GUY CARPENTER

October 2019

Risk Benchmarks Research

Property/Casualty Industry Insights

MARSH & McLENNAN COMPANIES

Contents

Introduction

With the goal of accumulating and interpreting U.S. insurance statutory financial data, Guy Carpenter continues our Risk Benchmark Research initiative, now in its ninth year. Our Risk Benchmark Research study, prepared by Guy Carpenter's Global Strategic Advisory team, provides insight into market trends for strategic decision making.

Whether you are a company looking to compare your results to the industry or searching for insight as you manage your business strategies, the information that follows is intended to facilitate a review of intuitive yet critical metrics.

The challenges and opportunities faced by regional and nationwide carriers have evolved over the past several years and as such we have delved into these segment breakouts to help uncover the trends and issues faced by our clients.

This year's Risk Benchmark Research is available on our new GC Edge platform to create an enhanced, interactive approach for our clients to personalize the extraction of information from our analysis. We hope you find the research useful and insightful and encourage you to explore the GC Edge platform.

Guy Carpenter is committed to providing each and every client with the data, tools, advice and execution to help them with their unique capital, volatility and growth challenges.

Please contact your Guy Carpenter representative and share your questions, thoughts and ideas.

We encourage feedback and value our collaborative client partnerships.

Best regards,

John Trace
CEO North America, Guy Carpenter & Company, LLC

Key Takeaways from Our Research

1. Reserve surprises continue to present themselves in the form of adverse development around lines such as personal auto, commercial auto and homeowners. The balance of the industry appears to have reached an inflection point with reserve redundancies close to being exhausted and no longer available to cover new shocks to the system.

2. Social inflation, marked by a rising propensity to sue and higher jury verdicts, is poised to drive increased pressure on loss costs through liability-exposed lines. Companies will need to reevaluate how they handle claims and minimize risks by assessing which types of claimants will have the highest potential for litigation and the influence of jurisdiction on loss costs.

3. Property lines in excess of USD 200 billion of written premiums are experiencing pressure due to catastrophes, reinsurer rate actions and atypical reserve adverse development. Insurers are reevaluating capital and how to better leverage reinsurance as market dynamics shift. In addition, companies have begun to think about how to translate this all into strategic evaluations of which lines/insureds are driving loss cost increases, rather than broadly passing rate increases to the entire portfolio.

4. Workers compensation direct written premiums declined slightly in 2018 to just over USD 57 billion. Combined ratios (CRs) continued to inch upwards, with more sophisticated carriers withstanding the drift more effectively through effective return-to-work programs, loss control discipline, and medical cost management to name a few.

5. Commercial auto is under new pressure as carriers such as Progressive push into the market with predictive models to attack the small commercial risks in ways similar to their personal lines approach. This comes at a time when many other carriers are still unable to reach profitable levels using traditional pricing and underwriting approaches.

6. Small and package commercial have been impacted by deteriorating property results while insurers battle for market share around deployment of advanced analytics and new carriers enter the market. While a portion of this deterioration was due to catastrophe losses, another part was attributed to companies competing for those accounts that best fit into their straight through processing underwriting approaches.

7. Personal auto rebounded to profitable levels for the first time in five years, while homeowners suffered at the hands of catastrophic loss. Overall balance is possible where companies are diversified and have purchased reinsurance appropriately.

8. Major direct writers such as Progressive, GEICO and USAA have taken advantage of analytics and low expense ratios to gain market share in personal lines.

Industry Insights

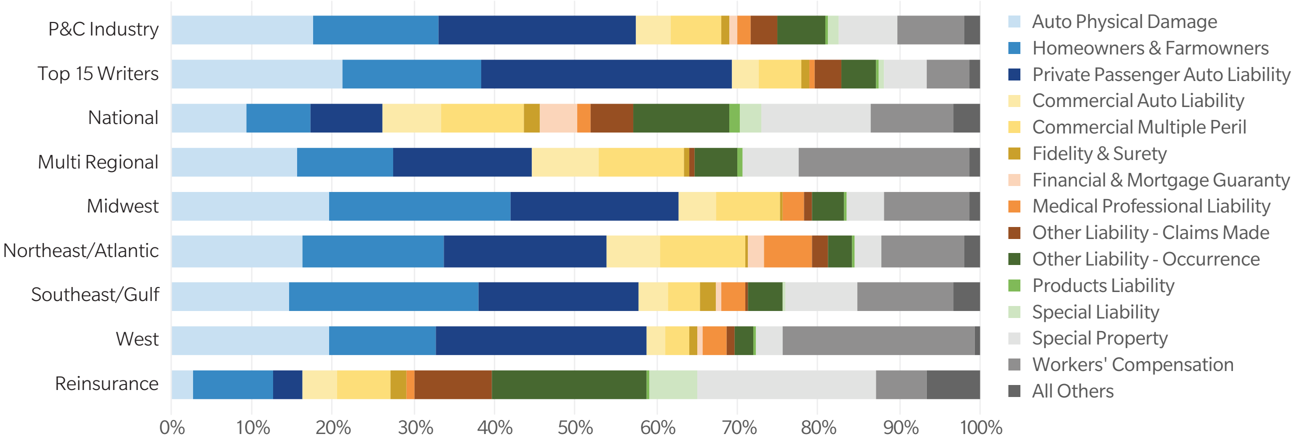
Competition and change are the only certainties (re)insurers are promised in today's market. The industry shows signs of overcapitalization coupled with evolving catastrophe risks and an extended period of low interest rates.

These factors have increased the pressure to focus on underwriting in place of hoping investment income would cover all sins. As such, business models for insurance companies have been progressing and the pace and opportunity associated with data, information and technology have influenced how risk is analyzed, selected, distributed and mitigated in the insurance equation of rate, exposure and capital. Results by segment and business model emphasize the pressure companies are under to generate profitable returns and once standalone threats are coalescing into systemic threats to the industry.

Companies will have to evaluate their business models around distribution, underwriting, pricing and risk mitigation to help create a separation from their competition as higher loss cost trends in a number of long-tail lines and an accumulation of losses from recent extreme weather events are forcing carriers to reassess views of risk. This increased exposure to catastrophes coupled with increased competition in personal auto, system and technological upgrades and outlays, medical inflation and social inflation will play through individual lines' results and create challenges or opportunities in the future.

Regional insurers' reliance on personal lines, once a dependable source of profits, has put them square in the crosshairs of some of the most sophisticated insurers in the midst of an analytics and marketing arms race to grow their business. This has driven Regionals and smaller personal lines-dependent carriers to rethink mix of business; we have seen a number of companies begin shifting to commercial lines. The relative mix by line of business and by carrier type (Regional versus National ...) can be seen below.

EXHIBIT 1: 2018 Net Earned Premiums by Line of Business



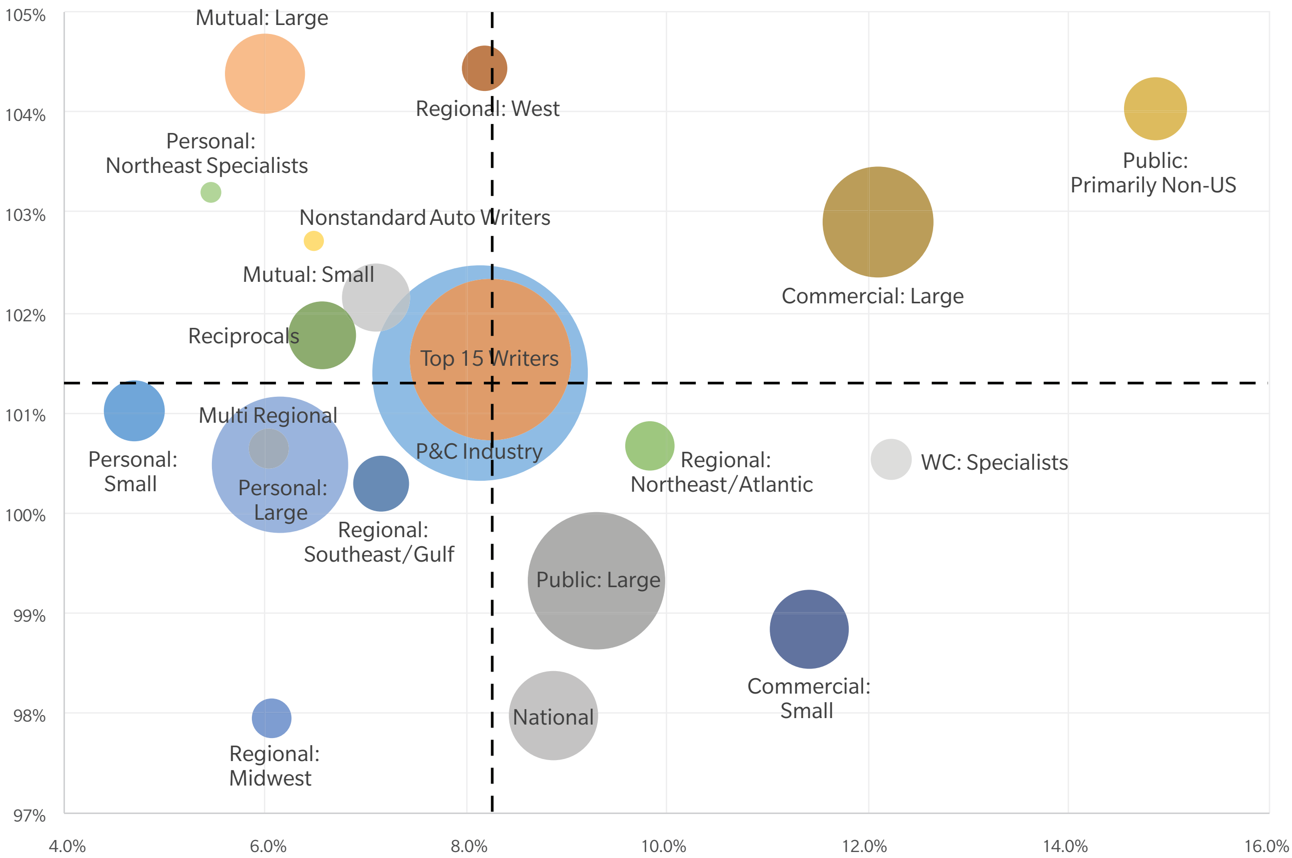
2018 Overview for All Lines Combined		
Segment	**Direct Premiums Written (DPW) ($Millions)**	**5-Year Growth Rate**
P&C Industry	671,981	4.5%
Top 15 Writers	377,349	4.3%
National	117,071	6.3%
Multi Regional	23,181	3.8%
Regional: Midwest	22,639	4.4%
Regional: Northeast/Atlantic	32,536	4.7%
Regional: Southeast/Gulf	45,062	5.4%
Regional: West	29,693	7.1%
Reinsurance	23,702	4.4%

Source: Guy Carpenter

While personal lines dominated the industry mix, with the Top 15 writers continuing their focus in that space, other segments looked to growth strategies that balanced the mix across personal and commercial.

