HOMEOWNERS INSURANCE TO VALUE—AN UPDATE

Robert J. Kelley

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BY ROBERT J. KELLEY

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Abstract: Homeowners Insurance to Value is a sometimes-forgotten, yet critical, factor in the ratemaking process. Some aspects of Insurance to Value have remained the same while others have changed. Actuaries must consider the impact of Insurance to Value, which can change quickly, as a part of their Homeowner ratemaking analyses.

A relatively new coverage which, under certain conditions, provides dwelling coverage beyond the full policy amount is one example of how today's Homeowner insurance marketplace is now different than previously when 80% coinsurance was the most common benchmark.

This paper discusses these developments and provides guidance and examples of reports and methods by which to monitor and measure ratemaking impacts. The paper is written so that a student or an actuary new to Homeowners Insurance should gain practical insights without being burdened with difficult technical demands.

INTRODUCTION

Homeowners Insurance to Value in the late 1980's and early 1990's has become an increasingly important consideration in the ratemaking process. Insurers are attempting to return Homeowner rate levels to adequacy and adapting to the increasing proportion of Homeowners contracts which promise additional dwelling coverage under certain conditions.

As insurers move toward profitability, many have increased rates in careful measure so that rates remain competitive and consumers are not motivated en masse to take their Homeowners insurance to another carrier. Greater efforts by insurers to make better or updated assessments of dwelling coverage needs for policyholders often reveal the need for additional coverage. Reinspections, for example, often highlight coverage inadequacies brought about by dwelling additions since policy inception. They sometimes may bring to light changing norms in the dwelling features of homes. If these reinspections result in dwelling coverage amounts being increased closer to the dwelling's full replacement cost, the impact can be to reduce the magnitude of indicated rate adjustments.

The actuary must be alert to the impact that these changes may have on the ratemaking process. This paper will provide a status report on this subject with respect to Homeowners insurance (other than insurance for those residing in apartments and condominium units) and an intentionally non-technical review of what an actuary should monitor and quantify for the purposes of ratemaking projections.

increased sales of contracts which essentially guarantee additional replacement cost coverage on dwellings under certain conditions are also changing the face of Homeowners Insurance to Value. The actuary must be cognizant of this resulting distributional change in the insurer's Homeowners writings to carry out the ratemaking process appropriately. This paper describes this coverage and highlights some of the pricing challenges it presents. It will also describe the need for the actuary to be wary of certain negative results which may occur for both the company and the consumer. This paper will offer several suggestions to minimize these unfavorable elements.

THEN AND NOW

Many, but not all, of Head's 1971 Comments Still Apply

The phrase "Insurance to Value" probably reminds many of us of George Head's book of the same name which we studied in preparation for actuarial exams. Some aspects of Insurance to Value have remained the same since Head's 1971 treatise. For example, we can still relate to Head in 1994 when he notes that this term is "generally associated with the concept that the equitable, adequate, and reasonable price...should vary with the amount of insurance".[1]

[1] George L. Head, Insurance to Value, 1971, p. 9.

An important item which relates to Insurance to Value and another one with which we can still identify is Head's comment that adjustment clauses have weaknesses. Adjustment clauses, also known as inflation coverages, are contractual provisions which are designed to automatically update the dwelling coverage amounts of each policy renewal to keep them in line with inflation. The adjustment clause is often tied to an external index of building costs. (For example, a home insured for an amount of $120,000 would be increased at its next renewal to $124,800 if the adjustment clause called for a 4% increase.) Head notes a weakness when he states "None of them compensates for underinsurance if the original policy is inadequate; they can only prevent any original underinsurance from growing proportionately larger".[2] (Thus, if the $120,000 policy was providing coverage on a home with a replacement cost of $130,000, the ratio of insurance to full replacement cost, 92.3%, would remain at this level at renewal. The policy would be renewed at $124,800, but the replacement cost is now $130,000 x 1.04 or $135,200.)

Gradually becoming outdated, however, is Head's comment: "Fire insurance rates traditionally assume 80% coverage".[3] It is the author's experience that one factor explaining this change is that over time insurers have successfully provided more consumers with complete, or near complete, protection. Insurers have refined their methods of estimating replacement cost and of communicating the need to purchase these more appropriate coverage levels. As a result, the average insurance to value ratio has

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[2] Ibid., p. 31.

[3] Ibid., p. 24.

increased over the last ten to fifteen years even though many rating plans are still designed for policyholders who purchase any amount between 80% and 100% of replacement cost.

The movement toward higher ratios of insurance coverage to replacement cost usually generates more additional premium than it does losses and expenses under today's typical Homeowners rating plan. The result is a diminished indicated rate need. To demonstrate that an increasing average percentage of insurance to value is financially wise, consider an example of a policyholder who purchases $103,750 of dwelling coverage on a home with a $125,000 replacement cost. The insurance to value ratio is 83%.

