



Workers Compensation Claim Frequency— 2014 Update

INTRODUCTION

According to preliminary estimates, lost-time claim frequency declined by a relatively modest 2% in Accident Year 2013. The Great Recession of 2007–2009, which was the most serious and long lasting economic contraction since the Great Depression, had a considerable effect on claim frequency changes. Frequency increased in Accident Year 2010 and has declined in each subsequent accident year.

In addition to examining overall frequency trends in recent years, this paper also looks at:

- Frequency changes by selected claim characteristics.
- Frequency for policies with small deductibles vs. policies without deductibles.

KEY FINDINGS

Overall Frequency Trends by Accident Year

- According to preliminary estimates, lost-time claim frequency per premium for workers compensation declined by 2% in Accident Year 2013 (see NCCI's 2014 State of the Line).
- From 1990 through 2009 claim frequency declined at an average rate of more than 4% per year.
- Claim frequency increased 3.5% in Accident Year 2010, the first significant increase in frequency in 20 years. Following the 2010 uptick, claim frequency has declined for three straight years at an average rate of about 3% per year, a positive sign that suggests frequency may continue its historical long-term rate of decline.
- Influenced by the Great Recession, frequency changes varied considerably by size of loss from 2008 to 2012. In Accident Year 2012, there was a sharp decline in the frequency of claims above \$50,000.
- From Accident Year 2008 through 2012, frequency per premium declined for all five NCCI major industry groups, most notably in the Office & Clerical Industry Group.

Frequency Changes by Selected Claim Characteristics

- Frequency declines by NCCI type of injury were volatile in the low-frequency fatality and permanent total disability categories.
- Frequency declines were greater than average for lower back and multiple body part injuries but lower than average for arm and shoulder injuries.

Frequency for Policies With vs. Without Small Deductibles

- Employers in high-frequency per payroll classes select small deductibles more often than those in lower frequency classes.
- Employers in the Contracting Industry Group, as well as employers in Hazard Groups F and G (the two most hazardous of the seven hazard groups), select small deductibles far more frequently than those in other industries or hazard groups.
- In states that allow the use of losses gross of the deductible in experience rating, frequency per payroll was only slightly lower for employers that selected small deductibles than for those that did not select a deductible, after adjusting to a common industry mix.

- In states that mandate the use of losses net of the deductible in experience rating, frequency per payroll was higher for employers that selected small deductibles than for those that did not select a deductible, after adjusting to a common industry mix.
- A significantly greater number of employers select small deductibles in states that mandate the use of losses net of the deductible in experience rating.

STUDY DESIGN

This research brief is subdivided into the following three sections:

- I. Overall Trends
- II. Frequency Changes by Selected Claim Characteristics
- III. Frequency for Policies With vs. Without Small Deductibles

This study is based primarily on the following data sources for states in which NCCI provides ratemaking services (see Appendix for a complete listing of states):

- **Financial Call**—NCCI's aggregate **Financial Call** data provides the latest available overall frequency information (through Accident Year 2013), representing experience for NCCI-affiliated carriers.
- **Statistical Plan**—NCCI's **Statistical Plan** data contains detailed information by individual policy, allowing us to analyze frequency changes in greater detail.

I. OVERALL TRENDS

As communicated at NCCI's *Annual Issues Symposium 2014*, Exhibit 1 indicates that lost-time claim frequency decreased by an estimated 2% in Accident Year 2013.

After increasing in 2010 for the first time in 13 years, lost-time claim frequency has declined for three straight years at an average rate of decline of about 3%. Prior to the 2010 uptick however, injury rates had fallen nearly 57% from 1990 through 2009, an average decrease of more than 4% per year. The only increases during this period occurred in 1994 and 1997. The three straight declines in frequency since 2010 are very positive signs that suggest that frequency may continue its historical long-term rate of decline.

Exhibit 1 is based on NCCI's aggregate *Financial Call* data. Accident year frequency, as measured here, is defined as follows:

Accident Year Frequency per Premium—Lost-time claims for injuries occurring in the accident year per \$1 million of earned calendar year pure premium adjusted by state for changes in average weekly wages¹ through Calendar Year 2013 and to current approved NCCI voluntary loss cost levels.²

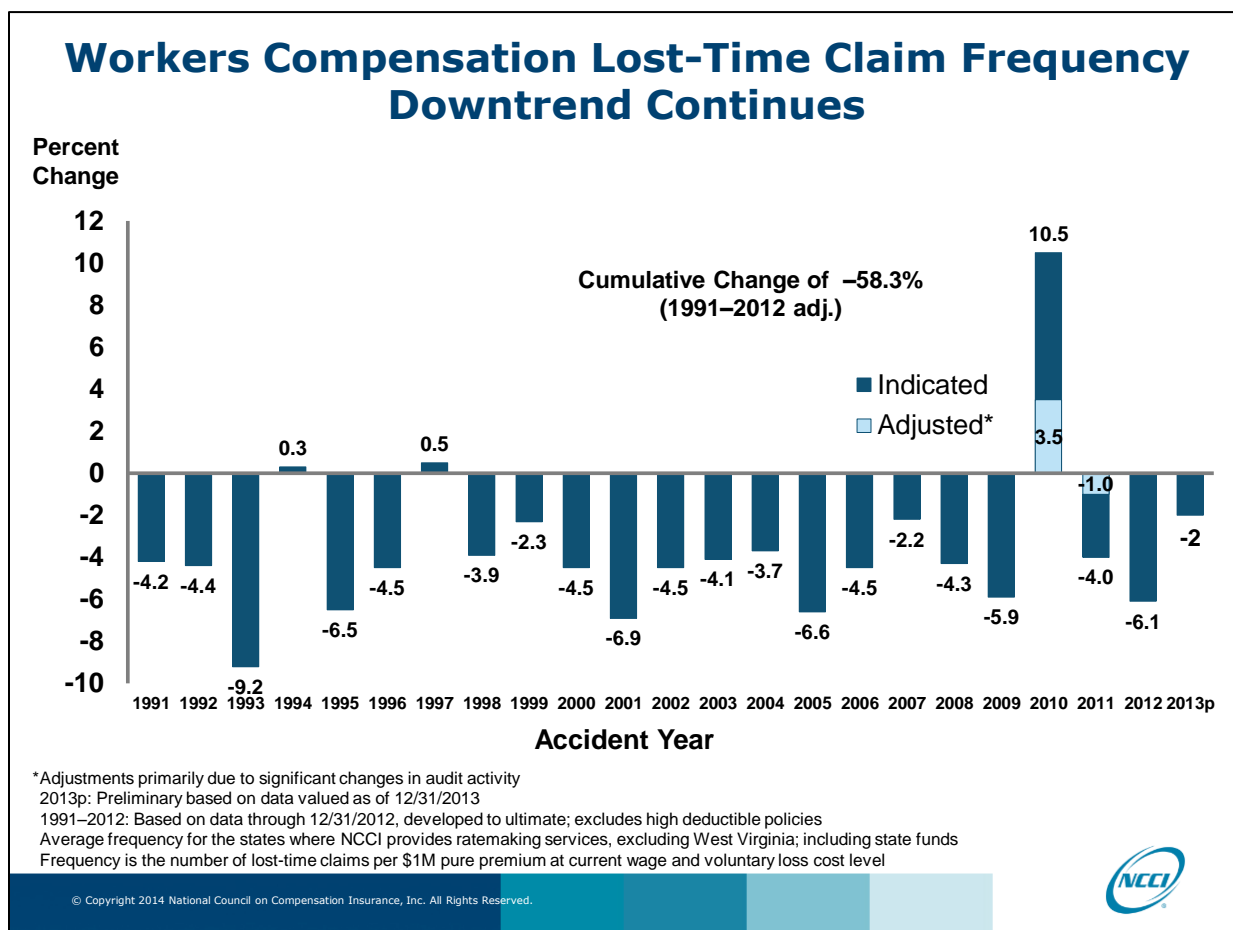


Exhibit 1: Lost-Time Claim Frequency Declined in 2013

¹ Average weekly wages are obtained from the US Bureau of Labor Statistics; Quarterly Census of Employment and Wages (QCEW).

² The frequency changes for Accident Years 2012 and prior are based upon lost-time claim counts that have been developed to ultimate level. The Accident Year 2013 frequency change represents a preliminary estimate that may be revised as additional information becomes available. It is based on a comparison of preliminary undeveloped lost-time claim counts for Accident Year 2013 as of December 31, 2013 vs. Accident Year 2012 as of December 31, 2012.

The Great Recession of 2007 to 2009 is viewed by many economists as the most severe economic downturn since the Great Depression. Previously, NCCI identified three recessionary factors that had a significantly greater effect on reported workers compensation frequency than would be expected in a normal economy: changes in industry mix, changes in average hours worked per week, and changes in premium audits.³ After adjusting reported data to account for these factors, frequency rose 3.5% in Accident Year 2010 and declined by 1.0% in Accident Year 2011.

Since the conclusion of the recession, industry mix has been more stable, premium audit adjustments have risen toward historical levels, and the average length of the workweek has increased to the pre-recession level. For these reasons, the recessionary adjustments applied to the 2010 and 2011 changes in frequency are no longer necessary.

Several factors may have contributed to the abrupt halt in 2010 in the long-term decline in frequency. There is evidence of an influx of small lost-time claims in 2010. Workers, fearful of losing their jobs, may have postponed filing workers compensation claims in 2009, but might have become less hesitant to file claims as the economy began to show signs of modest improvement. While the extent to which this phenomenon occurred is unclear and cannot be confirmed by NCCI, it may have contributed to the observed increase in claim frequency in 2010.

NCCI rate filings are primarily based on policy year data, which represents an exact match of premiums and losses from the same group of policies. The majority of NCCI rate filings made in 2014 will be based upon state data for Policy Years 2011 and 2012. For this reason, in addition to looking at accident year data, we analyzed **Financial Call** data for Policy Year 2012 as of December 31, 2013. The preliminary change in frequency in NCCI states from Policy Year 2011 to Policy Year 2012 is a decrease of 2.8%.⁴

Using **Statistical Plan** data for policies effective through June 30, 2012,⁵ we were able to examine accident year frequency changes through 2012 in greater detail. For this analysis, our definition of frequency per premium differs slightly from our **Financial Call** data measure as described below:

- **Exposure Accident Year**—To derive earned premiums, final audited premium for each policy was allocated to the appropriate calendar year based on the period of exposure.⁶ In contrast, the **Financial Call** measure is based on reported earned premium, which can be affected by changes in premium audit levels.
- **On-level Procedure**—Premiums are adjusted (on-leveled) to Calendar Year 2012 average carrier rates by class and state, whereas in the **Financial Call** measure, premiums are on-leveled to average NCCI loss costs by state.
- **Premium Basis**—Premiums are on a manual (rate times payroll) basis as compared to a modified (after experience rating) basis in the **Financial Call** measure.

³ See 2012 NCCI report, *Workers Compensation Claim Frequency—2012 Update* by Jim Davis, available on ncci.com.

⁴ The preliminary change in frequency from Policy Year 2011 to 2012 is a decrease of 2.2% for all states excluding Texas.

⁵ Using policies effective through June 30, 2012, NCCI estimates that more than 85% of Accident Year 2012 accidents are included for the states used in this analysis.

⁶ For each policy, final audited premium was allocated to the appropriate calendar year based on the period of exposure. To illustrate, consider a July 1, 2010 policy written for \$8,000 with an audit in August 2011 for \$2,000. The actual earned premiums for this policy in 2010 and 2011 would be \$4,000 and \$6,000 respectively. However this approach derives earned premium of \$5,000 for both years.

Exhibit 2 displays Exposure Accident Year frequency changes by size of loss. Individual claim amounts⁷ were adjusted to the 2012 inflation level prior to assigning to the appropriate size category. Specifically, indemnity losses were adjusted for changes in state average weekly wages and medical losses for changes in the Medical Consumer Price Index (CPI)⁸ through 2012. For this analysis, we define lost-time claims less than \$10,000 as small, between \$10,000 and \$50,000 as midsize, and above \$50,000 as large. The 2008 frequency levels for each size range are indexed to 1.00 to better illustrate the changes by size over the period.

While frequency declined for all three loss sizes from 2008 to 2012, the year-to-year changes vary considerably by size. As noted above, the influx of small claims in 2010, following a sharp decline through 2009, may have been influenced by recessionary factors.

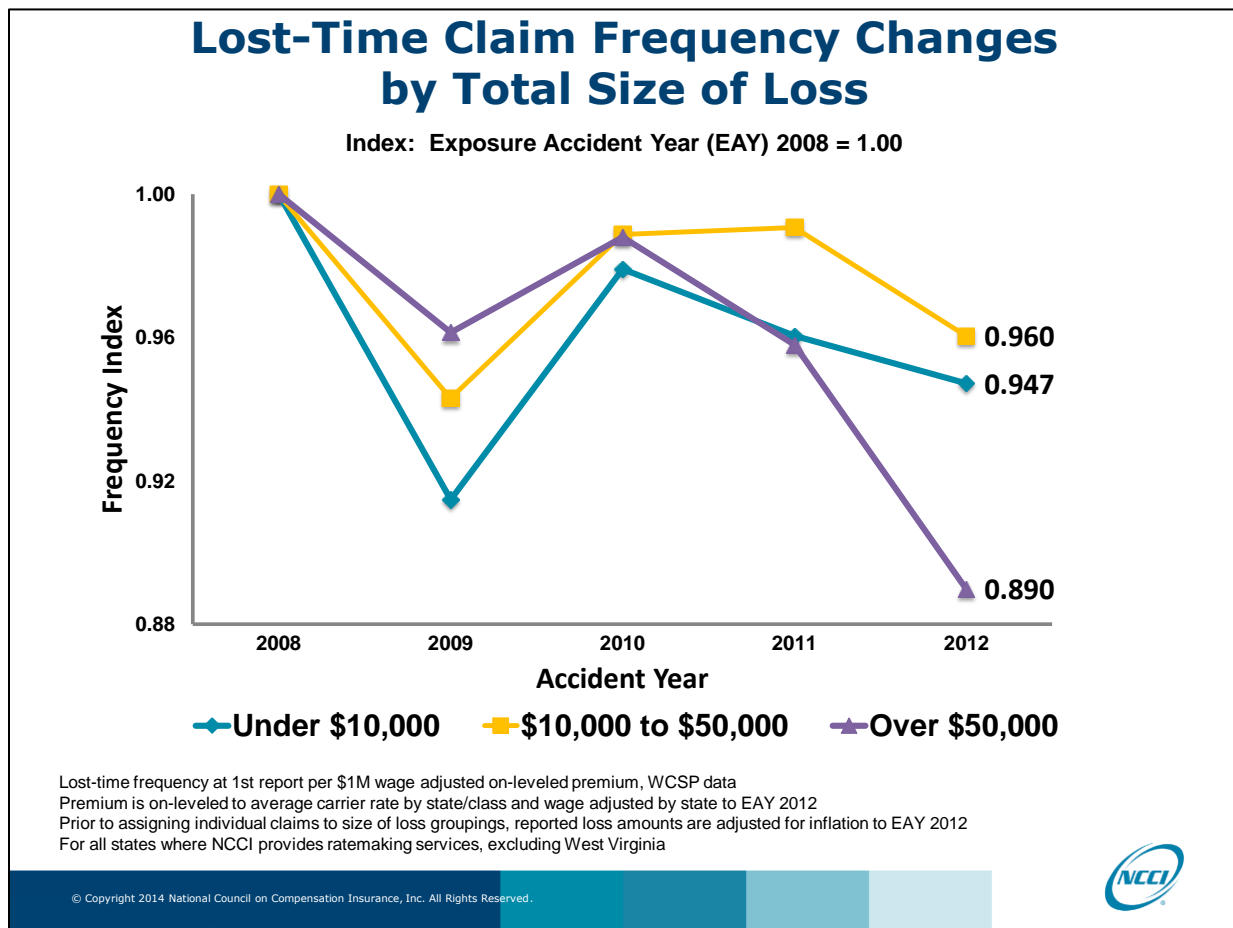


Exhibit 2: Claim Frequency Changes by Size of Claim

⁷ Each claim amount represents reported paid losses plus case reserves for medical and indemnity as of 1st report.

