ISO

Wheels of Misfortune

CAS Annual Meeting, November, 2018
Las Vegas, NV

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Concurrent Session: Wheels of Misfortune

- This session will provide an update to the Commercial Auto industry experience, most recently presented at the 2018 September CAS Loss Reserving Seminar and June CARe Wheels Down sessions.
- We will review various industry results from the 2000s through 2017. We will include a detailed review of 2017 as of 2018 with an emphasis on actual vs. expected testing indications, potential lengthening ground-up and excess loss development factors, industry based initial expected loss ratios, rate change monitoring, and underwriting cycle ramifications.
- Additional claim drivers and litigation trends will be reviewed including a diagnosis of the past and potential remedies for the future.
- An underwriter / commercial auto product manager who has lived through the wheels ups and downs over the last decade will give their experience from a ground level perspective, including measures to help underwriters improve their insights in this continually challenging line of business.

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Wheels of Misfortune Agenda

- **Introduction and update – Jim 30 mins**
  - Review of industry experience from 2009 to 2017, view at 2018
  - Review frequency and severity trends, loss development, profit vs LDF speed, IELRs – ground-up and excess, market segment review, rate changes
- **Additional industry insights – Mike 20 mins**
  - Review of industry booked loss ratios and development
  - Further analysis of lengthening development patterns
  - Analysis of loss ratio by premium growth
- **A product manager perspective – Diane 15 mins**
  - A view from the trenches over the last decade
  - Winners and losers
  - Measures to help improve insights
- **Further discussion and Q&A - Panel 10 mins**

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Commercial Auto
Views from 2010 - 2017

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Commercial Auto – View at 2010

Illustrative

Looking back at Trend at 2010:
- Frequencies steadily reducing from early 2000s
- Recent severities overall flat

Frequency

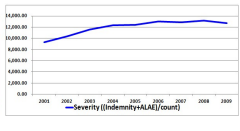
Analysis Method: Premium (BW rate change)
Apriori Trend = 0.03
BICOMSCO

AY	Ultimate OCCURRENCE	Freq per 1M UOP	YTY Change	Ultimate Prem
2001	287,739	54.8918		5,241,730,845
2002	233,763	46.0918	-16.14%	5,068,280,080
2003	292,872	44.9750	-2.42%	6,516,394,474
2004	286,487	46.4859	3.36%	6,165,176,459
2005	281,184	45.7888	-1.50%	6,141,841,917
2006	192,284	31.9888	-30.15%	6,015,644,319
2007	200,826	30.3930	-5.33%	6,140,184,535
2008	177,153	30.8400	1.46%	5,814,282,298
2009	150,860	34.2520	11.07%	4,441,840,894
Total/Average	1,135,164	41.8775	2.04%	43,681,184,892
Trend 1 year			-4.60%	
Trend - all year			-4.99%	
			-37.6%	

Severity

Analysis Method: Premium (BW rate change)
Apriori Trend = 0.03
BICOMSCO

AY	Ultimate Severity (Indemnity+ALAE) Count	Severity (Indemnity+ALAE) Count	YTY Change	Ultimate Prem
2001	8,334	8,334	9.91%	5,241,730,845
2002	10,303	10,303	19.24%	5,068,280,080
2003	11,501	11,501	11.58%	6,516,394,474
2004	12,136	12,136	5.49%	6,165,176,459
2005	12,080	12,080	0.57%	6,141,841,917
2006	12,488	12,488	3.37%	6,015,644,319
2007	12,010	12,010	-3.83%	6,140,184,535
2008	11,598	11,598	-2.79%	5,814,282,298
2009	12,125	12,125	3.52%	4,441,840,894
Total/Average	110,988	110,988	3.82%	43,681,184,892
Trend 1 year			3.88%	
Trend - all year			3.88%	



Source: ISO Slides from CAS Casualty Loss Reserve Seminar – September 12, 2017 (LOB-3 Wheels Down – J. Buchanan)