A deeper dive into **U.S. insurance industry** results over the past three years shows pockets of volatility and profitability at a refined segment level. Each segment has had to wrestle with its own specific challenges in managing the capital needed to support risk-taking. For example, over the past three years, Large Mutuals (see segment definition in Appendix) have experienced catastrophe influences on homeowners in addition to significant competition in personal auto that began to shore up in 2018 due to their advanced analytics strategies following four years of poor results. Western Regionals have felt the pain of a once underestimated catastrophe peril – wildfires. And Large Commercials have had to manage across the volatility of primary and excess liability covers that have come under pressure from rising social inflation coupled with a surge in attritional large property losses. These trends have been particularly hard felt among non-admitted writers.

EXHIBIT 2: **3-Year Net CR Versus 20-Year Volatility for All Lines of Business**
Y axis = Accident Year (AY) Net Combined Ratio. X axis = Long-term Volatility

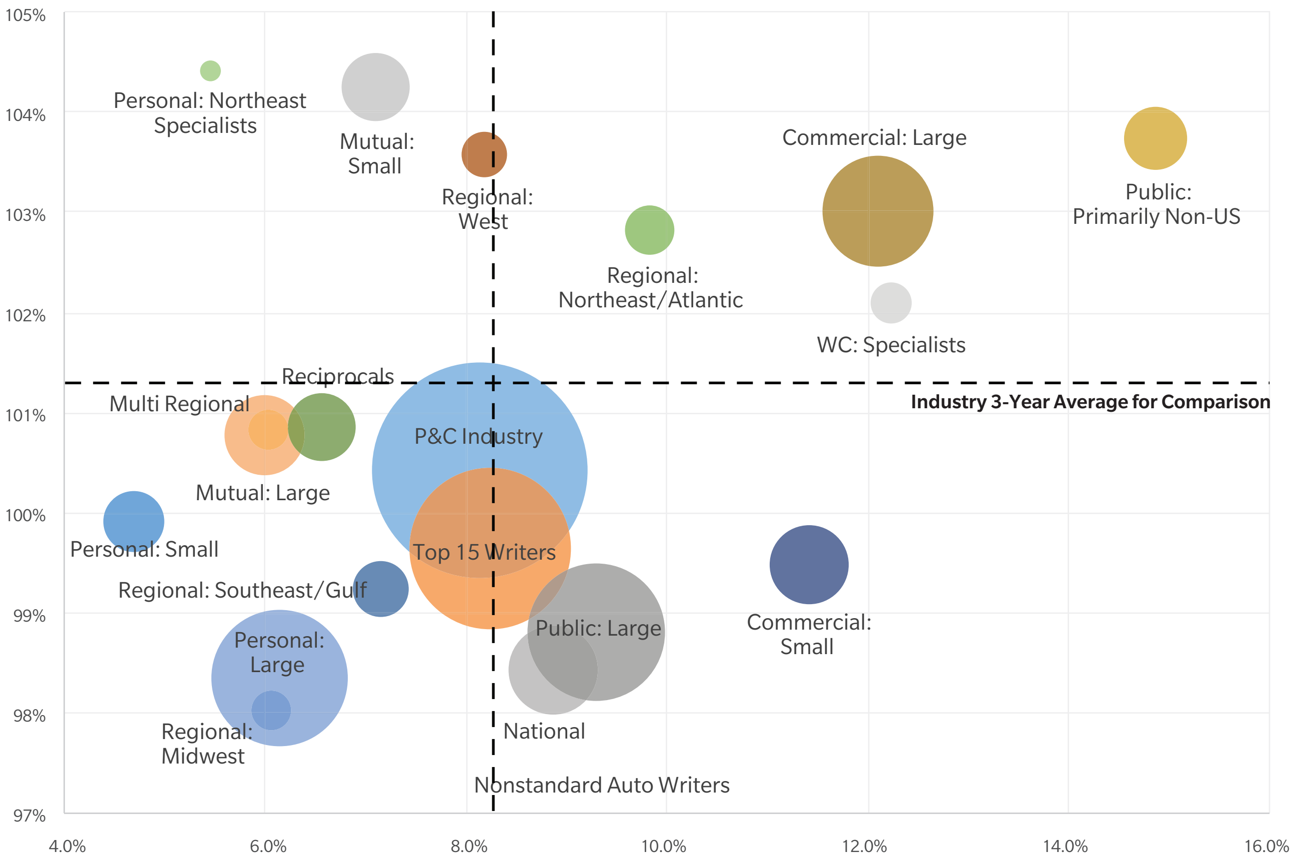


Source: Guy Carpenter

Segments experiencing combined ratios in excess of 100% or significant volatility of results, will have greater capital pressures than those segments in the lower left corner with more stable and profitable business. The industry as a whole, over the last three accident years, has produced slight underwriting losses (combined ratio in excess of 100%). Large Commercial writers show significant volatility of almost 1.5 times the industry.

As seen in the three-year versus one-year comparison, the **U.S. insurance industry** has shifted closer to a breakeven profitability, with the overall net combined ratio coming in at 100 percent versus the three year average of 101 percent. Long-term (20 year) volatility of the net combined ratio ranged from in excess of 20 percent standard deviation for Florida specialists to 4.7 percent for small personal lines writers. Lower volatility does not necessarily mean less capital-intensive business, as consistently unprofitable writers will be under capital demands similar to those of marginally profitable insurers with greater volatility. These companies may find themselves under greater rating agency pressures or market devaluation of stock price.

EXHIBIT 3: 2018 Net CR Versus 20-Year Volatility for All Lines of Business
Y axis = AY Net Combined Ratio. X axis = Long-term Volatility



Source: Guy Carpenter

2018 Accident Year results were a slight improvement over the prior three-year average results.

Notable Line of Business Insights

Commercial Lines

On the **products liability** side, insurers will likely face liability claims challenges as the trial lawyers ramp up around new mass torts including opioids, e-cigarettes, talc and Round-Up. This is apparent from some of the recent judgments and settlements against the manufacturers of opioids. How this migrates through other insurers is unknown as of yet.

These emerging products liability exposures coupled with social inflation will likely impact industry loss costs and will play out across primary, umbrella, lead and high excess writers in stages.

This year's study suggests that liability lines redundancy in past reserves has grown thin as industry reserves remain close to previously booked levels for the last four accident years. Given the recognition lag in emerging **products liability**, the industry is posed to experience some adverse development.

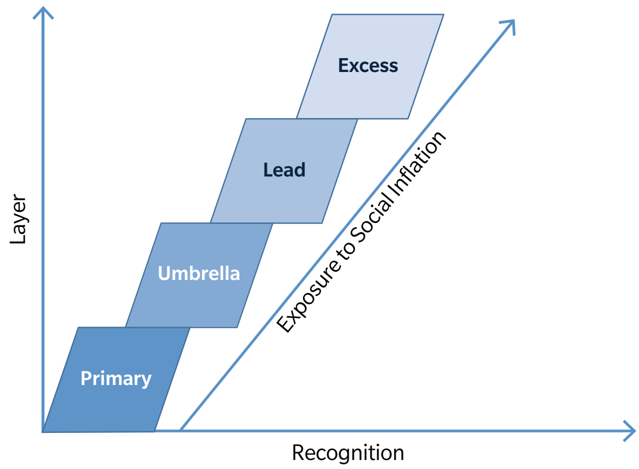
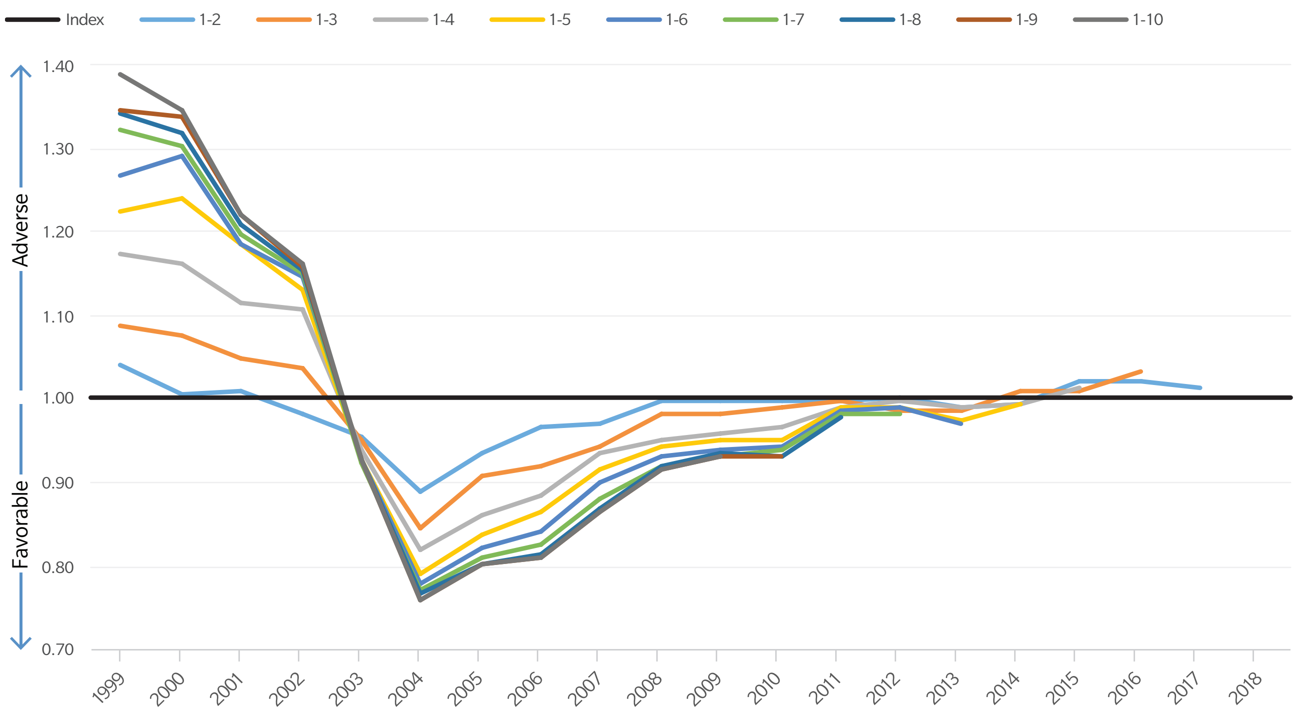


