HLDI
Highway Loss Data Institute

Bulletin | Vol. 34, No. 36 : December 2017

The effects of Michigan's weakened motorcycle helmet use law on insurance losses – five years later

Summary

In April 2012, the state of Michigan changed its motorcycle helmet law. The change allowed motorcyclists 21 years and older to legally ride without a helmet, if they carry at least $20,000 in medical payment (MedPay) coverage. The Highway Loss Data Institute (HLDI) published a study in 2013 quantifying the impact of the law change on collision and MedPay insurance losses (Highway Loss Data Institute [HLDI], 2013). The study compared the 2010–11 riding seasons with the 2012 riding season. In September 2016, this study was expanded to include additional insurance loss data through the 2015 riding season (HLDI, 2016).

This bulletin further expands the 2016 study by including insurance loss data through the 2016 riding season. Michigan losses were compared with losses in Wisconsin, Illinois, Indiana, and Ohio, where laws regarding helmet use were stable. The study controlled for motorcycle age and class, rider demographic factors, geographic factors, and weather. It also controlled for policy limits for MedPay coverage.

As in the prior studies, the results show a sharp increase in MedPay overall losses coincident with the helmet law change, 64 percent higher when compared to control states (the increase was 51 percent in 2013 and 61 percent in 2016). The increase in MedPay overall losses was driven by an increase in claim severity, which rose 68 percent more than expected absent the law.

Because there was an increase in the number of riders with at least $20,000 or higher limits on their policies, a second analysis was performed that controlled for policy limit. In this analysis, MedPay claim severity increased by 40 percent, a smaller but still substantial amount (the increase was 22 percent in 2013 and 37 percent in 2016). These results are consistent with recent research from the University of Michigan and the Insurance Institute for Highway Safety (IIHS), which documented a 14 percent increase in head injuries in Michigan for crash-involved motorcyclists, as the number of riders without helmets rose from almost zero to 1 in 4 (Buckley et al., 2016, Carter et al., 2017).

Collision losses were not expected to change, except to the extent that not requiring helmet use might increase riding time. Results show an 8 percent increase in collision claim frequency, along with a 7 percent increase in collision claim severity, for an increase in overall losses of 15 percent. It is unknown whether the increase in collision claim severity arose from more severe crashes, and hence might explain part of the increase in MedPay claim severity. However, as before, there was no significant change in MedPay claim frequency coincident with the helmet law change. Significant results are bolded in the following table.

Impact of Michigan's weakened motorcycle helmet use law on insurance losses

	Collision			MedPay		
	Claim frequency	Claim severity	Overall losses	Claim frequency	Claim severity	Overall losses
				Without limits		
2010-12	**12.0%**	0.3%	**12.3%**	10.4%	**36.3%**	**50.6%**
2010-15	**8.0%**	**5.1%**	**13.5%**	-3.4%	**67.0%**	**61.4%**
2010-16	**8.0%**	**6.5%**	**14.9%**	-2.2%	**68.1%**	**64.3%**
				With limits		
2010-12	-	-	-	-	**22.1%**	-
2010-15					**37.1%**	
2010-16	-	-	-	-	**40.1%**	-

Introduction

Motorcycle helmets are designed to cushion and protect a rider's head from impacts during crashes. Helmet use reduces the likelihood of crash fatality by 37 percent, and unhelmeted riders are 3 times more likely than helmeted riders to suffer traumatic brain injuries in the event of a crash (National Highway Traffic Safety Administration [NHTSA], 2008). Not surprisingly, research has shown large fluctuations in fatal crashes among motorcyclists when states have changed their helmet use laws. For example, when Florida weakened its universal helmet law in 2000 to apply only to riders younger than 21, the expected likelihood of death in a motorcycle crash was 25 percent higher after the law change (Kyrychenko & McCartt, 2006).

In 1967, to increase motorcycle helmet use, the federal government required states to enact helmet use laws to qualify for certain federal safety programs and highway construction funds. The federal incentive worked. By the early 1970s, almost all states had motorcycle helmet laws that were universal, meaning they covered all riders. In 1976, Congress stopped the Department of Transportation from assessing financial penalties on states without helmet laws. Currently, 19 states and the District of Columbia have laws requiring all motorcyclists to wear a helmet, 28 states require only some motorcyclists to wear a helmet, and three states do not have a helmet use law.