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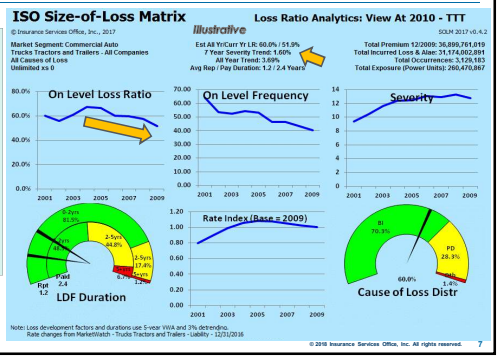
Commercial Auto – View at 2010

Holistic view at 2010:
- **On level Loss ratios going down since 2004**
- Frequencies steadily reducing from early 2000s
- Severities overall recently flat
- Relatively quick LDF duration
  - avg GU reported loss = 1.2 yrs
  - avg paid = 2.4 yrs
- Moderate reductions in rates since 2005
- Mostly BI claims – but their trends ok as well
- The interconnected on-level line graphs show what various IELRs would be at current rate levels
- **Overall, the current on-level loss ratio compared to long term is 8 pts better (60.0% long-term vs. 51.9% current)**



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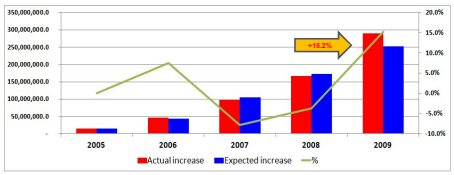
Commercial Auto – View at 2010

TTT Actual vs. Expected (ERLI Warning) – Excess Layer 900x100k *Illustrative*

Check to see if any early warning development signs in various layers and components.

Overall ok, except AY 2009 indicates a bit of a blip up – 252M expected, but 290M actual, or 15.2% adverse development.



AY	Actual n-5	Actual n-5	5-Yr ATA	Expected n-5	AY	Actual increase	Expected increase	Actual - Expected	%
2005	1,097,265,890	1,112,066,630	1.0135	1,112,058,120	2005	14,802,740.0	14,793,230.0	8,510.4	0.1%
2006	1,066,637,325	1,112,815,458	1.0403	1,109,570,434	2006	46,178,133.0	42,933,109.1	3,245,023.9	7.6%
2007	991,509,745	1,088,630,104	1.1063	1,096,882,077	2007	97,120,359.0	105,372,232.4	(8,251,873.4)	-7.8%
2008	722,271,219	888,533,303	1.2391	894,966,382	2008	166,262,084.0	172,715,163.5	(6,453,079.5)	-3.7%
2009	334,768,535	624,898,496	1.7525	586,678,587	2009	290,129,961.0	251,910,051.5	38,219,909.5	15.2%
2010		372,660,496			2010				
Sum x2010	12,419,753,463	13,029,933,629		13,010,261,530	Sum x2015	610,173,566	590,440,067	19,731,499	3.3%
1996-1999	3,028,045,461	3,027,332,760		3,027,833,529	2001-2004	(712,701)	(111,522)	(600,769)	-536.7%
2000-2004	5,179,255,288	5,175,654,269		5,182,891,395	2005-2009	(3,601,019)	2,836,107	(6,437,126)	-227.0%
2005-2009	4,212,452,714	4,626,846,000		4,600,176,606	2010-2014	614,483,286	587,723,892	26,759,394	4.6%

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Commercial Auto View at 2014

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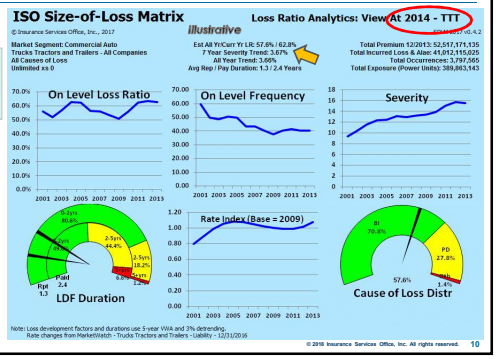
Commercial Auto – View at 2014

Due to frequencies and severities both ticking up since 2009, overall 2013 TTT IELR went from 51.9% to 62.8%



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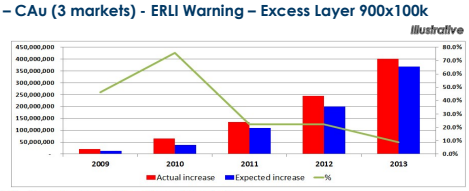
Commercial Auto – View at 2014

Commercial Auto – CAu (3 markets) - ERLI Warning – Excess Layer 900x100k

Each calendar year since 2009 had significant adverse development due to lengthening loss development tail.



