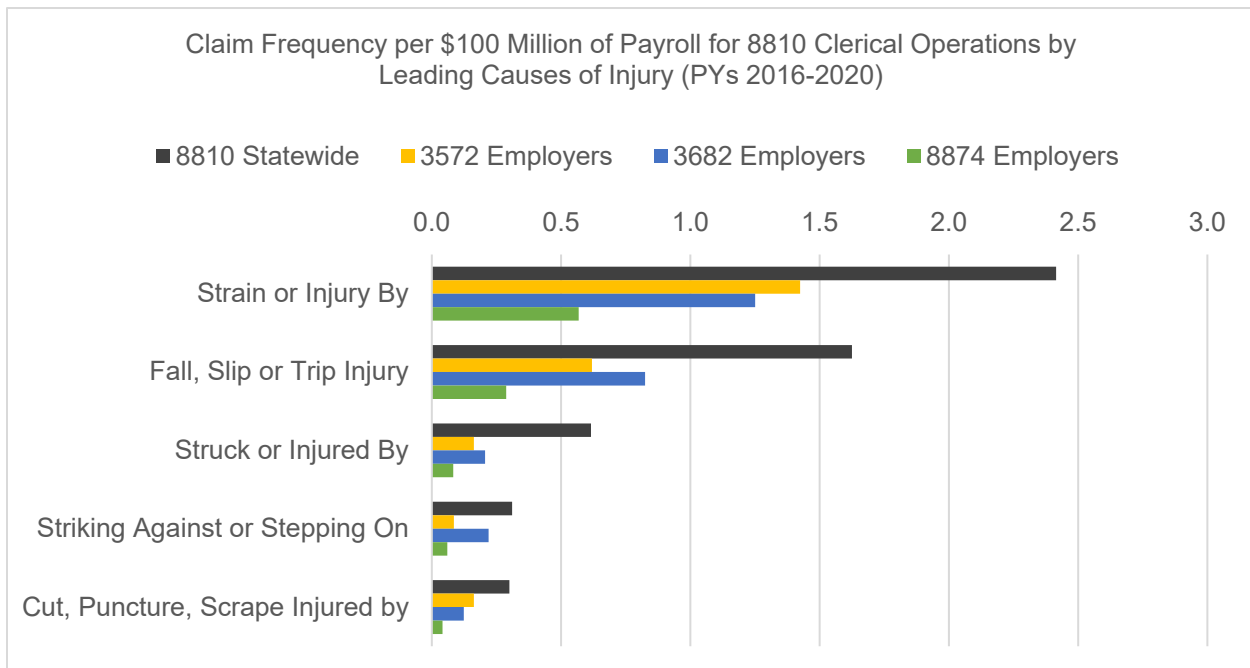
⁹ The reported historical statewide experience of Classifications 8810 and 8742 includes computer programming, design engineering, clerical and outside sales operations now assigned to Classification 8874. Therefore, such Classification 8874 experience is excluded from the statewide experience of Classifications 8810 and 8742 for the purpose of this study.

Figure 2. Capped Loss to Payroll Ratios for Clerical and Outside Sales Operations of Classifications 3572, 3682, and 8874 Employers and Statewide Classifications 8810 and 8742 at Latest Report Levels (PYs 2016-2020)



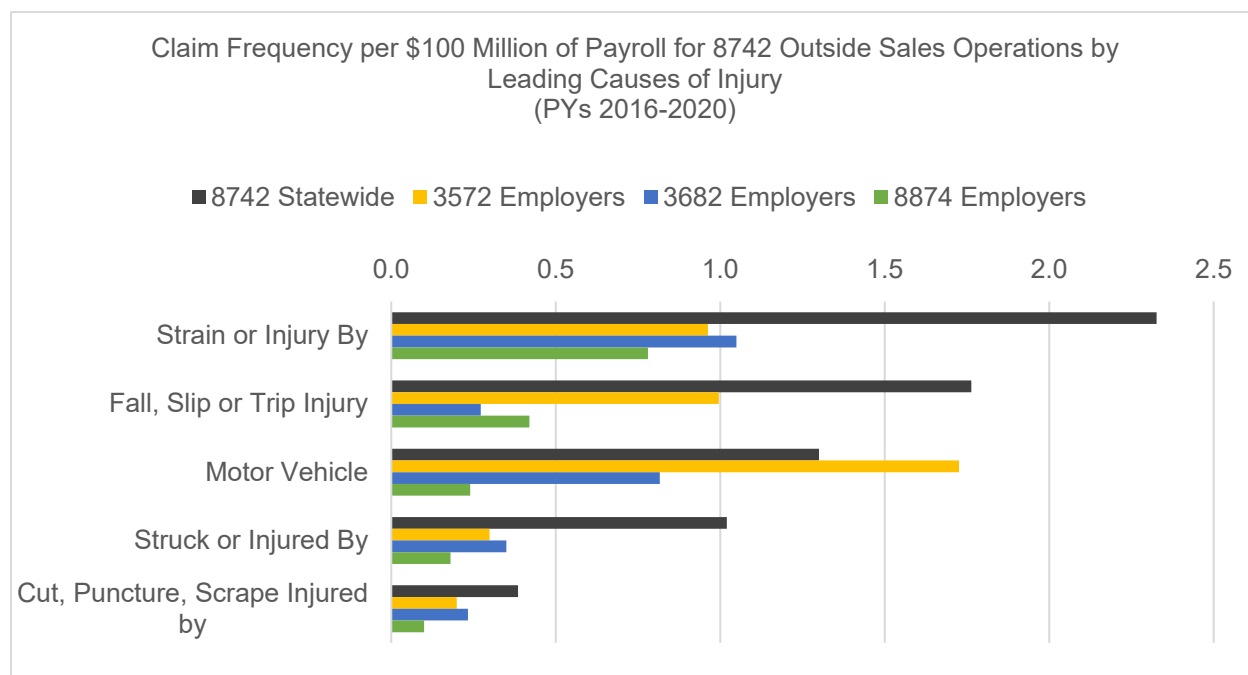
The differences in loss to payroll ratios between Classifications 8810 and 8742 operations supporting Classifications 3572 and 3682 employers and their respective statewide 8810 and 8742 experience are mostly driven by claim frequency. As shown in Figure 3, claim frequencies of the typical causes of injury for the Classification 8810 experience of Classifications 3572 and 3682 employers are generally more similar to those of Classification 8874 employers than to those of statewide Classification 8810. The patterns suggest that the computer programming, design engineering and clerical operations of Classifications 3572 and 3682 employers share similar claim characteristics with those of Classification 8874 employers.

Figure 3. Claim Frequency by Top 5 Causes of Injury for Clerical Operations of Classifications 3572, 3682 and 8874 Employers, and Statewide Classification 8810 at Latest Report Levels (PYs 2016-2020)



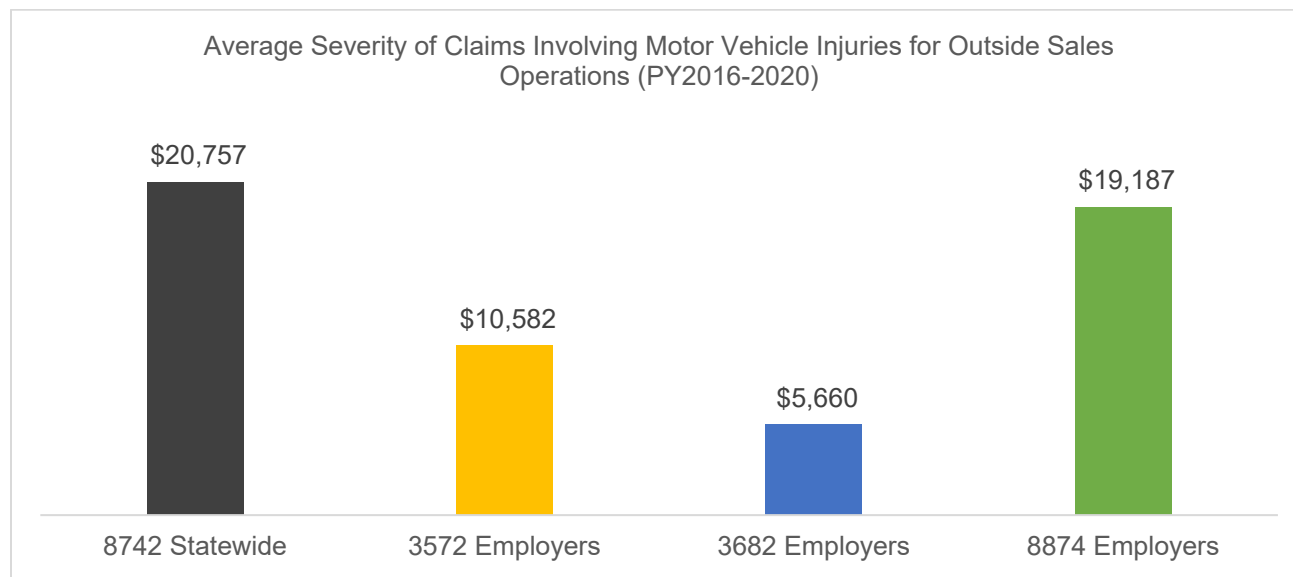
Similarly, the typical causes of injury for the Classification 8742 experience of Classifications 3572 and 3682 employers are generally more similar to those of Classification 8874 employers than to the statewide Classification 8742 experience (see Figure 4). However, the outside sales operations of Classification 3572 employers have a significantly higher claim frequency for claims involving motor vehicle injuries than those for other groups of employers and the statewide Classification 8742 experience. As discussed in the operational analysis, based on employer outreach, the difference in motor vehicle injuries is potentially related to more frequent and longer-distance travel among sales representatives of Classification 3572 employers than those of Classification 3682 employers and typical outside sales operations in statewide Classification 8742.

Figure 4. Claim Frequency by Top 5 Causes of Injury for Outside Sales Operations of Classifications 3572, 3682 and 8874 Employers and Statewide Classification 8742 at Latest Report Levels (PYs 2016-2020)



Given the higher claim frequency of motor vehicle injuries for outside sales operations of Classification 3572 employers, the WCIRB further reviewed the severity of those claims as motor vehicle claims tend to involve serious and catastrophic injuries. However, as shown in Figure 5, the average severity of the motor vehicle claims for the outside sales operations of Classification 3572 employers was only about one half of those of Classification 8874 employers and statewide Classification 8742. A similarly low average severity for motor vehicle claims was observed for outside sales operations of Classification 3682 employers. Considering both frequency and severity, this suggests the overall loss experience of motor vehicle claims is more comparable between the outside sales operations of Classifications 3572 and 3682 employers and those of Classification 8874 employers than when compared to the statewide outside sales experience.

Figure 5. Average Severity of Claims Involving Motor Vehicle Injuries for Outside Sales Operations of Classifications 3572, 3682 and 8874 Employers at Latest Report Levels (PYs 2016-2020)



In summary, Classifications 3572 and 3682 meet the criteria for utilizing companion Classification 8874. Classifications 3572 and 3682 employers typically retain computer programmers and/or design engineers to support their manufacturing operations. The outside sales operations of Classifications 3572 and 3682 employers are also similar to those of Classification 8874. The loss to payroll ratios and typical causes of injury for computer programming, design engineering, clerical and outside sales operations of Classifications 3572 and 3682 employers are more similar to those of Classification 8874 employers than to those of the statewide experience of Classifications 8810 and 8742. Therefore, WCIRB staff recommends including the hardware and software design and development, clerical and outside sales operations performed in connection with manufacturing operations assigned to Classifications 3572 and 3682 in Classification 8874.

III. Impact Analysis

The WCIRB evaluated the impact of reassigning the hardware and software design and development, clerical and outside sales operations of Classifications 3572 and 3682 employers to Classification 8874 as well as the indicated changes for statewide Classifications 8810 and 8742. Classification relativities for Classifications 8874, 8810 and 8742 are included in Appendix III.

1. Impact on Employers Assigned to Classifications 8874, 8810 and 8742

As shown in Table 1, the indicated loss to payroll ratio for Classification 8874 would increase by 25.0% due to the inclusion of hardware and software design and development, clerical and outside sales operations of Classifications 3572 and 3682 employers. This change in the indicated loss to payroll ratio is estimated without consideration of the WCIRB's 25% change limitation. However, because the selected loss to payroll ratio under the current classification structure was already limited to a 25% decrease as of September 1, 2023,¹⁰ the selected loss to payroll ratio for Classification 8874 under the proposed recommendation would remain the same.