Michigan was the first state to repeal its universal helmet law in 1968, but 1 year later reinstated it. Michigan remained a universal state until April 12, 2012, when a new, weakened law took effect requiring riders younger than 21 to wear a helmet, but allowing those 21 and older to ride without a helmet, if they carry at least $20,000 in MedPay insurance, and either have passed a motorcycle safety course or have had their motorcycle endorsement for at least two years. Motorcycle passengers may ride without a helmet if they are 21 or older and the driver carries additional insurance to cover passenger injuries.

In September 2013, HLDI published its first study evaluating the effects of Michigan's weakened motorcycle helmet use law on insurance losses. Losses under MedPay and collision coverage during the 2010–11 riding seasons were compared with those during the 2012 riding season. Michigan losses were compared with losses in Wisconsin, Illinois, Indiana, and Ohio, where laws regarding helmet use were stable.

The 2013 study found that after the law change and while accounting for policy limits, MedPay claim severities in Michigan increased by a significant 22 percent (36 percent without accounting for limits). The study also found that the collision claim frequency increased by 12 percent. In 2016, this study was updated to include additional insurance loss data through the 2015 riding season. The 2016 study found similar, but larger effects on insurance losses. After the law change and while accounting for policy limits in 2016, MedPay claim severities in Michigan increased by 37 percent (67 percent without accounting for limits). Collision claim frequency also increased significantly by 8 percent in Michigan.

This HLDI bulletin expands the 2016 study to include insurance loss data through the 2016 riding season. As a result, both MedPay and collision exposure increased by 12 percent.

Methods

Insurance data

Motorcycle insurance covers damage to vehicles and property in crashes plus injuries to people involved in crashes. Different insurance coverages pay for physical damage versus injuries. Different coverages may apply depending on who is at fault. In this study, two different insurance coverage types were examined: collision and MedPay. Motorcycle collision coverage insures against physical damage to a motorcycle sustained in a crash when the rider is at fault. MedPay covers injuries sustained by the operator.

Insurance measures

Insurance losses are measured as claim frequency, claim severity, and overall losses. Claim frequency is defined as the number of claims for a group of vehicles divided by the exposure for that group, expressed as claims per 100 or 1,000 insured vehicle years. An insured vehicle year is one vehicle insured for 1 year, two vehicles insured for 6 months, etc. Claim severity is the average loss payment per claim. For a group of vehicles, it is the total dollars paid to settle claims, divided by the number of claims paid. Overall losses for a group of vehicles is the product of claim frequency and claim severity, expressed as dollars per insured vehicle year. Total exposure and claims for this study are shown in **Table 1**.

Vehicles

The loss data in this study cover calendar years 2010–16. The nine most current model years were included for each calendar year (for example, 2003–11 model years were included for the 2010 calendar year). Losses for Michigan and the control states were determined based on garaging location. Information about where a crash occurred is not available in the HLDI database.

Table 1: Motorcycle exposure and claims by coverage type

Coverage	Exposure (insured vehicle years)	Claims
Collision	673,751	18,161
Medical payment	410,967	8,041

Only the Michigan riding season of May through September was included, as motorcycle claim frequencies have strong seasonality, especially in northern climates. Two vehicle-related factors served as covariates: motorcycle class and motorcycle age. Motorcycle class included scooter, cruiser, chopper, touring, dual purpose, standard, sport touring, unclad sport, sport, and super sport. Motorcycle age was defined as the difference between the calendar year and model year, with a range of zero to 7 years. Motorcycles with a calculated age of -1 (i.e., model year 2015 bikes in calendar year 2014) were combined with motorcycles of age 0 (i.e., model year 2015 bikes in calendar year 2015).

External data source

Monthly mean temperature and monthly precipitation: Prior HLDI (2010) research showed that temperature and precipitation are highly correlated with motorcycle collision claim frequency. The interaction of temperature and temperature range was also shown to significantly impact motorcycle collision claim frequencies. The temperature ranges used in this report are identical to those used in prior research. State monthly mean temperatures, measured in degrees Fahrenheit, were obtained from the National Oceanic and Atmospheric Administration (NOAA) for the 2010–16 riding seasons and were linked to HLDI loss data. Daily mean temperatures for states were unknown.

It was possible that, within a given month, there were days with favorable weather conditions for riding, at least in some part of a state, yet the monthly average temperature was less than ideal for riding. Mean monthly temperatures were divided into two ranges: moderate (50–64), and high (65+). NOAA state monthly precipitations, measured in inches, for the 2010–16 riding seasons were also linked to HLDI loss data. The type of precipitation and number of days in a given month with measurable precipitation were not available.