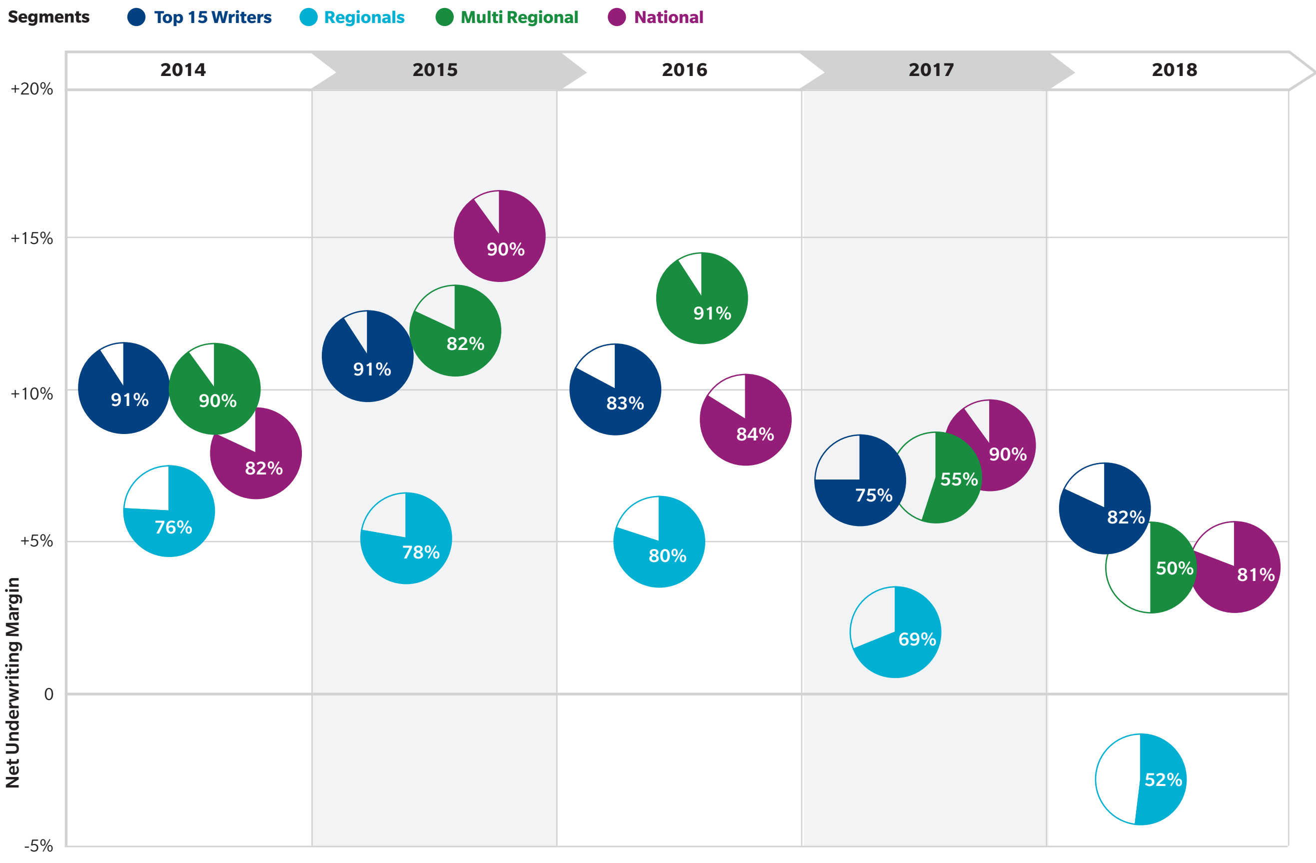
EXHIBIT 4: P&C Industry Reserve Development for Commercial Liability Lines
Booked Ultimate Loss (Subsequent n Year)/Booked Ultimate Loss (First Evaluation), by Accident Year



Source: Guy Carpenter

Adverse development during the early 2000s Accident Years was offset by reserve releases for 2003 - 2010. Booked reserves have held close to original estimates (1.0) for Accident Years 2011 and subsequent, with a slight tick above 1.0 in the last two accident years, possibly showing early signs of social inflation.

EXHIBIT 5: **WORKERS COMPENSATION: % of Companies in Segment Achieving Profitability on an Underwriting Margin Scale**



Source: Guy Carpenter

Workers compensation continued a slow drop in profitability across the industry, with Regionals showing the most damage to combined ratio. The largest writers were most consistent at posting profits once again in 2018.

The **workers compensation** industry has continued to work through an extremely effective change management process as its results continue to defy pre-2013 expectations. Now into its sixth year of nominal underwriting profit, the workers compensation industry has actively engaged in initiatives around loss control, return to work, nurse interaction and prescription management, to name a few. As interventions begin to take hold, the haves and have nots have become more clear. As the 2018 data illustrates, the Nationals and largest carriers have started to separate themselves from the Regionals as they leverage technology and scale in their pricing, claims and underwriting disciplines.

The **workers compensation** industry is not without challenges, including potential systemic risks that could shift the footprint for all carriers. It is managing through an opioid epidemic impacting claims duration and the number of viable bodies available in the work force. Frequency of loss may become exacerbated should the economy heat up and create demand for construction and driving jobs, leading to recruitment of inexperienced workers to fill the void of jobs vacated by those unable to work due to opioid dependence. Where this line of business tracks to in future years will depend highly on the discipline of employers and the market in general as well as external reactions to benefit levels. The year 2018 showed an uptick in combined ratio for the fourth year in a row, and a simple lesson in history from the mid-2000s reveals the potential for a swing into unprofitable territory.

Other future systemic challenges to **workers compensation** include:

- As marijuana legalization continues to accelerate through the states, there will be questions on frequency of loss and how it may ripple through the industry.
- Increased deployment of automation and the resulting displacement of traditional workers could result in a long-term decline in premium volume.
- Material changes to the number of people with and without health insurance could result in cost-shifting to and away from the workers compensation marketplace.
- Impact of a recession and potential for moral hazard.

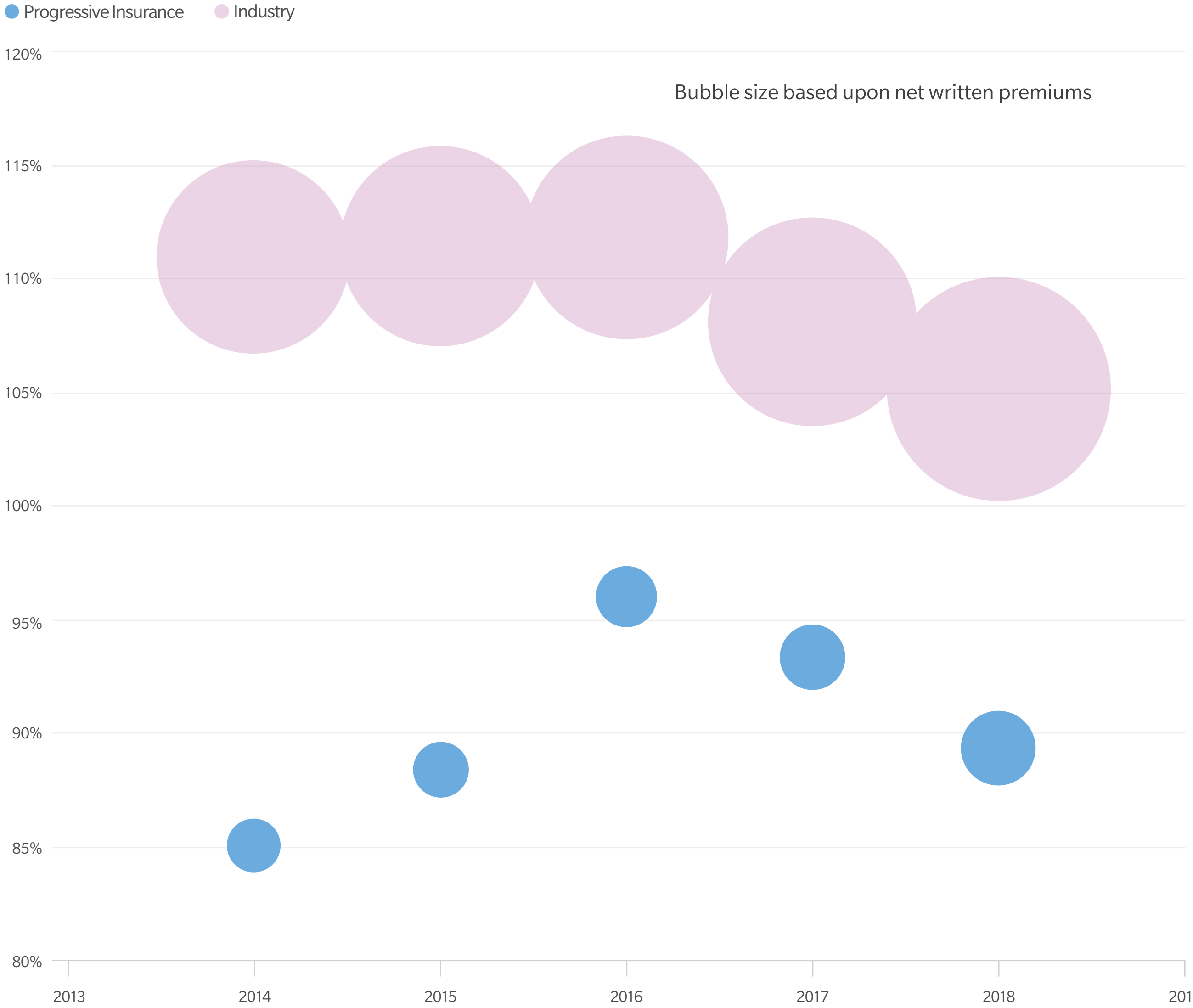
Commercial auto liability (CAL) continues to search for solutions as it steadily drains earnings for many and surplus for some. Forty of the top 100 commercial auto writers experienced combined ratios in excess of 110 percent in 2018. Fifteen of those companies had combined ratios in excess of 120 percent. While the industry has seen some improvement in combined ratio in total, dropping to 105 percent after multiple years in excess of 110 percent, rate changes have been met with adverse selection as across-the-board increases drove the marginally better risks into self-insured configurations or to companies with better segmentation plans. Progressive's strong entry into the sole proprietor and small fleet segment of the market will sound an alarm for the unsophisticated insurers and put greater emphasis on creativity and analytics – Progressive is putting to work 20 years of advanced analytics and has recently pushed into usage-based-insurance (UBI) on the personal auto side.