Now assume that the policyholder increases the dwelling coverage from $103,750 to $113,750 resulting in an insurance to value ratio of 91%, for an additional annual premium of $30. After deducting for premium-related expenses, we determine that $24 of this additional premium is left to pay for the higher amount of claims generated by the extra $10,000 of dwelling coverage.

To complete the analysis, the actuary is in need of a loss distribution curve or actual claim data to estimate the dwelling claims for this $10,000 layer. In this case let's assume we can determine that the frequency is 0.20% that additional dwelling claim payouts will occur. If we combine this estimate with the $10,000 (= $113,750 - $103,750) maximum increase in severity which could result from this particular situation, the following calculation determines the maximum estimated increase in loss for this policy:

Estimated additional loss $\leq$ .0020 X $10,000 = $20

Based on this analysis, the additional $24 (already reduced for premium-related expenses) which is available for the estimated extra $20 of claims certainly makes this a profitable underwriting venture for the company, while at the same time providing better coverage for the policyholder.

Guaranteed Replacement Cost Coverage is Accelerating the Move to 100% Insurance to Value

Policies which promise or guarantee full dwelling replacement cost coverage under certain conditions are now available from most Homeowners insurers and are becoming increasingly popular. This policy provision understandably requires that the policy coverage be purchased for an amount equal to 100% of the replacement cost, because dwelling claim settlements will exceed the policy amount if the replacement cost at the time of the loss turns out to be greater than what was thought to be the full cost to replace it. It has brought the typical Homeowner insurer's overall book of business to an average coverage amount that is probably 95% or higher of replacement cost. The actuary must remain attuned to these changes related to insurance to value and appropriately measure their impact for ratemaking purposes. This subject will be further explored later in this paper.

WHY IS THIS SUBJECT IMPORTANT?

The Casualty Actuarial Society's "Statement of Principles Regarding Property and Casualty Insurance Ratemaking" includes numerous considerations which commonly apply to ratemaking. The stated references to distributional changes in the paragraph entitled "Mix of Business" certainly apply to a changing cross-section of policies' Insurance to Value. Changing percentages of Insurance to Value may arise from changes in the underwriting (or reunderwriting) process, such as a new or expanded reinspection program of in-force risks. Such "Operational Changes" are also listed in the CAS statement among the ratemaking considerations. In addition, beneath the heading "Policy Provisions", the considerations include coverage limits and other policy provisions. This situation is applicable to the guaranteed replacement cost coverage. Based on the applicability of several sections in the CAS Statement and the fact that a change in the level of Insurance to Value will affect premiums, losses and expenses, analysis of such changes is critical to the ratemaking process.

However, the actuary should not be reviewing these ratemaking matters just to demonstrate some effort was made to abide by the considerations noted in the CAS Statement. As stated in the Casualty Actuarial Society's 1993 Discussion Paper Program "The Actuary As Business Manager", Michael J. Miller's article entitled "How to Successfully Manage the Pricing Decision Process" states: "The effect on loss ratios from ... a change in underwriting rules or the introduction of a new insurance program are all quantifiable.

The best managed insurers do attempt to quantify these changes, rather than rely on hunches, in an effort to keep their financial results on target".[4]

Miller continues several sentences later: "The actuary is uniquely qualified to prepare this projection, but in so doing must be aware of all the changes going on within the company which affect the financial results, not just the rate change".[5]

It is therefore obvious that to conform with accepted ratemaking principles, the actuary must consider these impacts. It is also highly advisable to quantify the impacts of these items to enhance the actuary's financial projections and to further improve the management of the insurer.

WHY IS MONITORING INSURANCE TO VALUE CHANGES PARTICULARLY IMPORTANT NOW?

Consider the following observations. Companies want to have competitive rates. For the last several years, Homeowners insurance for the vast majority of insurers has not been a profitable market. Non-catastrophe claim trends have been deteriorating, and many insurers have learned that their previously perceived exposure to catastrophes is greater than their rates contemplated. With these facts in mind, it's not surprising that many insurers have been faced with a need for Homeowners premium increases.

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[4] Michael J. Miller, "Characteristics of Successful Pricing Decision Processes", Casualty Actuarial Society 1993 Discussion Paper Program, p. 206.

[5] Ibid., p. 207.

Because of a desire for competitiveness on rates, many insurers want to obtain rate adequacy in a way that won't send their current customers shopping for another company or significantly impact their new policy writings.

One of the methods an insurer can employ to reduce the magnitude of its rating need for additional Homeowners rate increases is to improve its average level of Insurance to Value. As previously noted, such coverage increases help the consumer from a protection standpoint and usually help the company's financial results. If the actuary can better the accuracy of rate change indications by quantifying these increasing levels of Insurance to Value, the information will be very helpful to the insurer. One possible outcome is that the premium effect is significant, and management will certainly appreciate hearing the actuary's report of a smaller need for upward rate adjustments. Another potential result, which management should appreciate just as much, is that the analysis shows the quantified change will have only a negligible premium impact, at least in the short run. This latter analysis would make it clear to management that they should be realistic about the limited premium impact of some underwriting programs.