Analysis method

Motorcycle data were aggregated by calendar year, model year, month, state, rated driver age, rated driver gender, rated driver marital status, deductible, risk, motorcycle class, and registered vehicle density. The rated driver is considered to represent the greatest loss potential for the insured vehicle. In a household with multiple vehicles and/or drivers, the assignment of drivers to vehicles can vary by insurance company and by state, but usually it reflects the driver most likely to operate the vehicle. Information on the actual driver at the time of a collision is not available in the HLDI database. In this study, the rated drivers (riders) were limited to those aged 21 years and older, as those under 21 were not affected by the law change. Information from NOAA on temperature and precipitation were linked to the insurance data using calendar year, month, and state.

Claim frequency was modeled using a Poisson distribution, and claim severity was modeled using a Gamma distribution. Both models used a logarithmic link function. Estimates for overall losses were derived from the claim frequency and claim severity models. The effect of the Michigan helmet law change on collision and MedPay losses was estimated while controlling for other covariates. The other covariates were vehicle age, motorcycle class, risk, deductible (collision only), registered vehicle density, time period, state, rated driver age, rated driver gender, rated driver marital status, temperature, temperature range, precipitation, and the interaction of temperature and temperature range. A second model for MedPay losses was constructed that also included policy limits. Previous HLDI reports have shown these covariates are important predictors of claim severities.

To control for other factors not covered by these variables and unrelated to helmet law (e.g., economic situation and change in miles driven), loss data from Illinois, Indiana, Ohio, and Wisconsin were used as controls. These states were chosen as controls based on several criteria. The control states border Michigan, and all had similar seasonality patterns. Motorcycle class is a predictor of crash frequencies, and the classes of motorcycles ridden in the control states are similar to those in Michigan. Additionally, these states' helmet laws remained unchanged during the study time period. Time period was used as a categorical variable to indicate whether losses occurred before or after the weakening of Michigan's helmet law.

The model also includes the interaction of state and time period. This interaction represents the relative change in claim frequency and claim severity between each control state and Michigan that occurred after the law was changed. The estimates associated with this interaction, with p-values less than 0.05, indicate the controls are meaningfully different from Michigan.

HLDI collected insurance claim data through September 2016 and payment information through December 2016. In the regression analysis, May to September 2012–16 was the time period after the helmet law change, and May to September 2010–11 was the time period before the helmet law change.

To illustrate the analyses, the Appendix contains full model results for MedPay claim severity while controlling for policy limits. The full modeled results present the interaction of time period and state using Michigan and the time period of 2010–11 as a reference category. To further simplify the presentation here, the exponent of the parameter was calculated, 1 was subtracted, and the result multiplied by 100. The resulting number corresponds to the estimated difference in MedPay claim severity in the control state after the law was changed, as compared to Michigan before the law was changed, while controlling for policy limits. For example, the estimate for the interaction of the time period and Illinois was -0.3650; thus, the estimated difference in MedPay claim severity in Illinois after the helmet law was changed was 31 percent lower as compared to Michigan before the helmet law changed ((exp(-0.3650)-1)*100=-31).

However, the key metric of interest is the effect of the law change in Michigan relative to the control states. To calculate this, the negative of the estimate for the interaction of time period and state was used. For example, the estimated difference in MedPay claim severity in Michigan after the helmet law changed was 44 percent higher as compared to Illinois before the helmet law changed ((exp(0.3650)-1)*100 = 44). All results in this report present the interaction of time period and state using the control states and the time period of 2010–11 as a reference category.

To estimate the effect of the law change in Michigan compared to all the control states combined, a weighted average of the model estimates for the individual control states was calculated. The weights in the average were proportional to the inverse variance of the respective estimates, meaning that the estimates with high variance (those with large confidence intervals, typically due to little exposure and/or claims) contributed less than estimates with low variance (those with small confidence intervals).

An alternative method was used to estimate the effect of the helmet law change on insurance losses in Michigan compared to the combined control states. With this approach, a new independent variable was created that grouped the control states together. This variable was used in place of the original, individual state variable in the analysis. This approach is similar to the method used to measure insurance losses by state after a law change in HLDI's 2017 study, "Recreational marijuana and collision claim frequencies." The key findings of the analysis did not differ; however, the confidence bounds were wider using this method as compared to the previous method. To maintain consistency with the prior Michigan helmet studies, the results presented use the same weighted average approach used in those studies.

