

By Peril Rating:

Changing the Game for Insurers

by Sue C. Quimby, CPCU, AU, CIC, CPIW, DAE

A fundamental aspect of insurance is charging the correct premium for the exposure being underwritten. This means that the insurer must have a good understanding of the risk they are taking. Advances in technology have given rise to more and more elaborate and detailed methods of quantifying risk. The increasing use of predictive analytics tools, including by peril rating, has been a game changer. By peril rating is a tool that gives the insurer the ability to analyze the individual characteristics and exposures of a risk on a very granular level.

Insurers use a variety of methods to pursue their goals of increased market share, reduced losses, simplified underwriting and claims handling. Some perils, such as named storms or floods, can be excluded altogether. Others can be mitigated through use of conditions and deductibles. Hurricane deductibles and actual cash value (ACV) limitations on roof damage are two examples of conditions that are commonly included.

Historically, some risks, such as homeowners and small businessowners, have been treated almost like commodities—one size fits all. Early rating plans for homeowners and businessowners policies were fairly simple. Premiums were based on a limited number of characteristics—construction, occupancy, protection and exposure. Coverage under these programs was “all risk”—everything was covered unless it was specifically excluded. One reason for the simplified rating system was the lack of access to data. Compiling and analyzing results in the pre-computer world was cumbersome, expensive and time consuming.

Simple rating plans assume that perils are impacted equally by the same factors. For example, a risk in the Midwest may have a higher risk of wind/tornado damage—regardless of whether they are located in a rural or urban setting. However, theft and vandalism risk might be higher in a more urban setting. By peril rating breaks the types of losses that can occur into a number of

categories. Insurers can rate a risk based on a more accurate understanding of the mix and magnitude of perils the risk is exposed to. The perils that are commonly included in by peril rating systems are fire, liability, theft or vandalism, wind, hail, weather-related water, nonweather-related water, lightning and all other perils.

As a case in point, two houses in the same neighborhood with the same replacement cost will have different exposures.

For comparison purposes, look at two one-family houses built the same year. Both have a replacement cost of \$500,000. One (House A) is a three-bedroom two story brick colonial with two baths, a pool and attached garage. The shingle roof is 15 years old. The other (House B) is a frame one story ranch with four bedrooms and two and a half baths, and a detached garage. House B has a brand-new slate roof. While the cost to rebuild after a total loss would be the same, the risk of the loss happening varies.

Dogs, pools, trampolines and swing sets represent an increase in liability hazard. Brick houses are less likely to burn. Other characteristics of the homes may also impact the rate charged. Alarms, security systems and cameras reduce the risk of theft and vandalism. Smoke and fire detectors impact the fire peril, lowering the rate.

Water damage is an interesting peril as it can be due to weather or nonweather causes. So, water damage would be listed in two categories: weather-related and nonweather-related.

In the example provided, more bathrooms in House B could mean a higher frequency of water damage, but multiple stories in House A may mean a possible increased severity of damage from any one loss due to



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HOUSE A		HOUSE B
Brick Colonial	STYLE	Ranch
Two Story	STORIES	One Story
Three Bedroom	BEDROOMS	Four Bedrooms
Two Bathroom	BATHROOMS	Two and a Half Baths
Shingle Roof (15 years old)	ROOF	Slate Roof (New)
Pool & Attached Garage	ADDITIONAL EXPOSURES	Detached Garage

water from upstairs damaging lower levels. House A would also have a greater risk of weather-related water damage to the roof due to its age.

Not every by peril rating system is the same, as each insurer can have their own set of perils that are used in their rating system. As indicated, rates differ based on the individual perils the risk is exposed to, as well as the characteristics of the property itself, and two homes in the same neighborhood with the same replacement cost can have different rates under by peril rating.

As with any rating methodology, developing the proper initial rate is only part of the battle. Collecting results to allow the company to respond appropriately to variance in risk and modify the rate accordingly is equally important. An insurer's data is only as good as the information that is collected. Use of a by peril rating system requires that premiums and losses be reported based on the components of the by peril rating system.

By peril rating is not just for personal lines. The businessowners policy (BOP) product has experienced a major transition since its beginnings. Originally designed as a program for main street type, fairly homogenous risks, the BOP eligibility classes have been expanded to include a wide range of risks with very different liability

and property exposures. BOP policies can now be written for insureds with properties in multiple locations and even multiple states. This means that the same business, e.g., a clothing store, can have different rates under a by peril system due to the different exposures in the various locations.

Use of by peril rating has increased dramatically in recent years. In addition, predictive analytics uses data collection, modeling and statistics to assist companies in their underwriting, rate making and claims handling functions. Together, by peril rating and predictive analytics have changed how the insurance industry can review and assess risk. The ability to use these practical applications in a statistically sound way helps to reduce risk and fraud. The use of by peril rating will only strengthen as the ability and accuracy of predictive analytics continues to increase.

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