

## About the Author



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Mr. Walling is a Principal and Consultant in Pinnacle's Bloomington, IL office. A Fellow of the Casualty Actuarial Society and member of the American Academy of Actuaries, he has served the CAS as Chairman of the Ratemaking Seminar Committee and Chairman of the Risk and Capital Management Seminar Committee.

Prior to joining Pinnacle, Mr. Walling was employed for five years by Anthem Casualty Insurance Group where he was responsible for the pricing and product monitoring functions of the Commercial Lines and Managed Care Workers Compensation Divisions. He also has work experience at Providence Washington Insurance Company and Great American Insurance Group during his 14 years in the insurance industry.

His experience includes commercial lines ratemaking and product development, product management responsibilities, personal and commercial lines reserving, rate filings, funding and risk retention studies for self insureds, regulatory compliance and dynamic financial analysis of insurance companies.

Mr. Walling holds a Bachelor of Science degree in secondary mathematics education from Miami University.



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## ***Are You Ready to Unlock the Power Hidden in Your BOP Application?***

*By Robert J. Walling, III*

Technological, economic and insurance market forces are creating an ever-increasing small business insurance marketplace. At the same time, these forces are opening opportunities for small business insurance products to be priced more similarly to personal lines products. Thus, modern rating plans can provide greater predictive accuracy through a more sophisticated rating methodology. This paper will show that most Businessowners Policy (BOP) insurers capture a tremendous amount of information on their BOP applications, much of which has significant predictive value that could be included in an updated rating plan. A scorecard approach using generalized linear modeling (GLM) can move this information from subjective underwriting judgment to objective, predictive rating factors. This pricing approach offers you advantages in marketing, underwriting expense control, and loss ratio improvement over the current ratemaking approach.

### ***Changes Influencing the Small Business Insurance Market***

Economic changes have produced many more small businesses that need insurance coverage. Insurance trends



have made small business insurance a more significant part of the standard commercial insurance market. Technological advances have created faster premium rating engines, larger policy information databases, and improved comparative raters. Also, social changes have resulted in a small business insurance customer who is more risk savvy and more likely to shop for insurance with the broadest coverage at the lowest price.

The small business insurance marketplace is growing in three distinctly different ways. First, significantly more small businesses in the U.S. have emerged in the last two decades. Data from the U.S. Small Business Administration show that between 1992 and 1997 alone, the number of businesses with four or fewer employees grew by more than 623,000. This represents a growth rate of 4.2% annually, versus 3.7% growth for U.S. businesses overall.

Second, insurance companies have dramatically increased the number of eligible classifications in their small business insurance products. Insurance Services Office (ISO) and many major insurers of small businesses have added significantly to the eligible classes in their BOPs in recent years, including new eligibility for:

- specialty contractors,
- restaurants,
- self-storage facilities,
- garage service operations, and
- high tech and e-commerce companies (the latest small business trend).

In addition to these expansions in the small business insurance marketplace, many middle market commercial insureds have exited the standard commercial insurance marketplace for the alternative market via captives, risk retention groups and other self-insurance programs. There are a number of types of business, such as auto dealers and nursing homes, about which it can legitimately be argued that the alternative market has become the “standard” market. As a result of this exodus, the small commercial insurance marketplace makes up an even larger proportion of the total commercial insurance market.

From a technological perspective, greater computer power at an ever-decreasing cost is enabling insurers to have access to policy management and pricing software that allows sophisticated pricing algorithms and customized rating factors without impacting speed or efficiency. Insurance companies have also capitalized on the ever-decreasing cost of data storage. Finally, the improved technology has also resulted in faster, more powerful software available for performing pricing analyses, including comparative rating and internal pricing studies.

Technology has also encouraged increased price comparison. Many small, savvy business owners are more price sensitive and likely to shop their insurance every year. Insurers and agents have encouraged this behavior by making it easier to obtain an insurance quote through the Internet and other options. Insurance agency rating software makes quoting a small business insured using the products of several insurers in the agency, a tactic known as “shotgun quoting,” a much easier process. This approach strives to assure better client retention within the agency by providing the lowest available price.