MONITORING INSURANCE TO VALUE

How to Begin

The actuary should first become aware of how dwelling coverage amounts are calculated and updated, and the available systems or aids which are utilized to help agents and underwriters make these determinations. During periods of increased numbers of, or more extensive, inspections of new business, or reinspections of existing business, additional tools are often brought to the process. More information is usually obtained on new writings, and more

frequent and in-depth reviews of existing business occur. The actuary must study these developments and then attempt to quantify resulting additional changes in premiums, losses and expenses from these actions which would not otherwise be measured or would not be measured as soon based on current procedures. It can be just as important to obtain available information more quickly as it is to obtain new information.

As an example, consider the situation where rates are based on a book of business for which the average dwelling coverage amount is 85% of full replacement cost. Also, assume a very early projection can be made with a high probability that in a year the average will move to 90%. The previously indicated rate adjustment will likely be reduced, as shown earlier, since the additional premiums usually exceed the additional losses and expenses. The actuary's advance estimates of such matters can be quite valuable to the insurer's entire plan of operation.

Michael Walters (1974 Proceedings Paper "Homeowners Insurance Ratemaking") and Mark Homan ("Homeowners Insurance Pricing" in the 1990 Casualty Actuarial Society Discussion Paper Program, "Pricing Issues", Vol. II) have authored well written papers describing analyses which provide comprehensive approaches to the entire Homeowners ratemaking process, including premium projections based on past changes in average amounts of insurance. This paper provides some additional means to analyze ratemaking data which can be used to augment the standard approach and in some cases provide a fast-track (e.g. monthly) means to track changes which can improve ratemaking projections.

Be Aware and Broad-Minded

The actuary should be watchful of developments, which may cause changes to the average level of Insurance to Value but would not immediately be reflected by a typical analysis of historical changes in amounts of dwelling coverage or inflation indexes. These developments might include:

1. **More frequent or more extensive personal inspections and reinspections of dwellings.** (Remodeling, room additions and renovations, or a change in the frequency with which additional dwelling features are present can go unnoticed until the dwelling is reinspected. More specifically, additional patios, porches, and garages, saunas, solar hot water systems, decks, more expensive roofing materials and finished basements and attics are examples of items which increase a policyholder's property exposures.)

2. **A broad advertising or direct mail campaign, or notices accompanying policy renewals which encourage policyholders to consider increasing their dwelling coverage.**

3. **Revisions to company procedures or tools which aid in the determination of dwelling replacement costs.**

4. **Changes in legal requirements or changes in the degree of enforcement of existing statutes.** (For example, stricter building codes or stronger enforcement of existing codes are emerging in the post-Hurricane Andrew and Iniki era. Restrictions on the lumber industry due to the increased protection of wildlife, like the spotted owl, may also have an impact or dwelling costs.)

5. **Changes in economic trends.** (An economic downturn may result in new housing being constructed with considerably less features.)

6. **A rapid change in construction design or efficiency.**

7. **Regional "hot spots" of quickly changing home values;** however, the actuary should be certain that such occurrences are adjustments in replacement cost and not just market value.

In addition to keeping an eye out for the above situations, one should maintain close and continual communication with the underwriting department. Underwriting reports can be very helpful to the actuary. Underwriters are often the best source of knowledge, when credible data is just not available.

The actuary should arrange to receive minutes and other correspondence related to internal meetings involving underwriting programs and other meetings regarding new or revised procedures. In addition, the actuary should have access to at least one trade magazine to stay current about residential construction. However, be wary of temporary conditions which may not have an impact in the projection period.

<u>Obtain Data</u>

The actuary should research what company reports already exist, which should be expanded, and what new reports will be required. The actuary should enlist the help of company peers and other experts to design new reports to meet short-term <u>and</u> expected long-term needs. Besides the underwriters, consultation with marketing, claims and research people is highly recommended.

Examples of reports that can be useful for a fast-track monitoring of changes in levels of Insurance To Value and other coverage changes include the following:

1. The number (or percentage) of policies with mid-term changes in their dwelling coverage amounts and the amount of dwelling coverage increases and decreases, preferably for the last two years. (The marketing department may have reports available by agent or agency district which can help pinpoint the locales where changes are most significant.)

2. A current and prior year comparison of an insurer's distribution of Insurance to Value. (A separate data run for newer business should always be considered because it reveals early movements that could otherwise be disguised in a report of total writings.)

3. A listing of existing policies which have been reinspected in a recent period and the results of those activities. Exhibit #1 illustrates the framework of a simple report which can keep one attuned to changes and reasons for the updates on a frequent basis. To keep the amount of data manageable, a sampling of reinspected policies may be best.

