
CROP INSURANCE PREMIUM REDUCTION PLAN ISSUES-04-02

BPA #45-RMA1-5-0021
Work Order #RMA-05-0002

January 7, 2005



GlobalAgRisk, Inc.
1008 S. Broadway
Lexington, KY 40504

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¹ This report was prepared by Drs. Barry Barnett, Roy Black, and Jerry Skees, with assistance from Anne Goes of GlobalAgRisk, Inc., and Celeste Sullivan, editor. Barnett, Black, and Sullivan are subcontractors for GlobalAgRisk, Inc.

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Table of Contents

EXECUTIVE SUMMARY _____	ii
INTRODUCTION _____	1
SUMMARY OF PRP SUBMISSIONS _____	1
WHAT ARE THE POLICY OBJECTIVES? _____	2
High Participation.....	2
Actuarial Soundness.....	2
Universal Access.....	4
CAN THE INDUSTRY AFFORD TO REDUCE PREMIUMS? _____	4
DOCUMENTING COST EFFICIENCIES _____	7
PRPs AS COMPETITIVE INSTRUMENTS _____	9
ALTERNATIVES AND CONSEQUENCES _____	11
Allow AIPs to Compete Using PRPs.....	11
Rigorously Verify Cost Efficiencies and Regulate Premium Reductions	12
QUESTIONS _____	13
REVIEWERS' BACKGROUNDS _____	19
REFERENCES _____	21

Figures

<i>Figure 1. Aggregate Loss Ratios by Year.....</i>	<i>3</i>
<i>Figure 2. Geographical Differences in Aggregate Loss Ratios, 1981-2002</i>	<i>3</i>
<i>Figure 3. Changing Share of Gross Premium by Coverage Level.....</i>	<i>5</i>
<i>Figure 4. Changing Share of Gross Premium by Crop Insurance Plan</i>	<i>6</i>
<i>Figure 4. Average Industry-Wide Rate of Premium Retained in the SRA (from Vedenov, et al., 2003).....</i>	<i>10</i>
<i>Figure 5. [Redacted Confidential Business Information]</i>	<i>10</i>

Tables

<i>Table 1. Proposed Premium Reduction Rates by State and Submitter.....</i>	<i>Error! Bookmark not defined.</i>
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Executive Summary

This review investigates the core economic incentives that would cause the approved insurance providers (AIPs) to recommend differential premium reduction plans (PRPs) by state. We believe it is critical for the Board to understand these issues as they consider the appropriate role for the Board and the RMA in reviewing these and future PRP submissions.

We make the case that administrative and operating (A&O) costs per policy are likely relatively constant over time. However, A&O expense reimbursements per policy have increased significantly over the past several years. A&O expense reimbursements are a direct function of gross premiums. Gross premiums per policy have increased significantly in the past several years. Increased premium subsidies have resulted in farmers purchasing policies with higher coverage levels and a greater percentage of revenue insurance policies. In 1999, only about 40 percent of gross premium was written at coverage levels higher than 65 percent. By 2004, approximately 70 percent of gross premium was written at coverage levels higher than 65%. Further, in 1999 revenue insurance products comprised only 37 percent of gross premium. By 2004, revenue products exceeded 70 percent of gross premium. In 1999, gross premium per policy was about \$2000. By 2003, the value was over \$3000.

We asked just how high PRPs could go, on average, so that the A&O expense reimbursement (net of the PRP) per policy would be the same for the 2003 book of business as it was for the 1999 book of business – which was the highest year up to that point. Our analysis suggests that the AIPs could implement a flat 3.5 percent PRP for all policies and all states and still obtain the same net A&O reimbursement per policy in 2003 as they did in 1999. This analysis carefully incorporates the rules for A&O expense reimbursement that are in the new SRA. The simulations performed use the summary of business data from the RMA homepage. It is important to note that the 3.5 percent is an average value. While significant differences exist by state, coverage level, or plan of insurance, those differences were not addressed in our analysis.

Next, we examine the linkages between underwriting gains and the competitive structure for acquiring access to sales agents. Since AIPs can obtain higher underwriting gains in certain core states, it is economically rational to expect that agents in those states will be paid higher base commission rates. Using data supplied in these submissions and data on the average premiums retained by AIPs by state, we show that the correlation between base commissions paid to agents and percent of gross premiums retained by AIPs is nearly 80 percent. These PRP submissions request differential PRPs by state that are consistent with AIP premium retention. This

strongly suggests that as expected underwriting gains increase, the requested PRPs also increase.

It is quite logical that each of the submissions anchors on base commissions paid to agents as the means to document efficiencies. We have considered how difficult it would be to document other cost efficiencies. Even the documentation that is supplied in these submissions is incomplete as it provides only the base commissions for agents by state. Many agents also receive bonuses and/or profit sharing from the AIPs. These likely also vary by state. Given that many of the AIPs sell multiple products, in addition to federal crop insurance products, it is also difficult to document the federal crop insurance portion of A&O costs for AIPs. Pointing these aspects of the unknown information is not to suggest that RMA attempt to obtain these data. Doing so in an effective fashion would be highly burdensome and most likely RMA would obtain inconsistent data that would make it nearly impossible to make cross-company comparisons.

Since there are clearly economic reasons for having differential costs and PRPs by state, it would likely be ill-advised to require the same PRPs for all states. If RMA forced AIPs to offer the same AIPs in all states, to be competitive in core states, AIPs might have to offer PRP levels that would drive agents out of business in marginal states. In other words, there are clear cost savings that can be passed along to farmers but these values will need to be different in different states. The companies are in the best position to determine these differences.

Our report examines three possible alternatives for the board regarding these submissions. The first alternative – to reject all the submissions – is considered impractical. The second alternative involves making certain that companies meet the intent of the law, but to largely allow the AIPs to compete with differential PRPs. The final alternative would involve turning RMA into a regulatory agency that would rigorously verify cost efficiencies and approve PRPs based on more detailed information. Our analysis works through the consequences of these different choices. On balance, allowing companies to compete with less regulation may be the most logical alternative. Setting up excessive regulations in an attempt to control this process is likely to prove expensive and cumbersome. The last section of the report addresses each of the specific questions contained in the “description of work” for this project.

Introduction

This review addresses questions that have far reaching implications for the Federal Crop Insurance Program, in general, and the delivery system, in particular. While we have attempted to provide some insights regarding these questions, our efforts have been constrained by the relatively short amount of time allowed for the review and the limited data provided.

The “description of work” for this project contained a number of specific questions that reviewers were asked to consider. Many of these questions relate to how the Risk Management Agency (RMA) can verify cost accounting data provided by approved insurance providers (AIPs). Beyond a rather basic level, we do not believe that the RMA will be able to effectively verify these data and make appropriate comparisons across AIPs. Further, we wonder whether this is an appropriate role for the RMA. While we do attempt to address these specific questions, our review begins by developing a conceptual understanding of how the delivery system has responded, and likely will respond in the future, to incentives provided within the Federal Crop Insurance Program.