SOLM Release 2016 (v4.2) - Development Triangle and Analysis
ERLI Warning

CY=2014 2 Ex Ante

AY	Actual n-1	Actual n-2	5-Yr ATA	Expected n-2	AY	Actual Increase	Expected	Actual	Expected	%
2009	927,792,337	948,489,796	1.015	941,837,861	2009	29,697,459	14,145,524	6,851,935		46.3%
2010	968,391,676	1,035,440,722	1.039	1,006,993,605	2010	66,049,046	37,602,009	28,447,637		75.7%
2011	996,401,629	1,125,601,334	1.112	1,100,865,153	2011	135,275,805	110,583,624	24,696,181		22.3%
2012	796,632,607	1,042,053,515	1.252	997,232,576	2012	245,420,908	200,599,969	44,820,939		22.3%
2013	448,845,946	849,047,219	1.820	817,040,649	2013	400,801,273	368,194,703	32,606,570		8.9%
Sum x2014	14,826,297,316	15,898,714,934		15,555,987,734	Sum x2014	879,417,610	735,690,418	142,727,200		Total %
1999-2002	4,175,976,527	4,176,860,812		4,176,055,046	1999-2002	884,285	78,519	805,766		1026.2%
2003-2007	5,484,115,686	5,486,515,006		5,485,827,797	2003-2007	2,399,480	1,712,191	687,289		40.1%
2008-2012	4,711,359,237	5,185,691,817		5,077,064,243	2008-2012	474,332,580	365,705,006	108,627,574		29.7%

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Commercial Auto
View at 2016/2017

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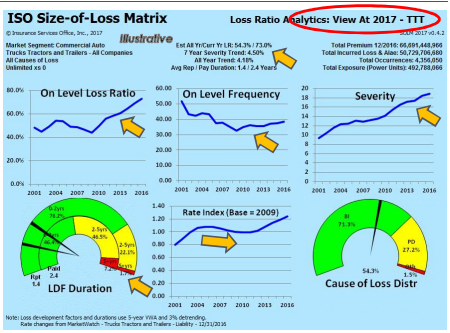
Commercial Auto – View at 2017

The IELR for 2016 has moved to 73.0%, up from 51.9% at 2009. Rebounded frequency, heightened severity trends, and lengthening development factors, coupled with rates that were still going down through 2012 account for the over 20 point increase.



Source: SOLM 2017v1 pre-release

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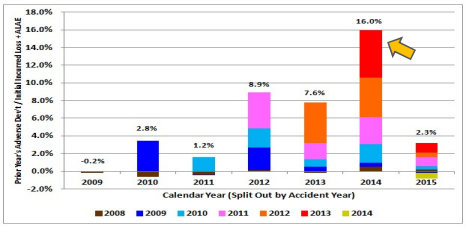
Commercial Auto – View at 2016

Illustrative

Commercial Auto – TTT - ERLI Warning through 2015 – Calendar Year

Each calendar year since 2010 had adverse development due to lengthening loss development tail. 2014 being by far the most adverse, with all years contributing besides first look at 2015.



Source: ISO SOLM 2016 v1 - losses developed to ultimate using 5-year VWA (refresh each year); premiums developed to ultimate using Earned Premium triangle
ISO MarketWatch for Rate changes - Auto Commercial Liability - through 12/31/2015 (adjusted policy year to accident year using 6 mo policy term assumption)
CY adverse development for AYs 2009-2014: approximately 40% in CY2014 (about 20% each in CY2013 and CY2012)

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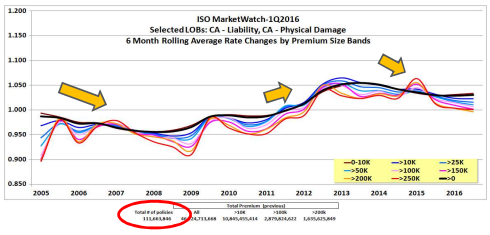
Commercial Auto – View at 2016

Incremental Rate Changes Through 3/31/2016 - Liability & Physical Damage

Rates reducing from 2005 to 2011, and importantly didn't go positive until 2012 even though loss trends changed direction 3 years earlier.