Against a generally adverse market backdrop, some commercial auto carriers are beginning to see dividends on their investments in UBI, in-vehicle cameras and fleet monitoring initiatives, particularly in the medium and large fleet segments. Carriers that offer more risk management capabilities to their commercial insureds can differentiate from those insurers offering only a traditional insurance product and may therefore be able to avoid competing purely on price while at the same time, helping to manage losses.

Reserve surprises continue to manifest themselves across all types of companies in this once mundane line of business for reserving actuaries. **Commercial auto liability** reserve risk appears to be pervasive across all risks, including traditional safe havens such as Regionals that may have participated in more specialized commercial auto risk. They were believed to have some immunity to issues faced by long-haul trucking risks. Indications point to social inflation as one of the drivers of adverse results and it has a greater propensity for impacting not just the core commercial auto results but also the excess and umbrella divisions of companies, because primary auto policy limits stayed relatively stable over the past five years. As a result, auto carve-out reinsurance programs have been utilized as risk management tools to protect umbrella books from the rising frequency and severity of large auto losses piercing into excess layers.

As social inflation continues to touch more and more jurisdictions and classes of business, commercial auto loss costs will need to respond appropriately or this line will continue to be a hindrance to success for commercial lines writers. In an industry trying to protect itself from prospective unexpected surprises, consistent reinsurer support will depend on how quickly perceived fixes can come into the market. Rate alone may not be enough to drive reinsurer support, as the basics, including increased limits factors, class plans and territory relativities, will need to be fixed to create a dynamic marketplace across the board. Where companies can better leverage machine learning while effectively managing upfront costs to build out this required infrastructure, great opportunity may be found.

EXHIBIT 6: Progressive's Commercial Auto Liability Performance Compared to the Industry
Y axis = Net Combined Ratio. X axis = Accident Year



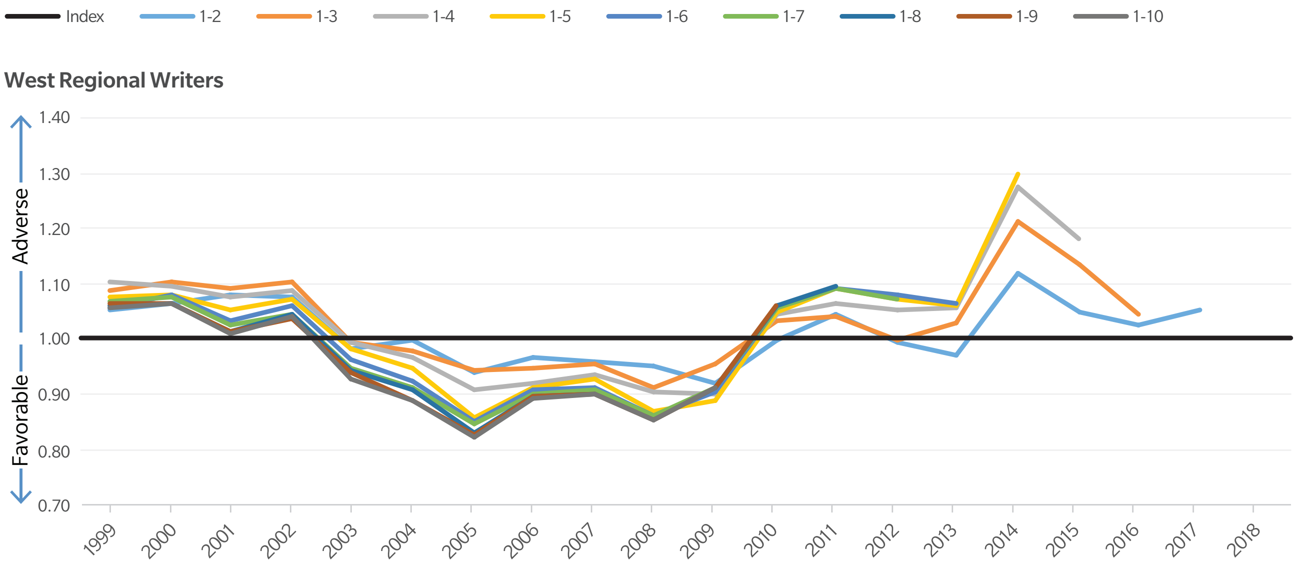
Source: Guy Carpenter

Progressive has grown premiums and leveraged lessons learned in its personal auto book to produce consistent profits, while industry results continue to reflect the strain of commercial auto liability on profits.

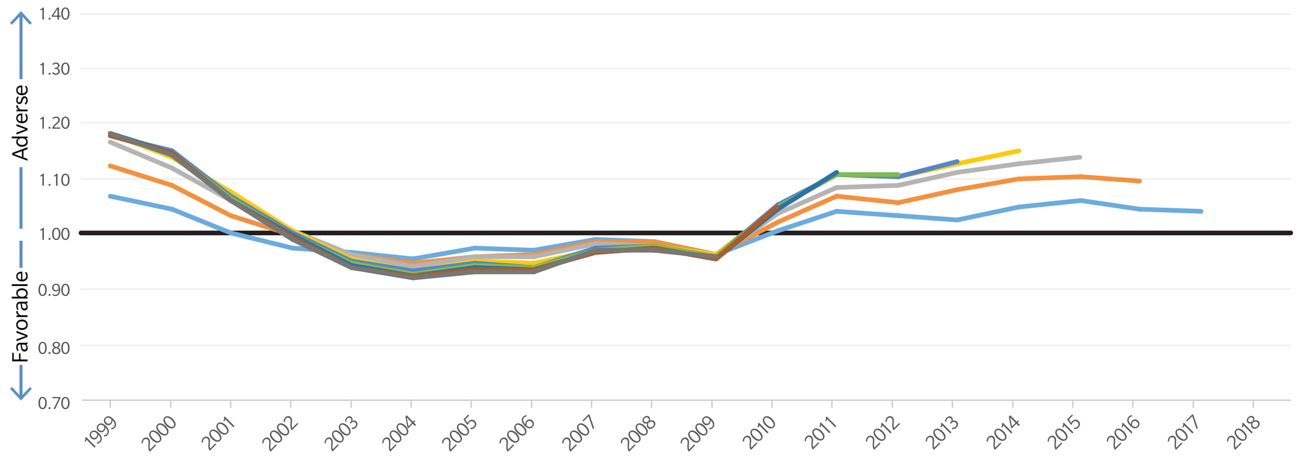
EXHIBIT 7: Reserve Development for Commercial Auto Liability

Booked Ultimate Loss (Subsequent n Year)/Booked Ultimate Loss (First Evaluation), by Accident Year

West Regional Writers



P&C Industry

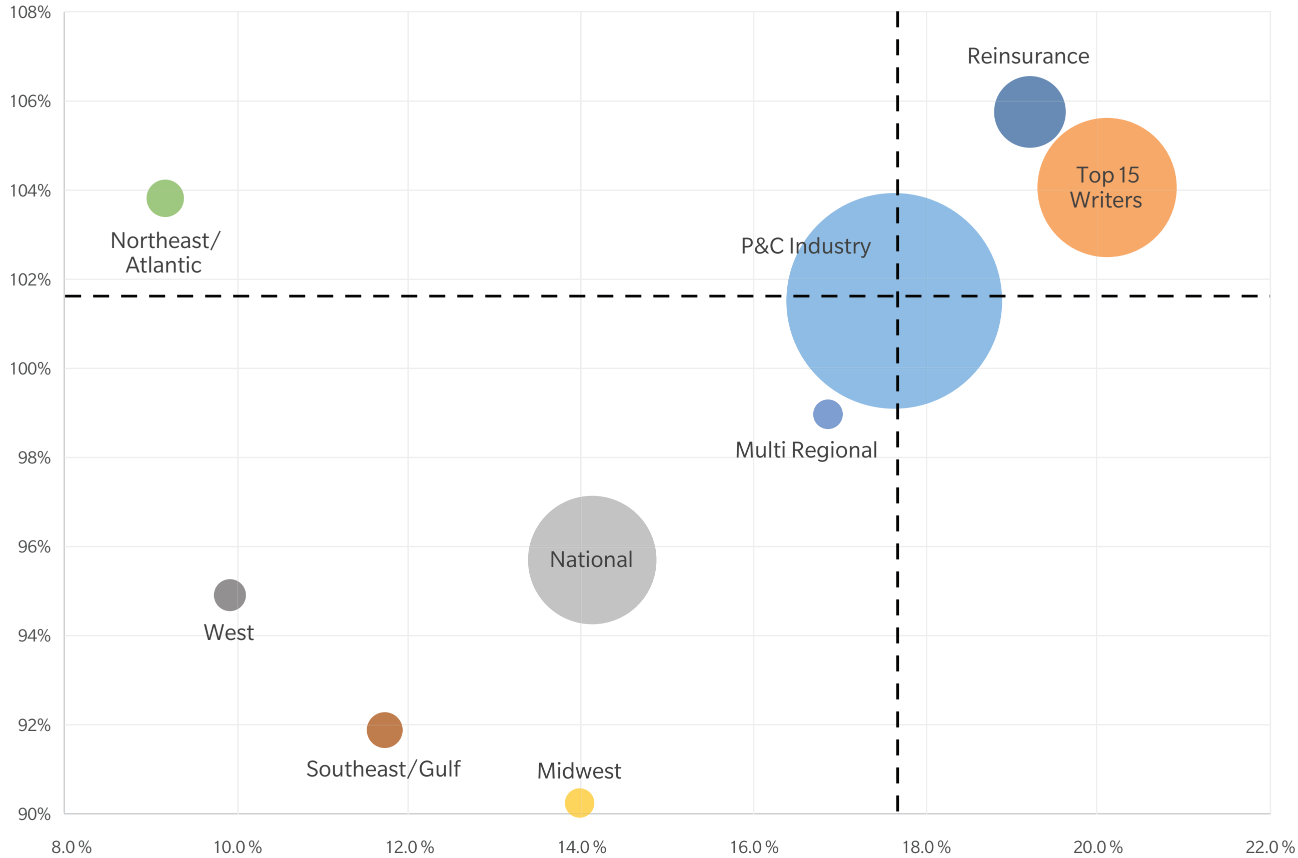


CAL Reserve Development		
Segment	**Correlation**	**Beta**
P&C Industry	1.00	1.00
Top 15 Writers	0.99	0.97
National	0.96	1.00
Multi Regional	0.92	1.07
Midwest	0.78	0.50
Northeast/Atlantic	0.89	1.18
Southeast/Gulf	0.78	0.53
West	0.84	1.15
Reinsurance	0.64	1.01

Source: Guy Carpenter

Commercial auto writers continue to see adverse development on originally booked reserves even in regional-based companies who may have not been as exposed to the more difficult long-haul trucking risks.