4. The percentage of policies cancelled and non-renewed by the insurer for reasons other than for non-payment of premium for a current and prior period and other than those initiated by the policyholder.

5. The distribution of basic types of dwellings and the frequency of use of dwelling features. Exhibit #2 is a sample report which can be used to monitor changes in these types of items and which can trigger further study as needed.

6. Policyholder questionnaires or research studies to verify policy data or for items not statistically identifiable or not available through any efficient method. (For example, insurer records for a sample of policies can be compared to county tax records to check the accuracy of square footage.)

The actuary must exercise care in maintaining and analyzing such data. The actuary should be committed to a continual re-evaluation of these reports. If several reports are used, one must ensure that no double-counting of effects occurs.

While not addressed in this paper, the actuary must also remain wary of the many considerations other than those related to Insurance to Value which may also need monitoring. A distributional change in the use of various deductibles, for example, while unrelated to Insurance to Value, affects both premium and losses, and should be quantified.

STUDYING CHANGES IN INSURANCE TO VALUE

What are the Impacts?

The actuary must play a key role in identifying, and then measuring, all elements that have a bearing on ratemaking determinations.

The potential impacts of changing, presumably increasing, levels of Insurance to Value are:

1. The additional premium generated by larger coverage amounts from actions such as inspections and reinspections. One would expect more of these activities during an unprofitable underwriting cycle.

2. The additional total, and near total, losses which accompany the larger coverage amounts generated by additional inspections and reinspections.

3. The reduced premium from increased numbers of cancellations and non-renewals.

4. The reduced claim payouts from increased numbers of cancellations and non-renewals.

5. The reduced claim payouts if broader reinspection programs result in suggestions to reduce the risk of loss which are then carried out. (Improved conditions of homes, such as repairs of prior roof damage or new front steps, are two examples.)

6. Changes in expenses such as (1) the greater cost of additional inspection and reinspection activity, (2) the greater cost generated by increased premium-related expenses, such as commissions and taxes (which result from additional premiums), and (3) the eventual savings in loss adjustment expenses from fewer (or reduced) claims, brought about by reinspections instigating reduced exposure to loss for some policies.

How Can We Quantify the Effects?

It was noted that Exhibit #1 presents a simplified worksheet approach to estimate the additional coverage and premium generated by more, or broader, inspections and reinspections. The actuary can extrapolate this information to quantify the effect for all policies and for a longer period of time.

If such a report is not available, or not feasible, some data and some judgement can be used to complete a document like Exhibit #3 to arrive at an estimate. As always, where data is lacking, close communication with other home office departments and regional offices is crucial to arrive at good estimates. A fairly simple computer program or spreadsheet should be developed to produce a good estimate of the premium to coverage ratio in item IV of Exhibit #3.

On the claim side, one can use the additional coverage estimates obtainable from Exhibit #1 or Exhibit #3, combined with the use of a representative loss distribution curve, to evaluate the additional dwelling claim dollars one will pay for the increased dwelling coverage amounts. An alternative method to making this estimate would be to use credible data for actual large dwelling claims as a basis for computing the additional dollar payouts had additional coverage amounts been in effect.

Reduced premium and reduced claim payouts resulting from additional cancellations and non-renewals should also be quantified. One can fairly easily determine projected reductions in premium by tracking the additional cancellations and non-renewals generated by the number of supplemental inspections and reinspections and simply multiplying that figure by the

average premium per policy. For reduced claim estimates, one can begin by multiplying the number of policies leaving the books by the recent average loss per policy. Then, with some judgement, preferably with the help of the underwriters and claim personnel, one should estimate how much higher the loss per policy would have been on these departing policies as one would certainly expect the policies being cancelled and non-renewed to be poorer than average risks. The actuary can then utilize this estimate to determine the reduced loss per policy on the remaining policies and incorporate the result into the ratemaking process.

To illustrate this scenario, suppose it is known that approximately 100 policies will be non-renewed out of 1,000 total policies in a given state for failure to repair prior roof and other damages. Company data may indicate that the previous year's statewide average total loss per Homeowner policy is $150 with 30% of total claim payouts resulting from these unrepaired damages. With the help of claim and underwriting personnel's judgment, you estimate that on these 100 homes, the claims would be 40% higher <u>if</u> the policies were to be renewed. The non-renewal of these policies would obviously reduce the overall loss per policy for the remaining Homeowners policies.

First, calculate the loss per policy of the 100 homes with unrepaired damage:

=	($150 x 30% x 1.40)	+	($150 x 70%)
=	$63	+	$105
=	$168		

Then, calculate the loss per policy, shown as variable X below, for the remaining 900 policies.

We know the following is true for the loss per policy of the entire current book of business:

$150 = (0.9 x $X) + (0.1 x $168)

X = $148

Thus, in this case the loss per policy will be reduced from the previous year by 1.3% [(148/150)-1)], and ratemaking projections should include this information.