⁸ The Medical CPI is a measure of price inflation for all forms of healthcare, and does not capture changes in utilization.

Exhibit 3 displays the actual frequencies for the three loss sizes underlying Exhibit 2 for the latest five years. The threshold of \$10,000 for the small and medium categories was selected so that the two categories would have approximately the same volume of claims. Most notable is that large claims experienced the sharpest decline. Specifically, from 2011 to 2012, the frequency of claims over \$50,000 declined by 7.1%, as compared to declines of just 1.4% for claims under \$10,000 and 3.1% for claims between \$10,000 and \$50,000.⁹

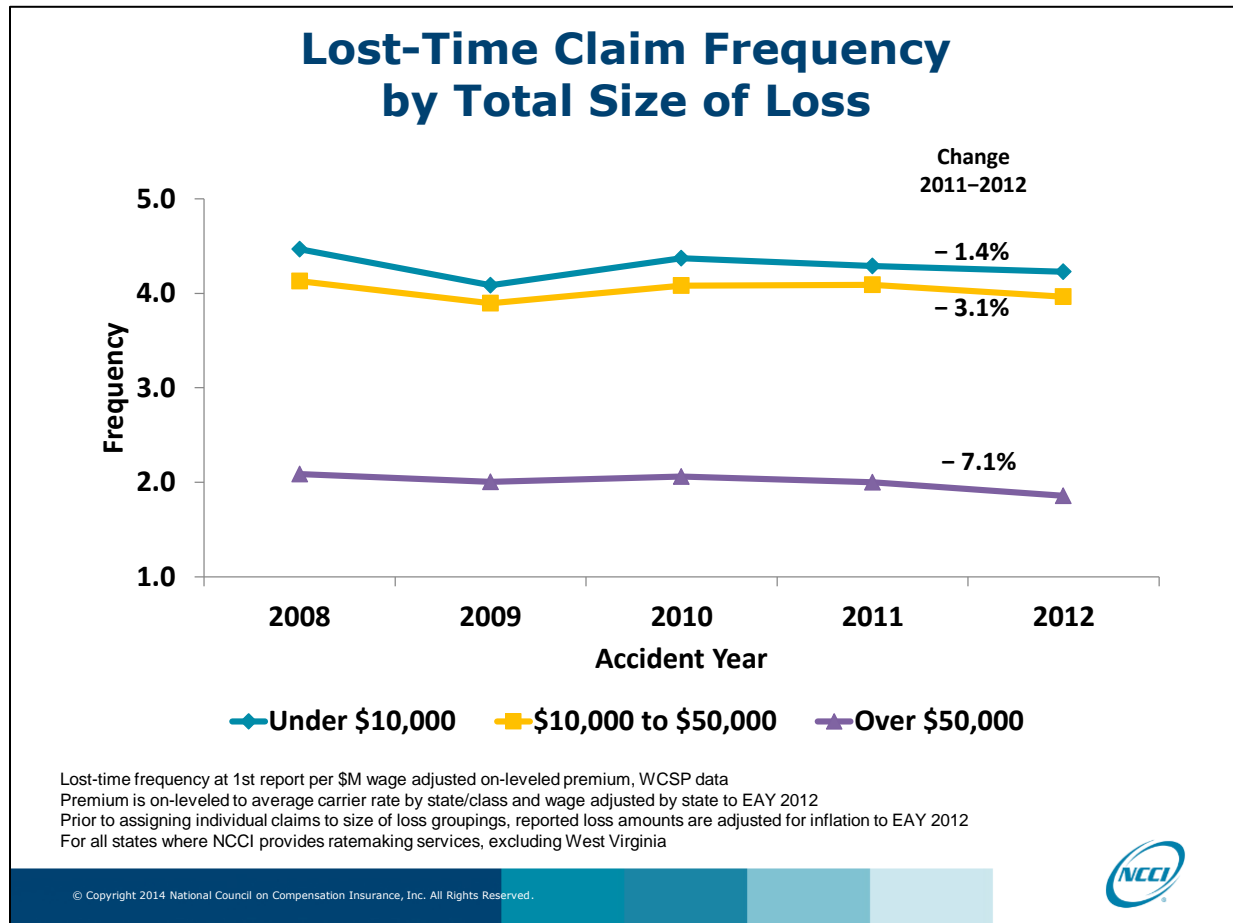


Exhibit 3: Claim Frequencies by Size of Claim

⁹ Using **Statistical Plan** data, the overall change in frequency from Accident Year 2011 to 2012 is –3.1% as compared to –6.1% using **Financial Call** data. The difference is partially attributable to the different definition of frequency and an incomplete Accident Year 2012 using **Statistical Plan** data.

In Exhibit 4 we examined the “claims over \$50,000” category in greater detail to gain insight on the 7% decline from Accident Year 2011 to 2012 and discovered two major drivers. Within the Part of Body group, we found that the frequency of lower back claims declined by 11% versus 6% for all other claims in the category. Similarly, within the Cause of Injury group, we found that the frequency of slip and fall injuries declined by 12% versus 4% for all other claims in the category.

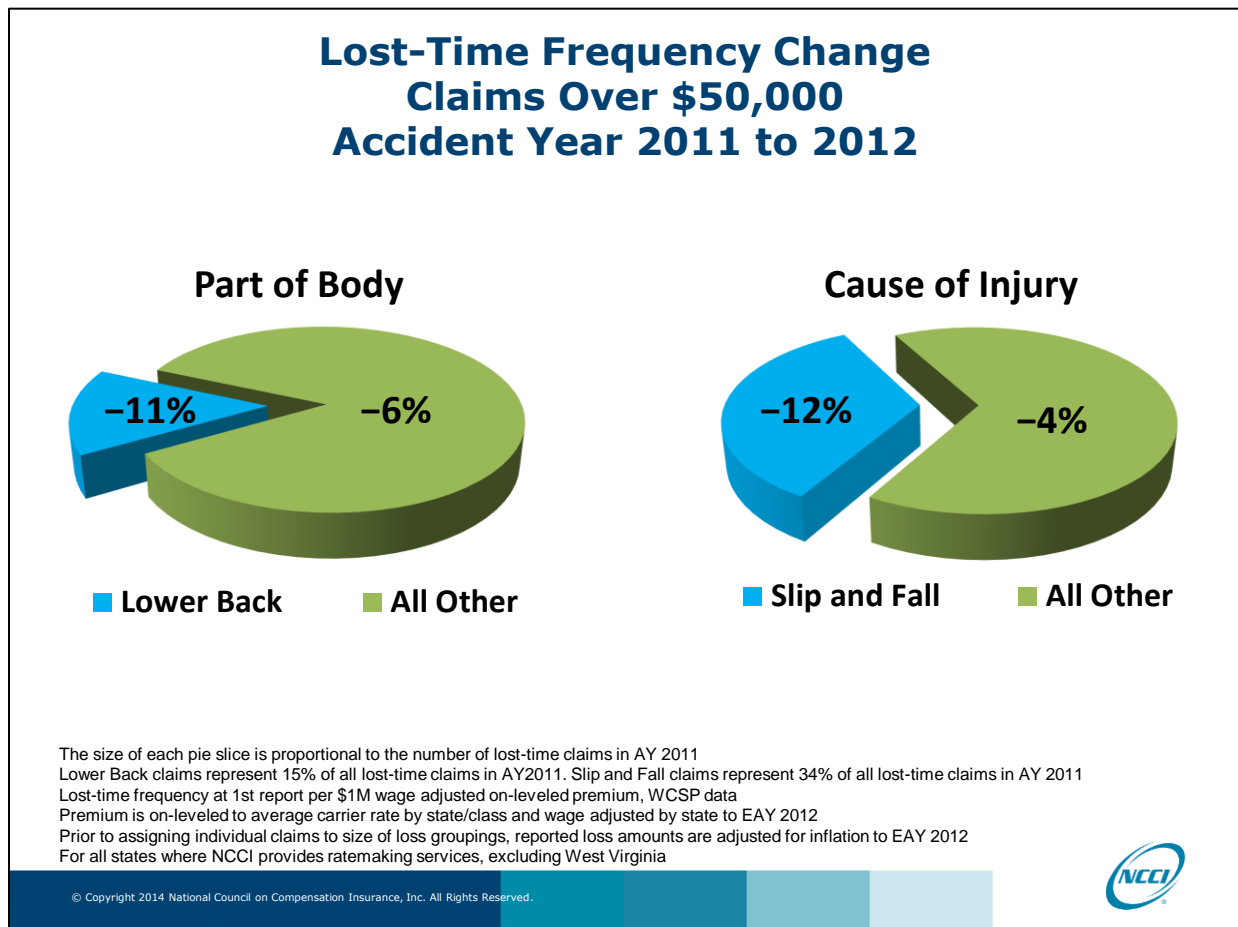


Exhibit 4: Frequency Changes for Claims Over \$50,000

Exhibit 5 displays lost-time frequency by NCCI Industry Group over the latest five exposure accident years. All industries experienced declines in frequency ranging from –5.3% in the Contracting group to –13.0% in the Office & Clerical group.

The overall change of –5.5% is on the high end of the range, due to a change in industry mix. The Contracting share of premium declined over the period. The Contracting Industry Group has very high frequency per worker (and per payroll) relative to other industries. In contrast however, it has a relatively low frequency per premium, as shown in the table. This is due to the fact that the premiums reflect claim frequency (per payroll) and claim severity, both of which are relatively high for the construction industry.¹⁰ Thus, the decline in the Contracting share placed upward pressure on overall frequency, resulting in a lower overall frequency decline, namely –5.5%, which almost falls outside of the range of the individual industry group frequency changes of –13.0% to –5.3%.

Accident Year Frequency Changes by Industry Group

Industry Group	2008 Frequency (Premium Share)	2009 Frequency (Premium Share)	2010 Frequency (Premium Share)	2011 Frequency (Premium Share)	2012 Frequency (Premium Share)	2008 –2012 Change in Frequency
Manufacturing	12.3 (14%)	10.5 (13%)	11.5 (13%)	11.5 (13%)	11.4 (14%)	-7.4%
Contracting	7.3 (32%)	6.7 (29%)	7.1 (28%)	7.0 (28%)	6.9 (28%)	-5.3%
Office & Clerical	10.3 (11%)	9.8 (12%)	10.0 (13%)	9.6 (13%)	9.0 (12%)	-13.0%
Goods & Services	14.0 (29%)	13.2 (31%)	13.7 (31%)	13.5 (31%)	13.1 (31%)	-6.0%
Miscellaneous	10.1 (14%)	9.4 (15%)	9.7 (16%)	9.7 (15%)	9.2 (15%)	-8.7%
Total	10.6	10.0	10.5	10.4	10.1	-5.5%

Lost-time frequency at 1st report per \$1M wage adjusted on-leveled premium, WCSP data
Premium is on-leveled to average carrier rate by state/class and wage adjusted by state to EAY 2012
For all states where NCCI provides ratemaking services, excluding West Virginia

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Exhibit 5: Claim Frequency by Industry Group

¹⁰ Average reported severity for the construction industry is approximately 50% higher than that of all industries combined.

Exhibit 6 displays lost-time frequency by NCCI Hazard Group over the latest five accident years. Classes are assigned to one of seven Hazard Groups based upon the class's propensity to generate large claims. Average claim severity increases as we move from Hazard Group A to G. Since, as discussed above, premiums reflect both frequency (per payroll) and severity, as we move from Hazard Group A to G, frequency per premium decreases.

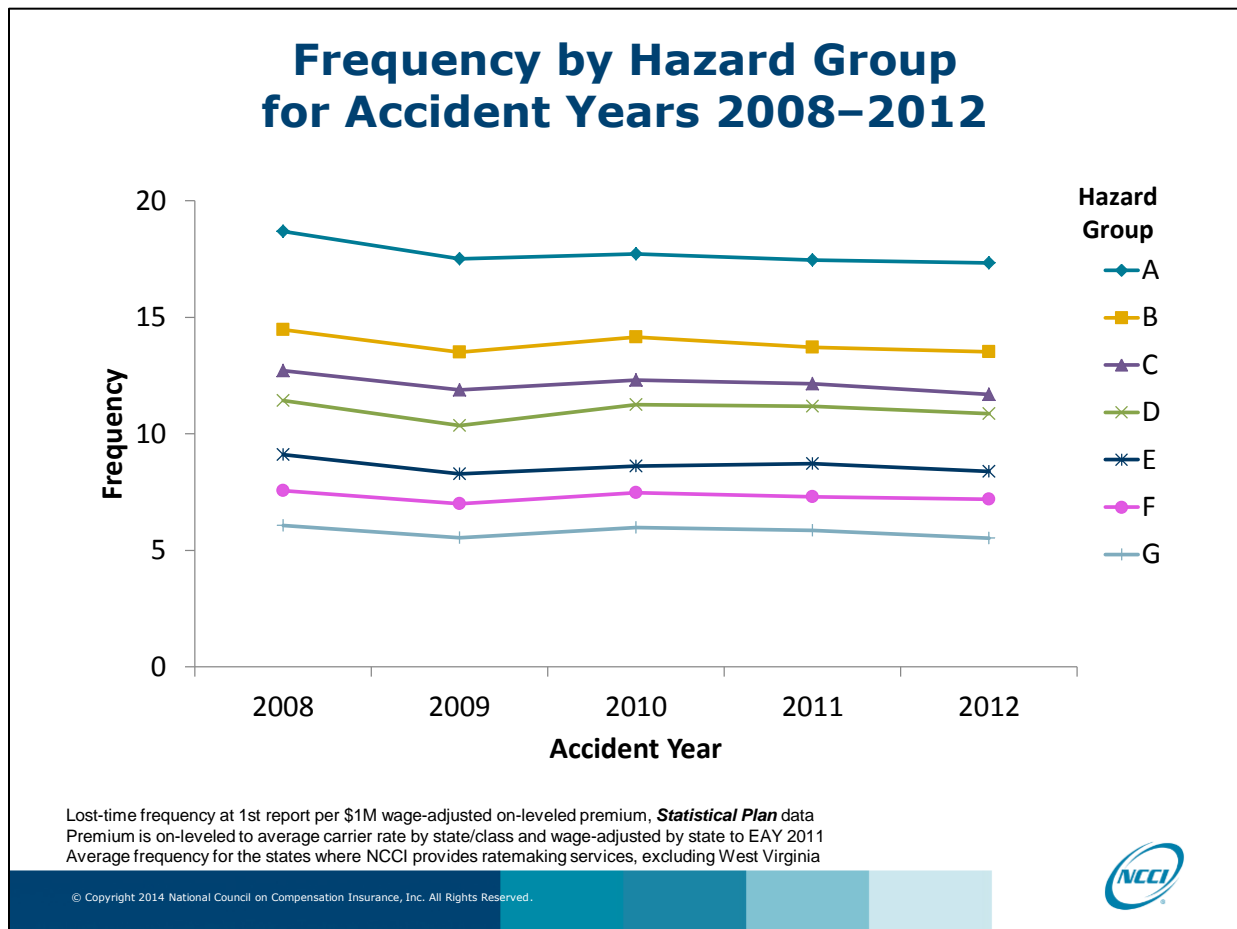


Exhibit 6: Claim Frequency by Hazard Group

When analyzing overall workers compensation claim costs, it is important to consider both changes in frequency and severity. While claim frequencies have generally declined over the last two decades, claim severities have continued to increase.