Larger policies, in general have larger rate reductions, and back to flat early 2016.

Illustrative



Source: ISO MarketWatch – released 6/15/2016; further details in Commercial Actuarial Panel – December 2016

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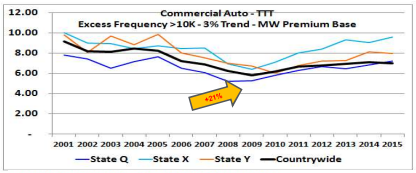
Commercial Auto – View at 2016

Excess Overall Frequency>10k @ 12/2015 and Assuming 3% Severity Trend

Illustrative

Overall frequency trend for claims excess of 10k is larger than ground-up claims by overall 1.25%, but significant variations by state.



Excess Frequency >10K - 3% Trend - MW Premium Base

	Countrywide	State Q	State X	State Y
2009	5.78	5.25	6.38	6.74
2010	6.20	5.80	7.10	6.03
2011	6.67	6.29	7.99	6.79
2012	6.77	6.68	8.42	7.22
2013	6.92	6.46	9.30	7.24
2014	7.09	6.83	9.05	8.11
2015	7.01	7.22	9.55	7.98
7 Year Trend	3.15%	4.67%	6.60%	4.17%
Total Occurrences	723,394	48,635	25,544	11,015
Excess vs GU trend	1.25%	1.19%	3.17%	0.06%

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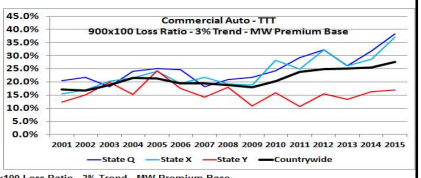
Commercial Auto – View at 2016

Excess Partial Loss Ratios 900x100k @12/2015 Assuming 3% Severity Trend

Illustrative

Overall excess IELRs for 900x100 show relativity has risen from average of 19% in the 2000s, to 27.6% in 2015; this increase suggests pressure on the ILFs; although not all states show the same pattern, overall excess loss ratio trend is larger than ground-up by about .5% per year



900x100 Loss Ratio - 3% Trend - MW Premium Base

	Countrywide	State Q	State X	State Y
2009	18.0%	21.8%	18.9%	10.9%
2010	20.4%	24.3%	28.3%	16.0%
2011	23.8%	29.3%	24.9%	10.6%
2012	25.0%	32.2%	32.2%	15.4%
2013	25.1%	26.2%	26.1%	13.3%
2014	25.5%	31.9%	28.6%	16.4%
2015	27.6%	38.3%	37.1%	16.9%
7 Year Trend	6.36%	7.58%	7.47%	5.69%
Total Indemnity	17,036,053,171	1,513,152,397	570,861,128	187,616,942
Excess vs GU trend	0.52%	0.52%	-0.55%	-0.07%

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Commercial Auto View at 2018

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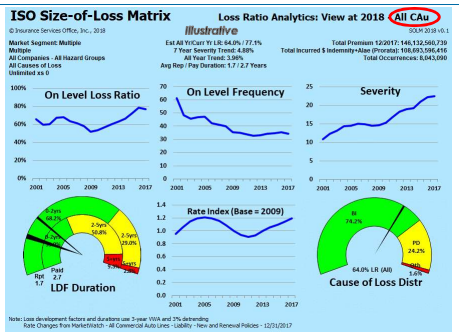
Commercial Auto – View at 2018

For all of Commercial Auto (TTT is about half of the 8 CAu markets and 38 total commercial markets we analyze), the current loss ratio is 77.1%, vs. long-term on-level average of 64.0%.

Recent somewhat higher overall severity trends (4.9% vs. 4.6% accounting for some of the difference).