Results

Medical payment coverage

Figures 1–2 illustrate the actual changes in MedPay claim frequency, claim severity, and overall losses in Michigan and the control states after Michigan's helmet law was weakened. These results do not control for any of the variables available in the HLDI data. Michigan saw a small decrease in MedPay claim frequency (5 percent) and large increases in claim severity (72 percent) and overall losses (63 percent). Figure 2 shows the actual changes in MedPay losses when the four control states are combined compared to Michigan.

Figure 1: Actual change in medical payment losses after Michigan helmet law change, Michigan and control states

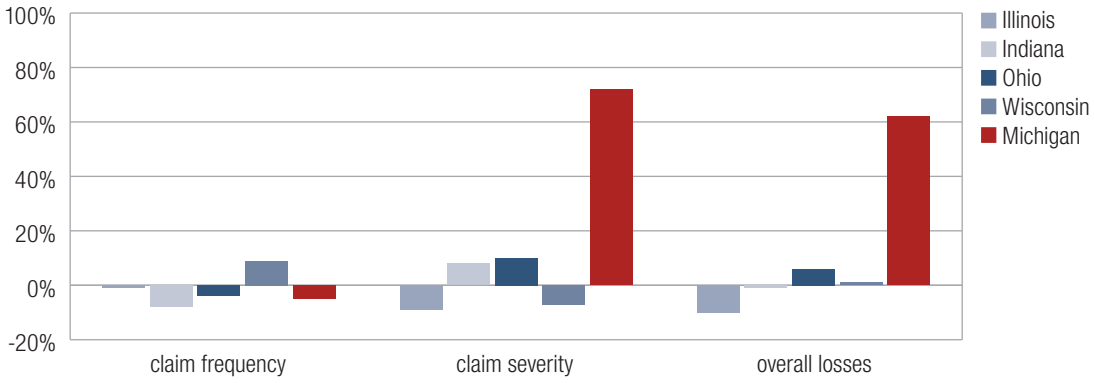
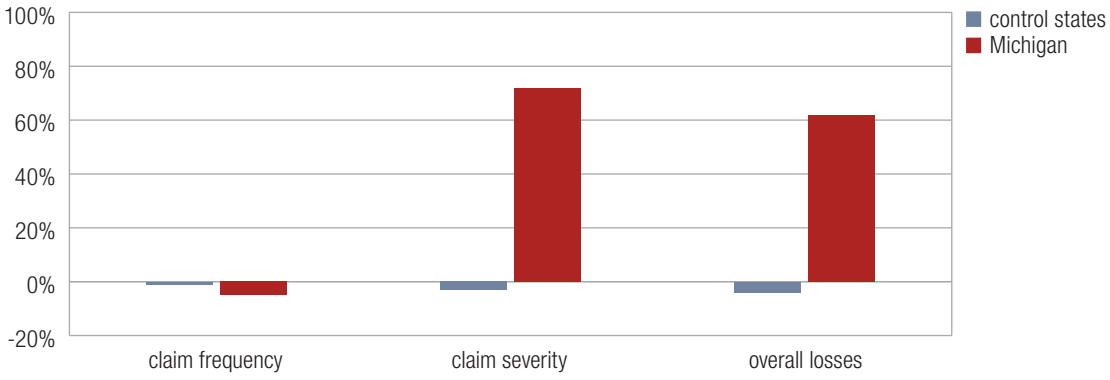
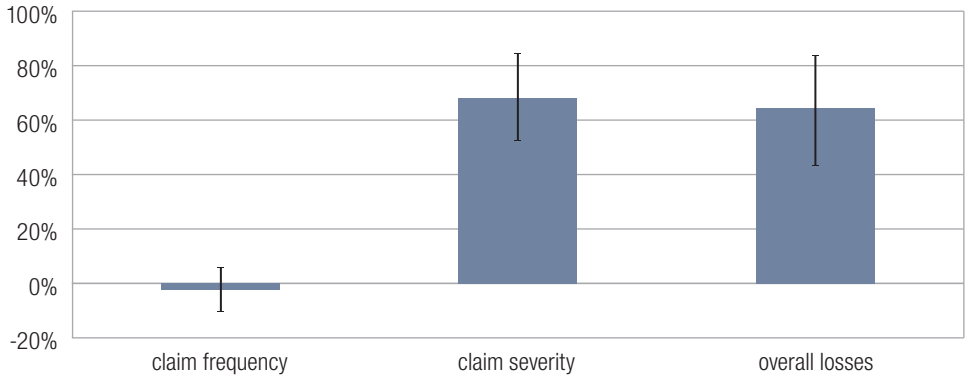