EXHIBIT 8: Commercial Liability: 3-Year Net CR Versus 20-Year Volatility
Y axis = AY Net Combined Ratio. X axis = Long-term Volatility



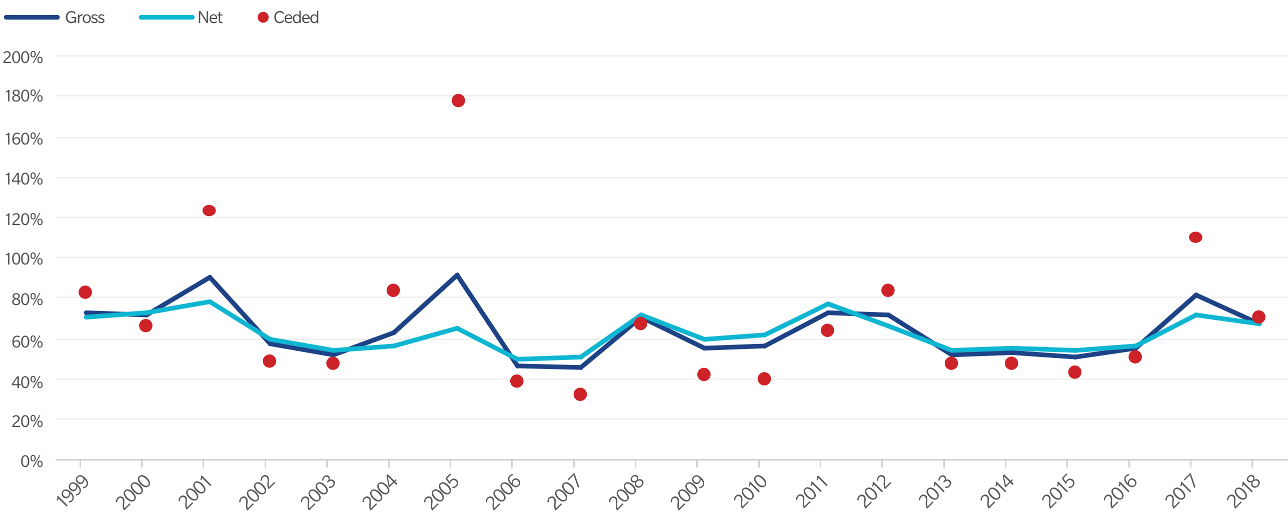
Commercial Liability				
Segment	**2018 DPW ($Millions)**	**3-Yr Gross Combined Ratio**	**3-Yr Net Combined Ratio**	**Net CR Long-Term Volatility**
P&C Industry	80,725	95.6%	101.5%	17.6%
Top 15 Writers	33,682	100.3%	104.1%	20.1%
National	28,341	91.3%	95.7%	14.1%
Multi Regional	1,473	95.3%	99.0%	16.9%
Midwest	1,602	85.3%	90.3%	14.0%
Northeast/Atlantic	2,380	96.1%	103.8%	9.2%
Southeast/Gulf	2,237	89.9%	91.9%	11.7%
West	1,727	92.2%	94.9%	9.9%
Reinsurance	9,192	95.4%	105.7%	19.2%

Source: Guy Carpenter

Commercial liability lines (**Other, Product and Special**) continued to show stable performance with 2018 net combined results hovering just below 100 percent, consistent with the trend over the past 14 years (save 2016). Regional business endures as the outperformer in the industry but its portfolio tends to be more personal umbrella-based, whereas the other segments work with tougher risks and/or higher limits and attachments of policies. Capital consumption is greatest on the Top 15 writers, consistent with the types of risk they are writing as seen in their volatility of results.

The catastrophe events of 2017 and 2018 impacted nearly all **property**-exposed lines of business. Nonetheless, 2018 property lines of business results still produced a combined ratio of 104. However, unanticipated adverse development on property lines due to assignment of benefits (AOB) and recent wildfire losses may cause some leakage in the numbers to come as actuaries respond to additional costs being pushed into the reserves to cover nontraditional loss. A side note on AOB, Florida will continue to wrestle with the impact of AOB legislation as lawyers push for it to not be applied retroactively to policy expiration date. While this may be a short-term blip on current claims in

EXHIBIT 9: P&C Industry Loss Ratio Comparison for Property Lines Combined
Loss+ALAE Ratio, by Accident Year



Source: Guy Carpenter

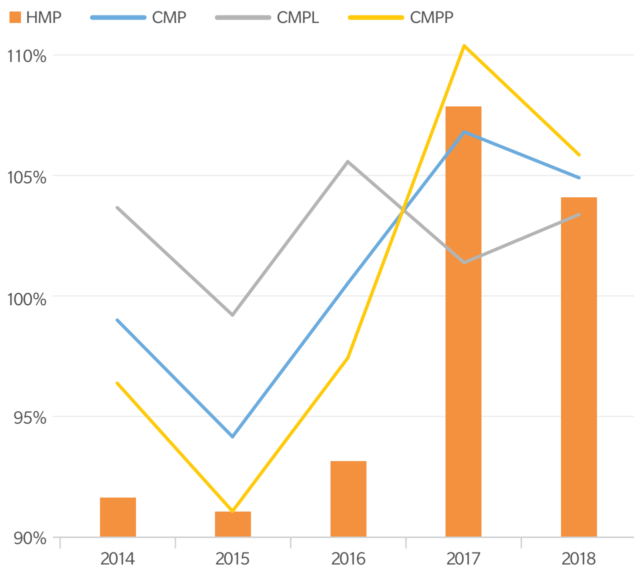
Property lines loss ratios in 2017 and 2018 increased due to catastrophe pressures. Ceded loss ratios of 2017 show the risk transfer borne by the reinsurance sector.

the system, insurers will need to determine how and when to reflect the perceived benefits of AOB legislation in their rates. A subtle difference in the timing of the actual manifestation of loss cost improvement could mean the difference between profits or losses for the 2019 and 2020 Accident Years.

2018 saw an extension of the trend in the percentage of gross premiums ceded for **property**-exposed lines of business due to reinsurers increasing rate and primary carriers purchasing more around perceived risk and volatility. Historical reinsurance utilization has evolved and capacity allocation philosophies are under review by reinsurers. A significant event over the next year or two in an area where we have not seen substantial insured loss lately, such as earthquake, could further shift capital allocation philosophies.

The **commercial multiple peril** industry will potentially experience a tale of two cities as small commercial writers settle into those who have (straight through underwriting) and those who do not. Those risks deemed manageable through advanced predictive modeling will find themselves in a race to get them through the door. More complex risks will find themselves under pressure to stay in traditional package polices and will have to distinguish themselves in quality and volatility of results.

EXHIBIT 10: Multiple Peril Profitability
Y axis = Net Combined Ratio. X axis = Accident Year



Note: CMPL & CMPP on a Calendar Year Basis *Source: Guy Carpenter*

It is possible to see rate shifts in opposite directions of expected as the predictive modeling, submission prefill and augmentation takes hold. Preferred risks stand to benefit from lower underwriting and acquisition expense loading and risk margins. However, risks that do not fit into these models or perform poorly based on model evaluation may find themselves in the excess and surplus market. There, acquisition expense is higher due to the common practice of using wholesalers to place business, specialized and expensive underwriting expertise is required, and risk loading is higher. A significant question will center on where the expanding marijuana risks will fall as companies dip their toes into the industry. With all of the new industry controls, will it be a good risk or will it still bear the exposure of an industry on the edge of acceptability?

Commercial multiple peril has also experienced trends similar to those of homeowners business as the strong performance years of 2014 through 2016 have recently faded into tougher times. Property losses have driven the shift, while liability has maintained its historical level of unprofitability. The traditional leaders in small business commercial have experienced similar trends, albeit muted, relative to their peers writing **commercial multiple peril**. The Small Business Leaders have shown adept use of predictive models across the majority of their business and as such will be forces to reckon with as competition ramps up around this segment.

Companies shifting towards direct business models or pass-through underwriting models on small commercial will face challenges in balancing historical agency relationships while also leveraging data and information learned from other lines of business that could help inform at the small business level.

Effective transitions to direct business models or pass through underwriting models on small commercial business create opportunities, but come with challenges.

Small Business Groupings	Accident Year	% Profitable	Loss Ratio	LAE Ratio	Expense Ratio	Combined Ratio
Other Writers	2014	50%	53%	14%	35%	102%
	2015	60%	48%	13%	36%	97%
	2016	49%	54%	13%	35%	102%
	2017	38%	60%	14%	35%	110%
	2018	35%	58%	14%	34%	106%
Small Business Leaders	2014	54%	49%	13%	35%	96%
	2015	77%	45%	12%	35%	92%
	2016	46%	51%	12%	36%	99%
	2017	46%	57%	12%	35%	104%
	2018	54%	57%	12%	34%	103%