### *“The Times They Are A Changin’”*

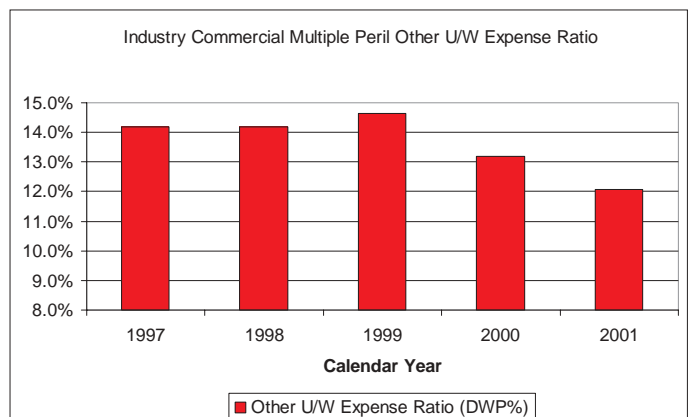
One additional factor has contributed to the current changes in small business insurance – soft market competition. The intense price competition of the mid-to-late 1990’s revealed some flaws. Most importantly, the soft market demonstrated that under extreme pressure, pricing discipline faltered. This was demonstrated by significant increases in the use of

deviated pricing tiers and schedule credits. The possible abuse of such tools is clearly demonstrated in the table below. In the example, an insurance group with four company tiers and a common schedule rating plan can produce a minimum rate that is less than 25% of the highest rate (42% of manual as compared to 175% for the highest net rate). This period of soft market conditions highlighted the lack of controls on tiering decisions, schedule rating and individual risk premium modification (IRPM) plans.

Company	Tiering Factor (1)	Schedule Max/Min (2)	Percent of Manual (3) = (1)x(2)
Barbershop I.C. (Max)	1.25	+40%	175%
Barbershop I.C. (Min)	1.25	+40%	75%
Vanilla I.C. (Max)	1.00	+40%	140%
Vanilla I.C. (Min)	1.00	-40%	60%
BTA I.C. (Max)	0.85	+40%	119%
BTA I.C. (Min)	0.85	-40%	51%
TPet I.C. (Max)	0.70	+40%	98%
TPet I.C. (Min)	0.70	-40%	42%

The soft market also highlighted the fact that historically high underwriting expense ratios could be (and were) pressured to be significantly reduced. This presents a real danger of loss leakage, as fully trained and credentialed underwriters can no longer review every small commercial risk. This demands that small commercial underwriting departments work smarter, not harder.

In summary, the economic, market and technology drivers of the small business insurance market continue to force insurers to approach their product more like personal lines. This means a leaner product (read: lower U/W expense), with less individualized underwriting and a greater focus on the accuracy of the class rates and tiering relativities. This trend can be seen in the underwriting expense ratio trends for commercial multiple peril (shown below) and in some product design changes that allow greater pricing sophistication. The current personal lines insurance market illustrates that smarter solutions are profitably and practically possible.



## The Personal Lines Approach

Personal lines have always been treated as a commodity, in that differentiating on coverage has rarely been a successful approach. Instead, the focus has largely been in two key areas:

- 1) lower expense ratio – an approach originated by State Farm and reinvented by direct response companies; and,
- 2) greater focus on the predictive accuracy of class rating – the classic example is Progressive's innovation on everything from liability vehicle symbols to credit scoring.

The focus on greater predictive accuracy of class rates accomplishes two significant objectives. First, it helps avoid adverse selection, the essence of the insurance adage that "the market inevitably finds the weakest part of your rating plan." For example, assume you have a class of insureds that are all charged \$400. Your competitor has identified a rating characteristic (e.g. years in business, credit score) that splits the class into two better defined classes, one with a base premium of \$300 and the other with \$500. If you do not respond to your competitor's rating plan, your competition will insure the majority of the risks that warrant the \$300 premium and you will gain market share in the higher risk segment. Making matters worse, your \$400 rate is now \$100 inadequate!