Exhibit 7 displays average indemnity claim costs since 1995, along with the corresponding year-to-year changes. The increases in 2007 and 2008 may have been influenced by a lack of return-to-work opportunities during the recession. The decrease of 2.7% in the average indemnity cost per claim in 2010 can be attributed to the influx of small lost-time claims. NCCI estimates an increase of 2% in 2013.

The larger decline in frequency from 2011 to 2012 for claims over \$50,000 than for smaller claims, shown in Exhibit 3, might have mitigated the severity increase from 2011 to 2012. Recall that for Exhibit 3 we removed the effect of inflation in order to make the size of loss categories comparable from year to year. In contrast, inflation directly impacts the severity changes shown in Exhibits 7 and 8.

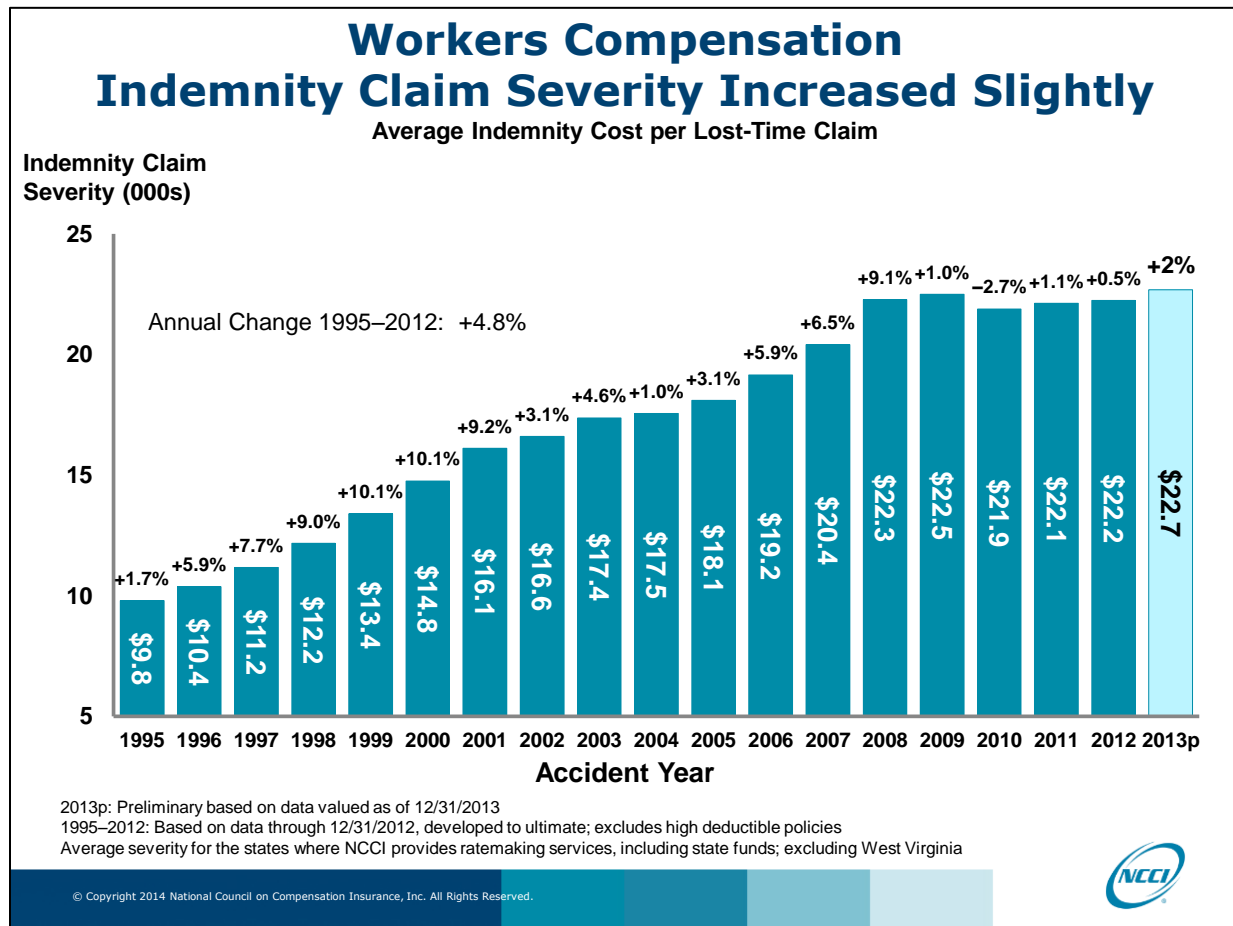


Exhibit 7: Change in Average Indemnity Cost per Claim

Exhibit 8 displays average medical claim costs per lost-time claim since 1995, along with the associated year-to-year changes. Following increases of 2.6% and 3.0% in 2011 and 2012 respectively, NCCI estimates an increase of 3% in the average medical cost per lost-time claim in 2013. These changes are modest in comparison to historical changes. However, the underlying drivers of medical costs are still present and remain a concern.

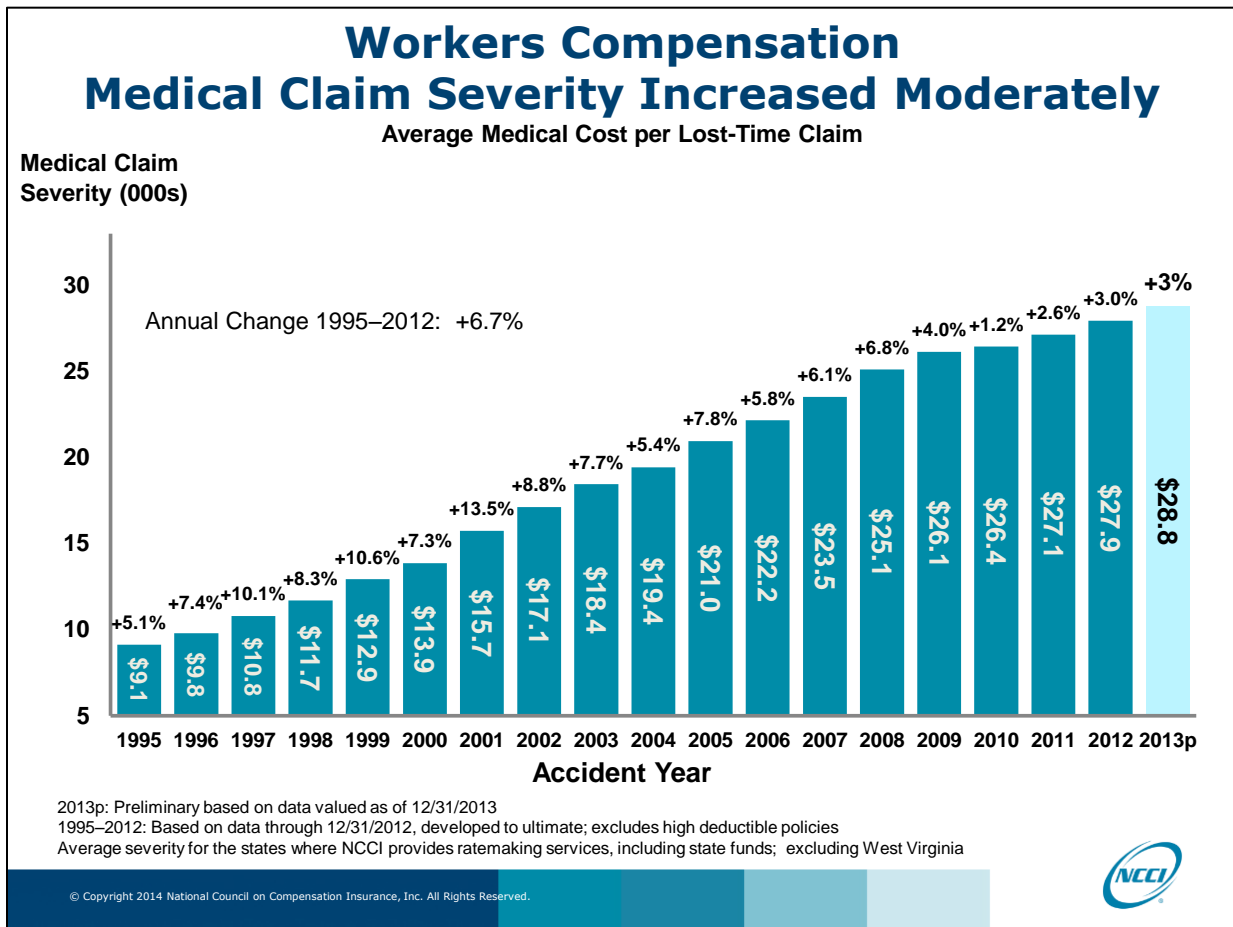


Exhibit 8: Change in Average Medical Cost per Lost-Time Claim

II. FREQUENCY CHANGES BY SELECTED CLAIM CHARACTERISTICS

In the remainder of this paper, we introduce an alternative frequency measure, frequency per payroll aggregated by policy year expiring (PYE). The data source is **Statistical Plan** data in states for which NCCI provides ratemaking services (excluding West Virginia). Though not as recent as **Financial Call** data, **Statistical Plan** data contains detailed information by policy that allows us to perform a variety of analyses.

While it is not uncommon for a small number of claims to be reported subsequent to 1st report¹¹, we have focused on changes in frequency observed at 1st report. This allows us to include the latest year available and ensures a valid year-to-year comparison.

Exhibit 9 compares our frequency per payroll vs. frequency per premium measures for NCCI's five major industry groups for PYE 2012:

Frequency per Payroll—Lost-time claims at 1st report per \$1 million payroll, adjusted for changes in QCEW average weekly wages by state through PYE 2012

Frequency per Premium—Lost-time claims at 1st report per \$1 million manual premium, adjusted (on-leveled) to PYE 2012 average carrier rates by class and state, and adjusted for changes in QCEW average weekly wages through PYE 2012¹²

Since the chart contains only PYE 2012 frequencies, the wage and on-level adjustments in the definitions above are not necessary. The chart is divided into four quadrants, with frequency per premium on the horizontal axis and frequency per payroll on the vertical axis. The frequencies have been indexed to the average frequency for all classes in all NCCI states.

As the chart indicates, frequency per payroll varies considerably by industry group. For example, the Contracting classes (e.g., Roofing, Carpentry) have very high frequency per payroll, whereas Office & Clerical classes have very low frequency per payroll. Hence, a change in industry (or class) mix will impact the overall frequency per payroll for all classes combined. The measure is very useful in comparing industries or classes, but caution should be exercised when examining changes in frequency per payroll for all classes combined.

On the other hand, frequency per premium varies considerably less by class because frequency is reflected in premiums charged. Therefore, this measure is less distorted by changes in industry (or class) mix. Frequency per premium is better suited for examining long-term trends in frequency for all classes combined (e.g., by state or countrywide).

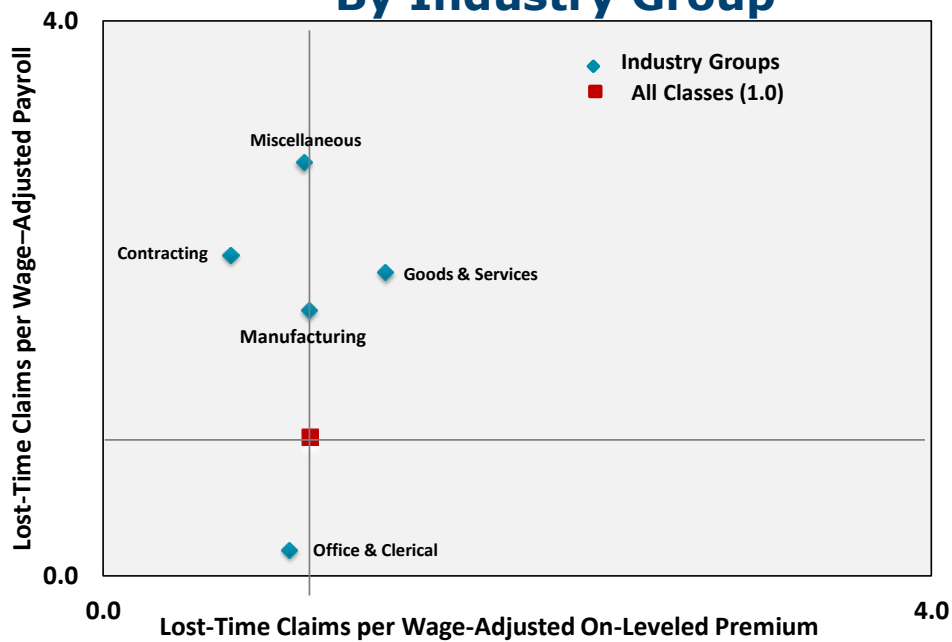
In previous frequency research papers¹³ we explored how shifts in industry mix can have much different effects on these two measures. This was of particular interest given the dramatic reductions in payroll in the manufacturing and contracting sectors during the Great Recession. As we are now a few years removed from the recession, industry mix has stabilized considerably.

¹¹ 1st report is valued 18 months after policy effective month. Approximately 95% to 98% of claims are reported as of 1st report.

¹² This PYE measure is identical to the EAY measure used in Exhibits 2 through 6, with the exception that the adjustments to current level are to PYE 2012 as opposed to Calendar Year 2012.

¹³ See NCCI reports: *Workers Compensation Claim Frequency—2011 Update* by Jim Davis and Yair Bar-Chaim, *Workers Compensation Claim Frequency—2012 Update* by Jim Davis, *Workers Compensation Claim Frequency—2013 Update* by Jim Davis and Daniel Stern, available on ncci.com.