Source: Guy Carpenter

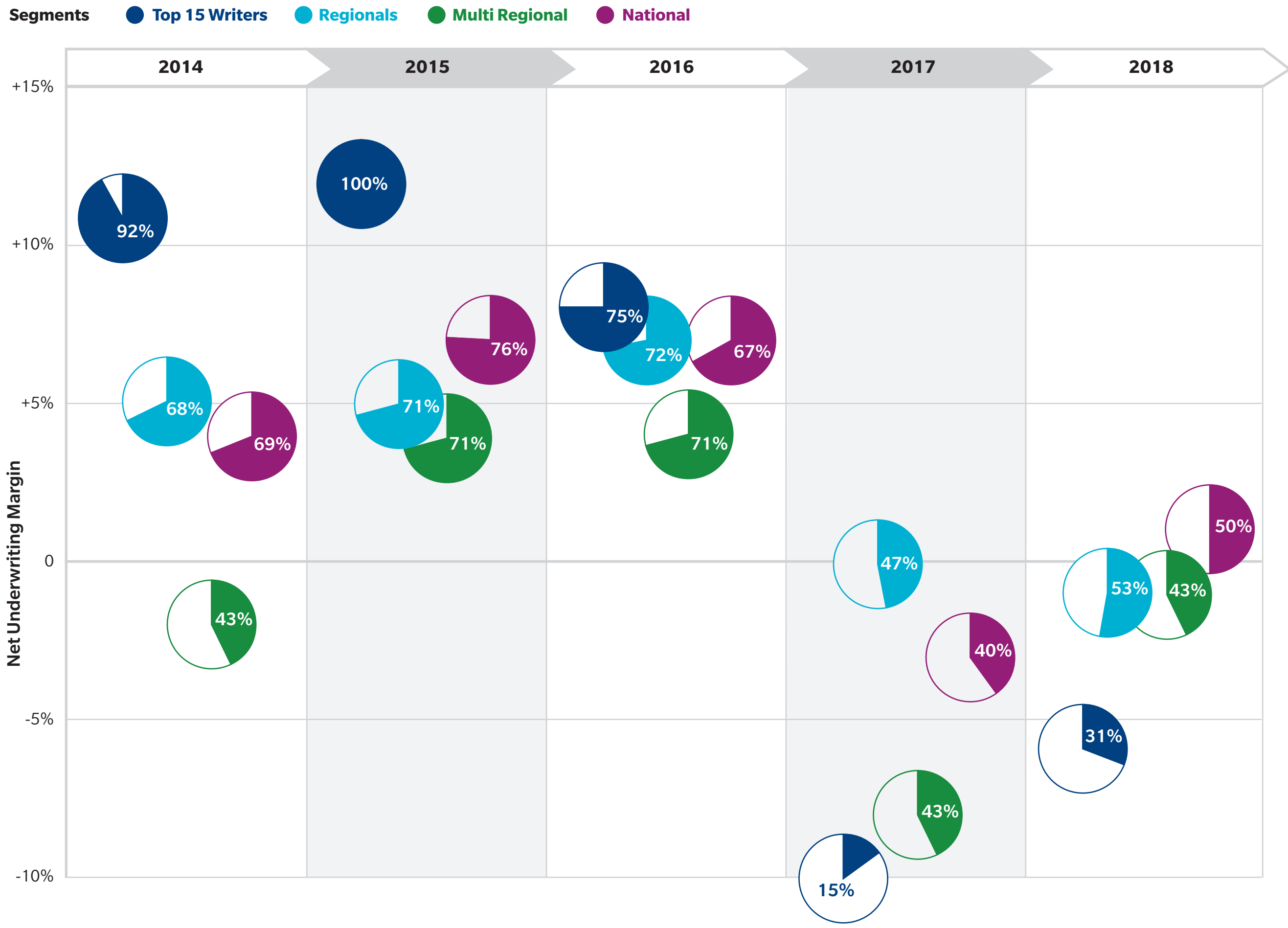
Northeast, Southeast and West Regionals continue to be the biggest users of reinsurance on their **commercial multiple peril** business compared to their peers. Nationals and Top 15 writers continue to cede the least amount of gross premium dollars due to scale and diversification, save a recent increase in 2018 spend by the National writers. This increase could be attributed to an increased demand for catastrophe aggregate covers to protect against frequency of smaller loss events they were previously retaining net. The southeast storms over the past few years have touched the reinsurance programs, with upticks also from wildfires rippling through ceded **commercial multiple peril** results for West Regional writers.

Special property particularly showed the same general trends as its property counterparts and continued to be the biggest user of reinsurance (as a percentage of gross premium). Regional writers experienced the best results while competing against the Nationals and commercial specialists who dominated market share. Overall, the ceded combined ratio for the industry on special property business recovered in 2018 to levels below 90 percent. Long-term averaged ceded combined ratios hovered around 90 percent.

Personal Lines

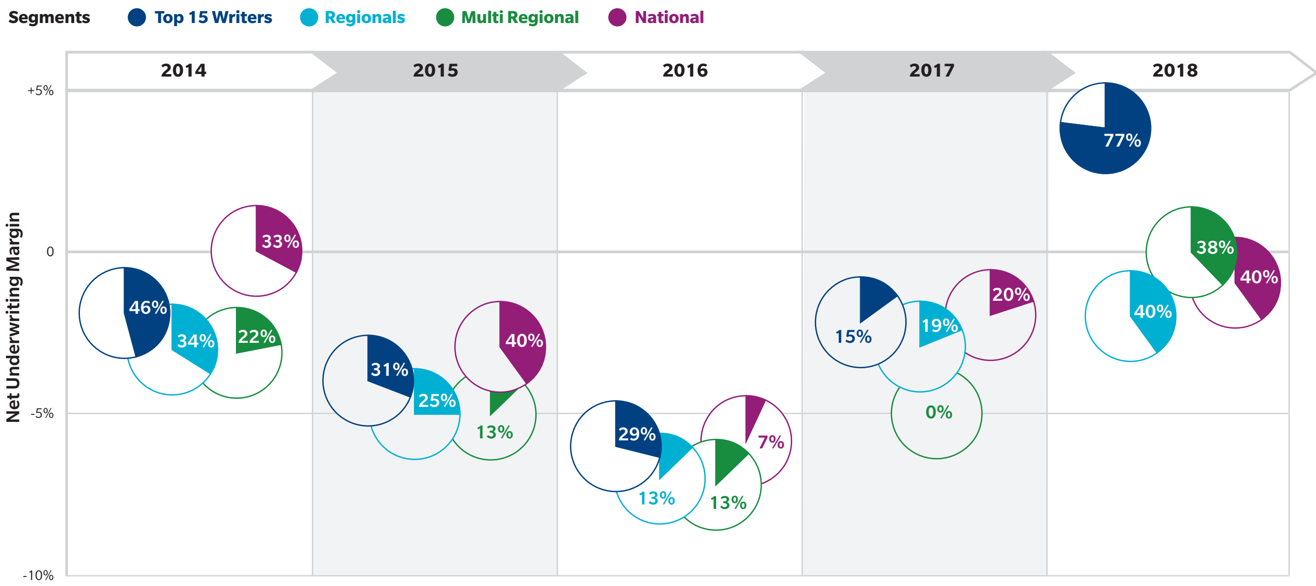
Shifting to personal lines, homeowners reverted to its historical trend with combined ratios in excess of 100 percent due to another round of catastrophe events affecting the United States. With the increase in personal auto competition, personal lines-dominant insurers face increased speculation on how to develop long-term prospective profits.

EXHIBIT 11: **HOMEOWNERS: % of Companies in Segment Achieving Profitability on an Underwriting Margin Scale**



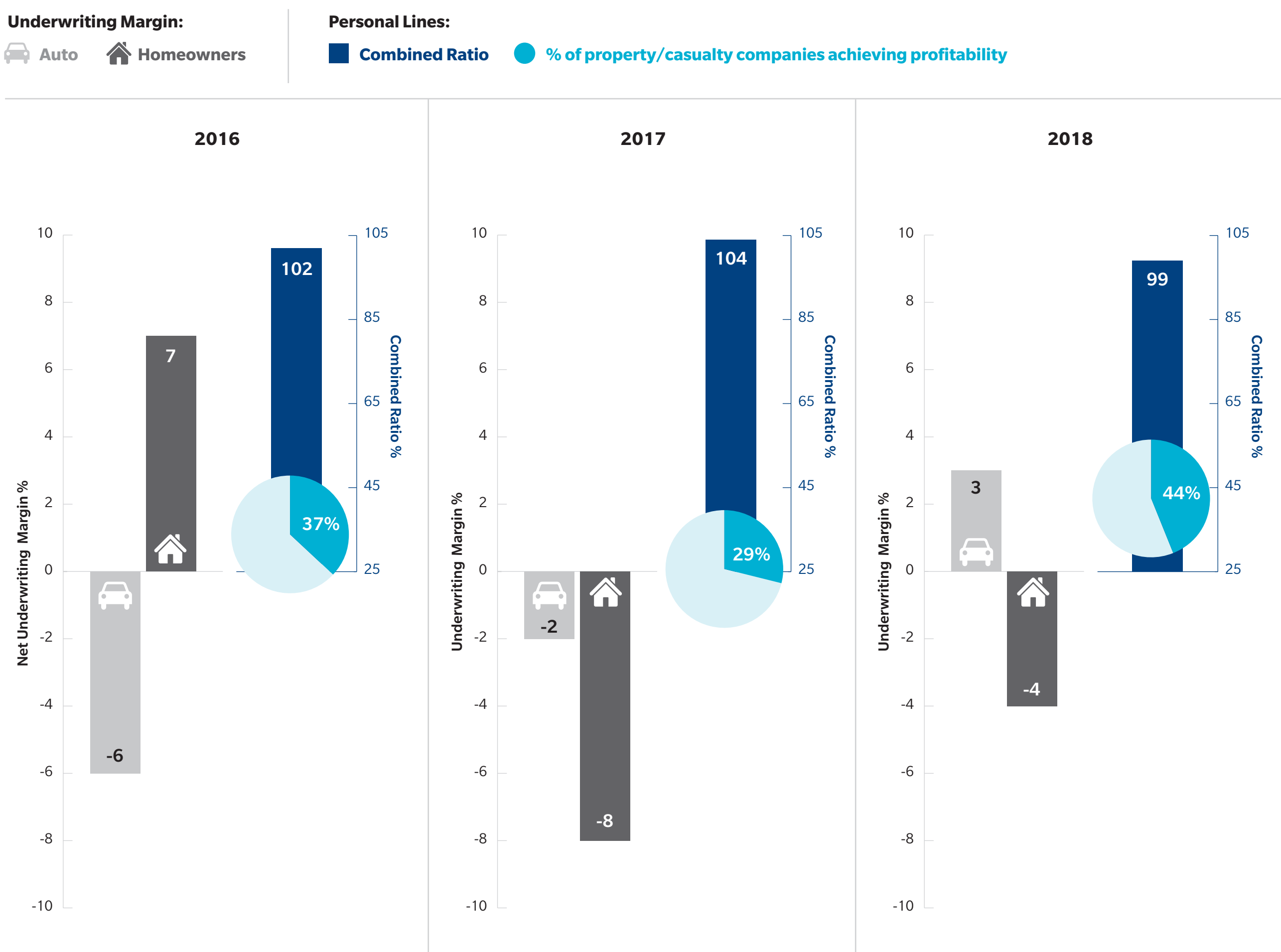
Source: Guy Carpenter

EXHIBIT 12: **PERSONAL AUTO: % of Companies in Segment Achieving Profitability on an Underwriting Margin Scale**