Our review is based on the classic “Issues → Alternatives → Consequences” model of public policy analysis. The issue under consideration is the role of Premium Reduction Plans (PRPs) in the Federal Crop Insurance Program — consideration of this issue having been initiated by the five PRP submissions contained in the review materials. From our perspective, it seems that in responding to these submissions the Board has three possible alternatives:

1. Reject them all, presumably based on a belief that this trend is not in the long-run best interest of the program;
2. Accept all proposals that provide the basic materials required for the submission and let future (perhaps annual) adjustments occur as the industry competes in this new environment;
3. Adopt a more regulatory role in advising where, when, how, and for what crops and plans of insurance, PRPs can be implemented.

Our review focuses on the potential consequences of these various alternatives for insured farmers, AIPs, insurance agents, and the RMA.

Summary of PRP Submissions

This review is based on information provided to GlobalAgRisk, Inc. regarding PRP submissions from five separate AIPs. While the submissions differ in some details, they are, in general, quite similar. Each of the submissions proposes to offer a PRP for 2005 that would reduce farmer-paid premiums for RMA-facilitated crop insurance products. Each submission proposes to fund the PRP through cost efficiencies. While some of the submissions mention other sources of cost efficiencies (primarily information technologies), each of the submissions ultimately indicate that the required cost efficiencies will be generated by reductions in agent base commissions. The cost efficiencies (and associated PRPs) are expressed as a percentage of total premiums. This is consistent with the calculation of administrative and operating (A&O) expense reimbursement as stipulated in the Standard Reinsurance Agreement (SRA).

The proposed premium reductions (as a percentage of total premiums) vary across submissions and, in most cases, vary across states for a given submission. **[REDACTED CONFIDENTIAL BUSINESS INFORMATION]** However, the proposed premium reduction is not the same for

each state. [REDACTED CONFIDENTIAL BUSINESS INFORMATION] Table 1 summarizes this information.

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What are the Policy Objectives?

As with many government programs, policymakers have multiple objectives for the Federal Crop Insurance Program. For purposes of this review, we focus on three major objectives identified by policymakers. The first is high levels of participation. The second is actuarial soundness. The third is universal access to crop insurance products. It is important to note that these objectives are not necessarily compatible.

High Participation

When the Federal Crop Insurance Act of 1980 was adopted, policymakers expressed the hope that an expanded crop insurance program would reduce political demands for disaster assistance. The House Committee on Agriculture went so far as to suggest that 50 percent participation might be adequate to meet that objective. The move to private-sector sales and servicing of federal crop insurance policies, authorized by the 1980 Act, was motivated, in large part, by a desire to increase participation. Rapid expansion into new commodities and regions would be accomplished by utilizing the existing network of private insurance companies and agents.

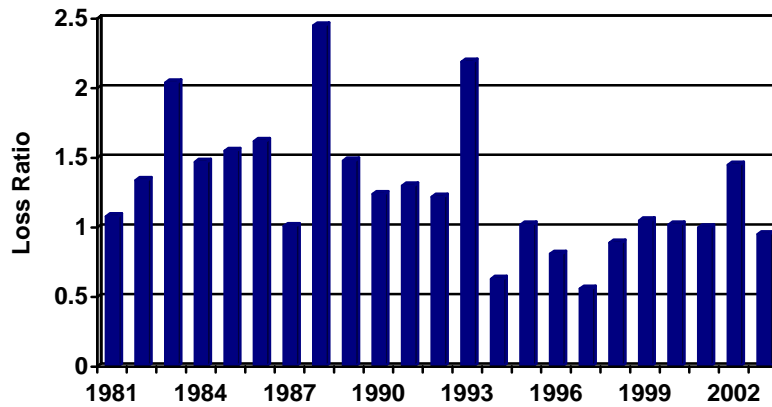
Policymakers often cite insufficient crop insurance participation to justify continued *ad hoc* disaster assistance. Yet both insured acreage and liability have increased dramatically since 1980. As a percentage of eligible acreage, crop insurance participation at the buy-up level has exceeded 50 percent since 1999. If catastrophic (CAT) coverage is included, participation since 1999 has been between 70 and 80 percent. Despite this, federal crop disaster assistance was paid in four of the six years between 1998 and 2003. The annual average of federal crop disaster assistance over this period was \$1.6 billion per year (Glauber, 2004). In 2002 policymakers provided more than \$2.1 billion in crop disaster assistance despite the fact that crop insurance participation rates (including CAT coverage) were nearly 80 percent with more than 50 percent of acreage insured at coverage levels of 70 percent or higher (Glauber, 2004).

Actuarial Soundness

A standard measure of actuarial soundness is the loss ratio, calculated as indemnities paid divided by total premiums collected. A loss ratio greater than 1.00 indicates that the program paid more in indemnities than was collected in premiums.

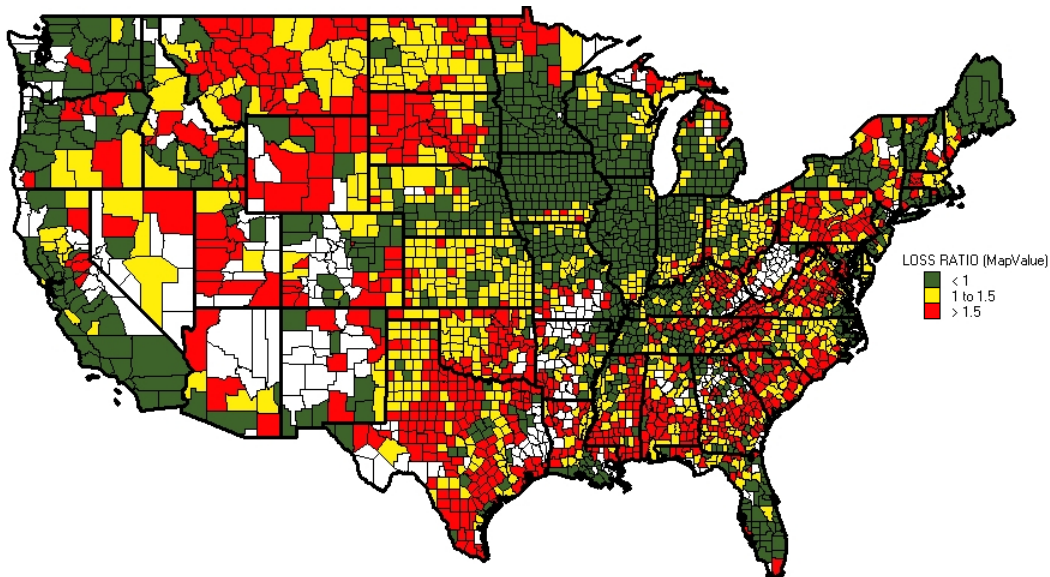
The loss ratio for the Federal Crop Insurance Program exceeded 1.00 in every year between 1981 and 1993. In 1993, policymakers established a long-run loss ratio target of 1.075 for the Federal Crop Insurance Program. Since 1994 the program has exceeded that target loss ratio only once, in 2002 (Figure 1).

Figure 1. Aggregate Loss Ratios by Year



Aggregate loss ratios, however, mask important commodity and regional differences in the actuarial performance of the Federal Crop Insurance Program. Figure 2 shows that since 1981, aggregate loss ratios have been highest in the South and in the Plains States. The Midwest and the West Coast have experienced relatively low loss ratios.