¹⁰ As of September 1, 2023, the indicated (unlimited) loss to payroll ratio for Classification 8874 before applying a 25% change limitation is 0.024, which is 68.5% lower than the September 1, 2022 selected (unlimited) loss to payroll ratio (0.076). Therefore, the selected (unlimited) loss to payroll ratio restricted to the 25% change is 0.058.

Table 1. Changes in the Indicated (Unlimited) and Selected (Unlimited) Loss to Payroll Ratio for Classification 8874 Under the Recommendation¹¹

Classification 8874	Current Classification Structure¹² (A)	Proposed Classification Structure (B)	% Difference (B/A-1)
Indicated (Unlimited) Loss to Payroll Ratio Prior to 25% Change Limitation	0.024	0.030	+25.0%
Selected (Unlimited) Loss to Payroll Ratio Restricted to 25% Change	0.058	0.058	0%

As shown in Table 2, the selected loss to payroll ratios for Classifications 8810 and 8742 would increase slightly by 1.3% and 1.4%, respectively, under the proposed recommendation. This is because a small share of the statewide Classifications 8810 and 8742 payroll in connection with Classifications 3572 and 3682 employers, with loss to payroll ratios that are lower than the rest of the statewide, would be moved to Classification 8874.

Table 2. Changes in the Selected (Unlimited) Loss to Payroll Ratio for Classifications 8810 and 8742 Under the Recommendation

Classification	Current Selected Loss to Payroll Ratio (A)	Selected Loss to Payroll Ratio Under Proposed Recommendation (B)	% Difference (B/A-1)
8810	0.153	0.155	+1.3%
8742	0.210	0.213	+1.4%

2. Impact on Classification 3572 and 3682 Employers Currently with Payroll Reported in Classifications 8810 and/or 8742

The WCIRB further analyzed the potential impact of the proposed recommendation on Classifications 3572 and 3682 employers with payroll currently reported in Classifications 8810 and/or 8742, based on the typical mix of Classifications 8810 and 8742 operations for these employers. The impact on individual employers would vary depending on their own mix of payroll reported in the two classifications. As shown in Table 3, for employers with payroll reported in only Classification 8810, the selected loss to payroll ratio under the proposed recommendation would decline significantly by 62.1%. For employers with payroll reported in only Classification 8742, the reduction in the selected loss to payroll ratio under the proposed recommendation would be even larger, at 72.4%. The WCIRB also analyzed the impact on employers based on the average payroll share between Classifications 8810 and 8742 (75% and 25%, respectively) for the largest 100 employers that were identified using payroll reported between PYs 2016 and 2020. The selected loss to payroll ratio for these employers under the proposed recommendation would be 65.3% lower than that under the current payroll mix of the 8810 and 8742 experience.

¹¹ The payroll limitation adjustment used to adjust the classification relativity for Classification 8874 is 20% as of September 1, 2023. Based on an initial review of the payroll in excess of the maximum payroll limitation threshold (\$154,700 as of September 1, 2023) for hardware and software design and development, clerical and outside sales operations of Classifications 3572 and 3682 employers, as well as the experience currently assigned to Classification 8874, approximately 21% of the payroll is estimated to be in excess of the maximum payroll limitation threshold. Therefore, Classification 8874 continues to meet the criteria for payroll limitation under the proposed recommendation. The current payroll limitation adjustment (20%) is used to calculate the indicated and selected (unlimited) loss to payroll ratios for Classification 8874 under the proposed recommendation.

¹² The current indicated and selected loss to payroll ratios for Classification 8874, as of September 1, 2023, are based on the reported experience of computer programming and/or design engineering, clerical and outside sales operations assigned to Classifications 8810 and 8742 performed in connection with manufacturing operations assigned to Classifications 3681 and 4112 between PYs 2018 and 2020.

Table 3. Estimated Changes in the Selected (Unlimited) Loss to Payroll Ratio for Classifications 3572 and 3682 Employers Currently with Payroll Reported in Classifications 8810 and/or 8742

Classifications 3682 and 3572 Employers	Current Classification Structure (A)	Proposed Classification Structure¹³ (B)	% Difference (B/A-1)
100% / 0% Payroll Reported in Classifications 8810 and 8742	0.153	0.058	-62.1%
0% / 100% Payroll Reported in Classifications 8810 and 8742	0.210	0.058	-72.4%
75% / 25% Payroll Reported in Classifications 8810 and 8742 ¹⁴	0.167	0.058	-65.3%

IV. Findings

Based on this review, the WCIRB has determined:

1. Classification 3572 employers often conduct computer programming and/or design engineering operations assignable to Classification 8810. Classification 3682 employers typically conduct design engineering operations assignable to Classification 8810. Computer programmers and/or design engineers of Classification 3572 or 3682 employers have similar job duties and average wages as computer programmers and/or design engineers assigned to Classification 8874. The outside sales operations of Classifications 3572 and 3682 employers are also similar to those of Classification 8874.
2. The loss to payroll ratios for hardware and software design and development, clerical and outside sales operations of Classifications 3572 and 3682 employers are more similar to those of Classification 8874 employers than to those of the statewide clerical and outside sales experience.
3. The claim frequencies of the typical causes of injury for hardware and software design and development, clerical and outside sales operations of Classifications 3572 and 3682 employers are generally more similar to those of Classification 8874 employers and lower than those for statewide Classifications 8810 and 8742. Although outside sales operations of Classification 3572 employers have a higher frequency of claims involving motor vehicle injuries than those of Classification 8874 and statewide Classification 8742, the average severity of those claims was less than half of the statewide Classification 8742 severity. Therefore, the overall loss experience of motor vehicle claims between Classification 3572 and 3682 employers and Classification 8874 employers is comparable.
4. Similarities in the loss and payroll experience between hardware and software design and development, clerical and outside sales operations of Classifications 3572 and 3682 employers and that of Classification 8874 employers suggest Classifications 3572 and 3682 meet the criteria for companion Classification 8874. The changes in the selected loss to payroll ratios for employers in Classifications 8874, 8810 and 8742 after reassigning hardware and software design and development, clerical and outside sales experience are minimal (0%, +1.3% and +1.4%, respectively).

¹³ The selected (unlimited) loss to payroll ratio under the proposed recommendation for Classification 8874 is restricted to a 25% change.

¹⁴ The selected (unlimited) loss to payroll ratio under the current classification structure is the weighted average of the current selected (unlimited) loss to payroll ratio for Classifications 8810 and 8742. The weighting is 75% for Classification 8810 and 25% for Classification 8742, based on the average payroll shares between policy years 2016 and 2020 reported in the two classifications for the largest 100 Classifications 3682 and 3572 employers with payroll reported in Classifications 8810 and/or 8742. The calculation of the selected loss to payroll ratio under the current classification structure is $75\% \times 0.153 + 25\% \times 0.210 = 0.167$.

5. Classifications 3572 and 3682 employers currently with payroll reported in Classifications 8810 and/or 8742 would have, on average, a significant decrease (-65.3%) in the selected loss to payroll ratio under the proposed classification structure. The impact on individual employers would vary depending on their own mix of payroll reported in Classifications 8810 and 8742.

V. Recommendations

Based on these findings, WCIRB staff recommends:

1. Establishing two alternate phraseologies (or suffixes) to Classification 8874 to apply to the hardware and software design and development, clerical and outside sales operations performed in connection with manufacturing operations assigned to Classifications 3572 and 3682:
 - a. Classification 8874(6), *Medical Instrument Mfg. – electronic – diagnostic or treatment – hardware or software design or development – including Clerical Office Employees, Clerical Telecommuter Employees and Outside Salespersons*, which will be included in the Electronics Industry Group; and
 - b. Classification 8874(7), *Instrument Mfg. – non-electronic – scientific or medical – hardware or software design or development – including Clerical Office Employees, Clerical Telecommuter Employees and Outside Salespersons – N.O.C.*, which will not be included in the Electronics Industry Group
2. Amending the following classifications to reference the corresponding proposed companion classifications:
 - a. Classification 3572, *Medical Instrument Mfg. – electronic – diagnostic or treatment*
 - b. Classification 3682, *Instrument Mfg. – non-electronic – scientific or medical – N.O.C.*

Appendix I – Analysis Approach

The WCIRB analyzed the business operations and payroll and claim experience of employers using both qualitative and quantitative data from a variety of sources.

Classification Inspection Reports: The WCIRB reviewed Classification Inspection Reports for employers with payroll reported in the classifications to better understand these employers' business operations.

Industry Outreach: The WCIRB contacted members of the industry, including industry associations and insurers that underwrite significant components of the industry, to gain insight into the operational characteristics.

Unit Statistical Reports: The WCIRB analyzed historical Unit Statistical Report data at the first report level and latest report level, including employers' payroll, loss experience and injury characteristics of claims. Losses were limited to \$500,000 per claim to minimize large swings in the loss to payroll ratios over time.

Classification Relativity Data: Classification relativity data as reflected in the WCIRB's September 1, 2023 Regulatory Filing were used to analyze the impact of the potential classification changes.

Wage Report: The WCIRB's 2022 Wage, Payroll and Exposure Report for California Workers' Compensation was used to analyze the wage levels of the classifications, as well as the estimated amount of payroll in excess of the WCIRB's standard payroll limitation threshold for employers assigned to Classifications 3572 and 3682.

Appendix II – History of Classifications 3572 and 3682

Following is a timeline of significant changes to the scope and application of **Classification 3572, *Medical Instrument Mfg. – electronic – diagnostic or treatment***:

- **1998:** Classification 3572, *Medical Instrument Mfg.*, was established to apply to the manufacture of electronic medical equipment used for diagnostic or treatment purposes and was included in the Electronics Industry Group.
- **2016:** Classification 3572 was amended to provide examples of instruments that should be included in this classification.

Following is a timeline of significant changes to the scope and application of **Classification 3682, *Instrument Mfg. – non-electronic – scientific or medical – N.O.C.***:

- **2006:** Classification 3682, *Instrument Mfg. – non-electronic – scientific or medical – N.O.C.*, was established to apply to the manufacture of non-electronic medical or scientific instruments.
 - These operations were previously assigned to Classification 3681, *Instrument Mfg. – professional or scientific – N.O.C.*
- **2020:** Classification 3682 was amended to clarify that, under prescribed circumstances similar to those stated in the Electronic Products Design and Manufacturing Special Industry Classification Procedures, it applies to employers that design proprietary products and subcontract manufacturing to other concerns.