Source: SOLM 2018v1 pre-release using on-level premium as base

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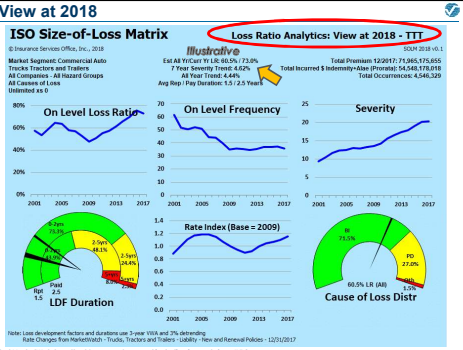
Commercial Auto – View at 2018

Overall loss ratios deteriorated a bit for 2016 and prior due to further lengthening tail and adverse loss development. 2017 improved a bit due to continued rate activity, and lessened loss trends.

The current TTT loss ratio of 73.0%, is 12.5 points worse than longer term on-level average of 60.5%.



Source: SOLM 2018v1 pre-release (using expanded MarketWatch method 3-new and renewal including impacts from ILFs)

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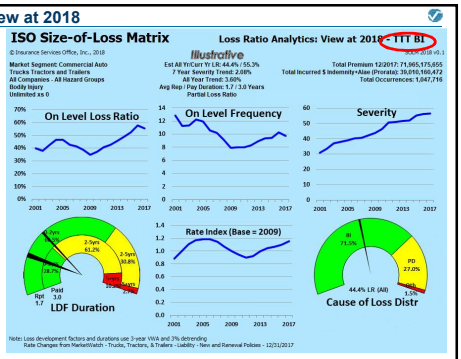
Commercial Auto – View at 2018

Bodily injury is a somewhat larger portion of total (71.5% vs. 70.3% in 2009), and longer average reported loss and payment duration.

BI shows higher frequency trends but lower severity trends than total and PD.



Source: SOLM 2018v1 pre-release using on-level premium as base

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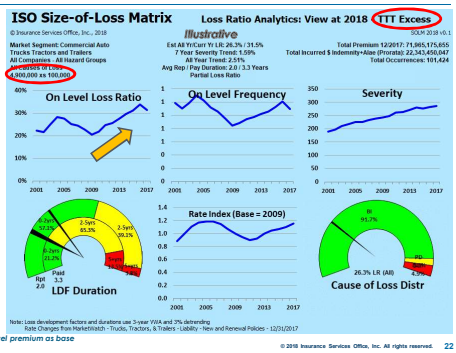
Commercial Auto – View at 2018

Continued pressure on increased limits factors for layer 4.9M xs of 100k, going from low 20% in 2009 to above 30% currently, driven by higher frequency and steady severity trend excess of 3%.



Source: SOLM 2017v1 pre-release using on-level premium as base

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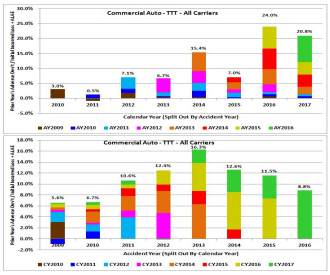
Commercial Auto – View at 2018

TTT - ERLI Warning through 12/31/2017

Illustrative

Calendar year 2017 2nd worse year for adverse development for TTT, with 2016 worse and 2015 a small lull.

Adverse development across all AYs.



Sources: Using pre-release SOLM 2018 v1 – mechanical selections of VWA (50% all-year, 50% 5-year)

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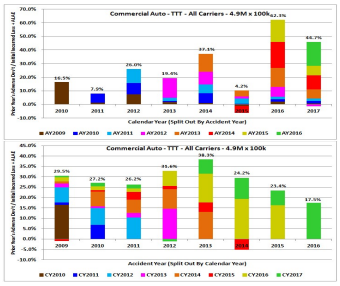
Commercial Auto – View at 2018

TTT XS - ERLI Warning through 12/31/2017

Illustrative

Excess TTT adverse development is higher than ground-up for 2017, continuing overall pattern of 2016 worse and 2015 a small lull.

Adverse development across all AYs.



Sources: Using pre-release SOLM 2018 v1 – mechanical selections of VWA (50% all-year, 50% 5-year)

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Commercial Auto – View at 2018

Continuing Reported Lengthening Loss Development – 4.9M xs 100k

Illustrative

LDF Factors continue to lengthen in 2017, especially at early maturities. All views at 2017 use 3-year averages – if use more recent or trend LDFs, indications would be higher.