To determine the judgmental component of claim savings from inspection-induced changes in the conditions of risk, such as the estimate of 40% higher claims in the above example, this author recommends the "divide and conquer" approach with the actuary acting as the coordinator. When possible, the actuary should first segment the business into statistically identifiable characteristics. Using a Delphi approach[6] the actuary independently inquires of experts (in this case, they're likely company experts) for their estimates of projected changes in claim frequency and severity, by cause of loss, which will result from these actions. The variance in the independent opinions may provide the actuary an understanding of how good or bad the estimates may be for this task.

Exhibit #4 provides a worksheet which summarizes the necessary calculations for such an approach. Estimates of changes in frequency and severity for each cause of loss can, to some extent, be based on historical data. In addition, though, estimates by company experts for specific claim impacts from inspection and reinspection activity are essential. The portion (Item III) of Exhibit #4 which deals with the distribution of claims by cause of

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[6] Spyros Makridakis and Steven C. Wheelwright, Forecasting Methods For Management, Fifth Edition, pages 324-326.

loss can be derived directly from historical data. Unless the actuary is aware that certain trends are changing, that is usually the best reflection of what is expected to continue. Crime and liability trends tend to be more short-term in nature, since they usually relate closely to the economy, and normally deserve the most consideration for possible deviation from historical distributions. These individual peril estimates are then transformed into an appraisal of total loss savings per policy in force, by summing the products of each pair of components A through E in items II and III to arrive at an estimate.

Additional statistical reports should be considered to aid in these judgments. If there are particular areas of focus for the inspections and reinspections, one should consider reviewing, or obtaining, frequency and severity data for them. For example, if reinspections are directed at homes with poor fire protection, dwellings with woodburning stoves, areas of high crime losses, or high loss agents, then historical data for these particular policies would be most valuable to the estimation process.

The various changes in expenses noted earlier should also be quantified. Records should be maintained of the cost of performing the additional inspections and reinspections. Historical data for the ratio of premium-related expenses to premium should be readily available to use for estimating any change in these premium-related expenses which would result from a change in premium. The historical relationship of loss adjustment expenses to claims provides a basis for determining a reasonable estimate of any loss adjustment expense savings.

Besides the effects the actuary attempts to measure, it should also be noted that there are many positive but intangible results from an insurer's additional emphasis on programs to improve risk quality and company operations. Stressing the importance of inspections, reinspections, and a more watchful eye on improving risk conditions provides greater protection and more satisfaction for the policyholder and can put the insurer back on track operationally as well as benefit it financially.

The Costs and Benefits of Quantification

The costs to the actuary and others involved in developing and maintaining reports, as well as the time of the experts providing assistance to make all these estimates, must be weighed carefully against the benefits derived.

It may become clear part way through an analysis that certain impacts will be quite minimal, and that cruder estimates and much less detail are the best alternative. On the other hand, if the impact could be significant, greater analytical detail and effort may be well worthwhile. This paper hopefully raises one's consciousness about this subject and provides some insights into those efforts.

GUARANTEED REPLACEMENT COST (GRC) COVERAGE

What is it?

Guaranteed Replacement Cost is a coverage that surfaced in the 1980's that is beginning to make obsolete George Head's comment that fire rates are based on policies insured at a level that is at least 80% of its replacement cost. Born out of a competitive environment, this coverage began as a benefit to existing qualifying policyholders and a way to attract new customers.

Previously, a typical Homeowner policy never permitted the loss payment on the primary dwelling to exceed the dwelling coverage amount. GRC coverage, however, provides that the dwelling may be replaced or repaired even if the cost exceeds the dwelling coverage limit of liability. An amount is usually still declared in the policy declarations, at least to serve as a basis for rating. The policy is required to be fully insured to value. Generally, in addition to the policyholder initially insuring the dwelling to 100% of its replacement cost, he or she promises to report any alterations which increase its value by 5% or more during the policy term. Many companies have additional eligibility rules in effect for GRC coverage to direct this coverage to a preferred class of Homeowner business.

GRC coverage quickly became a hot seller because of the guarantee the company provides. The consumer benefits from this new coverage because it removes any doubt that the amount of coverage might be insufficient in the event of a total loss. For this guarantee, a company is putting much more trust in its own methods, and in its personnel and agents to accurately determine and maintain adequate replacement cost so that the policyholder remains fully insured and the insurer continues to collect an adequate premium.

Several Challenges Exist to Pricing GRC

Because the 100% Insurance to Value requirement is critical for appropriate rating, accurate initial replacement cost estimates are essential to the entire GRC pricing structure. The difficulty in determining a dwelling's replacement cost is evidenced by the fact that companies employ various methods to quantify it. The approaches vary from straight square footage costing to a more involved hybrid involving square footage combined with a judgmental assessment of the degree of home customization, and then adjusted

for any of a long list of special characteristics which apply. Still other companies primarily base replacement cost on the number of rooms in the dwelling.