Appendix III – Classification Relativities

Table 1: Classification 8810 – Classification Relativity at Policy Year 2023 Level

Policy Year	Adjusted Payroll	Adjusted Indemnity Losses	Adjusted Medical Losses	Adjusted Total Losses	Adjusted Loss to Payroll Ratio (00s)
2018	168,270,720,200	119,540,743	106,935,548	226,476,291	0.135
2019	170,915,149,527	120,840,829	107,395,133	228,235,962	0.134
2020	183,144,403,887	130,224,285	114,479,251	244,703,536	0.134
Total	522,330,273,614	370,605,857	328,809,933	699,415,789	

Adjusted Loss to Payroll Ratio 0.134
 Selected Loss to Payroll Ratio 0.153

Credibility	
Indemnity	Medical
1.00	1.00

Table 2: Classification 8742 – Classification Relativity at Policy Year 2023 Level

Policy Year	Adjusted Payroll	Adjusted Indemnity Losses	Adjusted Medical Losses	Adjusted Total Losses	Adjusted Loss to Payroll Ratio (00s)
2018	51,536,383,256	49,689,228	42,503,762	92,192,990	0.179
2019	52,216,206,892	50,348,669	42,890,333	93,239,002	0.179
2020	49,471,456,466	47,544,966	40,620,734	88,165,700	0.178
Total	153,224,046,614	147,582,863	126,014,829	273,597,692	

Adjusted Loss to Payroll Ratio 0.179
 Selected Loss to Payroll Ratio 0.210

Credibility	
Indemnity	Medical
1.00	1.00

Table 3: Classification 8874 – Classification Relativity at Policy Year 2023 Level

Policy Year	Adjusted Payroll	Adjusted Indemnity Losses	Adjusted Medical Losses	Adjusted Total Losses	Adjusted Loss to Payroll Ratio (00s)
2018	24,584,413,745	3,549,428	3,539,244	7,088,672	0.029
2019	28,375,478,178	3,818,416	3,397,057	7,215,473	0.025
2020	40,815,011,890	3,351,590	2,728,573	6,080,163	0.015
Total	93,774,903,813	10,719,434	9,664,874	20,384,308	

Adjusted Loss to Payroll Ratio 0.022
 Selected Loss to Payroll Ratio 0.058

Credibility	
Indemnity	Medical
1.00	1.00

Table 4: Classification 8810 Under the Proposed Change – Classification Relativity at Policy Year 2023 Level

Policy Year	Adjusted Payroll	Adjusted Indemnity Losses	Adjusted Medical Losses	Adjusted Total Losses	Adjusted Loss to Payroll Ratio (00s)
2018	165,237,110,451	118,679,888	106,167,620	224,847,508	0.136
2019	167,500,901,338	119,717,180	106,624,709	226,341,890	0.135
2020	179,619,269,598	129,053,153	113,224,400	242,277,553	0.135
Total	512,357,281,387	367,450,221	326,016,729	693,466,951	

Adjusted Loss to Payroll Ratio 0.135
 Selected Loss to Payroll Ratio 0.155

Credibility	
Indemnity	Medical
1.00	1.00

Table 5: Classification 8742 Under the Proposed Change – Classification Relativity at Policy Year 2023 Level

Policy Year	Adjusted Payroll	Adjusted Indemnity Losses	Adjusted Medical Losses	Adjusted Total Losses	Adjusted Loss to Payroll Ratio (00s)
2018	50,491,970,913	49,249,061	42,214,959	91,464,020	0.181
2019	51,024,653,307	50,156,332	42,500,999	92,657,331	0.182
2020	48,333,020,762	47,416,980	40,202,235	87,619,215	0.181
Total	149,849,644,982	146,822,373	124,918,192	271,740,566	

Adjusted Loss to Payroll Ratio 0.181
 Selected Loss to Payroll Ratio 0.213

Credibility	
Indemnity	Medical
1.00	1.00

Table 6: Classification 8874 Under the Proposed Change – Classification Relativity at Policy Year 2023 Level

Policy Year	Adjusted Payroll	Adjusted Indemnity Losses	Adjusted Medical Losses	Adjusted Total Losses	Adjusted Loss to Payroll Ratio (00s)
2018	27,846,972,062	4,837,755	4,583,671	9,421,427	0.034
2019	32,060,119,605	5,121,920	4,599,024	9,720,944	0.030
2020	44,545,867,889	4,682,632	4,358,259	9,040,891	0.020
Total	104,452,959,556	14,642,308	13,540,955	28,183,262	

Adjusted Loss to Payroll Ratio 0.027
 Selected Loss to Payroll Ratio 0.058

Credibility	
Indemnity	Medical
1.00	1.00

Recommendation

Amend Classification 3572, *Medical Instrument Mfg.*, which is part of the Electronics Industry Group, to reference the corresponding proposed companion Classification 8874(6), *Medical Instrument Mfg. – electronic – diagnostic or treatment – hardware or software design or development*, clarify its intended application and for consistency with previously approved changes.

PROPOSED

ELECTRONICS

MEDICAL INSTRUMENT MFG. – electronic – diagnostic or treatment – all other employees 3572

This classification applies to the manufacture or shop repair of electronic medical ~~equipment~~ instruments used for diagnostic or treatment purposes, including but not limited to medical X-ray equipment, blood pressure monitors, pulse monitors, magnetic resonance imaging (MRI) equipment, heart scan systems, ophthalmology diagnostic ~~and/or~~ eye surgery equipment, endoscopes, vital sign monitoring equipment, radiation treatment equipment, blood ~~and/or~~ gas analyzers, brain analyzers, surgical lasers, computerized axial tomography (CAT) scanners, ultrasound imagers ~~and/or~~ defibrillators.

The installation or repair of instruments away from the shop shall be separately classified as 5128, Instrument Installation, Service or Repair.

The manufacture of non-electronic medical instruments shall be classified as 3682, *Instrument Mfg. – non-electronic*.

~~The installation or repair of instruments away from the shop shall be separately classified as 5428, Instrument~~ Also refer to companion Classification 8874(6), Medical Instrument Mfg. – electronic – diagnostic or treatment – hardware or software design or development.

* * * * *

Recommendation

Establish Classification 8874(6), *Medical Instrument Mfg. – electronic – diagnostic or treatment – hardware or software design or development*, as a companion classification in the Electronics Industry Group to (1) apply to hardware or software design or development, clerical office and outside sales operations performed in connection with manufacturing operations assigned to Classification 3572, *Medical Instrument Mfg.*, (2) direct that the maximum payroll amount be prorated based upon the number of weeks in the policy period when the policy is in force for less than a 12-month period and (3) limit an employee's annual payroll to \$159,900.

PROPOSED

ELECTRONICS

MEDICAL INSTRUMENT MFG. – electronic – diagnostic or treatment – hardware or software design or development – including Clerical Office Employees, Clerical Telecommuter Employees and Outside Salespersons 8874(6)

The entire remuneration of each employee shall be included, subject to a maximum of \$159,900 per year. When the policy is in force for less than a 12-month period, the maximum payroll amount shall be prorated based upon the number of weeks in the policy period.

This classification applies to employees engaged exclusively in hardware or software design or development, computer aided design, or clerical or outside sales operations in connection with the employer's electronic medical instrument manufacturing operations.

This classification does not apply to employees engaged in the manufacture, assembly, repair, testing or otherwise handling of electronic medical instruments or prototypes in connection with the employer's manufacturing operations.

Also refer to companion Classification 3572, *Medical Instrument Mfg. – electronic – diagnostic or treatment*.

* * * * *

Recommendation

Amend Classification 3682, *Instrument Mfg. – non-electronic*, to reference the corresponding proposed companion Classification 8874(7), *Instrument Mfg. – non-electronic – scientific or medical – hardware or software design or development*.

PROPOSED

INSTRUMENT MFG. – non-electronic – scientific or medical – all other employees – N.O.C.

3682

This classification applies to the manufacture or shop repair of non-electronic instruments, including but not limited to micrometers, surveying levels, sighting rods, hypodermic syringes, scalpels and microscopes. This classification also applies to the manufacture of catheters, binoculars, compasses, telescopes, implantable medical devices, orthodontic components, medical hand tools, non-electronic scales, measuring tapes or rifle scopes.

This classification also applies to employers that design proprietary, non-electronic instruments and subcontract manufacturing to other concerns provided the employer also:

1. Manufactures the prototype or subcontracts the manufacture of the prototype; or
2. Receives the manufactured product and performs quality control operations prior to shipment.

Employers that neither design nor manufacture the product, but purchase products from manufacturers for resale purposes, shall be assigned to the applicable *Stores* Industry Group classification notwithstanding that they may engage in some product preparation or quality control operations.

The manufacture of electronic medical instruments shall be classified as 3572, *Medical Instrument Mfg.*

The manufacture of electronic professional or scientific instruments shall be classified as 3681(1), *Instrument Mfg. – electronic*.

The repair of instruments away from the shop shall be separately classified.

Also refer to companion Classification 8874(7), *Instrument Mfg. – non-electronic – scientific or medical – hardware or software design or development*.

* * * * *

Recommendation

Establish Classification 8874(7), *Instrument Mfg. – non-electronic – scientific or medical – hardware or software design or development*, as a companion classification to (1) apply to hardware or software design or development, clerical office and outside sales operations performed in connection with manufacturing operations assigned to Classification 3682, *Instrument Mfg. – non-electronic – scientific or medical*, (2) direct that the maximum payroll amount be prorated based upon the number of weeks in the policy period when the policy is in force for less than a 12-month period and (3) limit an employee's annual payroll to \$159,900.

PROPOSED

INSTRUMENT MFG. – non-electronic – scientific or medical – hardware or software design or development – including Clerical Office Employees, Clerical Telecommuter Employees and Outside Salespersons – N.O.C. **8874(7)**

The entire remuneration of each employee shall be included, subject to a maximum of \$159,900 per year. When the policy is in force for less than a 12-month period, the maximum payroll amount shall be prorated based upon the number of weeks in the policy period.

This classification applies to employees engaged exclusively in hardware or software design or development, computer aided design, or clerical or outside sales operations in connection with the employer's non-electronic instrument manufacturing operations.

This classification does not apply to employees engaged in the manufacture, assembly, repair, testing or otherwise handling of non-electronic instruments or prototypes in connection with the employer's manufacturing operations.

Also refer to companion Classification 3682, *Instrument Mfg. – non-electronic – scientific or medical*.

* * * * *

Amend Section VIII, *Abbreviated Classifications – Numeric Listing*, for consistency with other proposed changes.

PROPOSED

Section VIII – Abbreviated Classifications – Numeric Listing

-
-
-
- 3572 Medical Instrument Mfg–electronic–all other employees
-
-
-
- 3682 Instrument Mfg–non-electronic–all other employees

-
-
-
- 8874(5) Integrated Circuit Mfg–design
- 8874(6) Medical Instrument Mfg–electronic–design
- 8874(7) Instrument Mfg–non-electronic–design
- 8875(1) Public Colleges/Schools
-
-
-

* * * * *

Amend Appendix IV, *Classifications Including Clerical Office Employees, Clerical Telecommuter Employees or Outside Salespersons*, for consistency with other proposed changes.

PROPOSED

Appendix IV

Classifications Including Clerical Office Employees, Clerical Telecommuter Employees or Outside Salespersons

See Section III, *General Classification Procedures*, Rule 4, *Standard Exceptions*, Subrule c, *Standard Exception Classification Procedures*.

Code	Name	Including Clerical Office Employees / Clerical Telecom- muter Employees	Including Outside Salespersons
•			
•			
•			
8874(5)	Integrated Circuit Mfg–design	X	X
8874(6)	<u>Medical Instrument Mfg–electronic–design</u>	<u>X</u>	<u>X</u>
8874(7)	<u>Instrument Mfg–non-electronic–design</u>	<u>X</u>	<u>X</u>
8875(1)	Public Colleges/Schools	X	X
•			
•			
•			

* * * * *

Low Credibility Study – Computer Memory Disk Mfg.

3070, Computer Memory Disk Mfg. – rigid

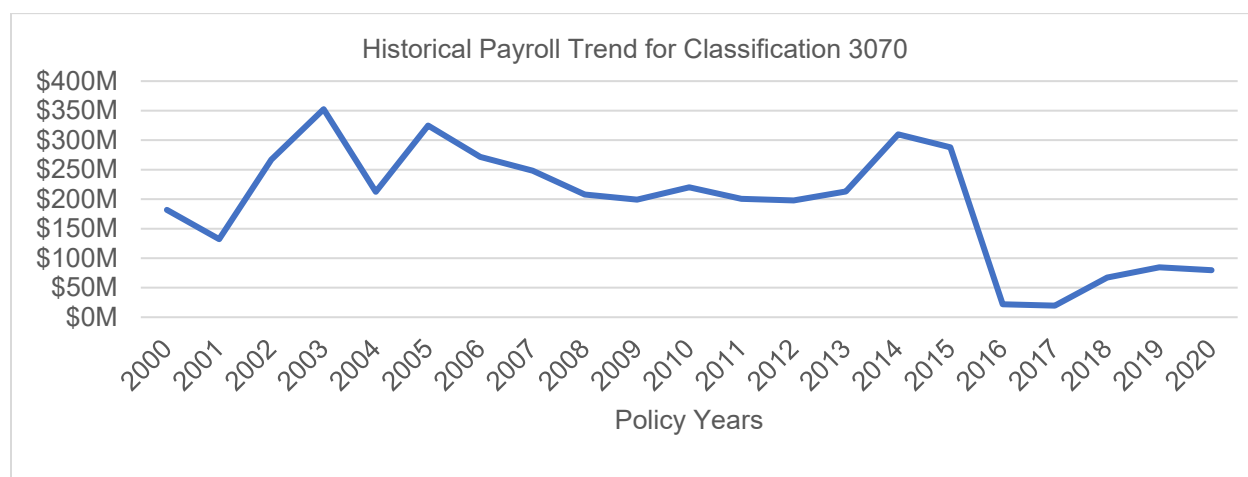
3681(2), Computer or Computer Peripheral Equipment Mfg. – all other employees – N.O.C.