Figure 2: Actual change in medical payment losses after Michigan helmet law change, Michigan versus control states



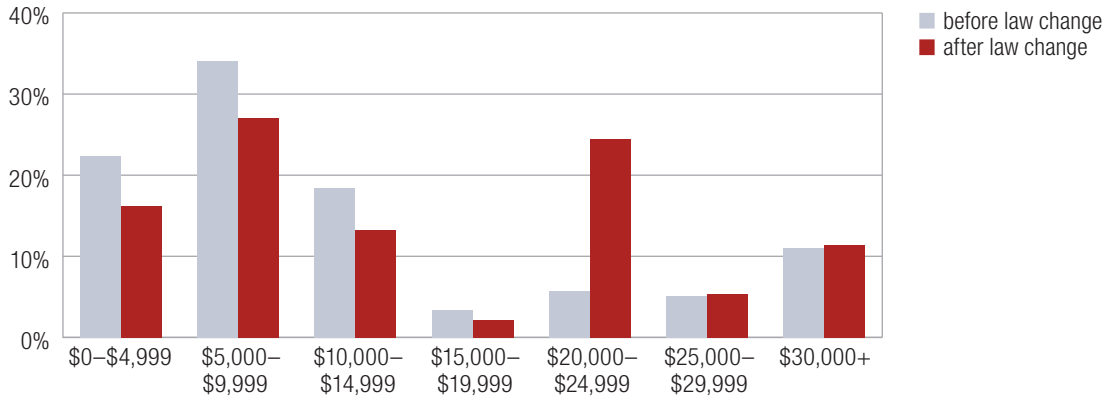
Weighted averages of the model estimates for the interaction of state and time period were calculated. The results of this analysis are similar to the patterns seen in the actual results (**Figures 1–2**) and are shown in **Figure 3**. Medical payment claim frequency decreased by 2 percent, although not significantly. Claim severity and overall losses increased significantly by 68 percent and 64 percent, respectively.

Figure 3: Estimated change in medical payment losses after Michigan helmet law change, Michigan versus control states



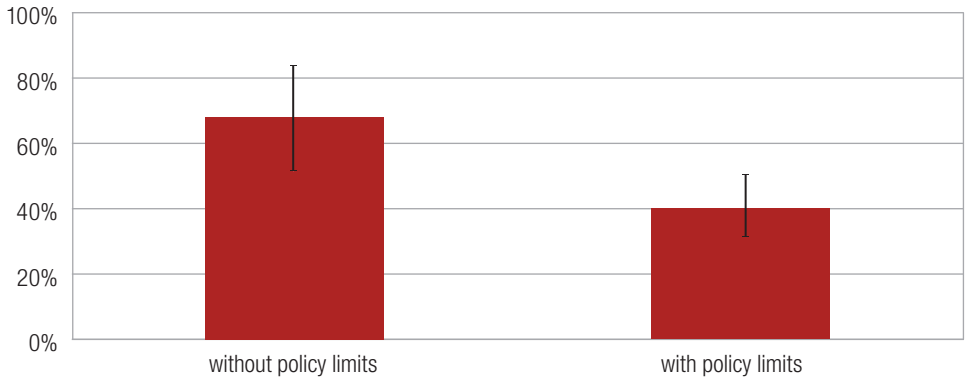
Michigan's revised helmet law requires motorcyclists who ride without a helmet to have at least $20,000 in MedPay coverage. **Figure 4** illustrates the distribution of MedPay policy limits for Michigan before and after the law change, with policy limits grouped into ranges. Exposure decreased for the policy limit ranges less than $20,000, but increased for ranges greater than $20,000. The $20,000–$24,999 range increased from 6 percent of the total before the law change to 25 percent after.

Figure 4: Distribution of Michigan medical payment policy limits by time period



To isolate the effect of removing the helmet requirement from the requirement for at least $20,000 in MedPay coverage, an additional model was constructed. This model employed all the independent variables used in the first MedPay claim severity model, and added a variable for policy limits. These limits were grouped into ranges and treated as a categorical variable. **Figure 5** compares the estimated difference in motorcycle MedPay claim severity for Michigan with and without policy limits included in the regression model. When adding policy limits, the MedPay claim severity decreases from 68 percent to 40 percent higher in Michigan after the helmet law changed as compared to the control states before the law changed.