Sometimes even the best possible estimates of replacement cost can turn out to be inadequate, making GRC coverage a riskier venture than normal Homeowners coverage. It may not be efficient for an insurer to make reinspections frequent enough to ascertain if renovations or add-ons have occurred or if the insurer's adjustment clause for inflation is maintaining the same level of protection from area to area and policy to policy. The company must choose the appropriate balance point.

A policyholder's expectations of the word "guarantee", which is used by many insurers for the name of the coverage, also creates challenges for the insurer. It can produce additional exposure which was not intended by the insurer. In some catastrophe situations and other individual cases across the country, many more dollars than intended have been paid out as courts have sometimes interpreted the coverage broadly. Insurers' policy language, sales materials and advertisements must convey the coverage appropriately to the public or else the actuaries' loss projections may turn out to be well below actual payouts.

Pricing GRC

Currently, most insurers use at most a small dollar or percentage charge for the GRC coverage. Sometimes no direct charge is made for GRC coverage because additional premium is automatically generated by the 100% replacement cost requirement. For the actuary to measure what the cost of this product should be, this author recommends utilizing several statistical reports.

As previously noted, eligibility rules are usually different for Homeowner policyholders to qualify for GRC coverage. These differing qualification requirements create the potential for a group of policies which may not be similar to other Homeowners policies. In that case separate statistical reports are essential to review the non-homogeneous segments. Most helpful would be a review of loss frequency data by cause of loss to determine if a truly different Homeowner class exists due to the insurer's GRC eligibility rules. This information may not only be insightful ratemaking information, but it may also aid management in determining if GRC eligibility rule revisions are in order.

Next, while data may be sparse, a report which provides details for individual claims in which payments exceed the dwelling coverage amount should be created. Exhibit #5 is an example of a report which provides ratemaking assistance for the GRC coverage. The losses associated with the GRC coverage are itemized and summarized. The losses are then related to premiums or to loss per policy. (The latter can be "grossed up" to include premium-related expenses, e.g. $2.87/.80 = $3.59.) These provide a starting point for determining the pricing of the GRC component. A loss distribution curve which extends above 100% of replacement cost could also be developed.

Before utilizing this particular set of information, the actuary should inquire with the claims departments about any losses which may distort the data. For example, the fourth claim listed on Exhibit #5 involved a loss 46% higher than the dwelling coverage amount. Cases such as this one deserve follow-up before being blindly included or excluded from the analysis.

The actuary should compare data for different states for reasonability. One would expect that the charge for GRC coverage in states with above average catastrophe provisions should be a greater dollar amount than states with below average catastrophe provisions. This is because of the greater potential for total losses and for increased rebuilding costs due to supply shortages which are more common following major catastrophes.

Finally, if possible, the claims department may also be able to help develop information on total losses on non-GRC policy claims. If claims representatives have recorded or would record the amount of claims that would have been paid if GRC coverage applied, the actuary would have additional data for review. Of course, the actuary must verify that this non-GRC policy information reflects risks homogeneous enough to be used in the review.

Other Challenges Caused by GRC Coverage

This coverage can bring about a number of negative outcomes for both the consumer and the insurer. The consumer may seem to be the winner in all situations, but that is not true in every case. If a company undervalues the dwelling replacement cost, the guarantee still provides the extra dwelling coverage to the policyholder (without charging the appropriate price), but other coverages, such as personal property, may be inadequate. This result can occur because personal property coverage is often provided as a percentage of the stated dwelling coverage amount, and the coverage guarantee may not extend to it. Therefore, the policyholder would not have adequate coverage on personal property in such a case.

For example, consider a dwelling that is insured for 100% of its replacement cost at $120,000 with GRC coverage and with personal property coverage

provided at the insurer's standard amount of 75% of the dwelling coverage, or $90,000 in this case. At claim time, it turns out the home's replacement cost is actually $160,000. The GRC coverage means that the policyholder will receive the $160,000 on the dwelling, but if there is no guarantee on the personal property coverage, the payment on it is limited by its policy amount of $90,000. This may be short of the needed contents coverage, because had the home been insured for the true dwelling replacement cost of $160,000, the insurer would have provided 75%, or $120,000 of personal property coverage. Thus, if this policyholder was typical, he or she really had $120,000 of personal property and would find themselves underinsured by $30,000.

A disadvantage to the company is that it is depending heavily on its inspections, inflation coverage, and internal review procedures to ensure that the dwelling is initially insured and remains insured at full replacement cost. If, for example, its initial determination of full replacement cost overshoots the correct coverage amount, the company will be less competitive than other similarly priced insurers competing for the same risk if the others rate it at the appropriate lower replacement cost. Another company shortfall may result if the inflation coverage index utilized by an insurer moves slower than it should with the result that not enough premium is obtained for the coverage provided.