8874(2), Computer or Computer Peripheral Equipment Mfg. – hardware or software design or development

I. Introduction and Study Objective

Employers assigned to Classification 3070, *Computer Memory Disk Mfg.*, do not develop sufficient data to produce statistically credible advisory pure premium rates,¹ which can result in undue volatility in the advisory pure premium rate from year to year without significant change in the underlying exposure to workers' compensation losses. The credibility of Classification 3070 is 0.22 for medical and 0.21 for indemnity. Payroll reported in Classification 3070 has been volatile since 2000. It dropped significantly in 2016 and has remained low since (see Figure 1). On average, only about 14 employers had payroll reported in Classification 3070 annually between 2016 and 2020, and over 97% of this payroll was developed by a single employer.

Figure 1. Historical Payroll Trend for Classification 3070



Consistent with the WCIRB's practice of reviewing classifications with low statistical credibility, as well as those that may be dominated by large risks, the WCIRB studied the business operations and payroll and claim experience of employers currently assigned to Classification 3070 to determine if this classification should continue to be a stand-alone classification or if the operations contemplated in the classification should be combined with operations in other classifications that are operationally similar and have similar loss and payroll experience and claim characteristics. In this regard, the WCIRB evaluated the scope of Classification 3681(2)² based on the relatively similar operations to Classification 3070.

¹ California Department of Insurance's (CDI) approved advisory pure premium rate for Classification 3070 is \$0.25 per \$100 of payroll as of September 1, 2023.

² Classification 3681 consists of four alternate phraseologies (or suffixes): 3681(1), *Instrument Mfg. – electronic – professional or scientific – all other employees – N.O.C.*; 3681(2), *Computer or Computer Peripheral Equipment Mfg. – all other employees – N.O.C.*; 3681(3), *Telecommunications Equipment Mfg. – all other employees*; and 3681(4), *Audio/Video Electronic Products Mfg. – all other employees*.

II. Analysis Results

- **Characteristics of Operations Assigned to Classification 3070, *Computer Memory Disk Mfg.***

Classification 3070 applies to the manufacture of rigid computer memory disks used within computer hard disk drives to store data. Rigid computer memory disks are typically round metal platters which store data magnetically and are attached to a motor that spins them within the drive casing while a read/write head manipulates the information stored on them. These disks are components within a device, rather than a device itself. It is common for employers assigned to Classification 3070 (Classification 3070 employers) to retain engineering staff to support the design and development of hardware and these engineers are currently assignable to Classification 8810, *Clerical Office Employees*.

- **Characteristics of Operations Assigned to Classifications 3681(2), *Computer or Computer Peripheral Equipment Mfg. – all other employees*, and 8874(2), *Computer or Computer Peripheral Equipment Mfg. – hardware or software design or development***

Classification 3681(2) applies to the manufacture of two broad categories of products: computers and computer peripheral equipment. Computers may include desktops, laptops, tablets and similar full computer systems, and their use may or may not require peripherals. Computer peripheral devices consist of devices that enable or enhance the functionality and usability of a computer. These range from monitors, keyboards and mice to internal or external components such as hard drives and disk drives. While many hard drives are now “solid-state” with no moving parts, it is still common for hard drives to consist of a case that houses motors, read/write heads, rigid computer memory disks and a variety of solid-state controllers or data storage chips and associated circuitry. As such, employers assigned to Classification 3681(2) (Classification 3681(2) employers) that manufacture hard drives often use component parts produced by Classification 3070 employers and integrate them into drive devices, which may be internally mounted in computers or externally plugged in. Classification 3681(2) employers may also vertically integrate and manufacture component parts, such as computer memory disks, which are used in their own finished peripheral products.

Classification 3681(2) is a companion classification to Classification 8874(2), *Computer or Computer Peripheral Equipment Mfg. – hardware or software design or development*,³ which applies to hardware or software design or development, computer aided design as well as clerical and outside sales operations performed in connection with the associated manufacturing operations.

- **Comparison of Classification 3070 Operations and Classification 3681(2) Operations**

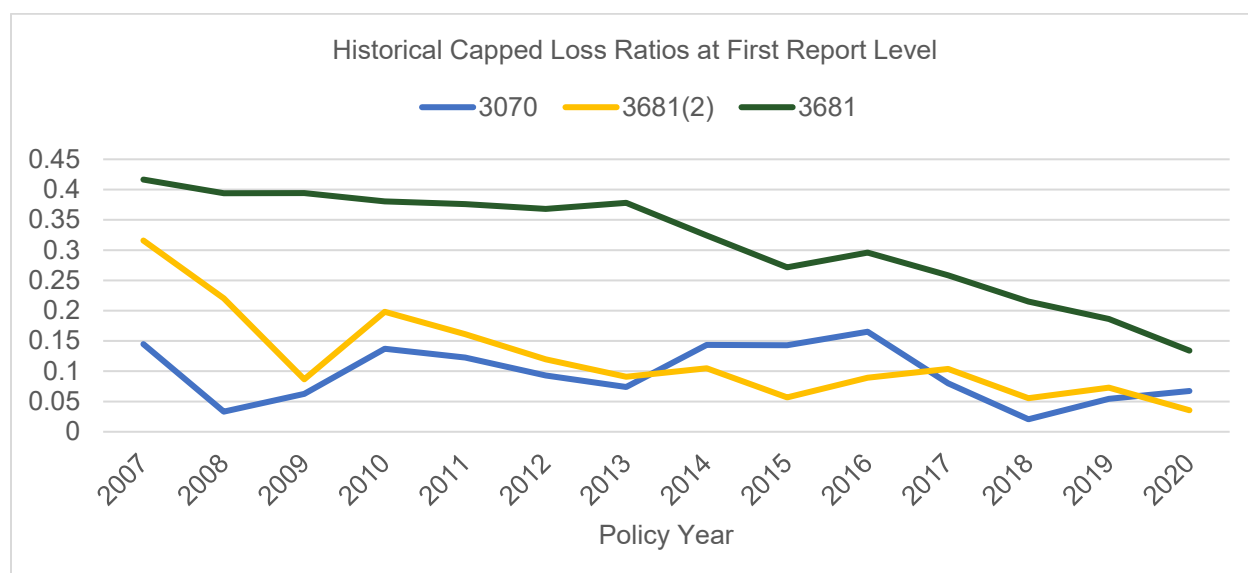
Operations typical for Classification 3070 employers are broadly similar to those of Classification 3681(2) employers. Both groups of employers may manufacture component parts, which involves cutting, forming, cleaning or otherwise preparing materials, applying coatings using deposition methods and curing the coatings. The finished products made by Classification 3070 employers are components of hard disk drives, which are devices manufactured by Classification 3681(2) employers. Furthermore, similar to Classification 3681(2) employers, Classification 3070 employers typically retain, in addition to clerical staff, design or development engineers who support their manufacturing operations and are currently assignable to Classification 8810, *Clerical Office Employees*. The outside sales operations of Classification 3070 employers, which are currently assignable to Classification 8742, *Salespersons – Outside*, are also relatively similar to those of Classification 3681(2) employers, which are currently assignable to Classification 8874(2), *Computer or Computer Peripheral Equipment Mfg. – hardware or software design or development*.

³ Classification 8874 consists of five alternative phraseologies (or suffixes): 8874(1), *Instrument Mfg. – electronic – professional or scientific – hardware or software design or development*; 8874(2), *Computer or Computer Peripheral Equipment Mfg. – hardware or software design or development*; 8874(3), *Telecommunications Equipment Mfg. – hardware or software design or development*; 8874(4), *Audio/Video Electronic Products Mfg. – hardware or software design or development*; and 8874(5), *Integrated Circuit and Semiconductor Wafer Mfg. – hardware or software design or development*.

- **Comparison of the Loss and Payroll Experience of Classifications 3070, 3681(2) and 3681**

In addition to operational characteristics, the WCIRB compared the loss and payroll experience of Classifications 3070 and inspected employers assigned to 3681(2),⁴ as well as the experience of Classification 3681 as a whole.⁵ As shown in Figure 2, the historical loss to payroll ratios between policy years (PYs) 2007 and 2020 and the latest 10-year loss to payroll ratios between PYs 2011 and 2020 were similar between Classifications 3070 (\$0.10 per \$100 of payroll)⁶ and 3681(2) (\$0.09 per \$100 of payroll). Both trends suggest a similar level of workers' compensation risk exposure between Classifications 3070 and 3681(2). However, the historical loss to payroll ratios for Classification 3681 were much higher than those for Classification 3070, partly due to wage differentials between computer memory disk manufacturing employees assigned to Classification 3070 and electronic product and equipment manufacturing employees assigned to Classification 3681.⁷ Despite the gap, the loss to payroll ratios between Classifications 3070 and 3681 appear to have converged in more recent years. In addition, the majority of Classification 3070 employers were small with reported average annual payroll of less than \$1 million.⁸ The loss to payroll ratios for these small Classification 3070 employers were much higher than those for Classification 3070 employers as a whole and more comparable to those for Classification 3681.

Figure 2. Historical Capped Loss to Payroll Ratios at First Report Level (PYs 2007-2020)



⁴ Classification 3681(2) employers were identified based on inspection reports where Classification 3681(2) was assigned.

Therefore, the loss and payroll experience of Classification 3681(2) was based solely on inspected Classification 3681(2) employers that account for 24% of the statewide Classification 3681 payroll between PYs 2016 and 2020.

⁵ Since the impact of any potential classification changes on advisory pure premium rates is at the classification level, this analysis included the experience of Classification 3681 as a whole.

⁶ The underlying data for Classification 3070 was volatile with, on average, fewer than 10 claims per year for the latest 5 PYs. Therefore, a 10-year loss to payroll ratio was considered to reduce volatility in the data.

⁷ According to the American Community Survey's 2022 Wage, Payroll and Exposure Report for California Workers' Compensation, in 2020, the average weekly wage was \$1517 for Classification 3070 and \$1157 for Classification 3681. The gap in the 10-year loss per full-time equivalent employee, adjusting for wage differentials, between Classifications 3070 and 3681 is narrowed by about 10% compared to the 10-year loss to payroll ratio gap before adjusting for wage differentials.

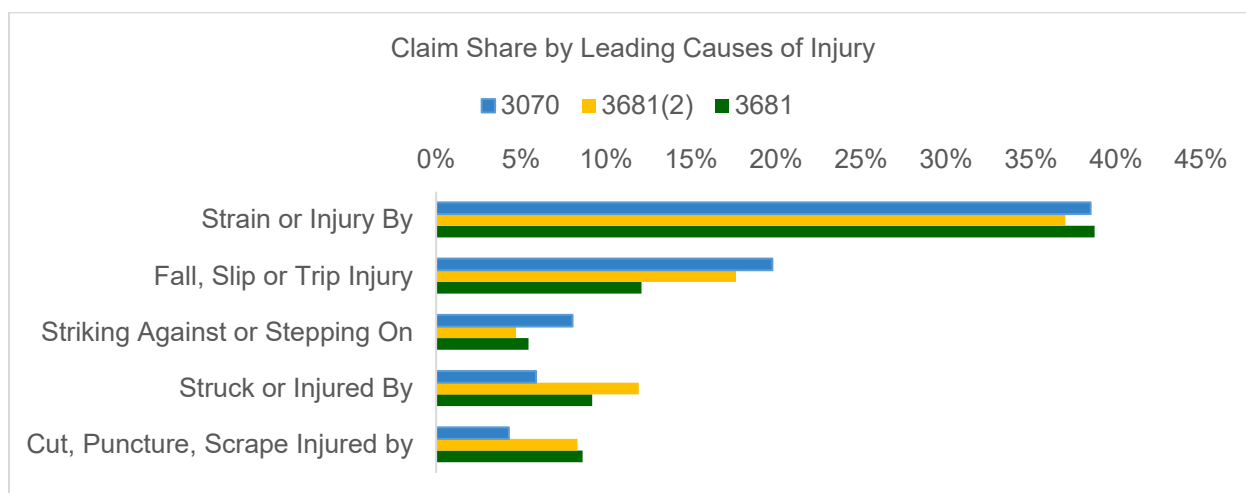
⁸ About 86% of the employers assigned to Classification 3070 had an average annual payroll of less than \$1 million in Classification 3070. In addition, the Classification 3070 experience is mainly driven by one large employer that accounted for 97% of the payroll in Classification 3070 between PYs 2016 and 2020.