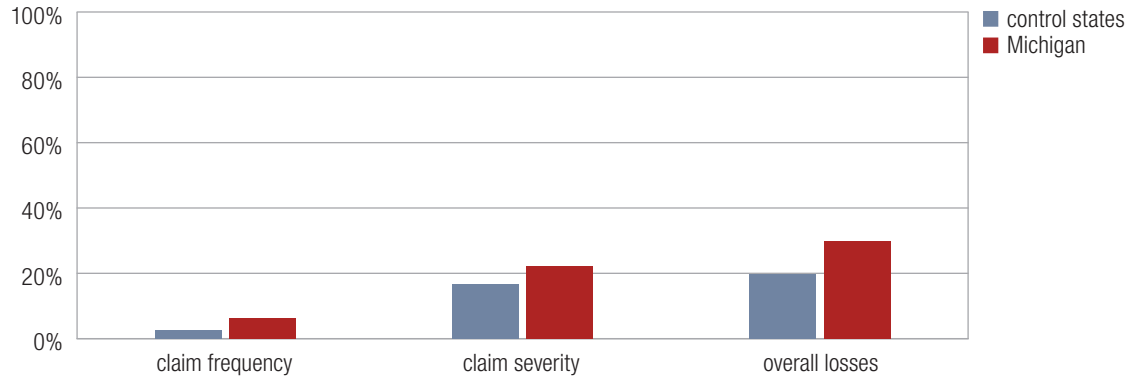
Figure 5: Estimated change in medical payment claim severity after Michigan helmet law change, Michigan versus control states



Collision coverage

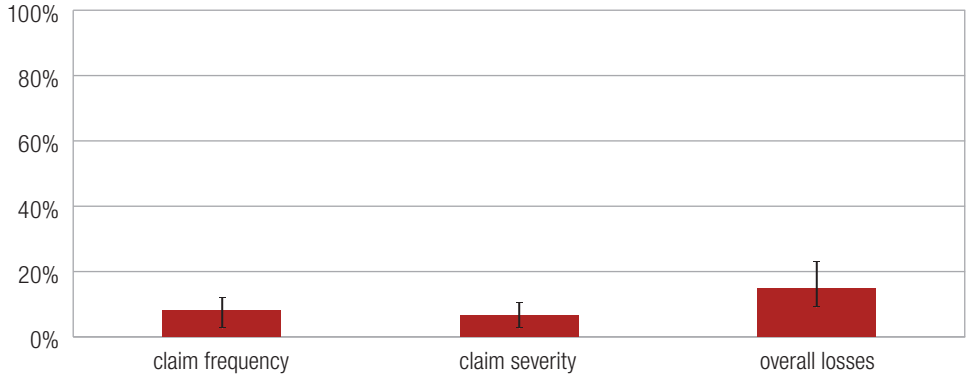
Figure 6 illustrates the actual changes in collision claim frequency, claim severity, and overall losses in Michigan and the control states after Michigan's helmet law was weakened. These results do not control for any of the independent variables available in the HLDI data. Michigan claim frequency increased 6 percent, while the increase in the control states was just 3 percent. The increase in Michigan collision claim severity and overall losses was larger than for the control states.

Figure 6: Actual change in collision losses after Michigan helmet law change, Michigan versus control states



Weighted averages of the model estimates for the interaction of state and time period were calculated. The results of this analysis were similar to the patterns seen in the actual results (Figure 6) and are shown in Figure 7. Collision claim frequency (8 percent), claim severity (7 percent), and overall losses (15 percent) all increased significantly.

Figure 7: Estimated change in collision losses after Michigan helmet law change, Michigan versus control states



Discussion

The likelihood of having a motorcycle crash in Michigan increased after the change in the helmet law, as evidenced by an increase in collision claim frequency of 8 percent. Claim severity under MedPay coverage increased by 68 percent in Michigan, compared with the control states, after the helmet law was weakened. Medical payment claim frequency in Michigan declined by 2 percent, but was not statistically significant. From an insurance perspective, the weakening of the law is associated with a 64 percent increase in overall losses under MedPay coverage and a 15 percent increase under collision coverage.

The rise in MedPay claim severity was expected, as any crash where an unhelmeted rider's head strikes the ground or any hard object would likely result in a head injury. Recent research from the University of Michigan and the IIHS examined how the partial helmet law repeal in Michigan affected motorcycle crash injuries and helmet use, and supports the increased MedPay severity finding. The studies found a 14 percent increase in the number of patients with head injuries, yet the type of injuries shifted. The proportion of head injuries that were concussion-related fell 17 percent, while the proportion of head injuries due to skull fractures increased 38 percent. Observations in Michigan before and after the partial repeal saw helmet use decline from nearly all riders to about 75 percent (Buckley et al., 2016; Carter et al., 2017).