Figure 2. Geographical Differences in Aggregate Loss Ratios, 1981-2002



Geographical differences in loss ratios are important because loss ratios are related to underwriting gains/losses for AIPs. The relationship between loss ratios and underwriting gains/losses for an AIP depends on how the AIP places business within the various pools of the SRA. However, in general, it is fair to say that areas with lower (higher) historical loss ratios have generated higher (lower) underwriting gains for AIPs. Thus, it is not surprising that the highest

proposed premium reductions in Table 1 tend to be in states with historically low loss ratios. As one would expect, AIPs will compete most aggressively in states that are likely to generate the largest underwriting gains.

Universal Access

Unlike other lines of insurance, AIPs for crop insurance are required to sell policies to all who meet the minimum eligibility requirements. If an AIP does not wish to hold the loss risk on a given policy, it can, within certain bounds, cede some of the loss risk to the federal government through the SRA. Thus, the SRA encourages increased participation by facilitating the sale of federal crop insurance policies in regions, or to individuals, that may not be considered sound commercial risks by a private insurer.

The delivery system is composed of private, “for profit,” businesses. While policymakers have a social objective of universal access, these private businesses have an objective to maximize returns on their equity capital. Thus, they respond rationally to economic incentives generated within the Federal Crop Insurance Program. For example, all other things equal, AIPs prefer to write policies in regions with potential for high underwriting gains.

A&O expense reimbursement is paid as a percentage of the premium. Agent commissions are also typically paid as a percentage of the premium. Thus, all other things equal, both AIPs and agents would prefer to write policies for larger farms or farms that produce higher valued commodities. Further, in regions where farms are sparsely located, the average delivery cost for each crop insurance policy is significantly higher than in major production regions where farms are more densely located. The A&O cost reimbursement structure does not account for this so, all other things equal, AIPs and agents will be disinclined to target regions where farms are less densely located.

Can the Industry Afford to Reduce Premiums?

How would the proliferation of PRPs impact economic incentives within the crop insurance delivery system? Can the industry afford to reduce premiums? Are A&O reimbursements adequate to facilitate delivery and fund PRPs? These questions are critical to any discussion of the future role of PRPs within the Federal Crop Insurance Program.

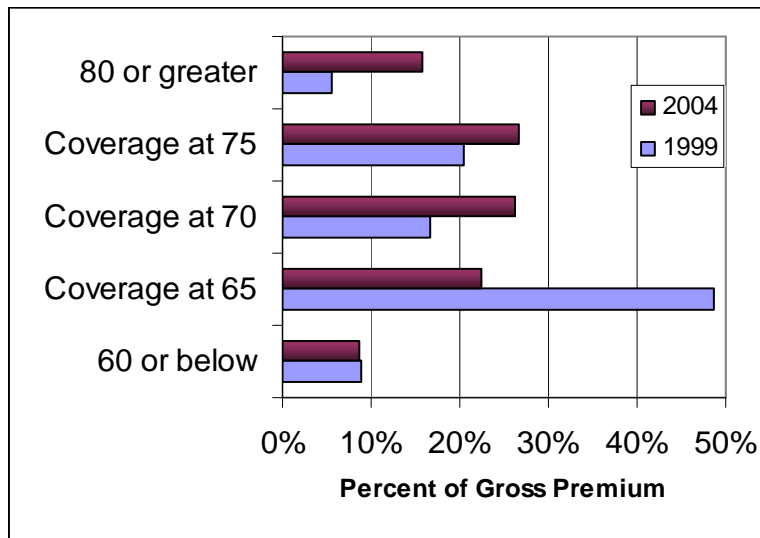
To address these questions we conducted a simulation using data from the RMA Summary of Business database. We asked just how high PRPs could go, on average, so that the A&O reimbursement (net of the PRP) per policy would be the same for the 2003 book of business as it was for the 1999 book of business. *The answer is about 3.5 percent.* This is a national average and was applied to all crop insurance policies in the 2003 book of business. It should be noted that the PRP can be significantly higher in some areas and should be lower in others to give the same answer as the 1999 book of business.

A&O expense reimbursements are a direct function of premiums. A&O reimbursement per policy has increased significantly in recent years due to a number of variables. All other things equal, higher expected commodity prices (and, thus, higher crop insurance price selections) lead to higher levels of crop insurance liability and, for a given premium rate, higher crop insurance premiums. Higher commodity prices explain much of the increase in crop insurance premium per policy between 2003 and 2004.

We will, however, focus our analysis on the change in premium per policy between 1999 and 2003. Commodity prices were slightly higher in 2003 than 1999 but according to our analysis this

accounts for only about 5 percent of the increase in premium per acre.² Higher coverage levels are responsible for much of the increase in premium per policy since 1999. In 1999 nearly 50 percent of gross premium for buy-up policies was written at the 65 percent coverage level. In 2004 only 20 percent of gross premium for buy-up policies was written at the 65 percent coverage level. As shown in Figure 3, the 30 percentage point difference in gross premium all moved to higher coverage levels. The move to higher coverage levels is largely a result of changes in the premium subsidy structure introduced in the Agricultural Risk Protection Act of 2000 (ARPA). The impact of coverage levels on premium per policy is evidenced by the fact that in 2004 the average gross premium per policy at the 75 percent coverage level was 55 percent greater than the average gross premium per policy at the 65 percent coverage level.

Figure 3. Changing Share of Gross Premium by Coverage Level



The shift to revenue insurance policies is the other major factor that has caused premium per policy to increase. Crop Revenue Coverage (CRC) and Revenue Assurance (RA) policies comprised 71 percent of gross premium for buy-up policies in 2004 and only 37 percent in 1999. Figure 4 shows the growth in revenue insurance plans versus APH plans. These revenue insurance policies had premium rates that were 30 percent greater than APH products 2003. More to the point, under the new SRA rules the A&O reimbursement per APH policy in 2003 would have been \$456 per policy the revenue insurance policies would have been reimbursed \$700 per policy³

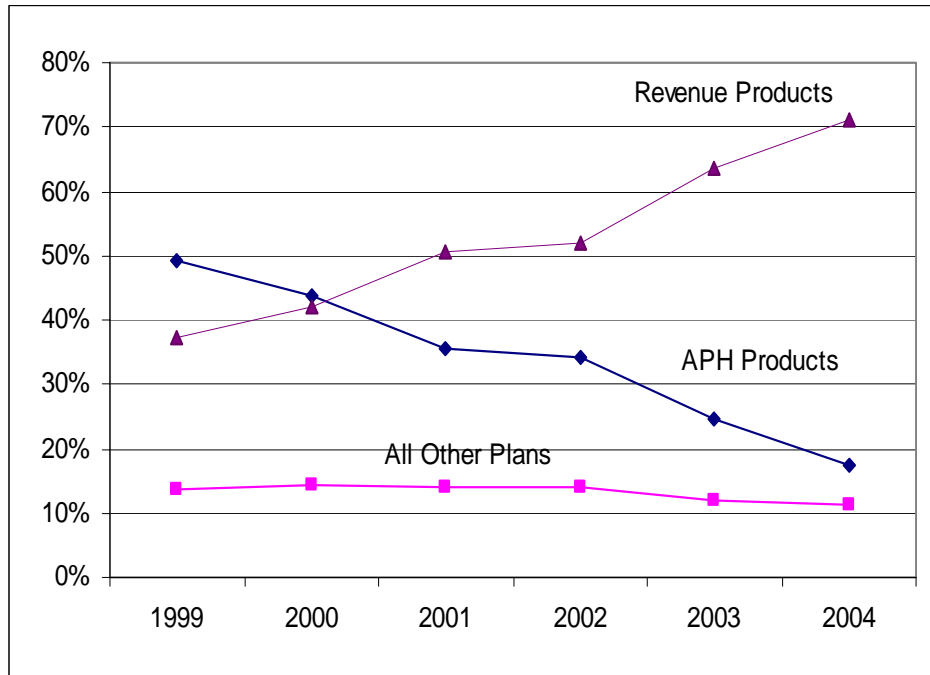
To control for the influence of new products and new insured crops, we first focus on only four crops (corn, soybeans, wheat, and cotton). These crops accounted for nearly 80 percent of the buy-up premium in 2004. They are also the crops that provide the highest earnings on the SRA. In 1999 these crops generated, on average, just over \$2,000 in gross premiums per buy-up policy.