Loss to Payroll Ratio (00s) ⁹	Classification 3070	Classification 3681(2)	Classification 3681
5-year (PYs 2016-2020)	0.08	0.07	0.22
10-year (PYs 2011-2020)	0.10	0.09	0.28

The WCIRB also compared the historical loss to payroll ratios among Classifications 3070, 3681 and 3681(2) at the latest report level. The loss to payroll ratios for Classification 3070 at the latest maturity levels continued to track closely with those for Classification 3681(2), although the loss to payroll differential between Classifications 3070 and 3681 continued to hold.

The typical causes of injury were generally similar between claims reported in Classification 3070 and those reported in Classification 3681(2) and in Classification 3681 as a whole (see Figure 3). Strain injury was the leading cause of injury for all, while the share of claims involving fall injuries was more similar between Classifications 3070 and 3681(2).

Figure 3. Share of Claims by Top 5 Causes of Injury (PYs 2011-2020)



In summary, the business operations and loss and payroll experience of computer memory disk manufacturing employers assigned to Classification 3070 are similar to those of computer or computer peripheral equipment manufacturing employers assigned to Classification 3681(2). Also, since Classification 3681 is fully credible, including Classification 3070 employers in Classification 3681 would largely improve the statistical credibility of the Classification 3070 employers' experience. Therefore, WCIRB staff recommends amending Classification 3681(2) to include computer memory disk manufacturing operations currently assigned to Classification 3070. The impact of this recommendation on employers currently assigned to Classifications 3070 and 3681 is shown in the Impact Analysis section of this report.

- **Comparison of the Loss and Payroll Experience of Design or Development Engineering, Clerical and Outside Sales Operations in Support of Classification 3070 Operations and that of Classification 8874**

As described earlier, Classification 3681(2) is a companion classification to Classification 8874(2), which includes hardware or software design or development, clerical¹⁰ and outside sales operations in support of manufacturing operations assigned to Classification 3681(2). The proposed reassignment of

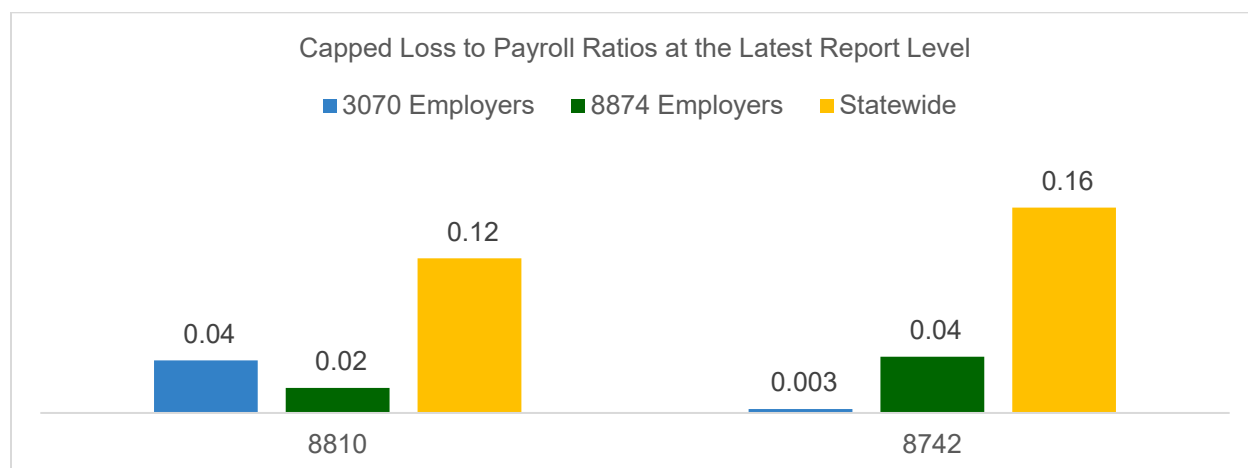
⁹ The loss to payroll ratio was the average of the loss to payroll ratio for each PY over the specified policy period to stabilize the significant volatility in the reported payroll in Classifications 3070 and 3682(2).

¹⁰ Classification 8874 also applies to clerical telecommuting operations that support Classifications 3681 and 4112's manufacturing operations, that were previously assigned to Classification 8871. However, as Classification 8871 became effective as of January 1, 2021, there is insufficient data available at the time of this study. Thus, the data for clerical operations in support of employers assigned to Classifications 3681 and 4112 for this study is solely based on the experience reported in Classification 8810.

Classification 3070 operations to Classification 3681(2) would also require reassigning the hardware or software design or development, clerical and outside sales operations in support of Classification 3070 operations to Classification 8874(2). Therefore, the WCIRB analyzed whether the design or development engineering and clerical operations (currently assigned to Classification 8810), and outside sales operations (currently assigned to Classification 8742), that support Classification 3070 computer memory disk manufacturing operations have similar loss and payroll experience to those assigned to Classification 8874.¹¹

As shown in Figure 4, the 5-year average loss to payroll ratio for hardware or software design or development and clerical operations (currently assigned to Classification 8810) supporting Classification 3070 operations¹² (\$0.04 per \$100 of payroll) is about one-third of that for statewide Classification 8810 (\$0.12 per \$100 of payroll) and is much more similar to that for hardware or software design or development and clerical operations supporting Classification 8874 (\$0.02 per \$100 of payroll). Similarly, the 5-year average loss to payroll ratio for outside sales operations (currently assigned to Classification 8742) supporting Classification 3070 operations is only \$0.003 per \$100 of payroll, which is more comparable to that for the outside sales operations supporting Classification 8874 than to that for Classification 8742.¹³

Figure 4. Capped Loss to Payroll Ratios¹⁴ for Hardware or Software Design or Development, Clerical and Outside Sales Operations of Classifications 3070 and 8874¹⁵ and Statewide Classifications 8810 and 8742¹⁶ (PYs 2016-2020)



¹¹ The 2022 Study of Computer Programming in the Electronics Manufacturing Industry indicated that the computer programming, design engineering, clerical and outside sales operations of employers in Classifications 3681 and 4112 have similar operational characteristics and loss and payroll experience and are distinct from the statewide Classifications 8810 and 8742 experience. As a result, Classification 8874 was established to contemplate these operations. The study resulted in the establishment of five alternative phraseologies (or suffixes) for Classification 8874 to facilitate a mapping between Classification 8874 and the corresponding electronics manufacturing classes (3681(1), 3681(2), 3681(3), 3681(4) and 4112). See footnote 3 for the listing of the five alternate phraseologies.

¹² The payroll reported in the computer programming, design engineering and clerical operations in connection with computer memory disk manufacturing operations accounted for 0.08% of the statewide payroll reported in Classification 8810 from PYs 2016 to 2020.

¹³ The loss to payroll ratios for the computer programming, design engineering, clerical and outside sales operations of employers assigned to Classification 8874 are based on the reported historical statewide experience of Classifications 8810 and 8742 in support of employers assigned to Classifications 3681 and 4112 between PYs 2016 and 2020.

¹⁴ The loss to payroll ratio for PYs 2016 to 2020 was calculated as the aggregate losses over the PY period from 2016 to 2020 divided by the aggregate payroll during the same period.

¹⁵ The payroll reported in the outside sales operations in connection with computer memory disk manufacturing operations accounted for 0.02% of the statewide payroll reported in Classification 8742 for PYs 2016 to 2020. There was only one claim during the policy period which resulted in the low loss to payroll ratio over the 5-year policy period.

¹⁶ The reported historical statewide experience of Classifications 8810 and 8742 includes computer programming, design engineering, clerical and outside sales operations now assigned to Classification 8874. Therefore, such Classification 8874 experience is excluded from the statewide experience of Classifications 8810 and 8742 for the purpose of this study.

In summary, Classification 3070 employers typically retain design or development engineers to support their manufacturing operations. The loss to payroll ratios for those design or development engineers, as well as clerical and outside sales employees supporting Classification 3070 operations, are much more similar to those of Classification 8874 than to those of the statewide experience for Classifications 8810 and 8742. Therefore, WCIRB staff recommends amending Classification 8874(2) to include the design or development engineering, clerical and outside sales operations of Classification 3070 employers. The impact of this recommendation on employers with reported payroll in Classifications 3070, 8810, 8742 and/or 8874 is shown in the Impact Analysis section of this report.

III. Impact Analysis

The WCIRB evaluated the impact of including computer memory disk manufacturing operations in Classification 3681(2) and including design or development engineering, clerical and outside sales operations supporting Classification 3070 operations in Classification 8874(2), the companion classification for Classification 3681(2). Classification relativities for Classifications 3681, 8874, 8810 and 8742 are included in Appendix IV.

1. Impact on Employers Assigned to Classifications 3070 and 3681

As shown in Table 1, the selected loss to payroll ratio for Classification 3070 would increase by 82.8% under the proposed recommendation. To mitigate the impact of the recommendation on the classification, WCIRB staff recommends applying the standard 25% limitation to the year-to-year relativity change for Classification 3070 and maintaining Classification 3070 until such time as the selected classification relativity for Classification 3070 better aligns with that for Classification 3681. The selected loss to payroll ratio for Classification 3681 would decrease slightly (-0.6%) with the inclusion of Classification 3070.

Table 1. Changes in the Selected (Unlimited) Loss to Payroll Ratio for Classifications 3070 and 3681 Under the Recommendation

Classification	Current Selected Loss to Payroll Ratio (A)	Selected Loss to Payroll Ratio Under Proposed Recommendation (B)	% Difference (B/A-1)
3070	0.186	0.340	+82.8%
3681	0.342	0.340	-0.6%

2. Impact on Employers Assigned to Classifications 8810, 8742 and 8874

The WCIRB also evaluated the impact on Classifications 8810, 8742 and 8874 after excluding the design or development engineering, clerical and outside sales operations of computer memory disk manufacturing employers from the statewide Classifications 8810 and 8742 and including it in Classification 8874. Table 2 shows that the selected loss to payroll ratios for Classifications 8810, 8742 and 8874 would remain the same under the proposed recommendation, as only a very small proportion of the statewide payroll for Classifications 8810 and 8742 in connection with computer memory disk manufacturing would be moved to Classification 8874.

Table 2. Changes in the Selected (Unlimited) Loss to Payroll Ratio for Classifications 8810, 8742 and 8874 Under the Recommendation

Loss to Payroll Ratios			
Classification	Current Selected (A)	Selected Under Proposed Recommendation (B)	% Difference (B/A-1)
8810	0.153	0.153	0%
8742	0.210	0.210	0%
8874 ¹⁷	0.058	0.058	0%

3. Impact on Employers Currently with Payroll Reported in Classifications 3070, 8810 and 8742

The WCIRB further analyzed the potential impact of the proposed recommendation on employers that currently have payroll reported in Classifications 3070, 8810 and 8742, based on the typical mix of Classifications 3070, 8810 and 8742 operations for these employers. The impact on individual employers would vary depending on their own mix of payroll reported in the three classifications. As shown in Table 3, based on the payroll splits among Classifications 3070, 8810 and 8742 for these employers for PY 2020, the selected loss to payroll ratio under the proposed recommendation would be 6.0% lower than that for the current mix of Classifications 3070, 8810 and 8742 experience.