The partial repeal of the Michigan helmet law contains two components. The first component stipulates 21 years as the minimum age for riders to ride without a helmet and the second component was an increase in the required MedPay limits for those who ride without a helmet. Both components of the law have the potential to increase claim severities, either due to increased head injuries or additional injury treatments covered under the higher limits. An initial analysis found a 68 percent increase in MedPay claim severities, which corresponds to the increase associated with both aspects of the law change.

To isolate the effect of allowing riders to ride without a helmet on claim severity, a second analysis was implemented including controls for MedPay policy limits. After controlling for MedPay policy limits in the analysis, claim severity was found to increase 40 percent. Although the effects of each component of the law are not easily separated, as both changes occurred concurrently, this provides a more accurate estimate for the increase in MedPay claim severities that could be associated with allowing riders to ride without a helmet. These results are consistent with a 2016 study conducted by the Spectrum Health Butterworth Hospital in Grand Rapids, Michigan, in which 345 motorcycle crash victims were studied. The average hospital cost for non-helmeted riders was $27,760—32 percent higher than for those wearing helmets (Striker et al., 2016).

The increase in collision claim frequency merits further discussion. Those who argue against helmet laws often state that requiring helmet use discourages people from riding. It is possible that the increase in collision claim frequency was caused by people traveling more miles on motorcycles. However, opponents of helmet laws also often state that

helmets increase the likelihood of crashes because they increase rider fatigue and decrease situational awareness. Assuming fewer riders in Michigan wore helmets after the law change, the increase in collision claim frequency is inconsistent with the notion that helmets increase crash risk.

Supporters of the law often state, "this is a freedom issue and an individual rights issue" (Roelofs, 2016). If motorcyclists are at least 21 years of age and have at least $20,000 in motorcycle MedPay coverage in Michigan, they may choose to not wear a helmet. However, with each year, the evidence against the weakening of the law continues to mount. According to the 2016 Spectrum Health Butterworth Hospital study, 10 percent of riders involved in a crash who were not wearing helmets died, compared with 3 percent of riders involved in a crash who wore helmets (Striker et al., 2016). Motorcycle helmets are designed to protect riders' heads from impacts during crashes. These crashes have the potential to result in fatal injuries. Wearing a helmet substantially reduces the likelihood of these crashes leading to fatal injuries.

Limitations

Information about the type of injury associated with a MedPay claim is not available in the HLDI database. Helmets are designed to reduce head injuries, and knowing if a head injury occurred could greatly improve the analysis. It also is unknown if a rider was wearing a helmet at the time of the crash. Observational studies indicate more than half of motorcyclists wear helmets even when not required (NHTSA, 2017). Also note that the claims assessed in this study are based on the garaging state of the motorcycle. The claims for collisions occurring in Michigan for motorcycles garaged in another state are categorized in their home state. HLDI's data does not indicate the collision location; thus all claims must be associated with the garaging location of the motorcycle.

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Appendix: Illustrative regression results — Medical payment claim severity while controlling for policy limits