Incurred $ Indemnity+Alae (Prorata) Triangle

	12	24	36	48	60	72	84	96
AY 1997	385,264,082	608,682,744	746,848,695	833,201,837	890,726,136	926,842,072	934,852,469	937,165,042
AY 1998	364,072,042	615,889,827	774,736,342	898,842,391	948,681,668	966,848,321	974,463,538	974,978,737
AY 1999	370,272,025	630,115,254	843,996,492	972,804,373	1,018,882,211	1,043,988,836	1,054,044,024	1,058,215,715
AY 2000	372,263,737	670,837,370	891,262,146	1,018,824,873	1,080,443,576	1,094,878,246	1,094,112,434	1,101,139,139
AY 2001	364,721,101	640,868,835	858,203,334	1,000,484,887	1,038,700,500	1,046,706,026	1,050,030,011	1,053,024,782
AY 2002	371,777,152	649,695,122	846,935,267	928,440,250	952,285,727	970,790,779	980,015,165	980,894,367
AY 2003	402,074,489	700,455,287	874,736,196	994,841,216	1,030,710,246	1,047,723,072	1,049,455,034	1,047,250,094
AY 2004	442,010,205	762,111,740	946,303,896	1,041,447,309	1,057,772,017	1,107,208,539	1,108,014,097	1,112,338,773
AY 2005	452,085,653	787,475,380	954,496,016	1,048,227,474	1,092,646,066	1,113,694,648	1,115,020,482	1,123,133,799
AY 2006	442,080,551	790,455,280	954,496,016	1,048,227,474	1,092,646,066	1,114,401,650	1,116,020,482	1,123,133,799
AY 2007	469,888,051	793,543,172	945,706,408	1,043,550,404	1,088,446,035	1,110,554,500	1,110,554,500	1,117,360,129
AY 2008	427,017,444	692,775,240	859,879,603	952,470,608	990,311,052	1,009,211,401	1,010,155,755	1,017,093,123
AY 2009	315,204,780	589,089,272	742,736,014	832,442,202	890,490,646	914,742,876	916,091,463	925,365,789
AY 2010	347,020,087	621,545,508	808,796,004	909,802,822	974,011,225	996,004,915	1,007,300,031	1,010,392,039
AY 2011	388,045,370	736,342,260	931,376,408	1,070,301,874	1,137,272,822	1,166,210,192	1,170,944,785	
AY 2012	391,302,002	741,003,007	914,007,115	1,100,030,391	1,190,315,100	1,209,474,875		
AY 2013	411,030,484	781,334,263	1,017,773,426	1,208,137,890	1,303,020,669			
AY 2014	453,755,072	798,972,033	1,109,071,420	1,312,070,420				
AY 2015	460,654,360	910,092,126	1,226,798,487					
AY 2016	551,054,014	1,000,840,484						
AY 2017	607,010,087							
H_2006; 2016; 2017;	17,031,440,583	19,192,140,253	26,609,369,893	22,343,450,847				

	2012	36/24	48/36	60/48	72/60	84/72	96/84	108/96
AY 1997	1.713	1.225	1.117	1.069	1.023	1.008	1.002	1.001
AY 1998	1.692	1.258	1.160	1.055	1.020	1.009	1.001	1.002
AY 1999	1.702	1.339	1.153	1.047	1.025	1.010	1.003	1.001
AY 2000	1.802	1.329	1.143	1.061	1.012	1.008	1.006	0.998
AY 2001	1.759	1.339	1.166	1.038	1.008	1.003	1.003	0.998
AY 2002	1.748	1.304	1.096	1.026	1.020	1.009	1.000	1.000
AY 2003	1.742	1.249	1.138	1.037	1.017	1.002	0.998	1.004
AY 2004	1.722	1.240	1.102	1.044	1.046	1.001	1.003	1.001
AY 2005	1.665	1.210	1.118	1.038	1.019	1.000	1.002	1.001
AY 2006	1.719	1.204	1.099	1.047	1.016	1.006	1.002	1.002
AY 2007	1.688	1.190	1.108	1.043	1.020	1.000	1.001	1.003
AY 2008	1.642	1.240	1.108	1.040	1.019	1.009	1.003	1.006
AY 2009	1.870	1.260	1.120	1.069	1.027	1.002	1.000	1.010
AY 2010	1.791	1.301	1.125	1.072	1.023	1.012	1.005	
AY 2011	1.835	1.275	1.149	1.063	1.025	1.012		
AY 2012	1.893	1.233	1.124	1.077	1.016			
AY 2013	1.906	1.230	1.187	1.079				
AY 2014	1.760	1.392	1.183					
AY 2015	1.869	1.328						
AY 2016	1.816							