Table 3. Estimated Changes in the Selected Loss to Payroll Ratios for Employers Currently with Payroll Reported in Classifications 3070, 8810 and 8742¹⁸

Classification 3070 Employers	Current Classification Structure (A)	Proposed Classification Structure (B)	% Difference (B/A-1)
35% / 60% / 5% Payroll Reported in Classifications 3070, 8810 and 8742	0.167	0.157	-6.0%

IV. Findings

Based on this review, the WCIRB has determined:

1. Classifications 3070 and 3681(2) share a number of operational similarities, and the products manufactured by employers assigned to Classification 3070 are components used in the manufacturing operations assigned to Classification 3681(2). The loss and payroll experience of Classification 3070 is similar to that of Classification 3681(2). Reassigning the operations of Classification 3070 to Classification 3681(2) would improve the statistical credibility of 3070 and help stabilize the advisory pure premium rate for Classification 3070 employers.
2. Employers assigned to Classifications 3070 and 3681(2) both typically retain design or development engineers in addition to clerical staff and outside salespersons. The loss to payroll ratios for design or development engineers, as well as clerical and outside sales employees

¹⁷ Classification 8874 was established and approved effective September 1, 2022. Therefore, the current indicated and selected loss to payroll ratios for Classification 8874, as of September 1, 2023, are based on the reported experience of computer programming, clerical and outside sales operations assigned to Classifications 8810 and 8742 performed in connection with manufacturing operations assigned to Classifications 3681 and 4112 between PYs 2018 and 2020. The current selected loss to payroll ratio and selected loss to payroll ratio under the proposed recommendation for Classification 8874 are restricted to a 25% change limitation based on the September 1, 2023 classification relativities. The indicated (unlimited) loss to payroll ratio without the 25% change limitation under the proposed recommendation is 0.025, which is 3.6% higher than the current indicated (unlimited) loss to payroll ratio without the 25% change limitation (0.024) as of September 1, 2023.

¹⁸ The selected (unlimited) loss to payroll ratio under the current classification structure is the weighted average of the current selected (unlimited) loss to payroll ratio for Classifications 3070, 8810 and 8742 based on the payroll splits among these three classifications for these employers for PY 2020, which are 35%, 60% and 5% for Classifications 3070, 8810 and 8742, respectively. The calculation of the selected loss to payroll ratio under the current classification structure is $35\% \times 0.186 + 60\% \times 0.153 + 5\% \times 0.210 = 0.167$. The calculation of the selected loss to payroll ratio under the proposed classification structure is $35\% \times 0.340 + 65\% \times 0.058 = 0.157$.

supporting Classification 3070 operations, are much more similar to those of Classification 8874 than those of the statewide clerical or outside sales experience. The similarities in both operations and loss and payroll experience suggest a good fit between the computer programming, design or development engineering, clerical and outside sales operations in support of Classification 3070 operations and the operations assigned to Classification 8874(2), the companion classification to Classification 3681(2).

3. Reassigning Classification 3070 employers to Classification 3681 would lead to a large increase (+82.8%) in the classification relativity for employers currently assigned to Classification 3070. To mitigate the impact of reassignment on those employers and in accordance with standard WCIRB classification ratemaking procedures, the year-to-year classification relativity for Classification 3070 would be limited to a 25% increase. There would be a slight reduction (-0.6%) in the classification relativity for employers currently assigned to Classification 3681.
4. Including the design or development engineering, clerical and outside sales operations of Classification 3070 employers in the companion classification, Classification 8874(2), would have no impact on Classifications 8810, 8742 and 8874. Only a very small proportion of the payroll for statewide Classifications 8810 and 8742 supports computer memory disk manufacturing and would be moved to Classification 8874.
5. Employers currently with payroll reported in Classifications 3070, 8810 and 8742 would have, on average, a modest decrease (-6.0%) in the selected loss to payroll ratio under the proposed classification structure involving Classifications 3681(2) and 8874(2). The impact on individual employers would vary depending on their own mix of payroll reported in Classifications 3070, 8810 and 8742.

V. Recommendations

Based on these findings, WCIRB staff recommends:

1. Combining Classification 3070, *Computer Memory Disk Mfg.*, with Classification 3681(2), *Computer or Computer Peripheral Equipment Mfg. – all other employees*, for ratemaking purposes and limiting the advisory pure premium rate relativity change for constituents of Classification 3070 to 25% each year until the advisory pure premium rate for Classification 3070 better aligns with that of Classification 3681, at which time Classification 3070 would be eliminated and Classification 3070 employers would be assigned to Classification 3681(2).
2. Reassigning the hardware and software design and development, clerical and outside sales operations performed in connection with computer memory disk manufacturing operations assigned to Classification 3070 from Classifications 8810, 8871 and 8742 to 8874(2) in conjunction with the elimination of Classification 3070 and assignment of Classification 3070 employers to Classification 3681(2).

Appendix I – Analysis Approach

The WCIRB analyzed the business operations and payroll and claim experience of employers using both qualitative and quantitative data from a variety of sources.

Classification Inspection Reports: The WCIRB reviewed Classification Inspection Reports for employers with payroll reported in the classifications to better understand these employers' business operations.

Industry Outreach: The WCIRB contacted members of the industry, including industry associations and insurers that underwrite significant components of the industry, to gain insight into the operational characteristics.

Unit Statistical Reports: The WCIRB analyzed historical Unit Statistical Report data at the first report level and latest report level, including employers' payroll, loss experience and injury characteristics of claims. Losses were limited to \$500,000 per claim to minimize large swings in the loss to payroll ratios over time.

Other Jurisdictions: The WCIRB reviewed the classification procedures by the National Council on Compensation Insurance, Inc. to understand how other jurisdictions classify operations contemplated within the classifications.

Classification Relativity Data: Classification relativity data as reflected in the WCIRB's September 1, 2023 Regulatory Filing were used to analyze the impact of the potential classification changes.

Wage Report: The WCIRB's 2022 Wage, Payroll and Exposure Report for California Workers' Compensation was used to analyze the wage levels of the classifications.

Appendix II – History of Classifications 3070 and 3681(2)

Following is a timeline of significant changes to the scope and application of Classifications 3070, *Computer Memory Disk Mfg. – rigid*, and 3681(2), *Computer or Computer Peripheral Equipment Mfg. – all other employees – N.O.C.*:

- **1985:** Classification 3070, *Computer Memory Disk Mfg. – rigid*, was established to apply to employers engaged in the manufacture of rigid computer memory disks, operations previously assigned to Classification 4350, *Electrotyping – N.P.D.*
- **1996:** Classification 3567, *Computer or Computer Peripheral Equipment Manufacturing*, was established after the WCIRB's review of the electronics industry in 1995.
 - The Electronics Industry Group was created by consolidating various classifications related to the manufacture of electronic and electrical products.
- **2006:** Classifications 3567, *Computer or Computer Peripheral Equipment Manufacturing*, 3578, *Telecommunications Equipment Manufacturing*, and 3566, *Audio/Visual Electronic Products Manufacturing*, were eliminated as unique classifications and established as alternate phraseologies (or suffixes) to Classification 3681, as Classifications 3681(2), 3681(3) and 3681(4), respectively.
- **2022:** As part of the multi-year effort to review computer programming in the electronics industry, Classification 8874 was established as a companion classification to Classifications 3681 and 4112, *Integrated Circuit and Semiconductor Wafer Mfg.* Classification 8874 consists of five alternative phraseologies (or suffixes) and applies to employees engaged exclusively in software or hardware design or development, computer aided design, or clerical or outside sales operations conducted in connection with the associated manufacturing operations.

Appendix III – Other Jurisdictions

The WCIRB reviewed how the National Council on Compensation Insurance, Inc. (NCCI) classifies the operations reviewed in this study. NCCI retains the following classifications:

- Classification 4431, *Magnetic and Optical Recording Media Mfg.*, applies to the manufacture or assembly of cassettes, videotapes, CDs, DVDs, and other recording media which also includes audio or visual recording media manufacturing and recording tape or disk manufacturing.
- Classification 3574, *Computing, Recording or Office Machine Mfg. – N.O.C.*, applies to the manufacture of adding, computing, recording typewriters or other office machines. Computing machines include computers of all sizes, whether of the desktop or larger variety.

Appendix IV – Classification Relativities

Table 1: Classification 3070 – Classification Relativity at Policy Year 2023 Level

Policy Year	Adjusted Payroll	Adjusted Indemnity Losses	Adjusted Medical Losses	Adjusted Total Losses	Adjusted Loss to Payroll Ratio (00s)
2016	21,051,928	2,703	18,563	21,266	0.101
2017	18,543,207	9,634	4,884	14,518	0.078
2018	67,365,742	133	12,452	12,585	0.019
2019	84,431,907	25,981	35,504	61,485	0.073
2020	79,546,819	64,703	42,848	107,551	0.135
Total	270,939,602	103,153	114,251	217,404	

Adjusted Loss to Payroll Ratio

0.080

Selected Loss to Payroll Ratio

0.186

Credibility	
Indemnity	Medical
0.22	0.21

Table 2: Classification 3681 – Classification Relativity at Policy Year 2023 Level

Policy Year	Adjusted Payroll	Adjusted Indemnity Losses	Adjusted Medical Losses	Adjusted Total Losses	Adjusted Loss to Payroll Ratio (00s)
2018	9,289,867,141	16,888,197	14,459,747	31,347,944	0.337
2019	9,504,253,815	16,734,780	13,507,224	30,242,004	0.318
2020	12,162,826,707	14,049,582	14,305,552	28,355,134	0.233
Total	30,956,947,663	47,672,559	42,272,524	89,945,083	

Adjusted Loss to Payroll Ratio

0.291

Selected Loss to Payroll Ratio

0.342

Credibility	
Indemnity	Medical
1.00	1.00

Table 3: Classification 8810 – Classification Relativity at Policy Year 2023 Level

Policy Year	Adjusted Payroll	Adjusted Indemnity Losses	Adjusted Medical Losses	Adjusted Total Losses	Adjusted Loss to Payroll Ratio (00s)
2018	168,270,720,200	119,540,743	106,935,548	226,476,291	0.135
2019	170,915,149,527	120,840,829	107,395,133	228,235,962	0.134
2020	183,144,403,887	130,224,285	114,479,251	244,703,536	0.134
Total	522,330,273,614	370,605,857	328,809,933	699,415,789	

Adjusted Loss to Payroll Ratio 0.134
Selected Loss to Payroll Ratio 0.153

Credibility	
Indemnity	Medical
1.00	1.00

Table 4: Classification 8742 – Classification Relativity at Policy Year 2023 Level

Policy Year	Adjusted Payroll	Adjusted Indemnity Losses	Adjusted Medical Losses	Adjusted Total Losses	Adjusted Loss to Payroll Ratio (00s)
2018	51,536,383,256	49,689,228	42,503,762	92,192,990	0.179
2019	52,216,206,892	50,348,669	42,890,333	93,239,002	0.179
2020	49,471,456,466	47,544,966	40,620,734	88,165,700	0.178
Total	153,224,046,614	147,582,863	126,014,829	273,597,692	

Adjusted Loss to Payroll Ratio 0.179
Selected Loss to Payroll Ratio 0.210

Credibility	
Indemnity	Medical
1.00	1.00

Table 5: Classification 8874 – Classification Relativity at Policy Year 2023 Level

Policy Year	Adjusted Payroll	Adjusted Indemnity Losses	Adjusted Medical Losses	Adjusted Total Losses	Adjusted Loss to Payroll Ratio (00s)
2018	24,584,413,745	3,549,428	3,539,244	7,088,672	0.029
2019	28,375,478,178	3,818,416	3,397,057	7,215,473	0.025
2020	40,815,011,890	3,351,590	2,728,573	6,080,163	0.015
Total	93,774,903,813	10,719,434	9,664,874	20,384,308	

Adjusted Loss to Payroll Ratio 0.022
Selected Loss to Payroll Ratio 0.058

Credibility	
Indemnity	Medical
1.00	1.00

Table 6: Classification 3681 Under the Proposed Change – Classification Relativity at Policy Year 2023 Level

Policy Year	Adjusted Payroll	Adjusted Indemnity Losses	Adjusted Medical Losses	Adjusted Total Losses	Adjusted Loss to Payroll Ratio (00s)
2018	9,357,229,093	16,888,330	14,472,200	31,360,530	0.335
2019	9,588,685,722	16,759,473	13,542,728	30,302,201	0.316
2020	12,242,373,526	14,105,881	14,348,400	28,454,281	0.232
Total	31,188,288,341	47,753,684	42,363,328	90,117,011	

Adjusted Loss to Payroll Ratio 0.289
Selected Loss to Payroll Ratio 0.340

Credibility	
Indemnity	Medical
1.00	1.00

Table 7: Classification 8810 Under the Proposed Change – Classification Relativity at Policy Year 2023 Level