Claim Frequency for Policies Expiring in 2012 By Industry Group



PYE 2012 is policies expiring in 2012

Frequency at 1st report, indexed to all class average for states where NCCI provides ratemaking services (excluding West Virginia);

Statistical Plan data

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Exhibit 9: Frequency by Industry Group

For this year's update, we have analyzed changes in frequency per payroll in total and for the following categories:

- Injury Type
- Part of Body
- Nature of Injury
- Cause of Injury

Exhibit 10 shows that overall frequency per payroll declined by –13.9% from PYE 2008 to 2012 in NCCI states, but leveled off somewhat over the latest three years. For this analysis, PYE 2012 was the latest policy year available from the *Statistical Plan* data.

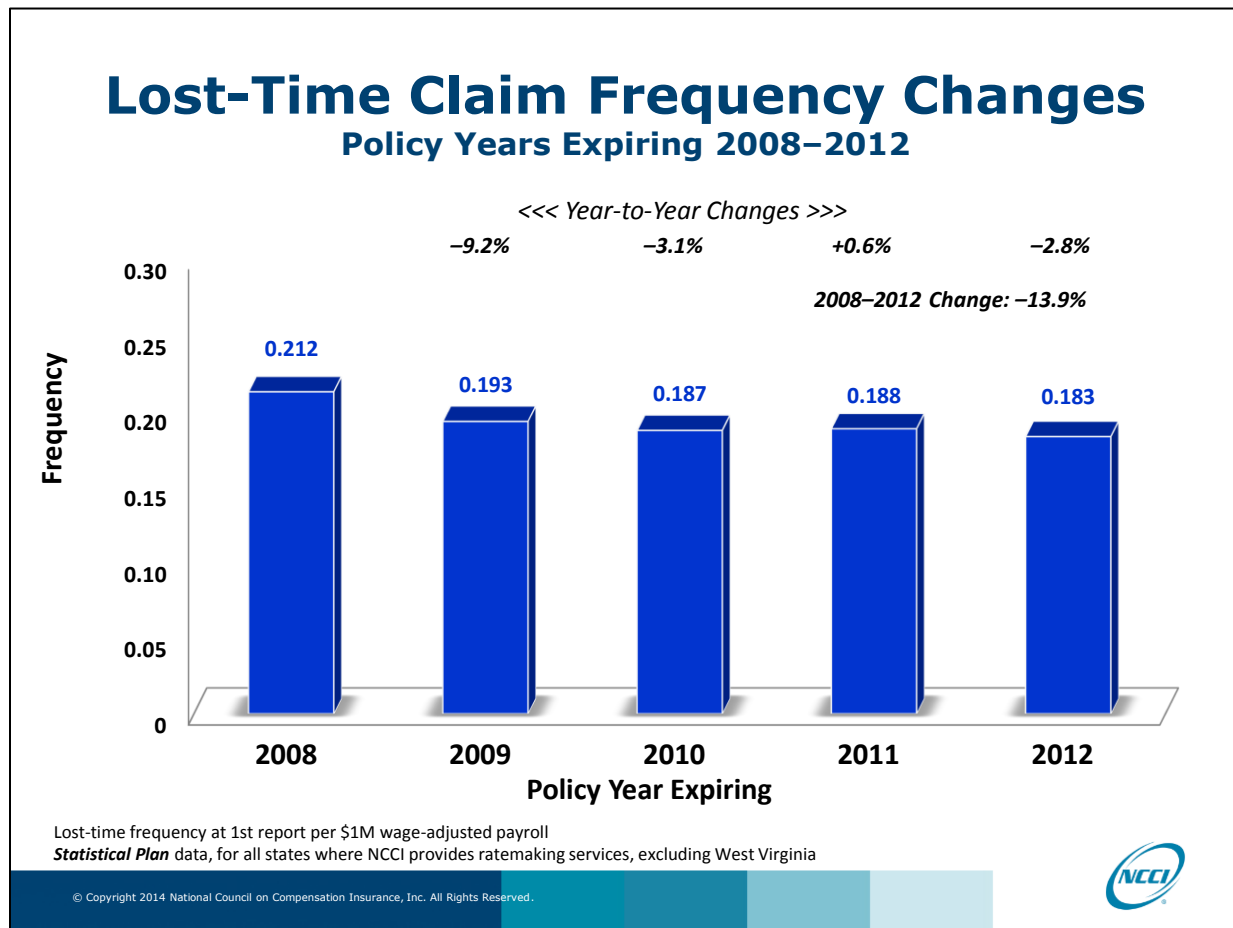


Exhibit 10: Lost-Time Claim Frequency per Payroll

Exhibit 11 displays changes in lost-time frequency per payroll by NCCI Injury Type over the latest five years. Frequency changes for Permanent Partial and Temporary Total disability claims were consistent with the overall decline of 13.9% for all injury types over the period. Fatal and Permanent Total claims, however, exhibit far more year-to-year volatility than other injury types, due to the much smaller volume of these claims.

This exhibit is based on the Injury Type reported as of 1st report. The development of claim counts from 1st report to ultimate level can differ considerably by injury type. For example, subsequent to 1st report, some claims will become Fatal claims and others will become Permanent Total disability claims. As shown in the exhibit, Fatal claim frequency at 1st report is more than three times higher than permanent total disability claim frequency. However, this difference will decline as claims age, since more Permanent Total claims than Fatal claims will emerge beyond 1st report.¹⁴

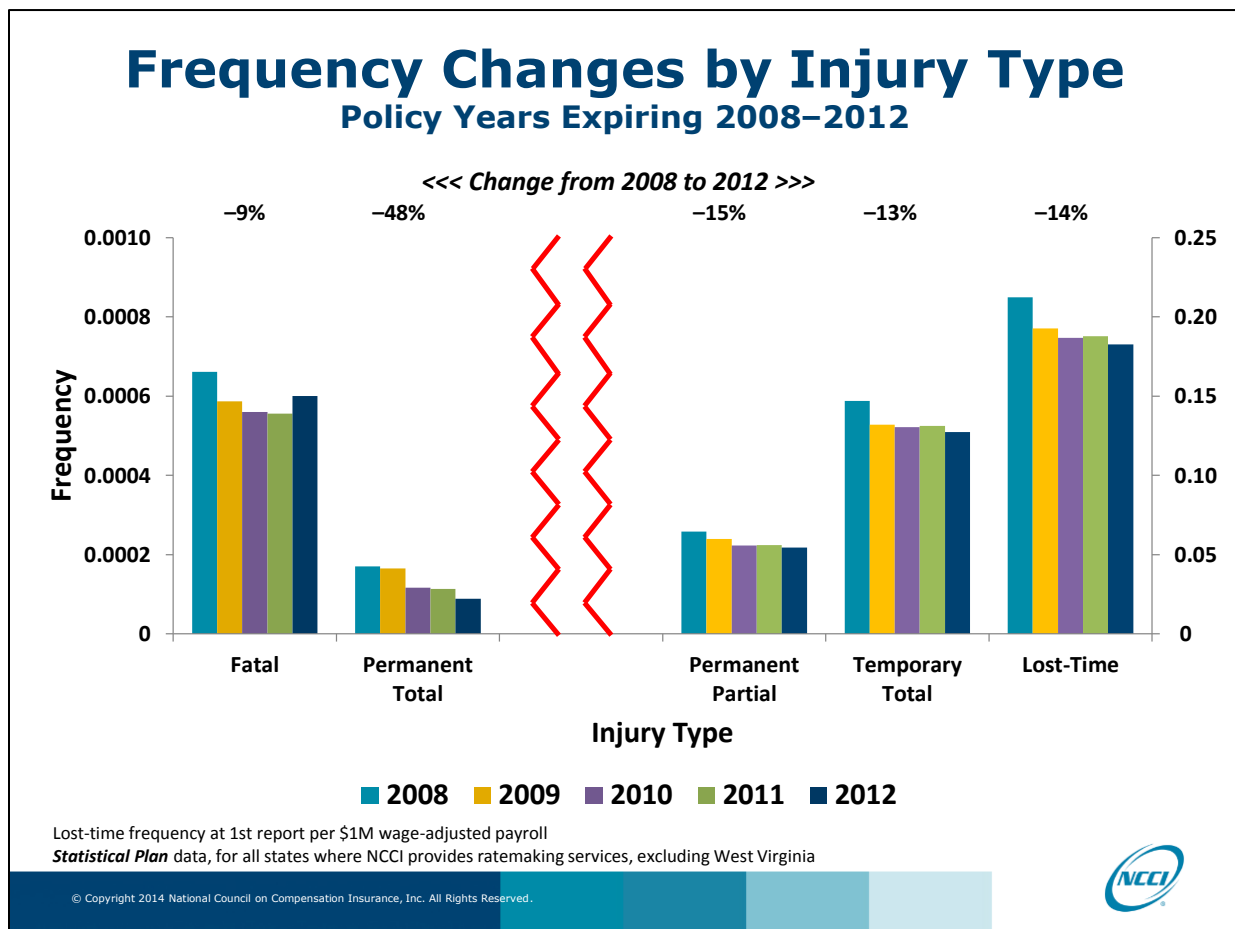


Exhibit 11: Claim Frequency by Injury Type

¹⁴ For more information on claims by type of injury, refer to the NCCI *Annual Statistical Bulletin*.

Exhibit 12 displays changes in lost-time frequency per payroll by Part of Body from PYE 2008 to 2012. For most body parts, the change over the latest five years is fairly consistent with the overall decline of 13.9%. One notable exception is that the frequency of injuries involving the arm and shoulder, which represent more than 15% of all injuries, remained flat over the period. This may be influenced by an older workforce, where rotator cuff injuries are not uncommon. The frequency of injuries involving multiple body parts declined 22% over the period displayed.

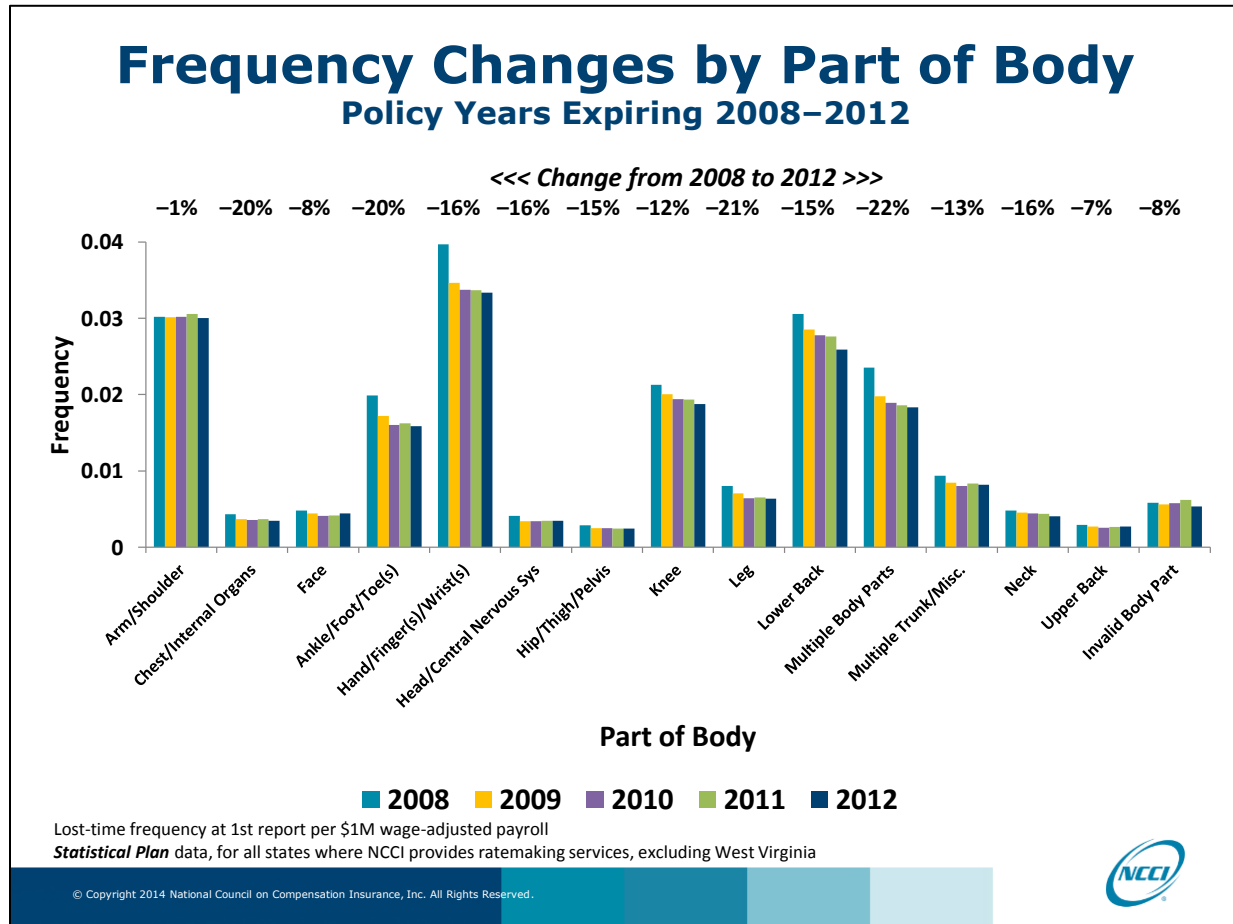


Exhibit 12: Claim Frequency by Part of Body

In Exhibit 13, we have assigned all lost-time claims into one of two categories (Likely-to-Develop and Not-Likely-to-Develop) based on Part of Body. NCCI identifies Likely-to-Develop claims as those with body parts such as head, skull, neck, trunk, spinal cord, upper and lower back, or multiple body parts.¹⁵ Not-Likely-to-Develop claims include those involving fingers, hand, arm, wrist, toes, foot, and ankle. Likely-to-Develop claims typically have higher loss development than Not-Likely-to-Develop claims beyond 1st report. Likely-to-Develop claims experienced a sharper decline in claim frequency per payroll from PYE 2008 to 2012.