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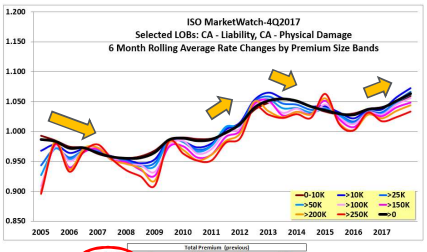
Commercial Auto – View at 2018

Incremental Rate Changes Through 12/31/2017 – Renewal Policies

Illustrative

Rates ride a roller coaster ride, but lagged by a few years compared to actual experience.



	Total Premium (previous)			
	All	>10K	>100k	>200k
Total # of policies	132,023,123	1,694,457,947	13,601,205,351	3,714,659,458	2,106,704,117

Source: ISO MarketWatch – released 3/22/2018; further details in Commercial Actuarial Panel – December 2016

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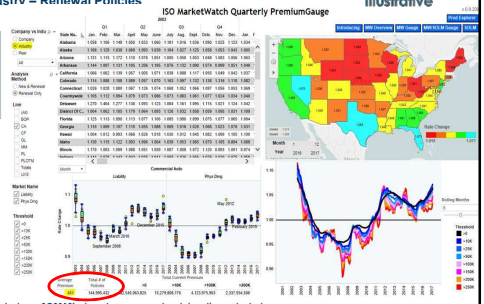
Commercial Auto – View at 2018

Total Commercial Auto Industry – Renewal Policies

Illustrative

There are significant rate change differences by renewal vs new/renewal, state, month, year, premium size, aggregated peer groups such as regional/super-regional/national, line of business and market.



Note: MarketWatch Dashboard (expected release 3Q2018): vlues shown may not match options selected

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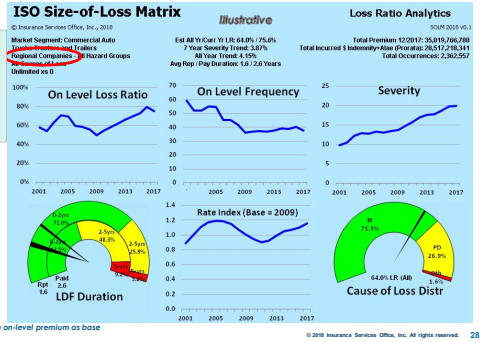
Commercial Auto – View at 2018

Regional carriers somewhat worse overall experience at 75.6% for TTT, and 11.6 points worse than long-term on-level average 64%. Significant variations between regional, and all, carriers exist.



Source: SOLM 2018v1 pre-release using on-level premium as base

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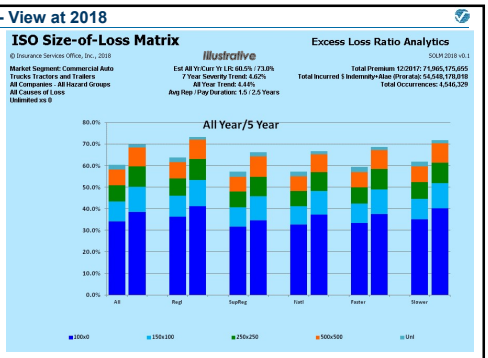
Commercial Auto – View at 2018

Regional carriers have worse experience than super-regional or national carriers, with losses less than 100k providing much of the difference.

Faster developing companies having better experience than slower companies.



Source: SOLM 2017 v1 using top 40 National Companies (market cap > $1B); regional is <$50M market cap)

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