Parameter		Degrees of freedom	Estimate	Effect	Standard error	Wald 95% confidence limits		Chi-square	P-value
Intercept		1	8.1335		0.0679	8.0005	8.2666	14349.10	<0.0001
State	Illinois	1	0.2039	22.6%	0.0622	0.0820	0.3259	10.74	0.0010
	Indiana	1	0.1677	18.3%	0.0658	0.0388	0.2967	6.50	0.0108
	Ohio	1	0.1920	21.2%	0.0747	0.0457	0.3384	6.61	0.0101
	Wisconsin	1	0.1326	14.2%	0.0682	-0.0010	0.2662	3.78	0.0517
	Michigan	0	0	0	0	0	0		
Time period	After	1	0.2983	34.8%	0.0652	0.1705	0.4260	20.94	<0.0001
	Before	0	0	0	0	0	0		
State x time period	After (Illinois)	1	-0.3650	-30.6%	0.0723	-0.5068	-0.2233	25.47	<0.0001
	After (Indiana)	1	-0.3439	-29.1%	0.0771	-0.4951	-0.1927	19.88	<0.0001
	After (Ohio)	1	-0.3337	-28.4%	0.0871	-0.5045	-0.1630	14.67	0.0001
	After (Wisconsin)	1	-0.3018	-26.1%	0.0764	-0.4515	-0.1521	15.61	<0.0001
	After (Michigan)	0	0	0	0	0	0		
	Before (Illinois)	0	0	0	0	0	0		
	Before (Indiana)	0	0	0	0	0	0		
	Before (Ohio)	0	0	0	0	0	0		
	Before (Wisconsin)	0	0	0	0	0	0		
	Before (Michigan)	0	0	0	0	0	0		
Motorcycle age		1	0.0047	0.5%	0.0041	-0.0034	0.0129	1.30	0.2537
Motorcycle class	Chopper	1	0.0231	2.3%	0.1280	-0.2277	0.2739	0.03	0.8565
	Dual purpose	1	-0.1339	-12.5%	0.0566	-0.2448	-0.0229	5.59	0.0181
	Scooter	1	-0.1103	-10.4%	0.0386	-0.1858	-0.0347	8.18	0.0042
	Sport	1	-0.1244	-11.7%	0.0453	-0.2131	-0.0357	7.55	0.0060
	Sport touring	1	0.0875	9.1%	0.0828	-0.0749	0.2498	1.12	0.2909
	Standard	1	-0.0073	-0.7%	0.0842	-0.1723	0.1577	0.01	0.9311
	Super sport	1	-0.0936	-8.9%	0.0355	-0.1632	-0.0241	6.96	0.0083
	Touring	1	0.0828	8.6%	0.0223	0.0391	0.1265	13.79	0.0002
	Unclad sport	1	-0.1209	-11.4%	0.0598	-0.2381	-0.0037	4.09	0.0432
	Cruiser	0	0	0	0	0	0		
Rated driver age	21-24	1	-0.1013	-9.6%	0.0457	-0.1908	-0.0118	4.92	0.0265
	25-39	1	-0.0101	-1.0%	0.0242	-0.0575	0.0373	0.18	0.6756
	65+	1	0.0061	0.6%	0.0335	-0.0595	0.0717	0.03	0.8544
	40-64	0	0	0	0	0	0		
Rated driver gender	Male	1	0.0548	5.6%	0.0339	-0.0116	0.1212	2.62	0.1057
	Unknown	1	-0.0569	-5.5%	0.0486	-0.1522	0.0383	1.37	0.2415
	Female	0	0	0	0	0	0		
Rated driver marital status	Single	1	0.0123	1.2%	0.0264	-0.0394	0.0640	0.22	0.6410
	Unknown	1	0.0229	2.3%	0.0360	-0.0477	0.0935	0.40	0.5251
	Married	0	0	0	0	0	0		
Risk	Nonstandard	1	-0.0431	-4.2%	0.0245	-0.0911	0.0049	3.10	0.0784
	Standard	0	0	0	0	0	0		

Appendix: Illustrative regression results — Medical payment claim severity while controlling for policy limits

Parameter		Degrees of freedom	Estimate	Effect	Standard error	Wald 95% confidence limits		Chi-square	P-value
Registered vehicle density	100-499	1	-0.0266	-2.6%	0.0214	-0.0684	0.0153	1.54	0.2139
	<100	1	-0.0406	-4.0%	0.0254	-0.0903	0.0091	2.57	0.1092
	500+	0	0	0	0	0	0		
Temperature range	Moderate	1	-0.2790	-24.3%	0.9217	-2.0856	1.5276	0.09	0.7621
	High	0	0	0	0	0	0		
Precipitation		1	-0.0001	0.0%	0.0001	-0.0002	0.0001	1.32	0.2497
Temperature		1	0	0.0%	0	0	0	0.33	0.5652
Temperature x temperature range	Moderate	1	0.0047	0.5%	0.0153	-0.0252	0.0347	0.10	0.7572
	High	0	0	0	0	0	0		
Policy limit ranges	$0 - $4,999	1	-1.1296	-67.7%	0.0274	-1.1833	-1.0760	1703.59	<0.0001
	$10,000 - $14,999	1	0.5643	75.8%	0.0389	0.4881	0.6406	210.39	<0.0001
	$15,000 - $19,999	1	0.1569	17.0%	0.1970	-0.2292	0.5429	0.63	0.4258
	$20,000 - $24,999	1	0.9703	163.9%	0.0772	0.8190	1.1216	158.04	<0.0001
	$25,000 - $29,999	1	1.2817	260.3%	0.0667	1.1510	1.4124	369.31	<0.0001
	$30,000+	1	1.7027	448.9%	0.0973	1.5120	1.8934	306.25	<0.0001
	$5,000 - $9,999	0	0	0	0	0	0		

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