² To develop this estimate, only Actual Production History (APH) gross premiums per acre insured were examined for the 65 percent coverage level for corn, wheat, soybeans, and cotton. This provides a good anchor for separating out the general commodity price increase on gross premiums between these two time periods.

³ A final relatively minor variable that explains increases in gross premium per buy-up policy is the increase in acres insured per policy. That value has increased about 10 percent for the major crops.

By 2003, these crops generated, on average, about \$3,000 in gross premium per buy-up policy.⁴ Had no changes been implemented in the SRA, this 50 percent increase in premium per policy would have generated a corresponding 50 percent increase in A&O expense reimbursements per policy. The increase in A&O expense reimbursements per buy-up policy is even greater if one compares against earlier base periods.⁵

Figure 4. Changing Share of Gross Premium by Crop Insurance Plan



The new SRA reduces the rate of A&O expense reimbursement for some coverage levels and some crop insurance products. We applied the new expense reimbursement rates to the 2003 book of business to get a more accurate assessment of the current situation. In 1999 the average A&O expense reimbursement per buy-up policy for these 4 crops was about \$476. Had the new A&O expense reimbursement rates been in place in 2003, the average expense reimbursement per buy-up policy in 2003 would have been \$567.⁶ This suggests that even with the new A&O expense reimbursement rates, A&O expense reimbursements per buy-up policy for these four crops are approximately 20 percent higher today than in 1999.

Finally, we assumed the A&O expense reimbursement rates in the new SRA and then introduced a PRP for all buy-up policies sold in 2003. We found that an *average* PRP of about 3.5 percent

⁴ In 2004, the average gross premium was \$3,740 per buy-up policy. We do not anchor on this value, as a significant amount of the increase between 2003 and 2004 was due to higher commodity prices. This volatility is an important issue with respect to A&O expense reimbursements but is beyond the scope of this review.

⁵ For example, in 1997 the average gross premium per buy-up policy was less than \$1,700.

⁶ This value would have been \$734 for the 2004 book of business given the higher commodity prices and other factors leading to more premium per buy-up policy.

was required to get the 2003 net A&O average expense reimbursement per buy-up policy to be equal to the value for 1999.⁷

To summarize:

1. Even after accounting for the recent SRA changes in A&O expense reimbursement rates, the average A&O expense reimbursement per buy-up policy has increased by 20 percent in the past five years; and,
2. AIPs could implement a nationwide PRP at 3.5 percent and still receive the same net A&O reimbursement per buy-up policy, on average, as they received in 1999.

We are not aware of any evidence that would suggest that the average cost to sell and service a crop insurance policy has increased significantly over the past five years. Thus, given these findings, there would seem to be no reason to believe that the PRPs being proposed in these submissions will negatively impact the performance of the crop insurance delivery system. The system has benefited from higher A&O expense reimbursements per policy due to the changes in the premium subsidy structure brought about by ARPA and farmer adoption of revenue insurance products.

It is difficult to know to whom in the delivery system these additional A&O expense reimbursement dollars have accrued. The answer likely varies across regions depending on factors such as differences in expected underwriting gains, differences in delivery costs, and competition for agents. Again, these conclusions presume that delivery costs per policy have not significantly changed over time.

Documenting Cost Efficiencies

Accounting approaches are frequently categorized into methods that support financial reporting and methods that support managerial decision-making; that is, financial accounting and managerial accounting. Likewise, costs are often segmented into categories such as fixed versus variable or capital versus operating. The pricing of equity capital and other inputs that are residual claimants of revenues – inputs that are typically priced on an opportunity cost basis — provides an additional challenge in both financial and managerial accounting.

One of the challenges managers face is that financial accounting methods are of limited value for managerial decision-making. Financial accounting procedures usually focus on aggregate measures while managerial decision-making requires disaggregated information. In regulated industries this has also been a challenge for the regulator. The firm may produce multiple products but the regulator is focused on a subset of those products. Economic benefits from producing multiple products are typically called economies of scope. This is different than economies of size that result from producing a given product on a larger scale. Both of these factors influence cost.

Perhaps the biggest difficulty in cost accounting schemes is allocation of joint costs; that is, costs associated with assets and operations that serve several tasks or products. In farming operations, for example, it is difficult to determine how to allocate the cost of a machine used in multiple enterprises. Sometimes, it is reasonable to assign an hourly cost based on hours of life and use per year, but it is also common to see “overhead” costs assigned to products based upon revenue

⁷ A final sensitivity analysis was performed on all business to see if the total book of business would provide a significantly different answer. The answer was basically the same.

share. This is often done in the allocation of the cost of central management “overhead.” This is generally not a very accurate approach for assessing product profitability. Some of the classic stories in the business literature describe situations where businesses shut down what they perceived to be unprofitable enterprises only to find that, in so doing, they reduced the profitability of the overall business. The managerial and regulatory cost issues can become even more complicated when assets become obsolete before they wear out. In this case, the hourly pricing approach breaks down.

These problems do not mean that accounting to meet managerial objectives is impossible. Substantial efforts have been devoted to find methods that at least partially deal with these issues. But, the approaches tend to be application- and firm-specific and are not well suited to the type of auditing required in a regulatory context. In many cases, firms decide that the cost of acquiring better information is simply not worth the benefit, so they use rough approximations or rules of thumb. In any regulatory context, firms will have a much better understanding of their cost accounting systems than will the regulator. This poses challenges that significantly increase the regulator’s auditing costs.

The PRP submissions appear to be based upon the recognition that, given limitations in cost accounting systems, it is difficult to document measurable cost efficiencies. As a result, they propose reduced agent base commissions (which can be easily measured) as the mechanism for funding PRPs. Of course, base commissions are not the only source of agent compensation. Agents often receive bonus or profit-sharing payments in addition to base commissions.

If companies are required to offer PRPs to all eligible producers in a state, and if agents must respond in a similar manner, a rational economic response on the part of both companies and agents is to set up new legal entities to segment the market. From the perspective of documenting cost efficiencies, this creates the additional challenge of correctly specifying “transfer prices” for services provided by the core company to the new legal entities. This is a significant challenge and in other business contexts has been used as a mechanism for shifting costs within business units.