Policy Year	Adjusted Payroll	Adjusted Indemnity Losses	Adjusted Medical Losses	Adjusted Total Losses	Adjusted Loss to Payroll Ratio (00s)
2018	168,167,257,212	119,392,686	106,852,664	226,245,350	0.135
2019	170,749,583,995	120,776,469	107,338,363	228,114,832	0.134
2020	182,957,585,244	130,088,381	114,407,071	244,495,452	0.134
Total	521,874,426,451	370,257,537	328,598,098	698,855,635	

Adjusted Loss to Payroll Ratio 0.134
 Selected Loss to Payroll Ratio 0.153

Credibility	
Indemnity	Medical
1.00	1.00

Table 8: Classification 8742 Under the Proposed Change – Classification Relativity at Policy Year 2023 Level

Policy Year	Adjusted Payroll	Adjusted Indemnity Losses	Adjusted Medical Losses	Adjusted Total Losses	Adjusted Loss to Payroll Ratio (00s)
2018	51,506,862,702	49,661,932	42,470,903	92,132,834	0.179
2019	52,190,031,849	50,348,669	42,889,749	93,238,418	0.179
2020	49,449,389,735	47,538,092	40,619,350	88,157,442	0.178
Total	153,146,284,286	147,548,693	125,980,001	273,528,694	

Adjusted Loss to Payroll Ratio 0.179
 Selected Loss to Payroll Ratio 0.210

Credibility	
Indemnity	Medical
1.00	1.00

Table 9: Classification 8874 Under the Proposed Change – Classification Relativity at Policy Year 2023 Level

Policy Year	Adjusted Payroll	Adjusted Indemnity Losses	Adjusted Medical Losses	Adjusted Total Losses	Adjusted Loss to Payroll Ratio (00s)
2018	24,690,803,744	3,721,504	3,653,164	7,374,668	0.030
2019	28,528,870,637	3,881,953	3,456,891	7,338,844	0.026
2020	40,982,120,190	3,498,104	2,798,835	6,296,939	0.015
Total	94,201,794,571	11,101,561	9,908,890	21,010,451	

Adjusted Loss to Payroll Ratio 0.022
 Selected Loss to Payroll Ratio 0.058

Credibility	
Indemnity	Medical
1.00	1.00

Low Credibility Study – Power Supply Mfg.

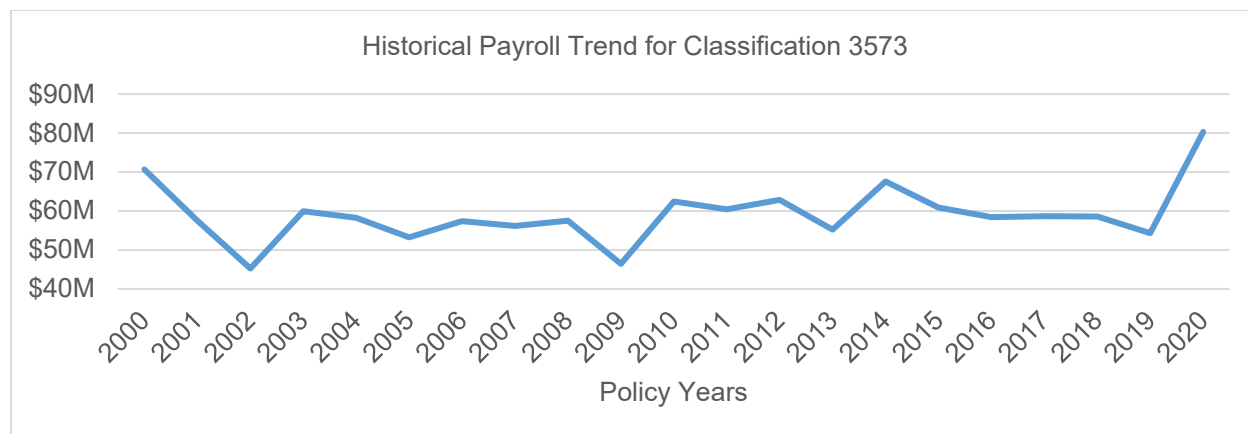
3573, Power Supply Mfg.

3643(1), Electric Power or Transmission Equipment Mfg. – N.O.C.

I. Introduction and Study Objective

Employers assigned to Classification 3573, *Power Supply Mfg.*, do not develop sufficient data to produce statistically credible advisory pure premium rates, which can result in undue volatility in the advisory pure premium rates from year to year without significant change in the underlying exposure to workers' compensation losses. The credibility of Classification 3573 is 0.38 for medical and 0.42 for indemnity. The exposure in Classification 3573 has been relatively stable but consistently low since 2000, with a significant increase (+48%) for the latest policy year (PY) (see Figure 1).¹ The number of employers with payroll reported in Classification 3573 had been stable in the past decade, on average about 62 employers per year.

Figure 1. Historical Payroll Trend for Classification 3573 – PYs 2000-2020



The WCIRB studied the business operations and payroll and claim experience of employers currently assigned to Classification 3573 (Classification 3573 employers) to determine if this classification should continue to be a stand-alone classification or if its operations should be combined with operations in other classifications that are operationally similar and have similar loss and payroll experience and claim characteristics. In this regard, the WCIRB evaluated the scope of Classification 3643(1), *Electric Power or Transmission Equipment Mfg.*, which has relatively similar operations to Classification 3573.²

¹ The increase in payroll for Classification 3573 in the latest policy year was due to a significant payroll increase by large employers assigned to Classification 3573.

² The WCIRB also evaluated Classification 3179, *Electrical Apparatus Mfg. – N.O.C.*, as a potential destination classification for Classification 3573 employers. Classification 3179 applies to the manufacture or shop repair of electrical apparatus, including but not limited to electric controls, switchboard assemblies, solenoids, electrical-mechanical switches, actuators and relays with a power rating of less than 746 watts that is not specifically described by another classification. The WCIRB conducted an operational and data analysis and determined that the operations and loss and payroll experience assigned to Classification 3179 are dissimilar compared to those assigned to Classification 3573. Therefore, Classification 3179 was not a good fit for employers assigned to Classification 3573.

II. Analysis Results

- **Comparison of the Characteristics of Operations Assigned to Classification 3573 and Classification 3643(1)**

Classification 3573 applies to employers engaged in the manufacture or shop repair of power supplies with a power rating of less than 746 watts (low wattage), which typically include assembling components, securing electronic components onto circuit boards and assembling circuit boards and other components within housings.

Classification 3643(1), *Electric Power or Transmission Equipment Mfg.*, applies to employers engaged in the manufacture or shop repair of electric power or transmission equipment with a power rating of higher than 746 watts (high wattage), such as generators, converters, transformers and power supplies (Classification 3643(1) employers). Operations contemplated in the classification include assembling components, securing electronic components onto circuit boards, winding materials onto components, assembling circuit boards and other components within housings and securing wire leads to coils.

A review of WCIRB inspection reports indicated that about a quarter of inspected Classification 3643(1) employers manufacture high wattage power supplies. A majority (about 77%) of inspected Classification 3643(1) employers manufacture products other than high wattage power supplies, such as other electric power or transmission equipment, and these employers accounted for about 85% of the payroll reported in Classification 3643(1) between PYs 2016 and 2020. These non-high wattage power supply manufacturing operations may require different raw materials, tools and manufacturing processes, which may result in different risk exposure.

If an employer engages in the manufacture of both high and low wattage power supplies, the primary operation (over 50% shop time) determines the classification assignment to either Classification 3573 or 3643(1).³ A review of WCIRB inspection reports indicated that about a quarter of inspected Classification 3573 employers and inspected high wattage power supply manufacturing employers assigned to Classification 3643(1) (high wattage operations in 3643(1)) engage in the manufacture of both low and high wattage power supplies. These employers may use the same crew or separate crews of employees for the manufacture of both low and high wattage power supplies.

- **Comparison of the Loss and Payroll Experience of Classifications 3573, 3643, 3643(1) and High Wattage Operations in 3643(1)**

In addition to operational characteristics, the WCIRB compared the loss and payroll experience of Classifications 3573, 3643⁴ and 3643(1), and high wattage operations in 3643(1).⁵ As shown in Figure 2, the historical year-to-year advisory pure premium rates for Classification 3573 has been stable and consistently lower than those for the statewide average of all classifications and Classification 3643. Effective September 1, 2023, the California Department of Insurance's approved advisory pure premium

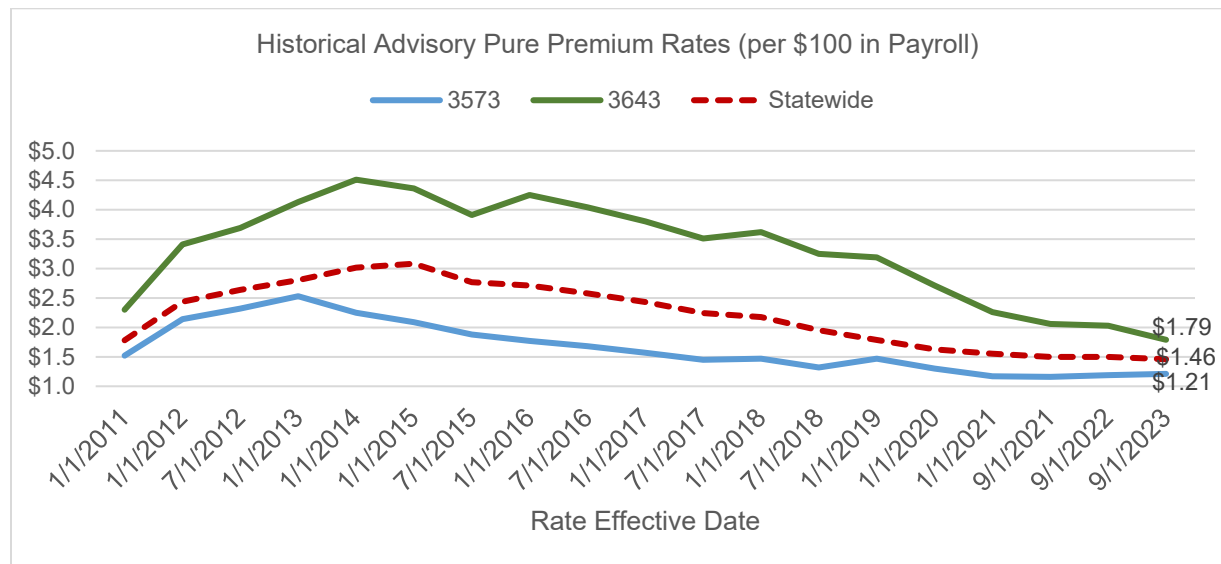
³ This assignment is based on footnotes in Classifications 3573 and 3643(1). For example, if an employer engages in the manufacture or shop repair of both low wattage and high wattage power supplies, but the primary operation (over 50% of shop time) is the manufacture of low wattage power supplies, then both the high wattage and low wattage manufacturing operations are classified in Classification 3573.

⁴ Since the impact of any potential classification changes on advisory pure premium rates is at the classification level, the analysis included the statewide experience of Classification 3643. Classification 3643 has two alternate phraseologies (or suffixes): 3643(1), *Electric Power or Transmission Equipment Mfg.*; and 3643(2), *Electric Control Panel or Switchgear Mfg.*

⁵ Classification 3643(1) employers were identified based on inspection reports where Classification 3643(1) was assigned. High wattage operations in 3643(1) were identified based on inspection reports where Classification 3643(1) was assigned for high wattage power supply manufacturing operations. Therefore, the loss and payroll experience of Classification 3643(1) and for high wattage operations in 3643(1) were based solely on inspected Classification 3643(1) employers. Inspected Classification 3643(1) employers and inspected high wattage operations in 3643(1) accounted for 19% and 3% of Classification 3643 payroll between PYs 2011 and 2020, respectively. Each group had limited available data, which may not be credible and therefore was not shown for some of the data comparisons.