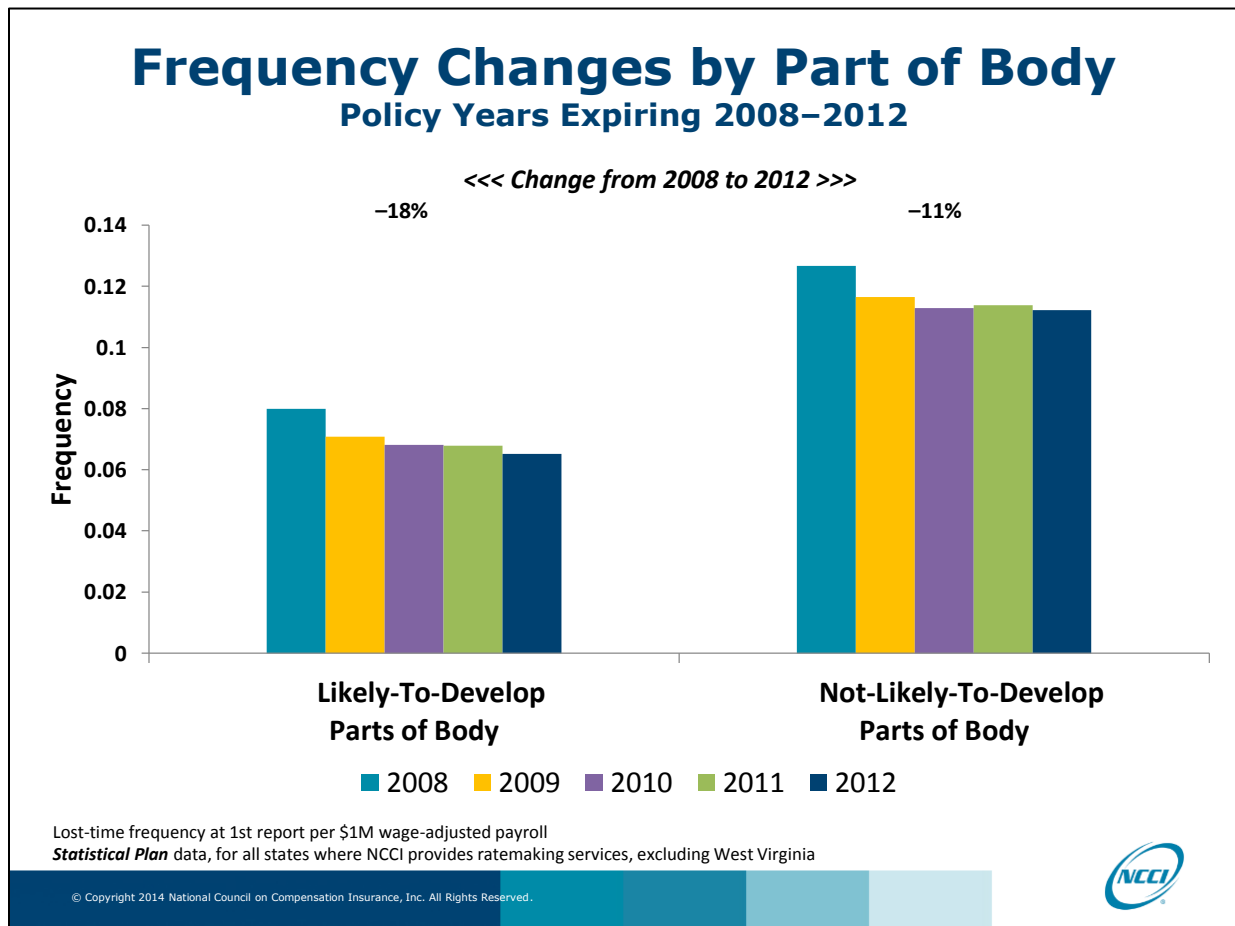


Exhibit 13: Claim Frequency by Likely vs. Not-Likely to Develop

¹⁵ Under NCCI's class ratemaking methodology, Part of Body is one of three claim characteristics (along with injury type and open vs. closed status) used to create homogeneous claim groupings for loss development purposes. Refer to the report, *Class Ratemaking for Workers Compensation: NCCI's New Methodology* by Tom Daley, available on ncci.com.

Exhibit 14 highlights changes in lost-time claim frequency per payroll by Nature of Injury (NOI). Sprain/Strain constitutes the largest share of claims and shows a decline of 10% from PYE 2008 to 2012. This compares to a decline of 17% for all other categories combined. Also notable is the continued decline in Carpal Tunnel Syndrome (CTS) claim frequency of 25%. However, the rate of decline in CTS claim frequency has slowed a bit in recent years. CTS claims, which involve injuries to the hand, wrist, or both, have received a great deal of national attention, but make up a very small portion of total claims.¹⁶ For more discussion on the decline in CTS claim frequency, see the September 2010 NCCI research brief on frequency.

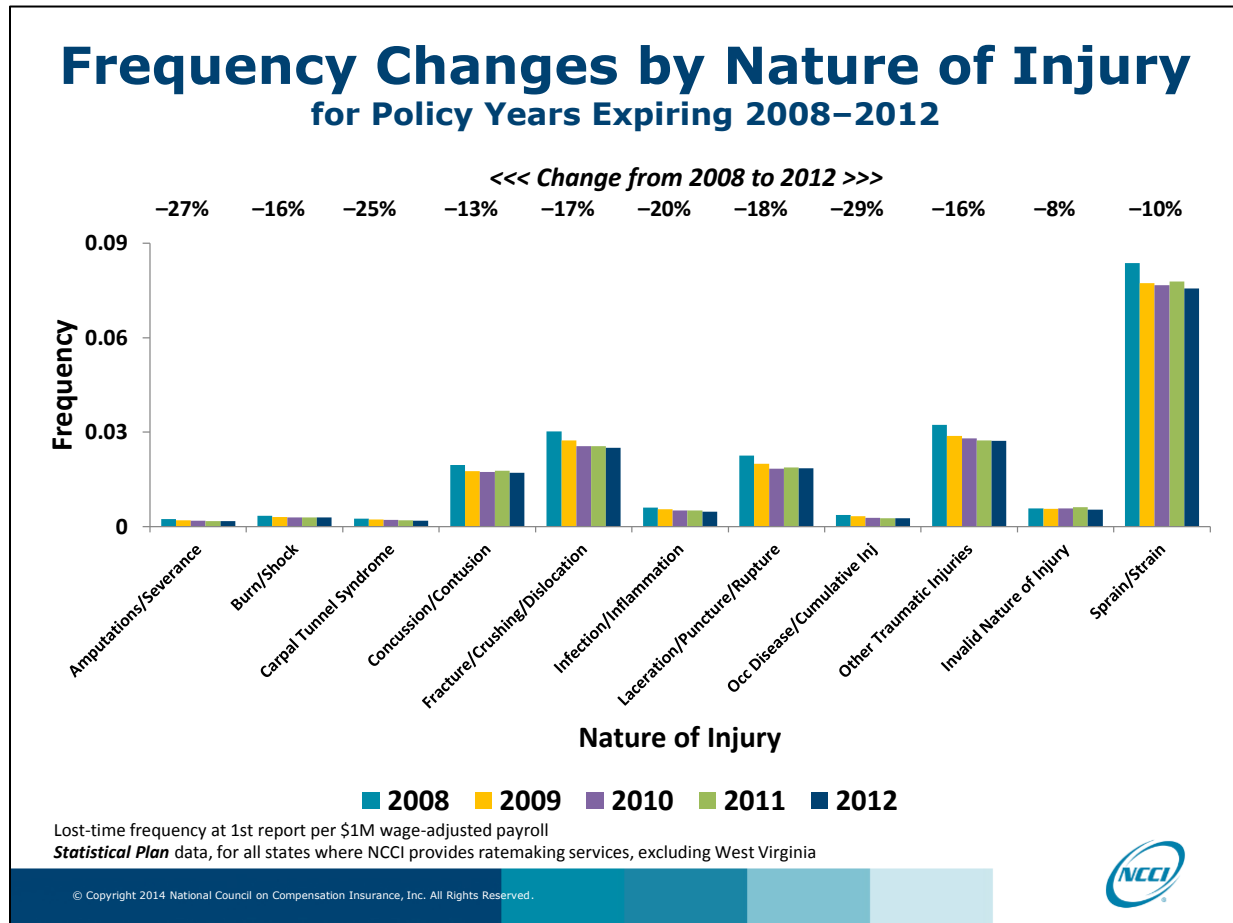


Exhibit 14: Claim Frequency by Nature of Injury

¹⁶ *Workers Compensation Claim Frequency Continues to Decline in 2009* by Jim Davis and Matt Crotts, available on ncci.com.

Exhibit 15 compares changes in lost-time claim frequency by Cause of Injury (COI). The frequency of claims in the Cumulative Injury category experienced a sharp decline of 18% over the five-year period. Injuries in the Cut/Puncture/Scrape category declined by 23%. A possible explanation is that the types of injuries in both of these categories may be relatively more preventable through loss control and safety measures.

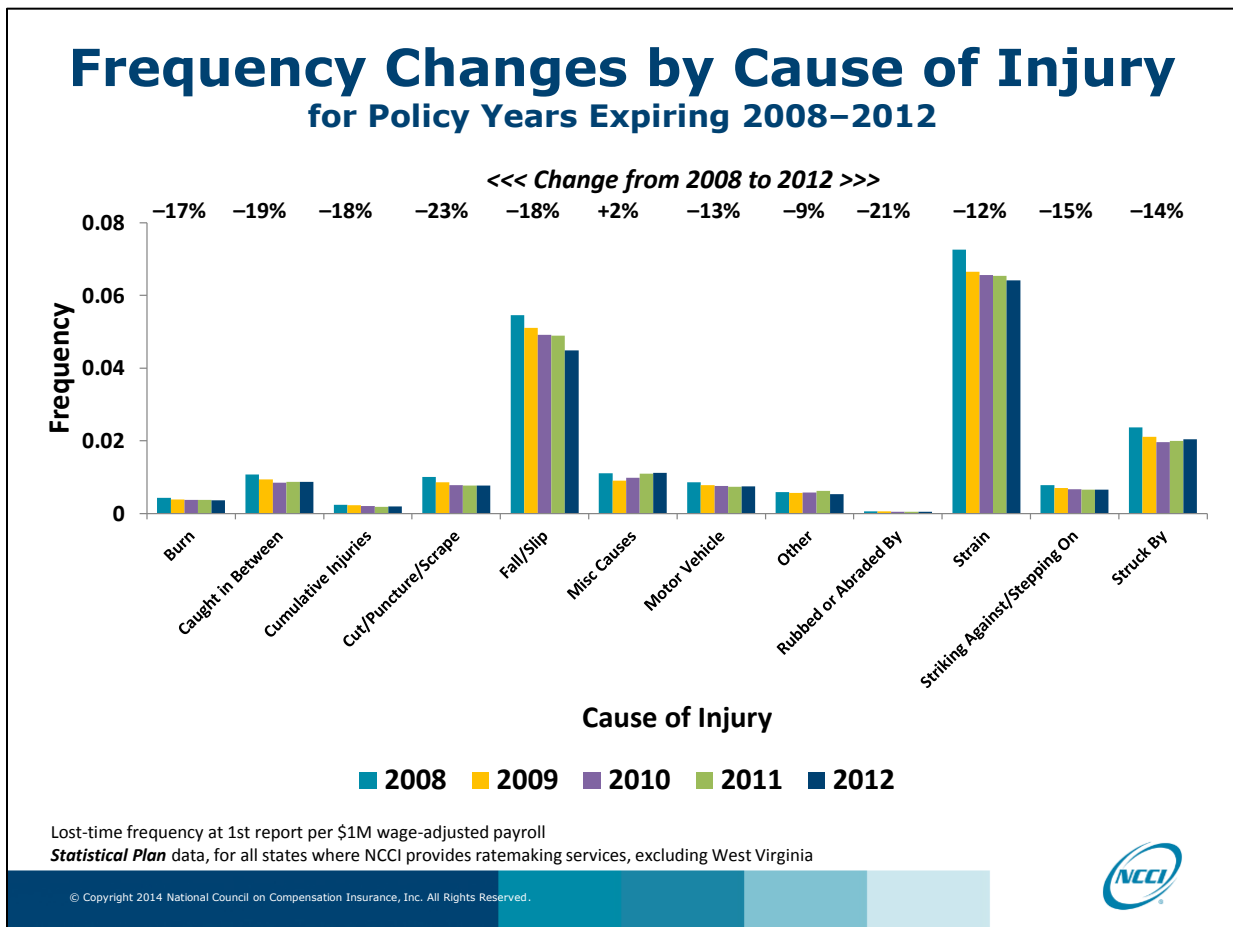


Exhibit 15: Claim Frequency by Cause of Injury

III. FREQUENCY FOR POLICIES WITH VS. WITHOUT SMALL DEDUCTIBLES

When electing to purchase workers compensation insurance, employers have the option of selecting various types of deductibles (e.g., per claim, per occurrence, per policy) as well as various deductible amounts. In this section we will compare claim frequency over the most recent five years for employers that chose a small deductible vs. those that did not choose a deductible.

A direct comparison of claim frequency for small deductible vs. no deductible policies in a given year may or may not provide meaningful results due to the different mix of classes within the two categories. That is, an observed difference in frequency between the two categories may be more a function of the class mix than the selection of a deductible.

To address this issue, and therefore facilitate a valid comparison between the small deductible and no deductible categories, we adjusted for differences in industry mix in each year. We determined what the frequency for employers that did not purchase deductibles would have been if the payroll shares by class and state were identical to those for employers that purchased policies with small deductibles.¹⁷

Many of the analyses that follow will compare:

1. No deductible frequency—Frequency for policies with no deductible.
2. Mix adjusted no deductible frequency—Frequency for policies with no deductible after adjusting to the mix of payroll by state and class for policies with small deductibles.
3. Small deductible frequency—Frequency for policies having a per-claim or per-occurrence deductible of \$25,000 or less.¹⁸

We found that the use of small deductibles is influenced by the NCCI **Experience Rating Plan** (ER Plan). The NCCI ER Plan plays an integral role in determining the final cost of workers compensation insurance. The purpose of experience rating is to tailor an individual employer's premium to its experience and to provide an incentive to maintain a safe workplace. The ER Plan is mandatory in all NCCI jurisdictions for employers that meet the premium eligibility requirements. The ER Plan predicts whether a qualifying risk is likely to develop loss experience that is better or worse than that of the average risk in a particular classification. Employers whose claims experience is better than the average of employers in the same classification will receive a credit **Experience Rating Modification** (E-mod). Employers whose experience is worse than average receive a debit E-mod.

We examine the following groups of NCCI states (see Appendix for listing of states):

- **Gross Reporting States**—States that permit the use of losses gross of the deductible in Experience Rating as filed by NCCI
- **Net Reporting States**—States that mandate the use of losses net of the deductible in Experience Rating

In deriving the E-mod, actual losses of the employer over a three-year period are compared to expected losses for employers in the same classification. In Gross Reporting States, this produces an apples-to-apples comparison in that both actual losses in the numerator and expected losses in the denominator are on a gross of deductible basis. Due to the requirements in Net Reporting States, however, the use of actual losses net of deductible in the numerator introduces a downward bias in E-mods for risks with small deductibles.

¹⁷ Specifically, we obtained the frequencies (per payroll) by class and state for policies with no deductible. We then weighted these frequencies with the payroll by class and state for small deductible policies. We define the weighted average as the mix adjusted frequency for no deductible policies.

¹⁸ For this analysis, policies that do not have a per-claim or per-occurrence deductible, but have a per-policy deductible of \$25,000 or less are also included in the small deductible category.

Exhibit 16 displays frequency per payroll in all Gross Reporting States combined for small deductible and no deductible policies over the latest five policy years. The exhibit also shows the mix adjusted frequency for no deductible policies which, as discussed above, is more directly comparable to the small deductible frequency.

Our a-priori expectation was that employers with relatively low frequency for their class would be more likely to select a deductible in order to lower their net cost (premium after deductible credit plus claim payments below the deductible amount). However, the observed small deductible frequency was only slightly lower than the mix adjusted no deductible frequency in PYE 2008 through 2011, and higher in PYE 2012. We believe that several factors are influencing this result including the following:

- In some cases, insurers may offer voluntary coverage to high-risk employers with a poor claims history with the stipulation that the policy be written with a deductible. The inclusion of these employers might put upward pressure on small deductible claim frequency.
- Employers with low tolerance to risk may be less likely to select a deductible, regardless of whether the decision would be expected to lower their net cost. These employers might put downward pressure on the frequency for no deductible policies.