There is obviously less incentive for the consumer with GRC coverage to insure the dwelling at an appropriate level when the company's contract guarantees full replacement of the building. The insurer and its agents can perhaps improve this situation by emphasizing the importance of appropriate protection on personal property coverage, and that it's not guaranteed to the policyholder.

Although total losses are not that frequent, companies will have claims for which they will pay out more than the dwelling coverage amount due to the GRC coverage. Some instances will be due to incorrect initial replacement cost valuation. Some will be due to automatic inflation indexes which did not remain accurate for a particular policy. Even though the estimates of replacement cost might be as accurate as possible, at other times the amount necessary to rebuild the home at claim time will be more than anyone thought it could be. Recent catastrophes like the Oakland fire and Hurricanes Andrew and Iniki have involved greater numbers of total dwelling losses and have brought about additional occurrences of claim payments which have exceeded dwelling coverage amounts due to GRC coverage. One positive aspect of these possible catastrophes is that they often provide insurers with more data upon which to validate their replacement cost valuation methods, and for the actuary to review additional GRC loss information.

Controlling GRC Exposures

Due to the current loss cycle, most companies are analyzing Homeowners insurance quite closely. Undoubtedly, this includes getting a better handle on GRC coverage exposures. Part of the answer is to find ways to produce better estimates of replacement cost, but there are other avenues, too.

Companies may consider narrowing their eligibility rules for GRC coverage. Additionally, agents and underwriters could more effectively screen out hard-to-estimate building replacement cost values. For example, the replacement cost of homes with one-of-a-kind building features are often difficult to assess and could be considered ineligible for GRC coverage.

Although the savings may not be significant, nor the handling very practical, another possible action that could reduce loss settlements would be to reduce the claim payout on an individual claim by the aggregate premiums (potentially for multiple years) that should have been collected for the amount of a dwelling's underinsurance, if underinsurance is found to exist at the time of loss. Although this approach could be considered too little too late, and may not be an efficient process, it might provide some discouragement to policyholders at policy inception to knowingly underinsuring their homes.

Another option is not to make an unlimited guarantee. Because the company has better tools than most policyholders to estimate replacement cost, the company should be able to come quite close to determining such costs in the vast majority of cases. Because it is difficult, however, for an insurer to be accurate on all its replacement cost estimates, and to maintain every one at 100% to value, the guarantee could be provided up to some limit, say 10% or 20%, above the dwelling coverage amount. It would become an extra layer of coverage rather than a guarantee. This would provide the company some comfort due to the upper limit on its exposure. The policyholder should still be adequately protected in virtually every case, even if supply shortages cause increased material costs as they often do after large catastrophes occur. If desired, the company could still provide a purchasable option (or options) for a policyholder to buy additional layers of coverage above 10% or 20%.

Yet another coverage alternative is for the company and the policyholder to share in claims involving building losses beyond some limit. For example, the insurer might pay 80% of dwelling losses exceeding the dwelling amount up

to 125% of the dwelling coverage. Another possibility along this line would be for the insurers to pay all dwelling losses up to 110% and then 50% of those from 110% to 130%. A report like Exhibit #5, supplemented by total loss data on non-GRC policies if possible and appropriate, would again provide the framework for a pricing study of all these limited guarantees.

CLOSING

The actuary must take the time to understand, monitor and quantify matters which can impact the ratemaking process such as those described in this paper. This is quite a challenge for the data-hungry actuary who may have to get the job done with only assorted bits of data and a number of judgments in the ever changing business of insurance. Constant communication with peers combined with efficient statistical reports provide the basic tools from which the actuary can complete his or her ratemaking analysis, including studies such as those involving Insurance to Value and coverages like GRC.

EXHIBIT #1
HOMEOWNERS ADDITIONAL
INSPECTION AND REINSPECTION ACTIVITY
MONTH OF _____

Policy Number	Dwelling Coverage Pre-Inspection	Dwelling Coverage Post-Inspection	Change in Premium from Coverage Change	Comments*
#XXXXXXXXXXX	$	$		
Totals	$	$	$	

*Comments might include:
+ Inaccurate square footage on previous records
+ Recent room addition
+ Wood shake roof installed
+ Sauna added

EXHIBIT #2
REPORT TO MONITOR
CHANGES IN THE DISTRIBUTION OF TYPES OF DWELLING
AND IN THE FREQUENCY OF USE OF SELECTED DWELLING FEATURES

I. TYPES OF DWELLING	DISTRIBUTION OF POLICIES PRIOR PERIOD	CURRENT PERIOD	PERCENTAGE CHANGE
1. Economy			
2. Standard			
3. Above Average			
4. Deluxe			
5. Ultradeluxe			
	100%	100%	