Source: Guy Carpenter

FIGURE 13: CONTRIBUTIONS TO HISTORICAL PERSONAL LINES RESULTS

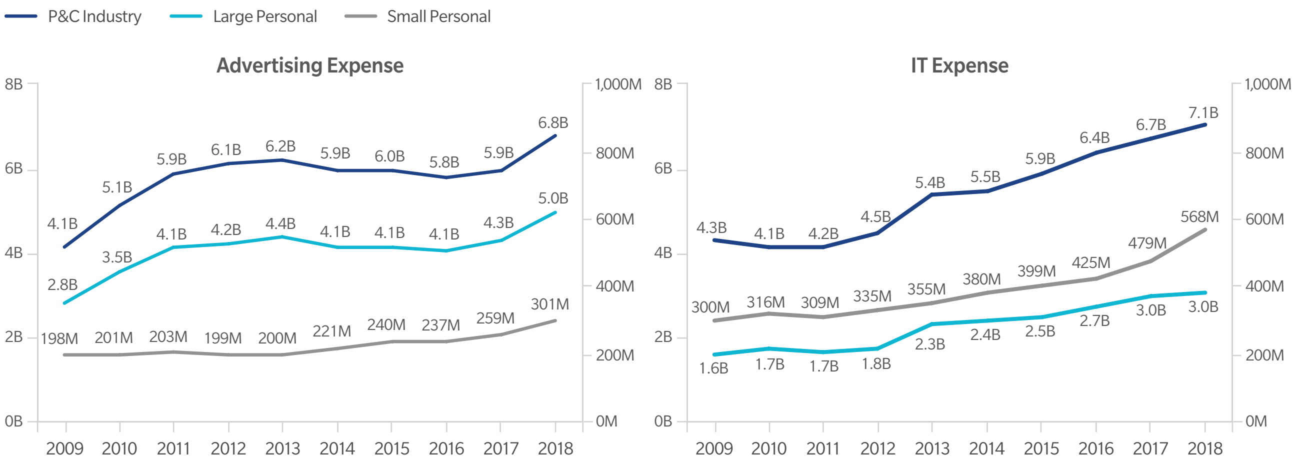


Source: Guy Carpenter

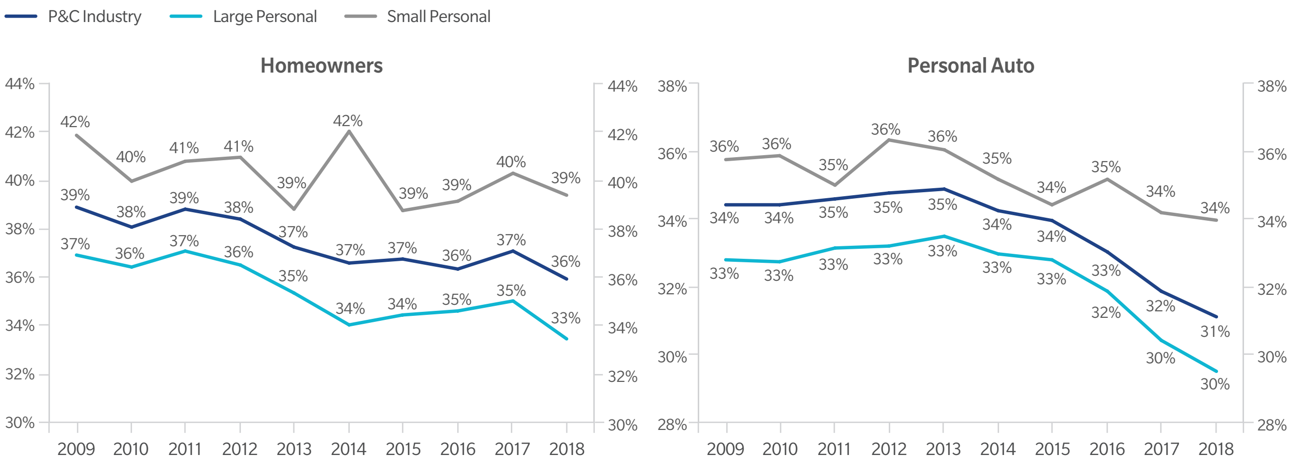
Personal lines writers experienced a reversal in 2018 from the previous four years as auto bounced back into profitable territory. Diversification of risk and reinsurance utilization remained important considerations, based on the past five years of results.

EXHIBIT 14: Personal Lines Expense Trends

Left Y-axis = P&C Industry and Large Personal. Right Y-axis = Small Personal



Y-axis = Net Expense Ratio



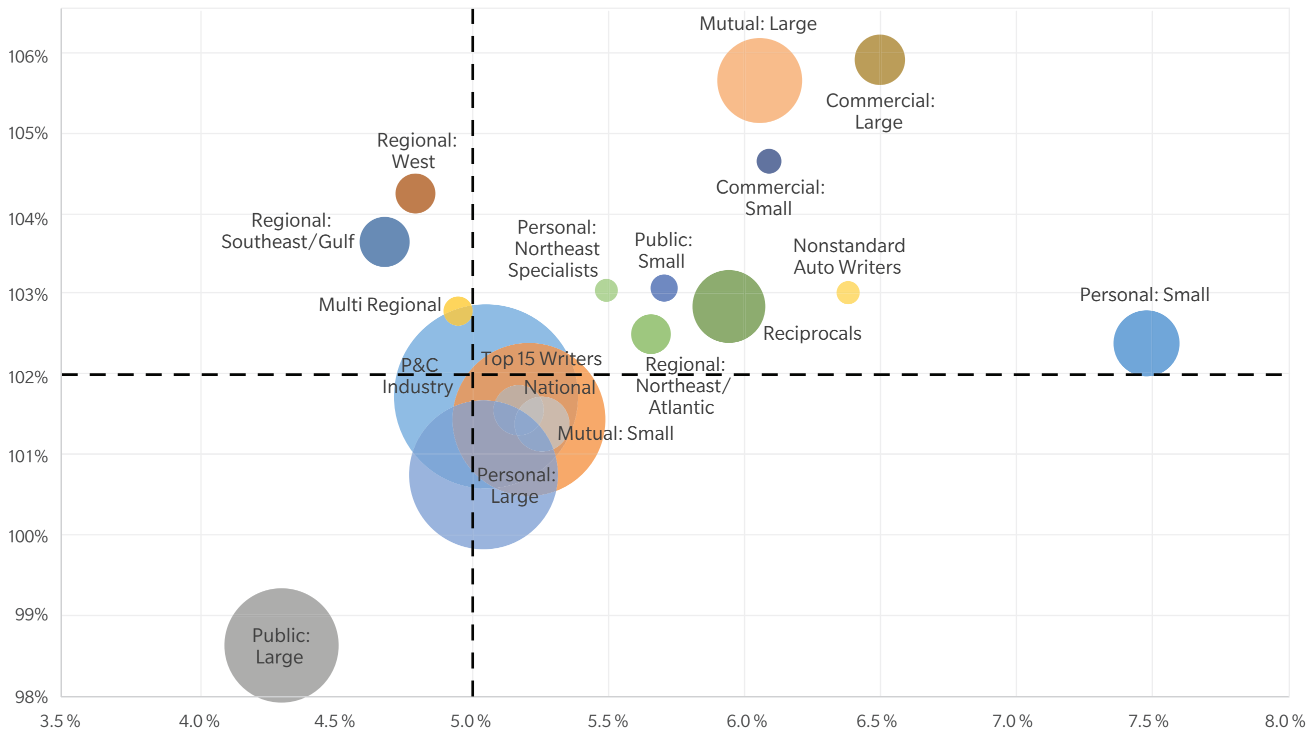
Source: Guy Carpenter

With the initiation of a flip in profitability between homeowners and **personal auto**, an argument can be made for building out a diversified portfolio. More carriers are looking to balance their portfolios with a small commercial book that, as previously noted, is also under competitive pressure. Demands around predictive modeling solutions will grow as the top personal lines carriers push on their in-house analytics. Progressive, GEICO and USAA, for example, substantially lower expense ratios through their direct operations. In fact, other major carriers continue to build out direct solutions to help offset this challenge.

Smaller players will not find solace in already stretched information technology budgets. Carriers are overhauling their systems to gather more data, creating faster interaction with consumers, and feeding the actuaries, cat modelers and data scientists all wanting to expand the use of analytics. This trend, compounded with increasing advertising spends, will create additional stress on the more inefficient players.

While systematic trends have migrated through all companies in the personal lines space, there has been substantial variation in results as each insurer tackles the day-to-day risks in a slightly different format.

EXHIBIT 15: Personal Lines: 3-Year Net CR Versus 20-Year Volatility
Y axis = AY Net Combined Ratio. X axis = Long-term Volatility



Personal Lines				
Segment	**2018 DPW ($Millions)**	**3-Yr Gross Combined Ratio**	**3-Yr Net Combined Ratio**	**Net CR Long-Term Volatility**
P&C Industry	359,004	102.4 %	101.7 %	5.0 %
Top 15 Writers	247,571	101.9 %	101.5 %	5.2 %
National	26,743	102.2 %	101.6 %	5.2 %
Multi Regional	9,034	102.4 %	102.8 %	4.9 %
Regional: Midwest	13,545	98.1 %	99.3 %	15.6 %
Regional: Northeast/Atlantic	16,620	99.9 %	102.5 %	5.7 %
Regional: Southeast/Gulf	26,589	106.9 %	103.7 %	4.7 %
Regional: West	16,837	107.6 %	104.3 %	4.8 %
Reinsurance	1,961	109.2 %	106.8 %	8.1 %
Commercial: Large	26,944	106.2 %	105.9 %	6.5 %
Commercial: Small	6,725	105.3 %	104.7 %	6.1 %
E&S	83	116.6 %	120.1 %	13.0 %
Mutual: Large	76,343	106.1 %	105.7 %	6.1 %
Mutual: Small	31,774	99.4 %	101.4 %	5.3 %
Nonstandard Auto Writers	5,785	101.6 %	103.0 %	6.4 %
Personal: Large	234,689	101.5 %	100.7 %	5.0 %
Personal: Northeast Specialists	5,493	100.1 %	103.0 %	5.5 %
Personal: Small	46,267	103.6 %	102.4 %	7.5 %
Property: Florida Specialists	7,132	119.4 %	105.3 %	26.6 %
Public: Large	138,356	99.0 %	98.6 %	4.3 %
Public: Primarily Non-US	3,756	109.6 %	108.9 %	7.7 %
Public: Small	7,850	105.8 %	103.1 %	5.7 %
Reciprocals	56,178	104.8 %	102.9 %	5.9 %
WC: California Specialists	46	100.5 %	101.2 %	10.1 %
WC: Specialists	549	97.9 %	117.7 %	8.9 %

Source: Guy Carpenter

Capital consumption continued to be front of mind as personal lines writers search for consistent profit while managing volatility due to price competition and catastrophes, including recent hurricane and wildfire losses.

Overall, the industry's need to address challenges in the face of competition and growth will continue. In this ever-changing landscape, insurers will be tested in picking their opportunities with care in their efforts to maximize their potential for success. With our Risk Benchmark initiative, analytics tools and solutions, and market-leading insights, Guy Carpenter looks to help insurers navigate their day-to-day business challenges and capture profitable growth opportunities.