The second objective is to identify niches of opportunity. This is often called "cream skimming" and is the opposite of adverse selection. Through the development of a more predictive approach, you can offer a lower price for insureds posing less risk – and leave the remaining, higher risk insureds to your competition. Your competitor in the earlier example was able to identify an overpriced market segment (i.e. the insureds that warranted the \$300 base premium), reduce their price and expand their presence in that segment. It is worth noting that if your competitor could have introduced a rate of \$350 for the subclass they were targeting – that would have increased their market share and increased profitability. That is, they could have been "cream skimming" until someone else came along and offered a premium lower than \$350. The rate will get down to \$300 eventually, but the opportunity exists for some enhanced profitability opportunities to the company first identifying the niche.

In recent years, the personal lines marketplace has improved the predictive accuracy of rates in a variety of ways, including:

- adding new rating factors, like credit or liability symbols, with a focus on insured's characteristics as compared to characteristics of their property;
- rethinking current rating factors, such as territory, driver age or protection class; and,
- better coordination of rating factors and underwriting tiering guidelines so they better predict the loss ratio experience of each insured.

## Small Business Applications

The opportunities for small business insurers to improve the predictive accuracy of their rating plans follow a similar road map:

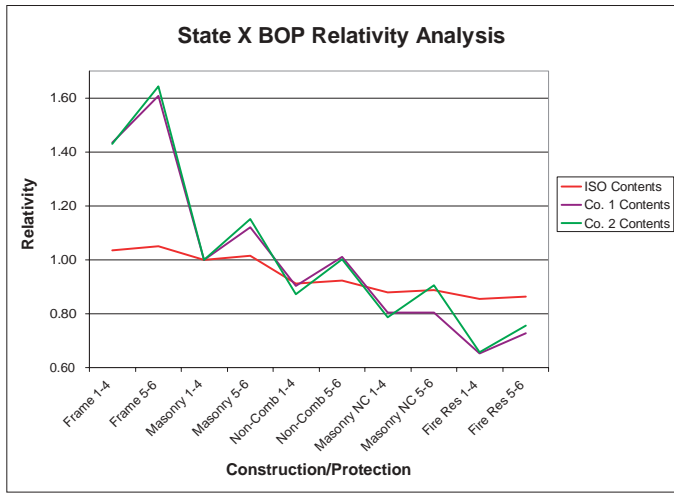
- adding new rating factors, such as credit and years in business, that focus on insured's characteristics;
- rethinking current rating factors, such as territory, protection class and occupancy class; and,
- better coordination of rating factors and tiering guidelines.

What kind of new rating factors are available? There are a tremendous number of characteristics already being submitted by insureds on their applications. Many of these characteristics relate to the insured more than the insured's property. The table below highlights some of the information currently on the ACORD BOP application.

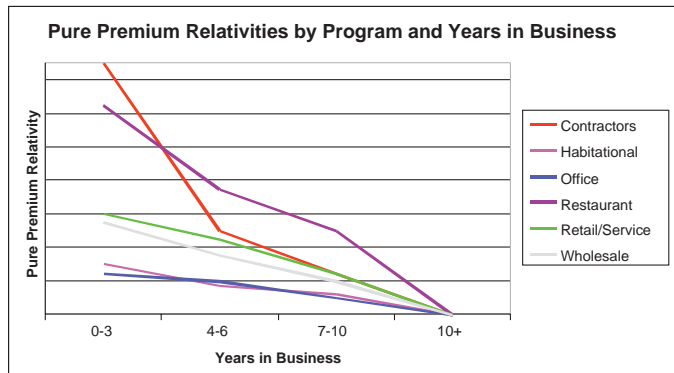
Insured Characteristics	Property Characteristics
• Years in Business	• Age of Building
• Years of Same Management	• Alarms
• Hours of Operation	• Elevators
• Franchisee Status	• Building Height
• Bankruptcies	• Percent Occupied
• Employee Leasing	
• Computer Backups	

There is also a strong move toward greater incorporation of credit scoring into small business insurance rating. This movement has used both financial rating scores of commercial enterprises, such as Dun & Bradstreet, and the personal credit scores of owners. Commercial scores have practical concerns about the number of "no hits" that occur for small businesses. Personal scores may be seen as less directly related to a commercial enterprise.