The crop insurance industry is currently facing some of the same challenges that were faced in the deregulation of brokerage fees for stock market brokers. Per dollar of business generated, the cost of delivery is substantially smaller (larger) for larger (smaller) clients.

Insurance agents compete in markets that are similar. Many of the costs that go into making a sale are similar for a large farm and a small farm; these are the costs associated with identifying prospects, making calls, and closing sales. Indeed, they may even be inversely related if the frequency of success is greater for large farms and if large farmers are easier to identify. Similarly, the agent cost of servicing a policy with 75 percent coverage is not much larger than the cost of servicing a policy with 65 percent coverage since the principal difference is in the frequency of loss adjustment. For insurance plans that require information on individual insurance units on a farm, there will be an increase in costs since larger farms will have more units but larger farms typically will not have proportionally more insurance units.

Other factors influencing agent costs include the density of farms in their market, the types of farms, and the crops grown on farms. Costs per sale are typically lower in markets that have a dense population of farms with an interest in crop insurance. However, there may be some segmentation of insurance agents in markets with dense populations of farms with some agents marketing to larger farms over a wide area while other agents market to smaller farms in a more local area. The nature of the crops grown also influence costs; the costs associated with servicing

insurance policies for some of the tree fruits are probably greater per dollar of premium than the costs associated with servicing insurance policies for corn, soybeans, and wheat.

PRPs as Competitive Instruments

Understanding the economic incentives imbedded in the current structure of the SRA will help explain why the AIPs have requested the PRP structures contained in the submissions. Central to the decisions facing the Board are questions regarding who will have access to PRPs. For example, should AIPs be allowed to offer different PRPs to farmers in different states? Should AIPs and insurance agents be allowed to offer PRPs to some, but not all, farmers in a given state?

The requests from the AIPs reflect economically rational responses to the incentives contained in the Federal Crop Insurance Program. In other words, the differentials in PRPs across states are motivated by economically rational decisions and, to the extent that PRPs are about introducing competitive forces into the Federal Crop Insurance Program, these differentials are likely necessary.

Three important factors motivate economic decisions within the private delivery system: 1) direct premium subsidies to farmers; 2) A&O expense reimbursements to AIPs; and 3) risk-taking subsidies embedded in the special provisions of the SRA. Among the most important aspects to keep in mind is that none of the subsidies going directly to the AIPs actually work based on averages. Thus, while reimbursement for A&O is tied directly to the gross premium, the costs of selling and servicing crop insurance vary greatly from one farmer to the next, and to a large extent, from one region of the country to the next. As was developed above, the size of farms and the geographic dispersion of these farms will have a large impact on the average cost per policy for selling and servicing crop insurance policies.

Vedenov, et al. (2003) document quite nicely that the SRA provides differential underwriting gains by state. For example, their analysis suggests that the average underwriting gains for some core states like Illinois, Iowa, Minnesota, and Nebraska exceed 30 percent. The rates of retained premium in these states are also in excess of 90 percent. By contrast, states such as Mississippi, Louisiana, and Arkansas have average underwriting gains that are very close to zero or negative. The rates of retained premiums in these states are about 30 percent.

The percent of premium retained by companies is an excellent indication of their expectation about risk-sharing earnings from the SRA. Figure 4 gives these values for several states. These values represent the industry average by state and are taken from Vedenov, et al. (2003) As one would expect, these values are highly correlated with the base commission rates that AIPs pay agents. **[REDACTED CONFIDENTIAL BUSINESS INFORMATION]** These data were 78 percent correlated with the national average retention numbers.

Figure 4. Average Industry-Wide Rate of Premium Retained in the SRA (from Vedenov, et al., 2003)

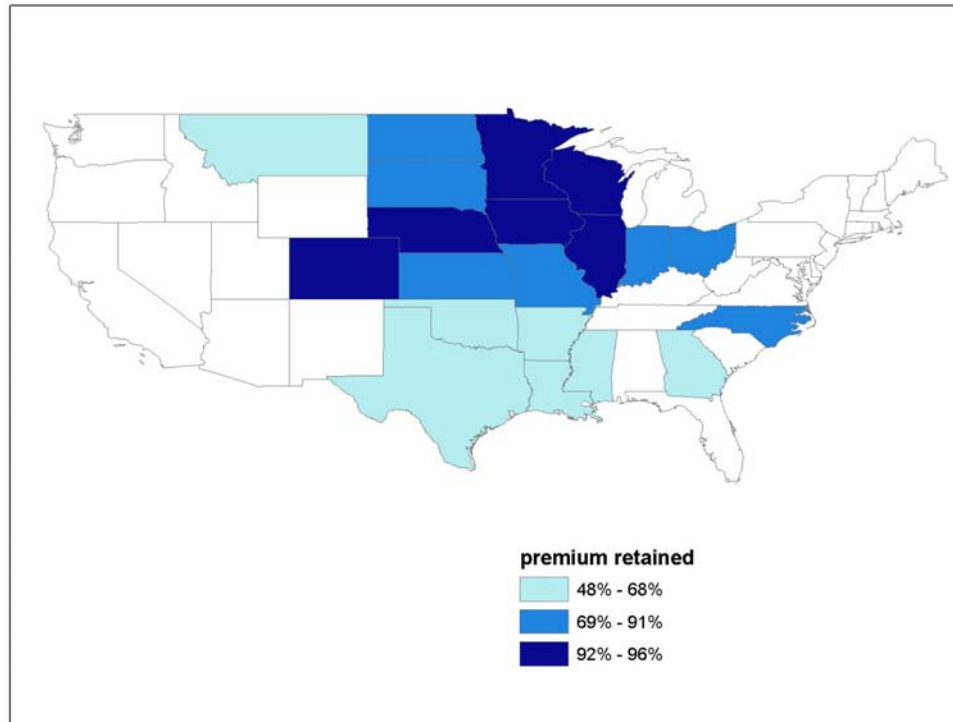


Figure 5. [REDACTED CONFIDENTIAL BUSINESS INFORMATION]

When the expected risk sharing returns are added to the 24.5 percent delivery expense reimbursement, an average of 35 to 40 cents goes to the private insurance providers for every one dollar of gross premium. In other private lines of insurance, such a ratio is not uncommon. However, in these private markets all the risk sharing, rate making, and the full cost of product development are provided by the private company. Also, in a true market, the buyer pays for all costs in premiums. Furthermore, in private markets such services are competitively priced, not established by regulation.

Since subsidized products must be made universally available, the government must provide the special risk sharing arrangements that assure AIPs that they will not lose money, even in the worst markets. The actuarial performance in some markets remains so poor that AIPs make little money by selling in them. They are compensated through A&O reimbursement and some underwriting gains for the best risk in the bad markets.