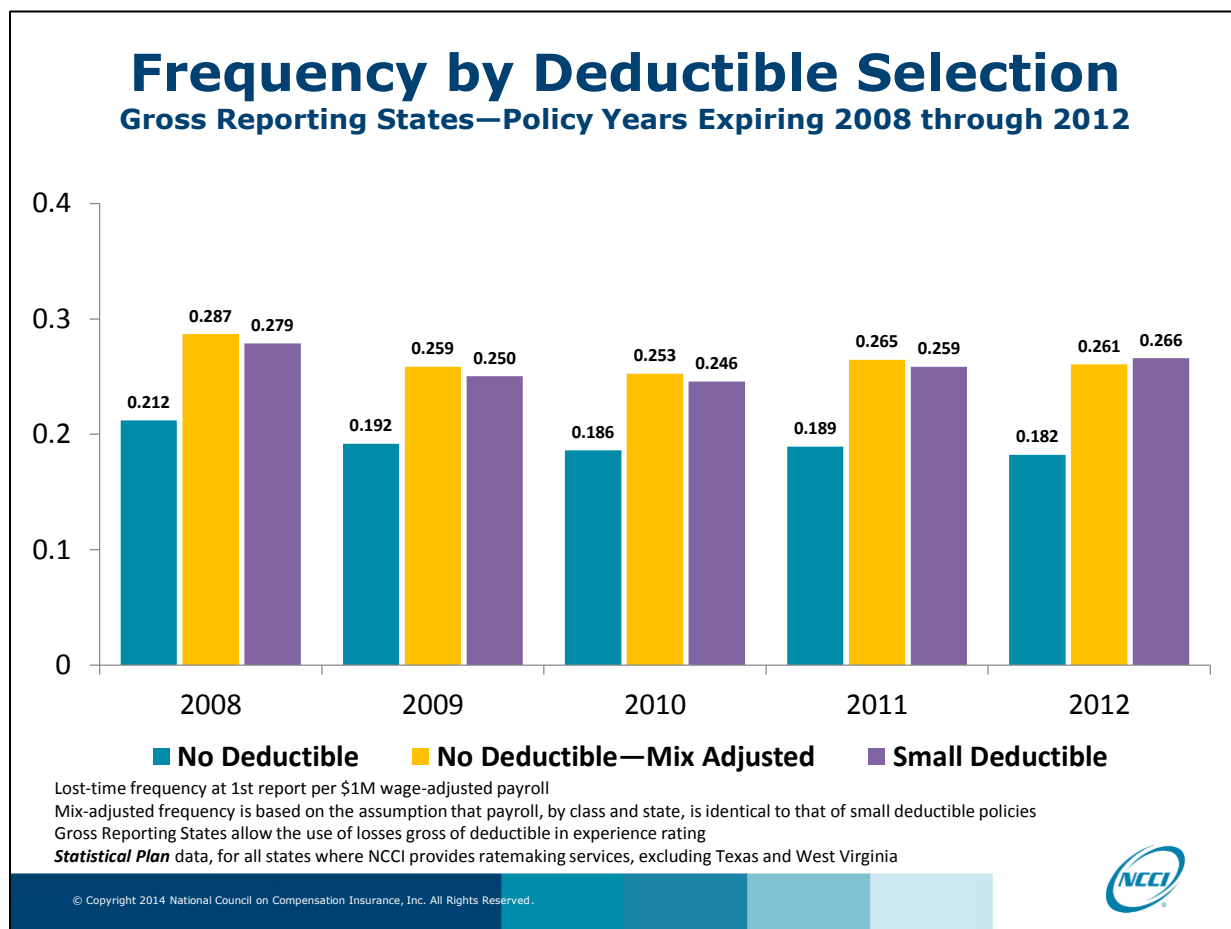


Exhibit 16: Claim Frequency by Choice of Deductible in Gross Reporting States

Exhibit 17 displays frequency per payroll in all Net Reporting States combined for small deductible, no deductible, and no deductible mix adjusted policies over the latest five policy years.

Employers that chose deductibles in Net Reporting States had comparable or higher frequency than those that did not choose deductibles (after mix adjustment) in all five years. This is distinctly different from the results in Gross Reporting States. This shows that those choosing deductibles in Net Reporting States not only have a downward bias in their E-mods, but also have higher frequencies.

Since E-mods on deductible policies in Net Reporting States have a downward bias, it is possible that some employers may select deductibles regardless of their claims history. This may be influencing the result below that the small deductible frequency is higher than the no deductible frequency, even after mix adjustment.

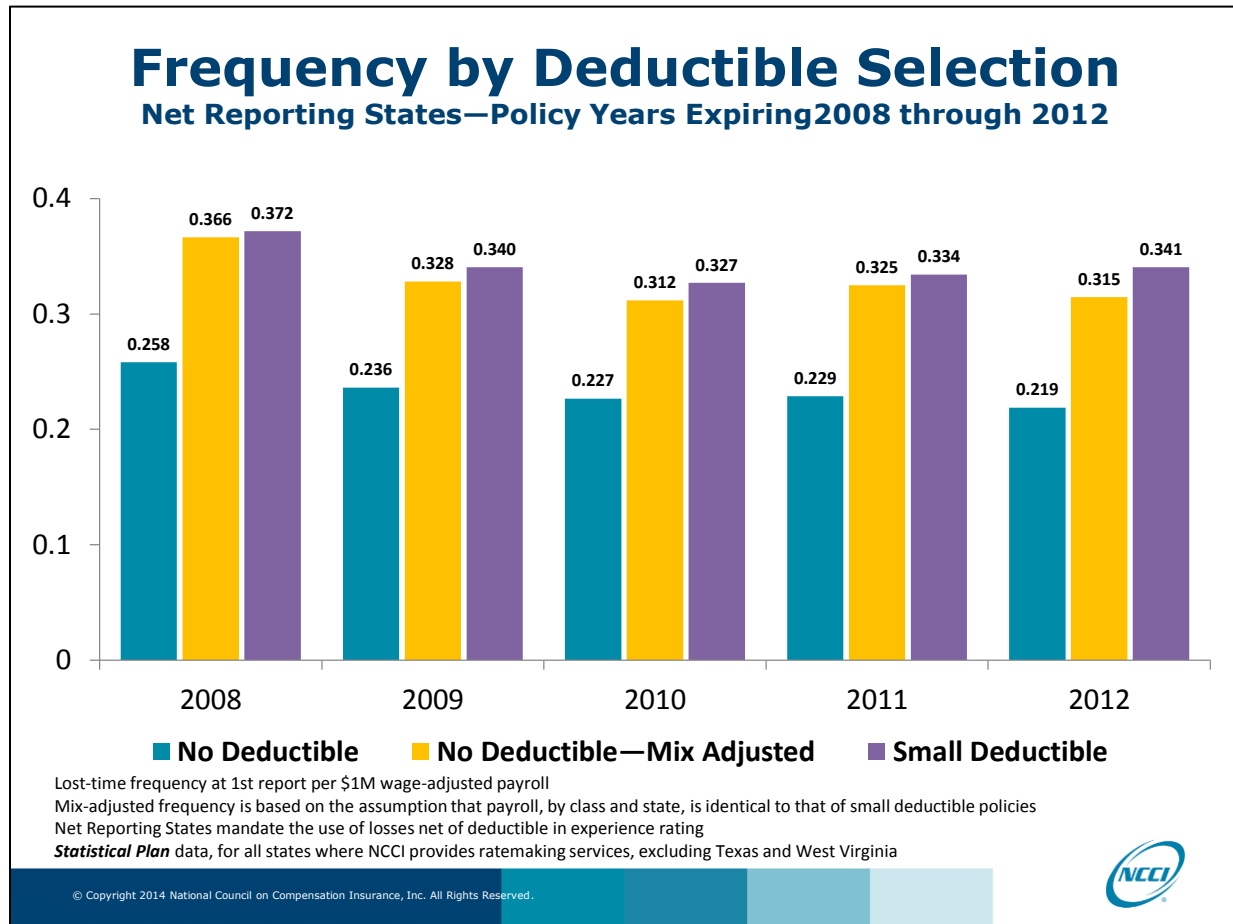


Exhibit 17: Claim Frequency by Choice of Deductible in Net Reporting States

Exhibit 18 displays the share of payroll written on small deductible policies in Net vs. Gross Reporting States. The share is significantly higher in Net Reporting States. This suggests that some employers may select deductibles regardless of their claims history in Net Reporting States since, as noted above, E-mods for small deductible policies in these states have a downward bias.

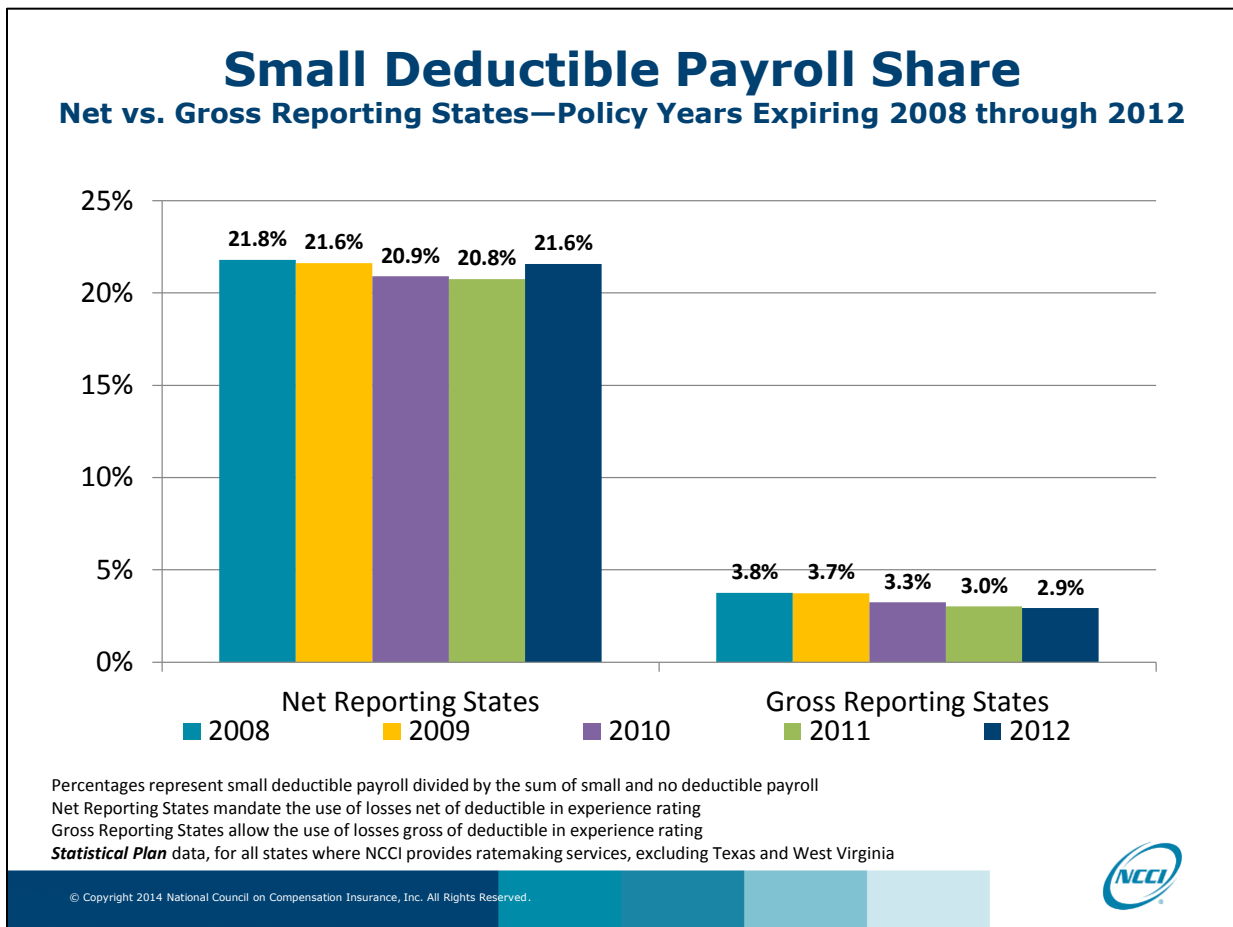


Exhibit 18: Small Deductible Payroll Share in Net vs. Gross Reporting States

Exhibit 19 displays the share of payroll written on small deductible policies within each Industry Group in Net vs. Gross Reporting States in PYE 2012. The Contracting Industry Group has the highest share in both Net and Gross Reporting States.

In Net Reporting States, 31.2% of the Contracting payroll is written on small deductible policies, as compared to 21.6% for all industries combined (as shown in Exhibit 18). It is possible that well informed contractors in Net Reporting States select deductibles in order to lower their E-mods. In the construction industry, E-mods are sometimes used to compare contractors that are bidding for a project. An employer may receive a debit E-mod for several reasons including the following:

- A classification may be broadly defined. Thus, an employer might receive a debit E-mod because it has a larger share of more hazardous operations than the average risk for its class.
- Consider the case where two classes have been merged into one. Some employers in the previously higher-rated class may receive a debit E-mod if their claims experience was average for their prior class, but is less favorable than the average employer in the new class.
- An employer may fit the class description well, but its loss experience is worse than average.

In the first two cases, a debit mod is not a sign of a “poor” risk, so a comparison that assumes all debited risks are poor may be misleading.