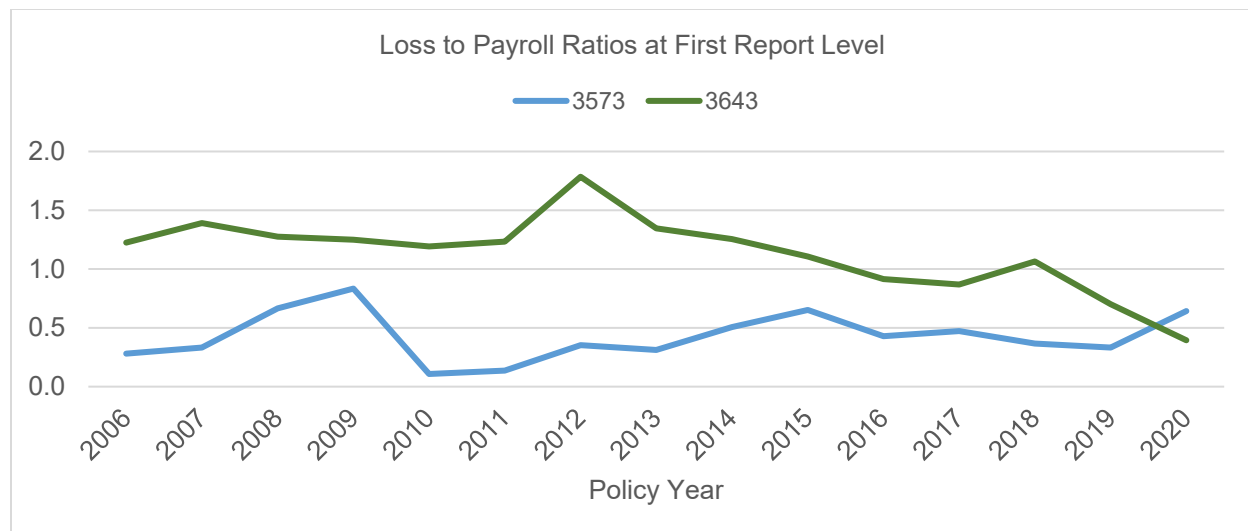
rate for Classification 3643 (\$1.79 per \$100 of payroll) is 48% higher than that for Classification 3573 (\$1.21 per \$100 of payroll).

Figure 2. Historical Pure Premium Rates



Similarly, the historical loss to payroll ratios at the first report level for Classification 3573 have been much lower than those for Classification 3643 (see Figure 3). The 5-year loss to payroll ratios between PYs 2016 and 2020 for Classification 3643 (\$0.73 per \$100 of payroll) is about 59% higher as compared to that for Classification 3573 (\$0.46 per \$100 of payroll). The gap in the 10-year loss to payroll ratios between the two classifications is even larger between PYs 2011 and 2020. While the loss to payroll ratios started to converge in recent PYs 2019 and 2020, the convergence may have been impacted by the pandemic and may not represent the future experience of the two classifications.

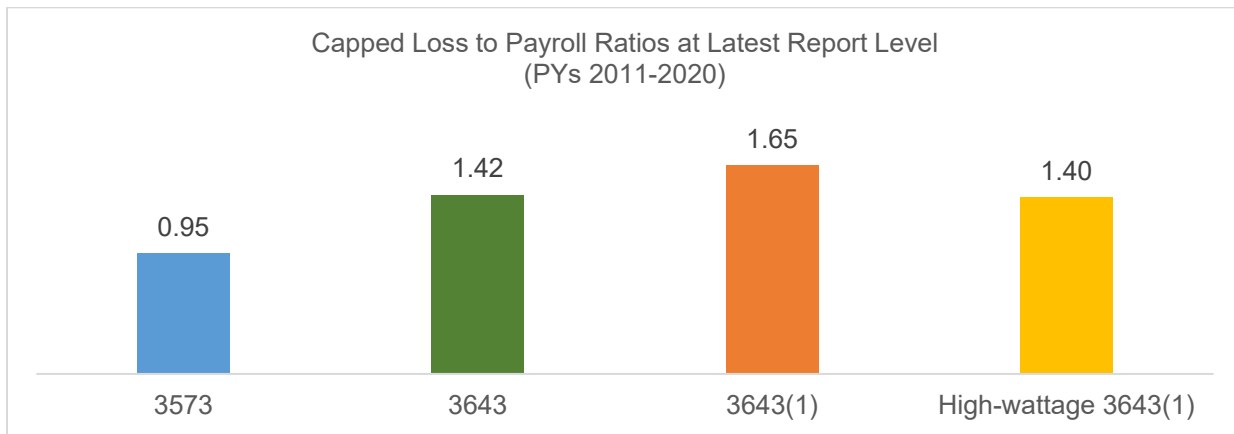
Figure 3. Historical Capped Loss to Payroll Ratios at First Report Level (PYs 2006-2020)



Loss to Payroll Ratio (00s) ⁶	Classification 3573	Classification 3643
5-year (PYs 2016-2020)	0.46	0.73
10-year (PYs 2011-2020)	0.43	0.95

The WCIRB further compared the 10-year loss to payroll ratios at the latest report level⁷ between Classifications 3573, 3643 and 3643(1) and high wattage operations in 3643(1) (see Figure 4). The large gap between Classifications 3573 and 3643 continues to hold at the latest maturity level. The 10-year loss to payroll ratio for high wattage operations in 3643(1) is 47% higher than that for Classification 3573 suggesting the risk exposure of employers assigned to the two classifications may be significantly different.

Figure 4. 10-Year Combined Capped Loss to Payroll Ratios at Latest Report Level (PYs 2011 – 2020)

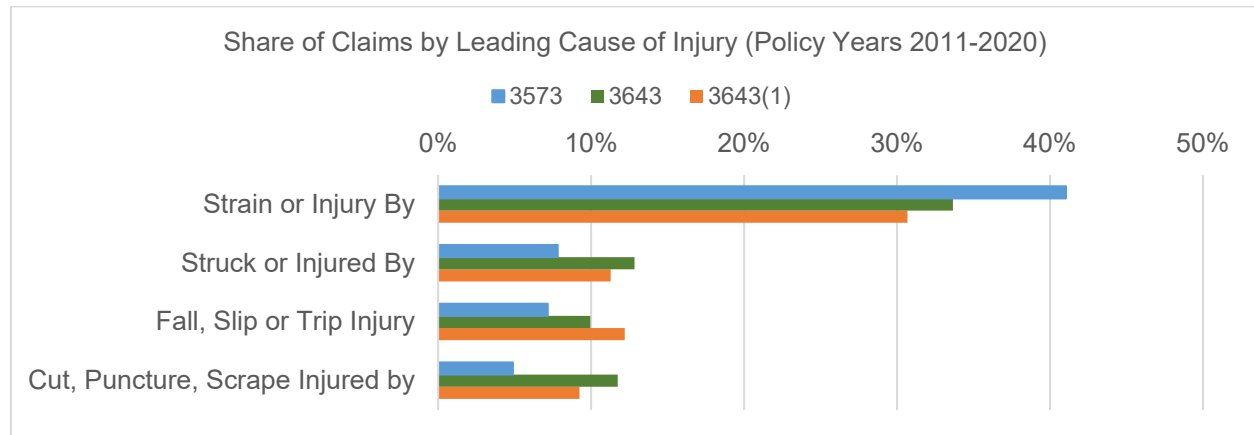


Also as shown in Figure 5, the typical causes of injury were generally dissimilar between claims reported in Classification 3573 and those reported in Classification 3643(1). Claims reported in Classification 3573 are more likely to involve strain injuries and less likely to involve struck, fall and cut injuries as compared to Classifications 3643(1) and 3643. The difference between Classifications 3573 and 3643(1) may be related to the different manufacturing processes of employers manufacturing non-high wattage products assigned to Classification 3643(1) and employers primarily manufacturing low wattage power supply assigned to Classification 3573. In addition, the WCIRB found that high wattage operations in 3643(1) share similar leading causes of injuries to Classification 3643(1) and are dissimilar compared to those of Classification 3573.

⁶ The loss to payroll ratios were calculated as the aggregate losses over the PY period specified divided by the aggregate payroll during the same period. Losses were evaluated at the first report level.

⁷ The 10-year loss to payroll ratios were calculated as the aggregate losses over PYs 2011 to 2020 divided by the aggregate payroll during the same period. Losses were evaluated at the latest report level. The 10-year loss to payroll ratios were used in the comparisons to increase the stability of the data due to the limited data available for Classifications 3643(1) and for high wattage operations in 3643(1).

Figure 5. Share of Claims by Leading Causes of Injury (PYs 2011–2020)



III. Findings and Recommendations

In summary, while Classification 3573 employers have some operational similarities to high wattage operations in Classification 3643(1), only a small proportion of Classification 3643(1) employers manufacture high wattage power supplies. The remaining Classification 3643(1) employers have operations that are less similar to high wattage power supply manufacturing operations. Further, the loss and payroll experience of Classification 3573 is dissimilar to that of Classifications 3643 and 3643(1) and high wattage operations in 3643(1). Although Classification 3573 is a low credibility classification, the reported payroll, number of employers and advisory pure premium rates have been historically stable, with a significant increase in payroll for the latest policy year. These trends do not suggest a further reduction in the credibility of Classification 3573.

Based on the findings, WCIRB staff does not recommend reassigning Classification 3573 employers to Classification 3643(1) and recommends that low wattage power supply manufacturing operations continue to be assigned to Classification 3573.

Appendix I – Analysis Approach

The WCIRB analyzed the business operations and payroll and claim experience of employers using both qualitative and quantitative data from a variety of sources.

Classification Inspection Reports: The WCIRB reviewed Classification Inspection Reports for employers with payroll reported in the classifications to better understand these employers' business operations.

Industry Outreach: The WCIRB contacted members of the industry, including industry associations and insurers that underwrite significant components of the industry, to gain insight into the operational characteristics.

Unit Statistical Reports: The WCIRB analyzed historical Unit Statistical Report data at the first report level and latest report level, including employers' payroll, loss experience and injury characteristics of claims. Losses were limited to \$500,000 per claim to minimize large swings in the loss to payroll ratios over time.

Other Jurisdictions: The WCIRB reviewed the classification procedures in other jurisdictions to understand how other jurisdictions classify operations contemplated within the classifications.

Classification Relativity Data: Classification relativity data as reflected in the WCIRB's September 1, 2023 Regulatory Filing were used to analyze the impact of the potential classification changes.

Appendix II – Classification History

Following is a timeline of significant changes to the scope and application of Classification 3573, *Power Supply Mfg.*:

- **1996:** Classification 3573, *Power Supply Mfg. – N.P.D.*, was established to apply to the manufacture of power supplies with a power rating of less than 746 watts and was included in the newly established Electronics Industry Group.
 - Constituents of Classification 3573 were previously classified in Classification 3681
- **2016:** Classification 3573 was amended to clarify its intended application and provide direction as to how related operations shall be classified.

Following is a timeline of significant changes to the scope and application of Classification 3643(1), *Electric Power or Transmission Equipment Mfg. – N.O.C.*:

- **1930:** Classification 3643, *Electric Power or Transmission Equipment Mfg.*, was established to apply to the manufacture or repair of motors, generators, converters, transformers, switchboards, circuit breakers, switches and switchboard apparatus and incidental equipment.
- **1965:** Classification 3643 was amended to indicate that it applies only to the manufacture of equipment with a rating of one horsepower or more.
- **1996:** Classification 3643, *Electric Power or Transmission Equipment Mfg.*, was amended to include the manufacture of power supplies with a power rating of 746 watts or more and to add a suffix. A new classification, Classification 3643(2), *Electric Control Panel or Switch Gear Mfg.*, was established to apply to the manufacture of electric control panels and switch gears. Both classifications were included in the newly established Electronics Industry Group.
- **2016:** Classification 3643(1) was amended to clarify its intended application and provide direction as to how related operations shall be classified.

Appendix III – Other Jurisdictions

The WCIRB reviewed how other jurisdictions classify power supply manufacturing. The National Council on Compensation Insurance, Inc. and the Workers' Compensation Rating and Inspection Bureau of Massachusetts direct that power supply manufacturing be assigned to Classification 3643, *Electric Power or Transmission Equipment Mfg.*

The New Jersey Compensation Rating and Inspection Bureau directs that the manufacture of wired electrical products, such as power supplies, be assigned to Classification 3179, *Electrical Apparatus Mfg.*

The New York Compensation Insurance Rating Board directs that the manufacture of equipment based on a small electrical supply unit be assigned to Classification 3179, *Electrical Apparatus Mfg.*, and the manufacture of larger power supply and transmission equipment be assigned to Classification 3643, *Electric Power or Transmission Equipment Mfg.*