Until now, AIPs have not been able to compete on premiums since these are established by the RMA. If an AIP has no opportunity to compete on premiums, how do they compete? AIPs try to differentiate themselves by the service they provide policyholders. Some AIPs offer other insurance products to complement the set of federally-subsidized products. For example, private crop/hail insurance has been on the American landscape since the 1880s. Many AIPs had a

history of selling private hail insurance long before the government provided the opportunity to sell federally subsidized products. Since the same agent sells both private hail insurance and federally subsidized RMA products, it is difficult to imagine how companies would keep separate accounting for the cost of providing these different products. They are provided in what one might call a joint production function. Such co-mingling of different lines of business using the same insurance sales force is common and it is to be expected. Obviously this complicates the task of understanding the cost accounting standards that are needed to allocate the cost among products.

Another way AIPs compete is to seek business with the greatest underwriting gains. Given that a number of states have an average underwriting gain that exceeds 30 percent, it is not difficult to imagine that in some locations within those states, the underwriting gain is even higher. AIPs have clear economic incentives to sell more in those markets. The best way to gain market share in markets with the highest underwriting gain is to pay agents higher commissions. Thus, competition is fierce among AIPs for agents selling in areas with the highest potential underwriting gains. Anecdotal evidence suggests that some agents can get commissions and bonuses that will equal the average A&O expense reimbursement. **[REDACTED CONFIDENTIAL BUSINESS INFORMATION]** Evidence in the submissions suggests that, on average, agents are getting between 70 and 80 percent of the A&O expense reimbursement in base commissions.

In addition, base commissions are not the only source of agent compensation. Agents often have profit-sharing and/or bonus arrangements with AIPs. Thus, reductions in agent base commissions will not necessarily translate into reductions in overall compensation for all agents. For example, realized agent compensation may be tied to the expected underwriting gain in the book of business delivered by the agent. This creates incentives for agents to seek business that will generate the highest underwriting gains. In other words, PRPs may facilitate the emergence of systems that would help AIPs make selections based on the anticipated quality of risk for an individual farmer. This would be a positive aspect of PRPs as it could lead to premium differentials that better reflect local underwriting knowledge.

Alternatives and Consequences

As indicated earlier, it is our considered opinion that with regard to these PRP submissions the Board must choose from three possible alternatives. The first alternative is to reject all the submissions on the basis that PRPs are not in the long-run best interest of the Federal Crop Insurance Program and the farmers who are served by the Program. Since PRPs will reduce premium costs for some insured producers, it is hard to see how one could argue that PRPs will not benefit farmers. In fact, a tremendous amount of adverse publicity would likely result from a decision to reject all the PRP submissions. Questions would be raised about why the Board would not allow changes that would reduce premium costs for some farmers with no additional cost for the government. Further, given that one PRP has been approved previously, it would seem difficult to reject these PRP submissions on a public policy basis. Thus, we presume that this first alternative is not viable and focus our attention on the remaining two alternatives.

Allow AIPs to Compete Using PRPs

One alternative would be to allow AIPs to engage in largely unfettered price competition using PRPs. Under this alternative, the Board would adopt a posture of routinely approving any PRP submission that seems reasonable. While we are not attorneys, the relevant section of the Federal Crop Insurance Act, Section 1508(e)(3), does not seem to require the FCIC to verify the cost efficiency data provided by AIPs in support of PRP submissions. Instead the language states that

“If an approved insurance provider determines that the provider may provide insurance more efficiently than the expense reimbursement amount established by the Corporation, the approved insurance provider may reduce, subject to the approval of the Corporation, the premium charged the insured by an amount corresponding to the efficiency.” The Board may consider seeking guidance from legal counsel regarding the extent to which the Act requires the Board to verify any cost efficiencies claimed by AIPs in support of PRP submissions.

Assuming that the Board could approve PRP submissions without having to engage in extensive efforts to verify the cost efficiencies claimed by submitters, PRPs would likely create an environment of price competition among AIPs in many markets. AIPs would likely submit new PRP proposals each year in response to price competition from other AIPs and changes in delivery costs associated with competition for agents. In addition, PRP submissions would likely reflect changes in expected A&O reimbursement due to changes in commodity prices and/or policyholder choices of coverage levels.

The most obvious consequence of this alternative would be reduced premium costs for some crop insurance purchasers. In particular, the submissions indicate that premium costs will be reduced most in areas with the largest potential for underwriting gains and/or the lowest delivery cost per dollar of premium. The current submissions indicate that these premium reductions will be paid for by reduced agent commissions. However, as indicated earlier, commissions do not always reflect the full compensation received by agents. Thus, premium reductions will likely be paid for by reduced agent compensation and/or reduced profit for the AIP, depending on the competition for agents in the local market.

First-mover benefits may accrue to agents and AIPs who adjust most quickly to a price competitive environment. And, to the extent that economies of scale exist at either the AIP or agent levels of the delivery system, price competition would likely create incentives for consolidation.

In an environment of price competition based on PRPs, effective agent compensation (including but not limited to base commissions) will be even more closely tied to potential underwriting gains from the book of business sold by the agent. As a result, agents may have more incentive to address moral hazard or risk classification (APH calculation) problems.

Finally, an environment of price competition based on PRPs would provide additional information about delivery costs that may be valuable to the FCIC in future SRA negotiations regarding A&O expense reimbursement.

Rigorously Verify Cost Efficiencies and Regulate Premium Reductions

Another alternative is for the FCIC to rigorously verify all cost efficiencies claimed by AIPs in PRP submissions and regulate allowable PRPs accordingly. Under this alternative, a prerequisite of PRP approval would be verification of the claimed cost efficiencies through careful and professional examination of the supporting cost accounting documents provided by the submitter. If the claimed cost efficiencies could not be adequately verified, the PRP submission would either be rejected outright or accepted, conditional on the PRP percentages being adjusted to the level of the verifiable cost efficiencies.

Under this alternative, the Board would also carefully regulate how and where PRPs are offered. For example, a condition for PRP acceptance could be that AIPs must offer the same level of PRP to every crop insurance purchaser in every state where they do business. Alternatively, PRP levels

could be allowed to vary across products but not across states, or across states but not across products. Presumably, concerns over universal access would be the primary motivation for adopting this alternative.

It is our opinion that this alternative will ultimately generate outcomes that are, in many ways, similar to those of the price competition alternative. The primary difference will be the transactions costs associated with the PRP submission and approval process. As indicated earlier, AIPs will always know far more about their cost structure than will the Board or the RMA. It will be extremely difficult to develop cost reporting standards that would allow the government to verify the cost efficiencies claimed in PRP submissions. Different AIPs likely use different cost accounting procedures. AIPs may have affiliate entities, operate in multiple states, and sell several different lines of insurance. Under these circumstances the allocation of joint costs across entities, states, and/or lines of insurance will be extremely problematic.

This alternative would dramatically increase the costs of PRP submission and approval both for AIPs and the government. To remain competitive in the market, AIPs would likely have to offer PRPs and thus bear these additional costs. These costs would be fixed in nature and thus, would be lower per dollar of premium for the AIPs that collect the most premium (i.e., the largest AIPs). Thus, these costs would contribute to incentives for consolidation among AIPs and accentuate economic barriers to entry for new reinsured companies.