A variety of current factors could use some "freshening up." Territory definitions have been in place for decades and have not reflected cities that sprawl into adjoining counties. The advances in software and global positioning systems (including fire department locations) make an approach similar to State Farm's use of detailed territory definitions instead of protection classes an intriguing possibility. The dramatic discrepancy between ISO and independent BOPs on construction relativities (see graph at top of next page) also warrants some investigation. Finally, the old approach of clustering a large number of similar classes into rate numbers has become unnecessary, as each class can have its own class relativity.



Some of these new and revised rating factors cannot stand alone. Some do not have enough of a price impact to justify implementing them separately as a rate discount. Others, like credit or years in business, are interdependent with other rating factors and need to be appropriately implemented. Using an underwriting scorecard has been a successful approach to these issues for personal lines, and would appear to be a good approach for small business insurance.



Generalized linear modeling (GLM) is commonly used to develop all rating factors simultaneously. This methodology has a number of advantages, including the ability to identify and quantify interactions between variables.

For rating variables that need to be combined due to interactions or because of small predictive differences, an underwriting scorecard approach can be highly effective. Such an approach allows the presence or absence of rating characteristics, alone or in combination, to contribute to an underwriting score. The total number of points results in the assignment of a pricing tier, including a factor as shown in the underwriting scorecard example. In one such scorecard developed for a BOP program, the previous schedule rating range of +/- 40% was replaced by a scorecard and +/- 15% schedule rating authority. In other words, 50 points of previously discretionary pricing flexibility was explainable using information that was already available on the insurance company's application. This increased accuracy in the manual rates allows underwriters to rely more confidently on the manual pricing and focus their underwriting efforts on truly exceptional risks and coverage issues.

### Underwriting Scorecard - EXAMPLE

D&B Financial Assessment

Strength	Composite Credit Appraisal			
	High	Good	Fair	Limited
5A	250	250	200	150
4A	250	250	200	150
3A	250	250	200	150
2A	250	200	150	100
1A	250	200	150	100
BA	250	200	150	100
BB	250	200	150	100
CB	200	200	150	100
CC	200	200	150	100
DC	200	150	100	50
DD	200	150	100	50
EE	200	150	100	50
FF	200	150	100	50
GG	200	150	100	50
HH	200	150	100	50

Years of Current Control	Score Points				
	Contractors	Apartment	Office	Retail/Service	Wholesale
0-3	60	115	120	95	100
4-6	100	130	125	100	110
7-10	120	135	135	120	125
10+	150	150	150	150	150

Building < 25 Yrs Old	25 Pts	Owner on Premises	15 Pts
Central Alarm	25 Pts	Franchise	10 Pts
No Parking Lot	10 Pts	Closed by 9 pm	10 Pts
Offsite EDP Backup	5 pts	No Delivery	5 pts
>95% Occupied	100 Pts	Safety Program	50 Pts

Cumulative Point Range	Tiering Factor
0 - 99	1.00
100 - 199	0.92
200 - 299	0.84
300 - 399	0.76
400 - 499	0.68
500 - 599	0.60
600 - 700	0.52

Three key benefits can be achieved using GLM to incorporate new rating factors. First, this rating plan will help identify profit pockets of preferred risks with loss potential below market pricing for you and increased adverse selection for your competition. Second, your small business insurance program can expect lower underwriting expenses as a result of more accurate manual pricing. This will allow the underwriters to focus on the risks where their expertise is needed. A higher marketing success ratio (or "hit" ratio) can also be expected, which will reduce other acquisition expenses. Lastly, loss ratios can be expected to improve as classes that were producing adverse results are repriced, classes that present market opportunities are exploited, and the mix of business is shifted to one that should produce higher retention ratios over time.

To date, the U.S. property/casualty insurance market has focused its efforts in GLM on personal lines with significant results. While the small business insurance market is not the size of the personal automobile or homeowners markets, similar opportunities exist. The technology, data, and market conditions are all in place for a change as significant as those seen in personal lines. Are you ready?

*If you would like more information about pricing small business insurance more accurately, contact Rob Walling at Pinnacle Actuarial Resources, Inc., by phone at (309) 665-5010, or by email at [rwalling@pinnacleactuaries.com](mailto:rwalling@pinnacleactuaries.com).*