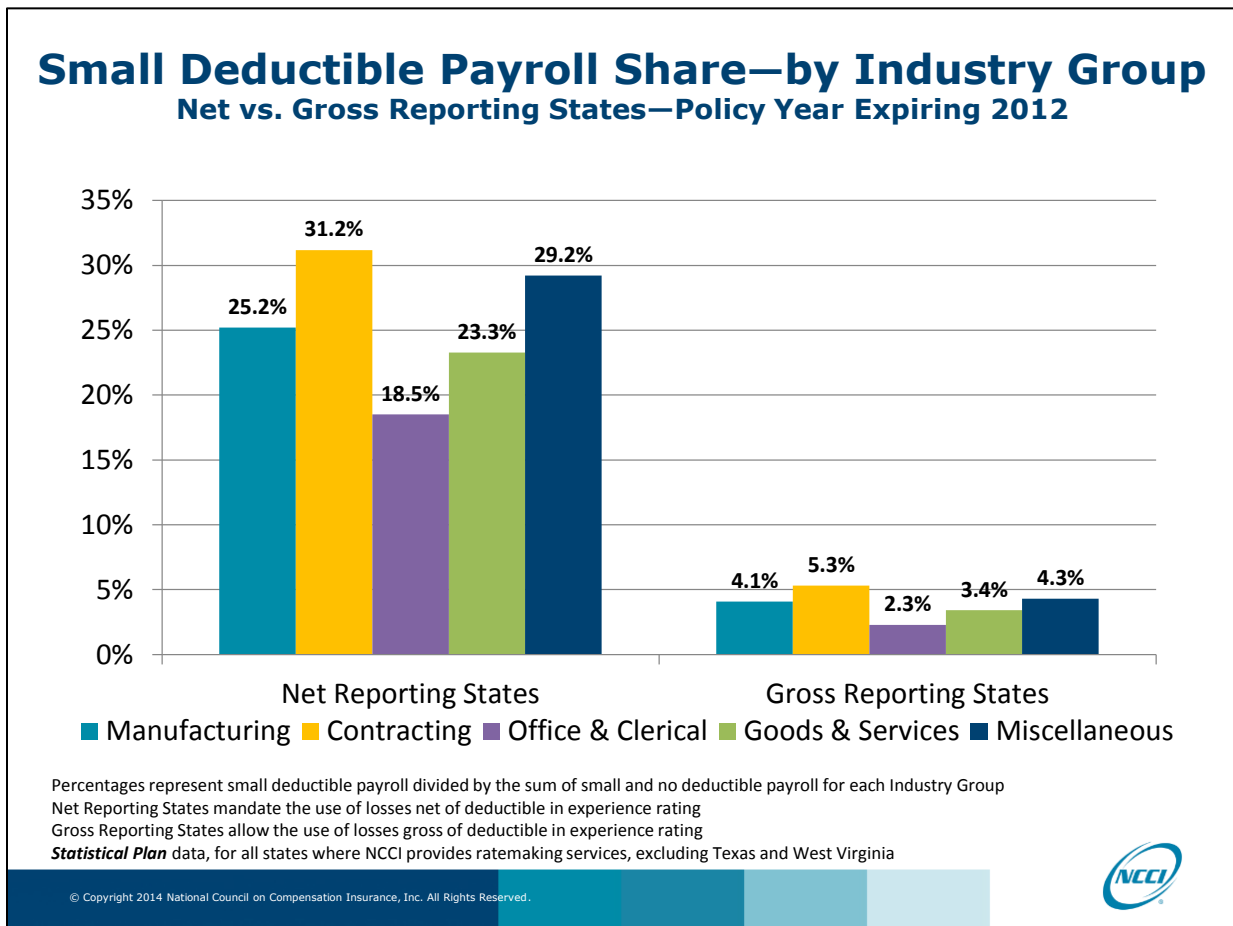


Exhibit 19: Industry Group Small Deductible Payroll Share in Net vs. Gross Reporting States

Exhibit 20 displays the share of payroll for the Contracting Industry Group written on small deductible policies in Net vs. Gross Reporting States over the latest five years. As shown in the exhibit, the usage of small deductibles in the high frequency per payroll Contracting Industry Group has been consistently higher in Net Reporting States than in Gross Reporting States.

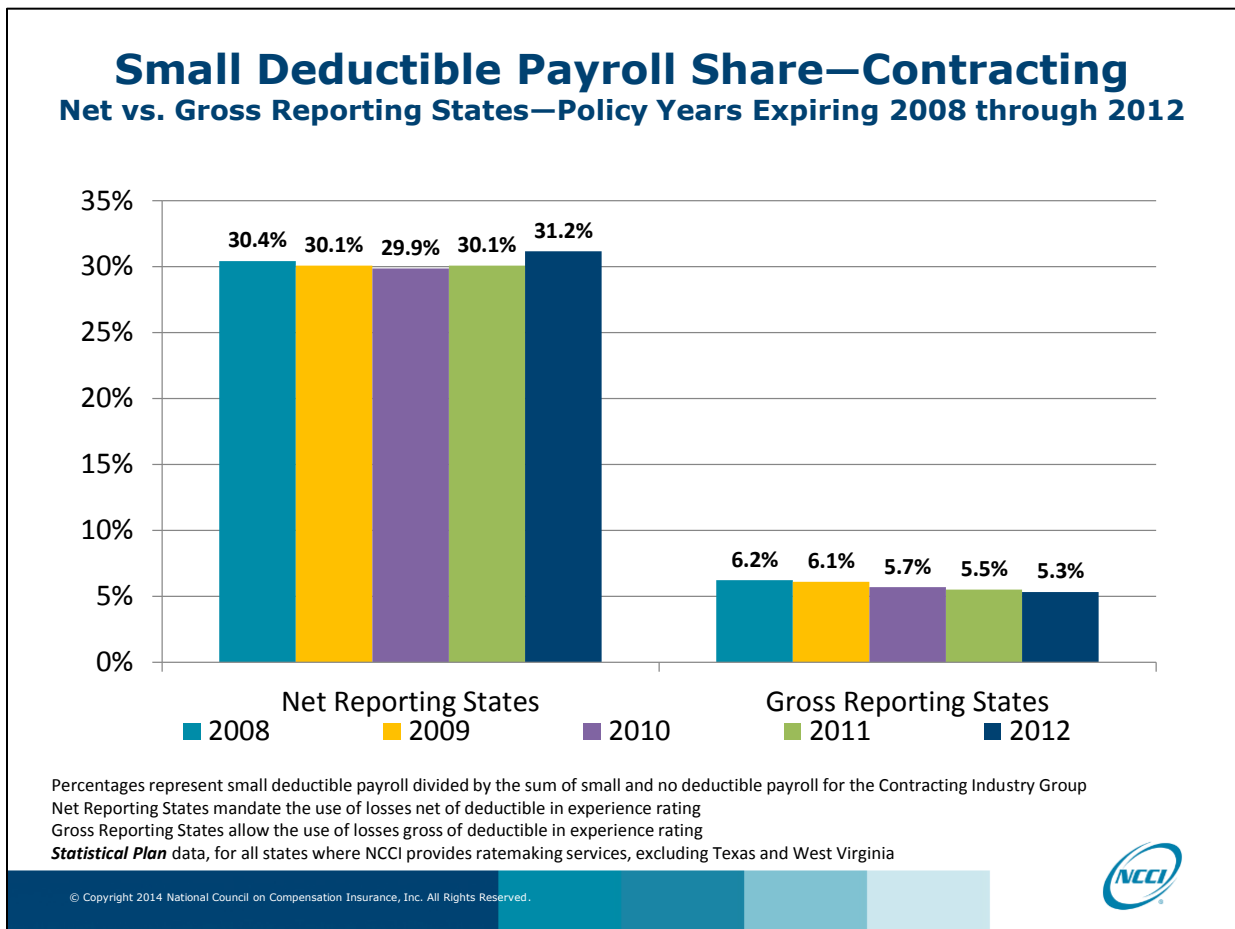


Exhibit 20: Contracting Small Deductible Payroll Share in Net vs. Gross Reporting States

Exhibit 21 indicates the share of payroll written on small deductible policies within each Hazard Group in Net vs. Gross Reporting States in PYE 2012. In Net Reporting States, 35.8% of Hazard Group F payroll and 29.2% of Hazard Group G payroll is written on small deductible policies, as compared to 21.6% for all industries combined (as shown in Exhibit 18). Note that for Hazard Groups F and G, these shares have been consistently high over the latest five years.

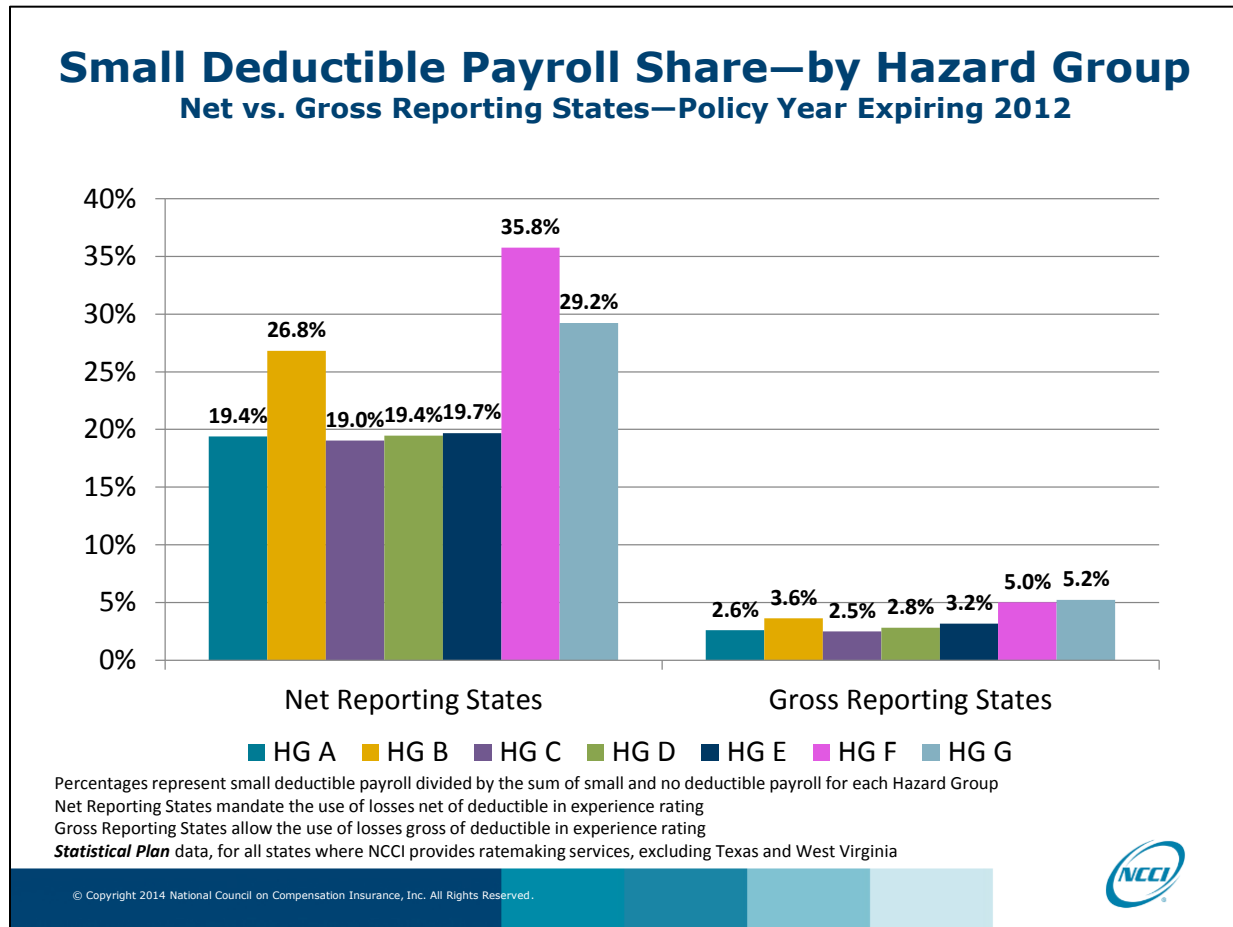


Exhibit 21: Hazard Group Small Deductible Payroll Share in Net vs. Gross Reporting States

Exhibit 22 displays the share of payroll for Hazard Group F written on small deductible policies in Net vs. Gross Reporting States over the latest five years. The exhibit shows that the usage of small deductibles in Hazard Group F has been consistently higher in Net Reporting States than in Gross Reporting States.

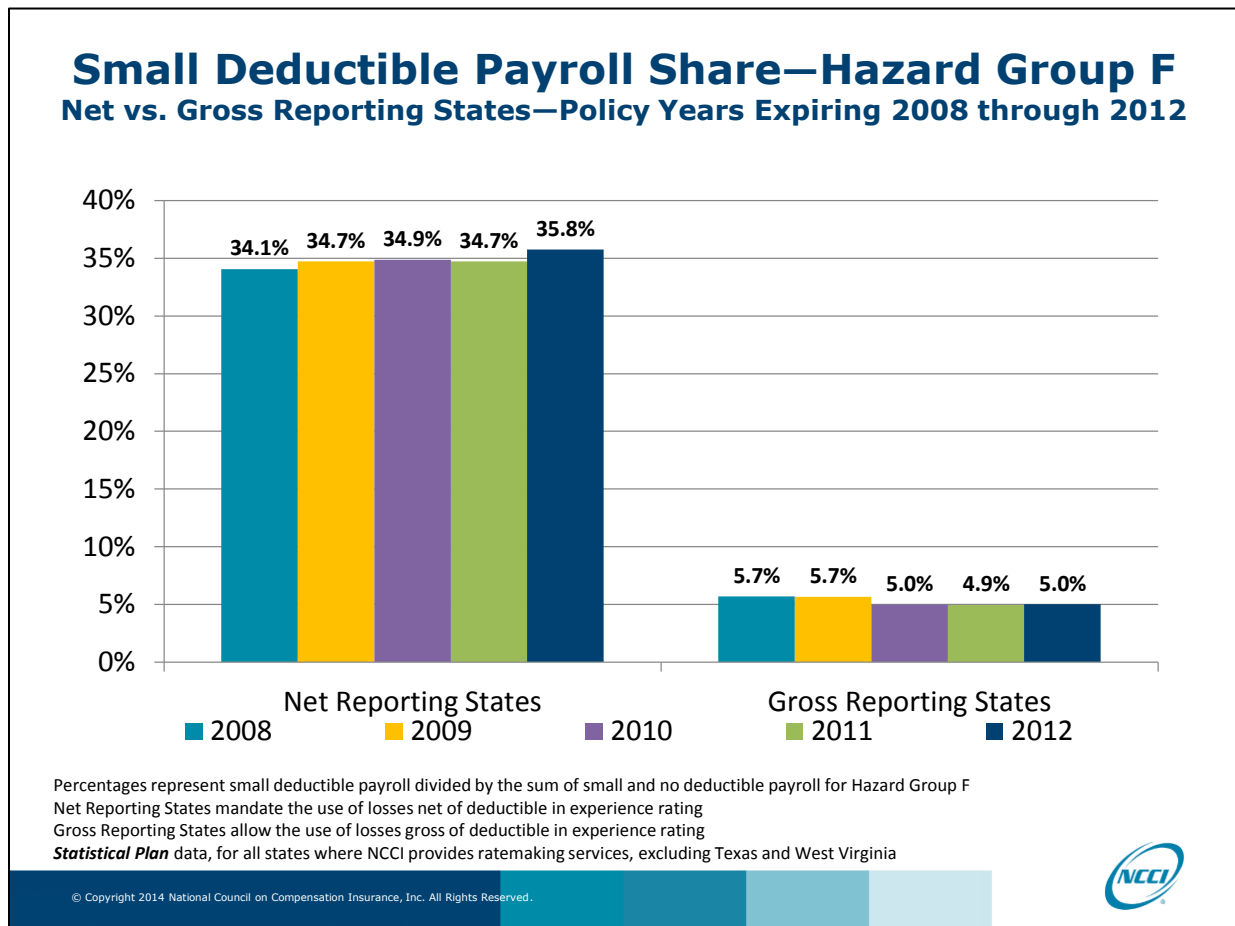


Exhibit 22: Hazard Group F Small Deductible Payroll Share in Net vs. Gross Reporting States

The following exhibits (23 and 24) provide results by industry group for Net and Gross Reporting States for policy years expiring in 2008 through 2012 combined. Each exhibit displays frequency per payroll for small deductible, no deductible, and mix adjusted no deductible policies.