AIPs are interested in PRPs as a competitive tool. If the Board approves PRPs, it will be very difficult to regulate how and where they are offered. In competitive markets for other lines of insurance, premiums often vary significantly across policyholders. These premium differences reflect differences in factors such as the risk inherent in the policies, delivery costs, etc. PRPs allow AIPs some of the same flexibility with crop insurance products. If the Board tries to regulate how and where PRPs can be offered, AIPs will have economic incentives to try and circumvent those regulations (e.g., by creating affiliate companies). An extensive government regulatory apparatus would be required to police these regulations. Examples abound for other government regulated financial or insurance markets.

In previous reports to the Board, we have noted that RMA resources have not increased to keep pace with the growth in the Federal Crop Insurance Program. This alternative would create significant new responsibilities for the RMA — responsibilities that would require very specialized accounting and regulatory expertise that likely does not currently exist in the agency.

Questions

1. The impact of premium reduction plans on producers' likely use of insurance as a risk management tool.
 - a. *The Board wants to know the extent to which reduced crop insurance premiums will assist or induce producers to increase the use, level of coverage and, therefore, the effectiveness of federal crop insurance as a risk management tool, or otherwise strengthen the economic stability and financial capacity of agricultural producers.*

The relationship between a percentage change in price and the resulting percentage change in the amount of a product purchased is what economists call the price elasticity of demand. Since 1993 a number of studies have attempted to empirically estimate the price elasticity of demand for federal crop insurance products. Those estimates range from -0.12 to -0.73 (Goodwin, Vandever, and Deal, 2004; Coble, et al., 1996; Smith and Baquet, 1996; Barnett and Skees, 1995; Goodwin,

1993). The most recent estimates are all less than -0.35 (Goodwin, Vandever, and Deal, 2004). A price elasticity of demand of -0.35 indicates that a 10 percent reduction in price would increase crop insurance purchasing by 3.5 percent. It is important to note that some of these studies measured crop insurance purchasing as acres insured while other used liability. Regardless, all of the studies suggest limited response to price changes. It is also important to note that all of these studies were based on crop insurance experience prior to ARPA. Given the significant increase in premium subsidies contained in ARPA, insurance purchasing is likely to be even less responsive to further premium reductions. In other words, given the high premium subsidies that already exist, the further premium reductions offered by PRPs will likely not stimulate large increases in overall insurance purchasing.

While we would not expect overall insurance purchasing to be highly responsive to further premium reductions, the distribution of business among AIPs will likely be highly responsive to PRPs. In other words, further reductions in premiums will likely not significantly impact how much insurance farmers purchase but it will impact from whom they choose to purchase insurance. Thus, we view PRPs as an instrument for price competition between AIPs rather than an instrument for significantly increasing overall insurance purchasing.

- b. The Board also wants to know if such changes will likely contribute to a decrease in the need for future ad-hoc agricultural disaster assistance.*

No. As indicated earlier, crop insurance participation at the buy-up level has exceeded 50 percent of eligible acreage since 1999. If CAT coverage is included, participation since 1999 has been between 70 and 80 percent. Despite this, federal crop disaster assistance was paid in four of the six years between 1998 and 2003. The annual average of federal crop disaster assistance over this period was \$1.6 billion per year. There is no historical evidence to suggest that higher rates of crop insurance purchasing will decrease federal provision of *ad-hoc* disaster assistance.

2. The impact that premium reduction plans might have on the delivery system for crop insurance.
 - a. The Board wants to know what impacts each of these types of premium reduction plans will have on the agent work force, on agent training, on claims adjustment, on approved insurance providers, on the crop insurance marketplace, and on service to producers. The Board wants to know what those impacts will be, and how to detect and mitigate potential problems.*

[REDACTED CONFIDENTIAL BUSINESS INFORMATION] However, as indicated earlier, commissions do not always reflect the full compensation received by agents. Thus, the premium reductions will likely be paid for by reduced agent compensation and/or reduced profit for the AIP, depending on the competition for agents in the local market.

PRPs may lead to more consolidation among AIPs and agents. Regardless of the Board's decision on PRPs, it seems likely that new delivery mechanisms could emerge. A number of agribusiness industries maintain field personnel who interact regularly with agricultural producers. Firms in these industries could contract with AIPs to have their field personnel deliver crop insurance products in direct competition with existing crop insurance agents.

- b. The Board also wants to know whether all approved insurance providers: 1) should be required to offer their premium reduction plan for all states and plans*

of insurance where they write; 2) should be allowed to limit their premium reduction plan to a limited number of states; or 3) should be allowed to pick the plans of insurance for which a premium reduction plan will be offered.

Even if the Board required AIPs to offer PRPs in all states and for all plans of insurance, we presume that this requirement could be easily evaded by simply setting up affiliate companies that operate only in selected states.

- c. If a limited number of states should be allowed, the Board wants to know whether the RMA or the approved insurance provider should be allowed to select the states and what criteria should be used in the selection.*

As suggested earlier, approved insurance providers will be more likely to offer PRP (or higher PRP reductions) in states with the highest potential underwriting gains and/or the lowest delivery cost per dollar of premium. This is what one would expect in an environment of price competition.

3. The impact of premium reduction plans on small, minority, and limited-resource farmers.

Because A&O reimbursements (and, thus, agent commissions) are tied to premiums, there is already significantly less incentive to sell to small farmers compared to large farmers. Relative to this status quo, we don't see how small, minority, and limited-resource farmers can be made worse off by PRPs. As would be expected, the submissions tend to request smaller PRP premium reductions in states with a larger preponderance of small farmers. Within a state where PRPs are available, it is also less likely that agencies serving small farmers will write for companies that are offering PRPs. The extent to which small farmers in a given region can benefit from PRPs will depend on the extent of competition between agencies in that region.

Concerns about universal access have focused attention on so-called "underserved states." However, the social objective of universal access is likely best handled with mechanisms that are outside the existing A&O expense reimbursement structure and thus, not germane to decisions regarding PRPs.

4. The impact of the requirement in the current procedures that a premium reduction plan be initially offered on a limited basis and later expanded to all states where the approved insurance provider operates.

- a. The Board wants to know whether it is necessary to have established approved insurance providers phase-in their premium reduction plans.*

With new insurance products a phase-in "pilot" period is often employed so that product design characteristics (e.g., rate adequacy) can be tested with only limited actuarial exposure. PRPs do not affect premium rates or product characteristics. They simply redistribute rents from the delivery system to some insured producers. The Board must decide whether they want to create an environment of price competition based on PRPs. If that decision is in the affirmative, we see no compelling reason to require that PRP business be phased in.

- b. If a phase-in is necessary, the Board wants to know what should be the recommended number of states in the first year and how many years it should take to completely phase-in the premium reduction plan.*

We see no compelling reason to require that PRP business be phased in.

- c. If the purpose of the phase-in is to allow a test of the premium reduction plan to ensure that it meets all the requirements, the Board also wants to know whether it should permit changes to a premium reduction during the phase-in period.*

We see no compelling reason to require that PRP business be phased in. If PRPs create an environment of price competition, AIPs would almost certainly want to change PRP percentages from year to year in response to competition from other AIPs and changes in delivery costs associated with competition for agents. In addition, PRP percentages may change from year to year to reflect changes in expected A&O reimbursement due to changes in commodity prices and/or policyholder choices of coverage levels.