For more information on this study or how Guy Carpenter Strategic Advisory can work with you to best leverage the study, please email us at riskbenchmarks@guycarp.com.

Appendix: Segment Definitions

Segment	Definition
P&C Industry	P&C Industry
Top 15 Writers	15 largest insurance groups in the industry based on total 2018 DPW
National	Non-top 15 companies with at least USD 500 million in 2018 DPW and that wrote business in at least 40 states
Multi Regional	Companies with at least USD 500 million in 2018 DPW that wrote business in at least 25 states but less than 40 states
Regional: Midwest	Companies that wrote business in fewer than 25 states or had less than USD 500 million in 2018 DPW, and the dominant region was Midwest based on all lines combined DPW
Regional: Northeast/Atlantic	Companies that wrote business in fewer than 25 states or had less than USD 500 million in 2018 DPW, and the dominant region was Northeast/Atlantic based on all lines combined DPW
Regional: Southeast/Gulf	Companies that wrote business in fewer than 25 states or had less than USD 500 million in 2018 DPW, and the dominant region was Southeast/Gulf based on all lines combined DPW
Regional: West	Companies that wrote business in fewer than 25 states or had less than USD 500 million in 2018 DPW, and the dominant region was West based on all lines combined DPW
Reinsurance	Companies that write reinsurance as their main source of premium income
Commercial: Large	All companies with USD 2 billion or more of 2018 DPW and 60 percent or more of their total DPW in commerical lines
Commercial: Small	All companies with less than USD 2 billion of 2018 DPW and 60 percent or more of their total DPW in commercial lines
E&S	Entities defined as "Surplus Lines" writers according to A.M. Best, adjusted based on Guy Carpenter's market knowledge
Financial Mortgage Guaranty Specialists	All companies that wrote more than USD 1 million in financial or mortgage guaranty lines in 2018
Mutual: Large	Top three mutual companies were selected due to their significant differences in portfolio compared with other mutual companies
Mutual: Small	All Companies with NAIC ownership structure listed as mutual, adjusted based on Guy Carpenter's market knowledge
Nonstandard Auto Writers	A.M. Best Nonstandard Auto Writers Composite
Other	Other
Personal: Large	All companies with USD 2 billion or more of 2018 DPW and 60 percent or more of their total DPW in personal lines
Personal: Northeast Specialists	All companies with 75 percent or more of their total 2018 DPW in personal lines in Northeast/ Atlantic States
Personal: Small	All companies with less than USD 2 billion of 2018 DPW and 60 percent or more of their total DPW in personal lines
Property: Florida Specialists	All companies with 40 percent or more of 2018 DPW in property lines in Florida
Public: Large	All companies with 2018 net earned premiums above USD 1 billion, were publicly traded and predominately wrote in the United States
Public: Primarily Non-US	All companies that were publicly traded and predominately wrote outside the United States, but owned and operated a U.S. statutory entity
Public: Small	All companies with 2018 net earned premiums below USD 1 billion, were publicly traded and predominately wrote in the United States
Reciprocals	All companies with NAIC ownership structure listed as Reciprocal Exchange
Risk Retention Groups	All companies with NAIC ownership structure listed as Risk Retention Group
WC: California Specialists	All companies with 25 percent or more of 2018 DPW in the workers compensation line in California
WC: Specialists	All companies that satisfied two conditions: First, workers compensation DPW in 2018 was larger than USD 5 million; and second, 40 percent or more of total premium for the company was collected from workers compensation policies
WC: State Fund	All American Association of State Compensation Insurance Funds Workers Compensation state funds that submit electronic annual statements to corresponding state insurance commissioners

Source: Guy Carpenter

Guy Carpenter Solutions

DEEPER UNDERSTANDING OF RISK → CREATES OPPORTUNITIES

Achieving profitable growth is a challenge faced by (re)insurers of all sizes today. The most successful carriers follow a systematic approach that starts at the top and dives deeper with each successive evaluation of the potential opportunity. Guy Carpenter brings a holistic approach to helping companies with the management of capital requirements, design of overall growth strategy, targeted implementation, and day-to-day individual risk assessment.

Whether you need help accessing how your capital needs to be structured to facilitate growth or you are looking for strategies around geographic or line of business growth or you need to understand the micro economies in your quest to target growth, Guy Carpenter can help design a solution to facilitate your growth goals.

Guy Carpenter will combine expertise with industry-leading software solutions and cutting-edge delivery to empower your profitable growth endeavors.

ASSESSING CAPITAL

- Understanding Required Capital
- Connecting Risk Tolerances
- Rating Agency Implications
- Excess Capital

METARISK® BENCHMARQ® Tyche

PORTFOLIO OPTIMIZATION

- Optimal Mix of Business
- State/Line Opportunities
- Growth Strategy
- Reinsurance/Retro Usage

METARISK® GC Stem℠ Tyche RIO

TARGETED GROWTH

- Market Deep Dives
- Geographic Characteristics
- Agency Focus
- Business Profiles
- Market Potential

GC Mosaic℠

RISK SELECTION

- CAT Contribution
- Hazard Proximity
- CAT Aggregation
- Technical Pricing
- Underwriter Use

GC AdvantagePoint® TPS

CONNECTING SOLUTIONS AT GREATER LEVELS OF GRANULARITY

A Complete Range of Solutions to Fit Your Needs

Solution		Key Benefit	User Profile
BENCHMARQ®	Standardized pre-built stochastic model using industry data and proprietary risk models. Simulates one year of company performance and provides financial statements associated with various outcomes.	Benchmarks risk profile relative to peers, features user-friendly reports and graphics and informs risk tolerance setting.	Mid-sized companies that desire substantial risk-based information and a better understanding of using stochastic capital models but do not have resources to build one at this time. Also, companies with internal models that want to compare modeling outcomes.
METARISK®	Customized single or multi-year stochastic model that assists clients in building a fully parameterized model that provides a comprehensive assessment of risks. Powerful software application for capital modeling, in addition to reinsurance evaluation, catastrophe management, assumed reinsurance pricing, capital allocation and curve-fitting.	The industry's leading timeline-based capital modeling software, fully customized with fuller risk parameterization. Full-time access to support from capital modeling experts.	Primarily large companies, but also smaller and medium-sized ones, that typically have internal modeling capabilities and seek comprehensive assessment of company-specific risks.
Tyche FINANCIAL MODELLING	Model building platform used to create capital models from either predefined library models or bespoke user-defined models developed by RPC and exclusively licensed by Guy Carpenter in the intermediary space.	An industry-leading fast and flexible capital modeling platform that can be used to create P&C, life and health models across any type of corporate configuration.	Complex modelers that either have unique structures to model or large models needing to run in substantially less time than what is available in the commercial market for other solutions.
GC Stem℠	Granular loss portfolio model for the entire U.S. P&C premium base: state-by-state and line-by-line. Addresses risk accumulation for both property and casualty exposures. Maps efficient pathways to strengthen a portfolio through acquisition of new business, organically and inorganically.	Enables a company to chart a unique development path across geography and product mix from the existing premium base. Rather than analyzing a static amount of new business "at the margin," STEM prescribes a sequence for efficient growth and ensures that the insights derived are unique to a company's risk profile.	Companies across the spectrum of size, capitalization and organization type can use STEM to support P&C insurance portfolio management. STEM presents technical guidance to the critical challenge of how to grow profitably and provides direction for achieving risk-aware underwriting profits.
Tyche RIO	Robust real-time optimization application built by RPCC and GC in Tyche.	A real-time underwriting portfolio optimization tool that simultaneously manages inwards and outwards mix of business while maintaining user-defined risk tolerances, appetites and capital requirements. It allows for individual contract, blocks of contracts or entire portfolio assessments and "what-if" analyses to provide greater insight into how business decisions impact overall profit and capital contribution.	Underwriters and CUOs managing renewals; Chief Risk Officers and Chief Financial Officers managing overall risk profiles; and ceded reinsurance purchasers managing retro and internal reinsurance vehicles.
GC Mosaic℠	Flexible dashboards on an interactive, web-based platform, enabling clients to perform multi-faceted analysis on market, distribution and macroeconomic factors to evaluate opportunities and develop and execute growth strategies.	This regularly updated database includes publicly available information as well as licensed and proprietary data all in one easy-to-access location. GC Mosaic is exclusively accessible on the GC Edge platform, which provides Guy Carpenter clients a central and secure access point for all applications.	No matter the size of an organization, there may be resource limitations that make gathering the data required to research and pursue new opportunities onerous. If a company is looking to expand into a new vertical or specialty, they too may be limited in terms of in-house expertise in the new area.
GC AdvantagePoint®	Advanced portfolio and risk management platform that helps companies translate vast amounts of data to better understand risk exposures, maximize returns and take advantage of opportunities hidden within their portfolios.	The industry's most advanced portfolio management platform enabling direct client access through an easy to use online platform as well as integration capabilities via API services directly into client's underwriting systems.	Strategy: Designed for the C-Suite to help plan, view, calibrate and set strategy to achieve optimal portfolio mix, establish a better underwriting discipline and grow profitably. Location Analysis: Underwriting modules designed for underwriters to evaluate new locations including portfolio accumulation, hazard assessment and profitability.
TPS PRICING SYSTEM	Comprehensive off-the-shelf large account and reinsurance pricing system, with a generic development framework built on top of Tyche by RPCC.	Fast enterprise grade system with data capture and governance that can be integrated into other third party admin/reporting systems. For use with CAT, non-CAT, proportional and excess types of risks.	Direct or treaty underwriters/actuaries using experience and exposure methodologies and needing a way to create a systematic all-in-one process that can be replicated and reused at future renewals with the ability to feed data warehouses.

Notes

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About Guy Carpenter

Guy Carpenter & Company, LLC is a leading global risk and reinsurance specialist with more than 3,100 professionals in over 60 offices around the world. Guy Carpenter delivers a powerful combination of broking expertise, trusted strategic advisory services and industry-leading analytics to help clients adapt to emerging opportunities and achieve profitable growth. Guy Carpenter is a wholly owned subsidiary of Marsh & McLennan Companies (NYSE: MMC), the leading global professional services firm in the areas of risk, strategy and people. With more than 76,000 colleagues and annual revenue over $17 billion, through its market-leading companies including Marsh, Mercer and Oliver Wyman, Marsh & McLennan helps clients navigate an increasingly dynamic and complex environment. For more information, visit www.guycarp.com. Follow Guy Carpenter on Twitter @GuyCarpenter.

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