For the Contracting Industry Group, the small deductible frequency is more than 10% less than the mix adjusted no deductible frequency in Gross Reporting states. This is not the case in Net Reporting states where these frequencies are very similar. This result may be influenced by the incentive for contractors to select small deductibles in Net Reporting States for the reasons cited earlier.

The results vary for the other industry groups. For example, the small deductible frequency is higher than the mix adjusted no deductible frequency for the Office & Clerical Industry Group, but less for the Miscellaneous Industry Group.

A class-by-class analysis shows that within the Contracting Industry Group, employers in lower frequency classes are just as likely to buy a small deductible as employers in the higher frequency classes. That is the reason why the no deductible frequency is similar to the mix adjusted no deductible frequency. Class-by-class analysis for the other industry groups shows that employers in the lower frequency classes in their industry group are less likely to buy small deductibles than employers in the higher frequency classes. That explains why the mix adjusted no deductible frequency in industry groups other than Contracting is higher than the no deductible frequency.

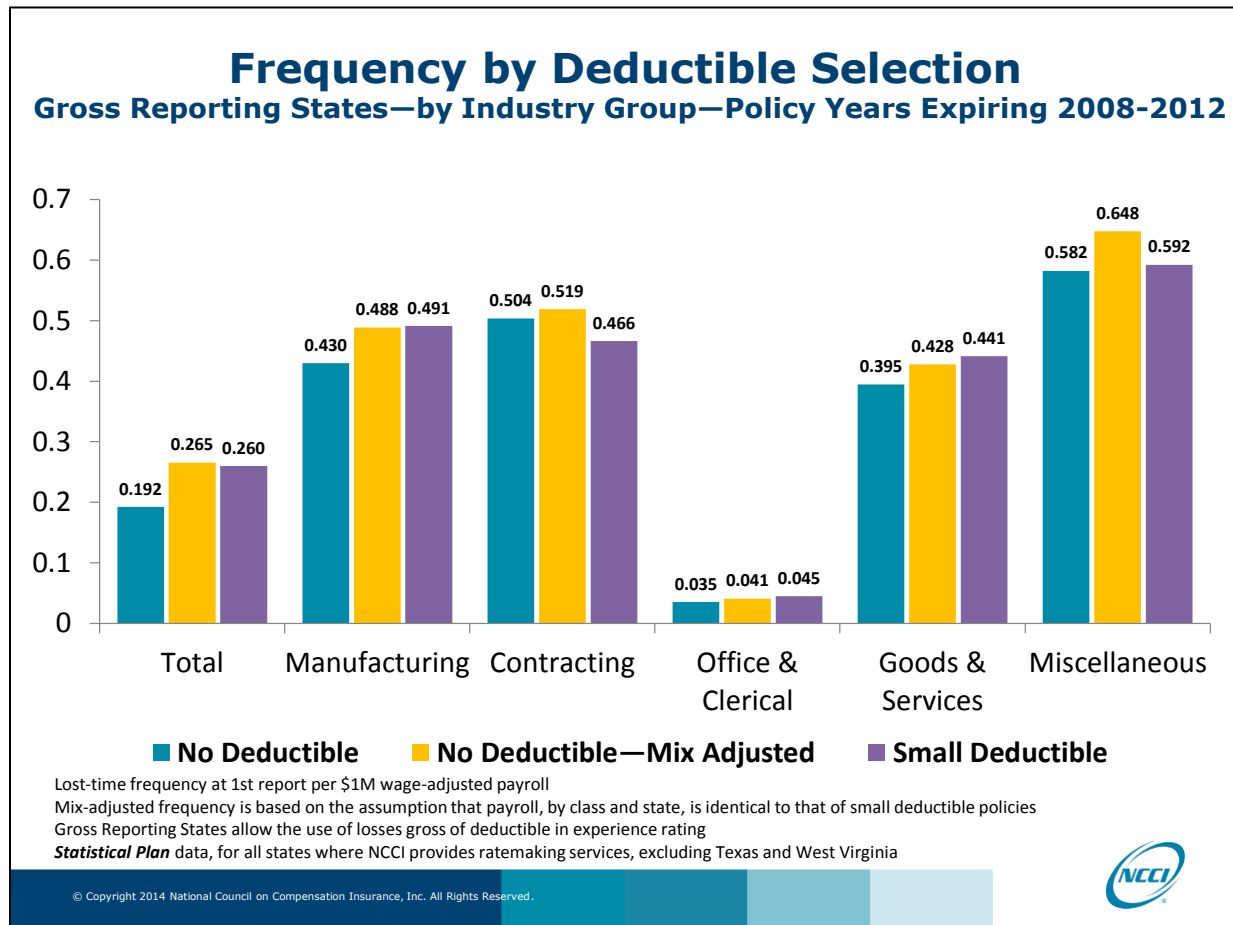


Exhibit 23: Frequency by Choice of Deductible by Industry Group in Gross Reporting States

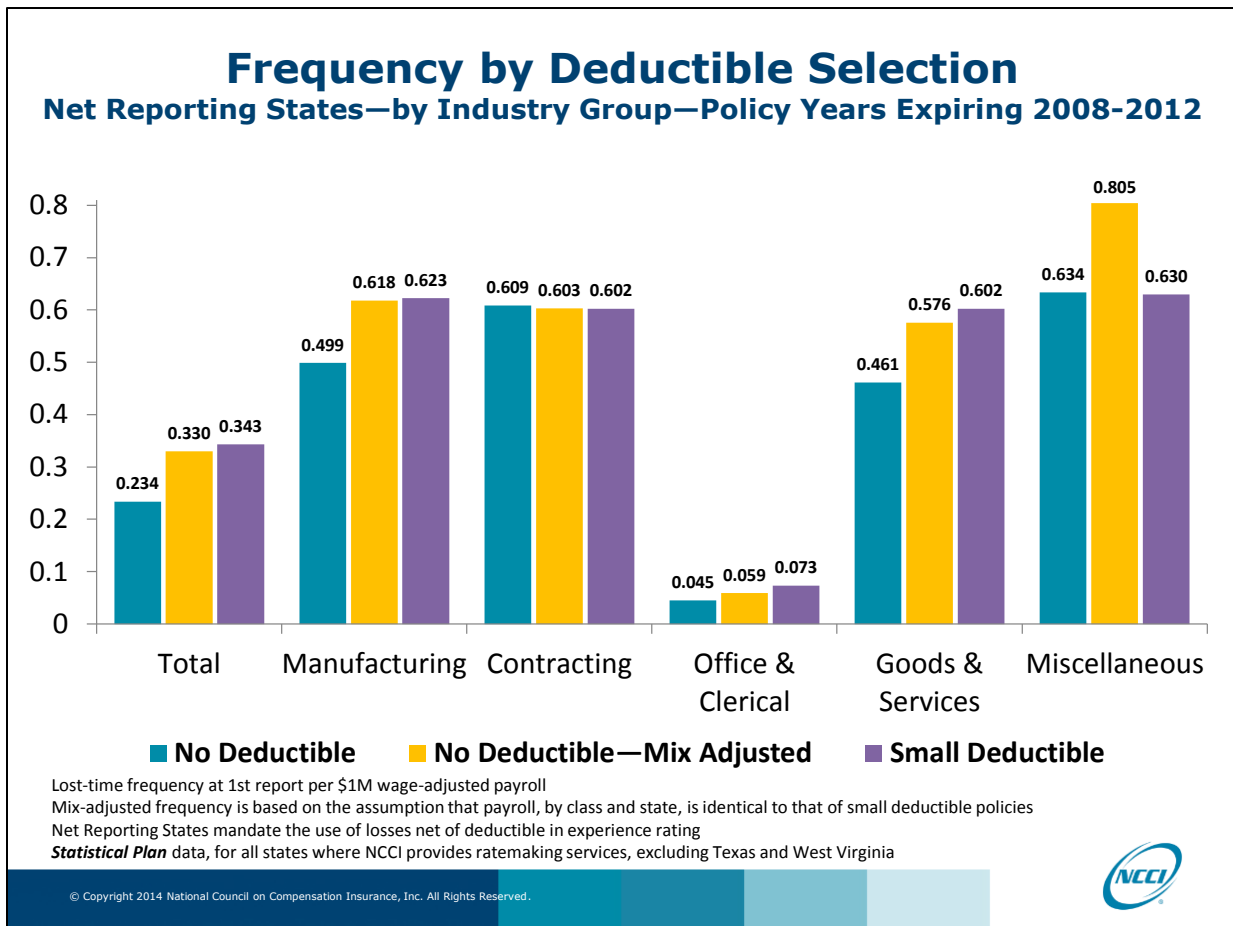


Exhibit 24: Frequency by Choice of Deductible by Industry Group in Net Reporting States

Conclusion

As previously reported, NCCI believes that several factors have contributed to the long-term decline in frequency since the early 1990s. In particular, advances in work processes fostered by global competition, including automation, have made the workplace safer and more efficient.

The Great Recession of 2007 through 2009 and its modest recovery had a considerable influence on workers compensation claim frequency. The 2010 increase in frequency, the first increase in 13 years, may have been the result of recession-related factors. Despite the 2010 uptick, claim frequency resumed its decline in Accident Years 2011, 2012, and 2013. These are very positive signs that suggest that frequency will continue its historical long-term rate of decline.

Acknowledgments

Barry Lipton, John Robertson, Delano Brown, Tom Sheppard, and Eric Anderson contributed to this study.

APPENDIX

The table below provides the list of states used in each of the analyses presented in this paper:

State	PYE	Analysis by:		Experience Rating*
		AY	Deductible	
Alabama	X	X	X	Net
Alaska	X	X	X	Gross
Arizona	X	X	X	Gross
Arkansas	X	X	X	Gross
Colorado	X	X	X	Net
Connecticut	X	X	X	Gross
District of Columbia	X	X	X	Gross
Florida	X	X	X	Gross
Georgia	X	X	X	Net
Hawaii	X	X	X	Net
Idaho	X	X	X	Net
Illinois	X	X	X	Gross
Indiana	X	X	X	Gross
Iowa	X	X	X	Net
Kansas	X	X	X	Net
Kentucky	X	X	X	Net
Louisiana	X	X	X	Gross
Maine	X	X	X	Net
Maryland	X	X	X	Gross
Mississippi	X	X	X	Gross
Missouri	X	X	X	Net
Montana	X	X	X	Gross
Nebraska	X	X	X	Gross
Nevada	X	X	X	Gross
New Hampshire	X	X	X	Gross
New Mexico	X	X	X	Net
North Carolina	X	X	X	Gross
Oklahoma	X	X	X	Net
Oregon	X	X	X	Net
Rhode Island	X	X	X	Gross
South Carolina	X	X	X	Net
South Dakota	X	X	X	Net
Tennessee	X	X	X	Gross
Texas	X	X	**	Gross
Utah	X	X	X	Gross
Vermont	X	X	X	Gross
Virginia	X	X	X	Gross

*Experience Rating based on losses net or gross of deductible

**Texas was not included since a significant portion of Texas deductible data is reported in pre-URE (Unit Report Expansion) format

The following charts provide the underlying loss distributions for selected slices of data provided in this report. Each chart provides a distribution of lost-time claim counts and reported loss amounts (medical and indemnity combined). Each distribution represents **Statistical Plan** data for the latest five years combined.¹⁹ The data is undeveloped as of 1st report. Thus, the distributions are likely to change as claim counts and loss dollars develop to an ultimate level.

Distribution of Lost-Time Claims by NCCI Industry Group

Industry Group	Claim Counts	Loss Amounts
Manufacturing	16.8%	16.6%
Contracting	15.5%	23.2%
Office & Clerical	11.6%	10.9%
Goods & Services	40.0%	31.7%
Miscellaneous	16.0%	17.6%
Total	100.0%	100.0%

Distribution reflects latest five-year period for Policy Years Expiring (PYE) 2008 to 2012

Loss amounts represent reported undeveloped paid losses plus case reserves for medical and indemnity at 1st report **Statistical Plan** data, for all states where NCCI provides ratemaking services, excluding West Virginia

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¹⁹ Not Reported includes data submitted by carriers in pre-URE (Unit Report Expansion) format.

Distribution of Lost-Time Claims by Part of Body

Part of Body Group	Claim Counts	Loss Amounts
Arm/Shoulder	15.7%	18.1%
Chest/Internal Organs	2.0%	1.6%
Face	2.3%	1.8%
Ankle/Foot/Toe(s)	8.9%	6.0%
Hand/Finger(s)/Wrist(s)	18.2%	11.5%
Head/Central Nervous System	1.9%	4.0%
Hip/Thigh/Pelvis	1.3%	2.0%
Knee	10.3%	9.0%
Leg	3.6%	4.7%
Lower Back	14.6%	13.5%
Multiple Body Parts	10.3%	16.4%
Multiple Trunk/Miscellaneous	4.4%	4.1%
Neck	2.3%	3.7%
Upper Back	1.4%	1.2%
Not Reported	3.0%	2.4%
Total	100.0%	100.0%

Distribution reflects latest five-year period for Policy Years Expiring (PYE) 2008 to 2012

Loss amounts represent reported undeveloped paid losses plus case reserves for medical and indemnity at 1st report *Statistical Plan* data, for all states where NCCI provides ratemaking services, excluding West Virginia

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Distribution of Lost-Time Claims by Nature of Injury

Nature of Injury Group	Claim Counts	Loss Amounts
Amputations/Severance	1.0%	2.0%
Burn/Shock	1.6%	2.3%
Carpal Tunnel Syndrome	1.1%	1.0%
Concussion/Contusion	9.3%	7.6%
Fracture/Crushing/Dislocation	13.9%	20.0%
Infection/Inflammation	2.8%	2.3%
Laceration/Puncture/Rupture	10.2%	7.8%
Occupational Disease/Cumulative Injuries	1.6%	1.4%
Other Traumatic Injuries	14.9%	18.9%
Sprain/Strain	40.6%	34.3%
Not Reported	3.0%	2.4%
Total	100.0%	100.0%

Distribution reflects latest five-year period for Policy Years Expiring (PYE) 2008 to 2012

Loss amounts represent reported undeveloped paid losses plus case reserves for medical and indemnity at 1st report *Statistical Plan* data, for all states where NCCI provides ratemaking services, excluding West Virginia

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Distribution of Lost-Time Claims by Cause of Injury

Cause of Injury Group	Claim Counts	Loss Amounts
Burn	2.0%	2.4%
Caught in Between	4.8%	4.7%
Cumulative Injuries	1.1%	0.9%
Cut/Puncture/Scrape	4.3%	2.5%
Fall/Slip	25.8%	29.9%
Misc Causes	5.4%	4.8%
Motor Vehicle	4.0%	7.9%
Rubbed or Abraded By	0.3%	0.2%
Strain	34.7%	30.1%
Striking Against/Stepping On	3.6%	2.7%
Struck By	10.9%	11.4%
Not Reported	3.0%	2.4%
Total	100.0%	100.0%

Distribution reflects latest five-year period for Policy Years Expiring (PYE) 2008 to 2012

Loss amounts represent reported undeveloped paid losses plus case reserves for medical and indemnity at 1st report

Statistical Plan data, for all states where NCCI provides ratemaking services, excluding West Virginia

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