5. The impact of allowing complex premium reduction plans.

- a. Since the administrative and operating expense reimbursement is provided on a reinsurance-year basis, the Board wants to know how the RMA can verify the approved insurance providers are properly restating costs that were originally presented on a calendar-year basis to a reinsurance-year basis.*

We have no knowledge of the cost/managerial accounting systems utilized by the various companies that have submitted PRP proposals. We presume that financial accounting systems are similar across the AIPs since they must each generate basic aggregate financial statements. But cost/managerial accounting systems are for internal use and likely vary a great deal across firms depending on the information needs of management.

We expect that efforts to verify AIP cost data would prove to be very difficult and very expensive.

- b. The Board also wants to know how the RMA can accurately determine and verify the cost reduction attributable to each type of efficiency.*

We expect that efforts to verify AIP cost data would prove to be very difficult and very expensive.

- c. Several of the approved insurance providers also write other lines of business, such as property and casualty insurance. Therefore there must be an allocation of costs between these lines of business. The Board also wants to know how such costs should be allocated, and how the RMA can detect and prevent improper allocation of costs between premium reduction plans and other activities of the approved insurance provider.*

We expect that efforts to verify AIP cost data would prove to be very difficult and very expensive.

- d. Several of the applications received for a premium reduction plan state the plan will only be offered in certain states. This will require an allocation of costs within the crop insurance business. The Board wants to know how such costs should be allocated and how the RMA can detect and prevent improper allocation of costs between states.*

We expect that efforts to verify AIP cost data would prove to be very difficult and very expensive.

- e. Once the costs have been allocated, the Board wants to know how the RMA can verify that the same allocation of costs was used to determine the total costs before the application of the efficiency, the amount of the efficiency, and the total costs after application of the efficiency.*

We expect that efforts to verify AIP cost data would prove to be very difficult and very expensive.

- f. The Board wants to know whether there is a fair and equitable system of cost identification that can be applied to all approved insurance providers offering premium reduction plans.*

We are not aware of such a system.

- g. If there is such a fair and equitable system, the Board wants to know what it would look like and how it should be applied.*

We are not aware of such a system.

- h. There is also a requirement that the premium reduction be offered in the same place where the efficiency was derived. Given these complex premium reduction plans, the Board wants to know how the RMA can determine and verify that the efficiencies correspond to the plans of insurance, states, or areas where the premium reduction plan is to be offered.*

We expect that efforts to verify AIP cost data would prove to be very difficult and very expensive.

Market competition will likely cause approved insurance providers to offer PRPs (or PRPs with higher levels of premium reductions) in states with the highest potential underwriting gains and/or the lowest delivery cost per dollar of premium.

- 6. The impact of allowing an approved insurance provider to offer a premium reduction plan through an affiliated entity while not offering it through other affiliated entities.
 - a. The Board wants to know if such arrangements could result in unfair discrimination against certain producers.*

In a competitive environment, AIPs will want to offer PRPs to farmers whose business is expected to generate high underwriting gains and/or have low delivery cost per dollar of premium. We will leave it to the Board to decide if this is “unfair discrimination,” and note that it is no different than what occurs in competitive markets for other lines of insurance.

If the Board does not allow AIPs to offer PRPs through affiliated entities, competitive market pressures would likely cause AIPs to find alternative organizational structures to accomplish this objective (e.g., divide into multiple AIPs). This would create cost inefficiencies in the delivery system.

- b. The Board wants to know if such arrangements could compromise the integrity of the crop insurance program.*

Presumably, the entities would all operate under the same SRA, so it is difficult to see how it would affect the financial integrity of the crop insurance program.

- c. The Board wants to know if such arrangements could allow the improper association of costs among affiliated entities to the detriment of some producers and to the crop insurance program in general.*

Efforts to verify which costs were associated with which entity would likely be very difficult and very expensive.

- d. If such results would occur, the Board also wants to know how the RMA could detect and prevent them.*

Efforts to verify which costs were associated with which entity would likely be very difficult and very expensive.

- 7. The impact of changes in agent or other service providers' compensation included in premium reduction plan applications on the integrity of premium reduction plans and on the integrity of the crop insurance delivery system.
 - a. The Board wants to know what standards should be used to evaluate and determine which profit sharing compensation arrangements should and could not be considered part of the approved insurance provider's cost structure under a premium reduction plan.*

We have no insights regarding what type of profit sharing arrangements should be considered part of an AIP cost structure. However, it does not appear that any of the submissions are justifying PRPs by reductions in profit sharing arrangements. Instead they are reducing base commissions.

- b. The Board also wants to know how potential improper use of agent compensation arrangements, or compensation of other service providers, to misstate crop insurance delivery expenses can be detected and prevented, so that efficiencies are fairly reported and claimed.*

We expect that efforts to verify AIP cost data would prove to be very difficult and very expensive.

- c. There are claims that reductions in agent compensation could result in agents no longer participating in the crop insurance program. The Board wants to know if and how such agent compensation changes that result from premium reduction plans could impact the long-term financial stability and capacity of the crop insurance delivery system, and, thus, the availability of crop insurance to all agricultural producers, especially small, minority, and limited-resource farmers.*

Reductions in agent commissions may cause some agents to cease selling federal crop insurance products. We have no way of estimating how many agents would choose this option. There would likely be some consolidation among agencies to reduce costs. The impacts on crop insurance availability would vary across regions. In marginal production regions, where few agents sell

crop insurance products, there may be some reduction in availability. In major production regions the impact on availability would be limited.

Potential impacts on small, minority, and limited-resource farmers were discussed in the response to question 3.

8. The need to determine and verify that an approved insurance provider's claimed efficiency will allow it to operate sufficiently below the administrative and operating expense reimbursement paid by FCIC to deliver the crop insurance program to cover the requested premium reduction.

Many approved insurance providers have expressed the need for a fair standard that can be applied consistently to all approved insurance providers that would accurately measure the costs associated with the delivery of the crop insurance program for the approval and oversight of premium reduction plans. The Board wants to develop such a fair standard in the administration and oversight of premium reduction plans.

- a. The Board wants to know how such a fair standard should be designed and implemented.*

We have no expertise on this.

- b. The Board also wants to know whether the FCIC, as part of the oversight of premium reduction plans, should require approved insurance providers to provide an independent certified accountant's audit of the approved insurance provider's expenses and claimed efficiencies related to its premium reduction plan and if such an audit would be an effective oversight tool.*

We have no expertise on this.

- c. The Board wants to know what other tools could be used to achieve the objective, if a certified accountant's audit is not thought to be an effective tool.*

We have no expertise on this.

- d. The Board also wants to know if the approved insurance provider should pay for the expense of such an audit.*

We have no opinion on this.

Reviewers' Backgrounds

Dr. Jerry R. Skees is H.B. Price professor of agricultural economics at the University of Kentucky and president of GlobalAgRisk, Inc. Dr. Barry J. Barnett is associate professor of agricultural and applied economics at the University of Georgia. Dr. J. Roy Black is professor of agricultural economics at Michigan State University.

This team of reviewers has a combined 60 years of experience working on crop insurance and risk management issues having worked on many RMA-funded research projects. The team has also worked on risk management projects around the world with project sponsored by the World Bank, USAID and the Inter American Development Bank.

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