DWELLING FEATURE	PERCENTAGE OF POLICIES WITH FEATURE PRIOR PERIOD	CURRENT PERIOD	PERCENTAGE CHANGE
1. Finished Basement			
2. Family Room Addition			
3. Kitchen Package (e.g. Microwave, Dishwasher, Garbage Disposal, etc.)			
4. Central Air			
5. Covered Patio			
6. Solar Hot Water System			
7. Hot Tub/Spa			
8. Sauna			
9. Wet Bar			
10. Deck			
11. Wood Burning Stove			
12. Wood Shingle Roof			
13. Wood Shake Roof			
14. Concrete Tile Roof			
15. Clay Tile Roof			
16. Finished Attic/Room Over Garage			
17. One Fireplace Hearth			
18. Two Fireplace Hearths			
19. More than Two Fireplace Hearths			
20. Attached Garage - 1 Car			
21. Attached Garage - 2 Cars			
22. Attached Garage - 3 Cars			
23. Attached Garage - > 3 Cars			
24. Carport			

EXHIBIT #3
PROJECTED CHANGE IN PREMIUMS GENERATED BY A CHANGE IN THE AMOUNT OF DWELLING REINSPECTIONS
---A Simplified Worksheet---

I. Additional Dwellings Reinspected (As a percentage of all dwellings) _____%

II. Percentage of policies in I in which the dwelling coverage amount is revised. _____%

III. Average percentage change in the dwelling coverage amount for the policies in II. _____%

IV. Average ratio of a change in premium and a change in coverage amount. [i.e. (Change in Premium)/(Change in Coverage)] _____

V. Projected change in premium = I*II*III*IV= _____%

EXHIBIT #4
PROJECTING REDUCED CLAIMS DUE TO A CHANGE IN THE AMOUNT OR DEGREE OF DWELLING REINSPECTIONS WHICH WILL LEAD TO REDUCED RISK OF LOSS

I. Additional Dwellings Reinspected Which Will Lead to a Reduced Risk of Loss. (As a percentage of all Dwellings) _____%

II. Projected Savings In Claim Frequency And/Or Claim Severity For Those Policies in I.

		Projected Savings		
		Frequency	Severity	Loss Per Policy*
A.	Fire	%	%	%
B.	Wind/Hail	%	%	%
C.	Crime	%	%	%
D.	Liability	%	%	%
E.	Other	%	%	%

III. Expected Distribution of Total Loss Per Policy By Cause of Loss

A.	Fire	%
B.	Wind/Hail	%
C.	Crime	%
D.	Liability	%
E.	Other _____	_____%
	Total	100 %

IV. Total Projected Claim Savings Per Policy

=(II. A X III. A) + (II. B X III. B) +
(II. C X III. C) + (II. D X III. D) +
(II. E X III. E) = _____%

*Loss Per Policy Savings for each peril in II is canculated as follows:

1 - [(1 - (Proj. Savings in Frequency)) X (1 - (Proj. Savings in Frequency))]

EXHIBIT #5
SAMPLE REVIEW OF HOMEOWNERS
PRIMARY DWELLING LOSSES ON
POLICIES WITH GRC COVERAGE

I. Dwelling Losses Which Exceeded Dwelling Coverage ("GRC" Losses)

Count	(1) State	(2) Policy or Claim Number	(3) Date of Loss	(4) Basic Policy Premium	(5) Primary Dwelling Coverage Amount	(6) Primary Dwelling Coverage Loss	(7)=(6)/(5) Ratio of Dwelling Loss to Dwelling Amount
1	01	A123456	01/02/93	$ 250	$ 76,000	$ 80,937	1.065
2	01	A234567	01/31/93	338	113,500	125,212	1.103
3	01	A345678	02/14/93	278	91,200	95,755	1.050
4	01	A456789	02/20/93	443	158,500	231,436	1.460
5	02	A567890	02/22/93	265	80,400	86,528	1.076
6	02	A678901	02/22/93	242	68,000	77,120	1.134
7	02	A789012	03/11/93	359	119,300	152,710	1.280
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
52	All	All	All	$17,168	$5,722,600	$6,466,075	1.130

II. Summary Data for All Other Policies with GRC Coverage

Count	(1) State	(2) Policy or Claim Number	(3) Date of Loss	(4) Basic Policy Premium	(5) Primary Dwelling Coverage Amount	(6) Primary Dwelling Coverage Loss	(7)=(6)/(5) Ratio of Dwelling Loss to Dwelling Amount
258,656	---	---	---	$84,839,224	$28,613,000,000	$44,636,280	0.002

III. A. From I above: GRC Coverage Losses = $6,466,075 - $5,722,600 = $743,475.

B. From I and II combined, for all policies with GRC coverage, the following calculations can be made:

(i) $\frac{\text{All GRC Coverage Losses}}{\text{All Basic Policy Premiums}} = \frac{\$743,475}{\$17,168 + \$84,839,224} = 0.9\%$

(ii) $\frac{\text{All GRC Coverage Losses}}{\text{Total Policies}} = \frac{\$743,475}{52 + 258,656} = \$2.87$