United States Government Accountability Office

Report to the Honorable Dianne Feinstein, U.S. Senate

July 2017

CROP INSURANCE

Opportunities Exist to Improve Program Delivery and Reduce Costs

GAO-17-501

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GAO Highlights

Highlights of GAO-17-501, a report to the Honorable Dianne Feinstein, U.S. Senate

Why GAO Did This Study

To implement the federal crop insurance program, USDA's RMA partners with private insurance companies, which sell and service policies. In 2010, USDA negotiated an agreement with insurance companies to set a national cap on the annual payments it makes to them for expenses and a target rate of return.

GAO was asked to examine (1) the changes in expense payments to companies due to the cap, (2) the extent to which the program's target rate of return reflects market conditions, and (3) opportunities for the federal government to reduce its delivery costs for the program. GAO analyzed RMA data on payments to companies for their expenses, conducted an updated analysis based on a USDA-commissioned study of the annual rate of return that companies should be expected to earn, and interviewed RMA officials.

What GAO Recommends

Congress should consider repealing the Agricultural Act of 2014 provision that any revision to the agreement with insurance companies not reduce their expected underwriting gains and direct RMA to (1) adjust companies' target rate of return to reflect market conditions and (2) assess the portion of premiums that companies retain and adjust it, if warranted. GAO also recommends that RMA consider adjusting the method it uses to determine payments to insurance companies for expenses. RMA stated it will take steps to implement GAO's recommendation.

View GAO-17-501. For more information, contact Steve Morris at (202) 512-3841 or morriss@gao.gov.

What GAO Found

The U.S. Department of Agriculture's (USDA) Risk Management Agency (RMA) makes payments to insurance companies to cover the cost of selling and servicing federal crop insurance policies. A cap on these payments stabilized them at about $1.4 billion per year from 2011 to 2015. In capping the annual payment to companies, RMA sought to make these payments more stable and dependable for companies and agents, but payments have fluctuated widely by crop, state, and county because, as GAO's analysis shows, the method RMA uses for calculating payments has allowed large fluctuations at the policy level. Specifically, RMA calculates payments based on such factors as crop price, and a price change can cause a change in the payments. For example, the average payment for almonds decreased by 42 percent from 2010 to 2011 but increased by 75 percent from 2013 to 2014. RMA could reduce such fluctuations and achieve greater stability by considering adjustments to how the payments are calculated when it negotiates a new agreement with companies.

The crop insurance program's target rate of return—the average annual rate of return that insurance companies are expected to earn—does not reflect market conditions. A 2009 USDA-commissioned study found that a 12.8 percent rate of return was reasonable for participating companies for 1989 through 2008 based on economic factors, such as interest rates. RMA used this study in 2010 negotiations with insurance companies to set a 14.5 percent target rate. According to GAO's analysis, which updated information in the study for 2009 through 2015, the reasonable rate of return declined, averaging 9.6 percent.

GAO identified two opportunities to reduce federal delivery costs for the program.

- First, given that GAO's analysis shows that the target rate of return does not reflect market conditions, that rate could be reduced. As a result, companies would earn a lower rate of return on their existing base of retained premiums. At the 2015 premium level, if the target rate were reduced by 4.9 percentage points, from the current rate of 14.5 percent to 9.6 percent, the companies' expected annual underwriting gains would decrease by $364 million.
- Second, the portion of premiums retained by companies could be reduced so that they would earn a rate of return on a smaller premium base. The portion of premiums retained by companies has changed little, averaging 77 percent since 2000, while USDA has retained the rest. Part of the justification for companies' retaining a significant portion of premiums was that they needed financial incentive to more carefully adjust farmers' loss claims. The need for this incentive decreased after a statutory change in 2000 improved RMA's ability to monitor those claims and companies' adjustment of them. Reducing the premiums that companies retain by 5 percentage points could reduce companies' annual underwriting gains by up to $100 million.

However, a provision in the Agricultural Act of 2014 requires any changes negotiated for a new SRA be budget neutral. To realize savings, such changes would require congressional action to repeal this provision. If Congress were to direct RMA to adjust the target rate in future negotiations or assess the portion of premiums companies retain, the agency could generate significant cost savings for the program.

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Abbreviations

A&O	administrative and operating
CBO	Congressional Budget Office
RMA	Risk Management Agency
SRA	standard reinsurance agreement
USDA	U.S. Department of Agriculture

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U.S. GOVERNMENT ACCOUNTABILITY OFFICE
441 G St. N.W.
Washington, DC 20548

July 26, 2017

The Honorable Dianne Feinstein
United States Senate

Dear Senator Feinstein:

Federally subsidized crop insurance, which helps farmers manage the risk inherent in farming, is one of the most important programs in the farm safety net. Under the federal crop insurance program, farmers can insure against losses caused by poor crop yields resulting from natural causes, declines in crop prices, or both. To implement the program, the U.S. Department of Agriculture's (USDA) Risk Management Agency (RMA) partners with private insurance companies, which sell and service the insurance policies and share with RMA in the risk of loss and the opportunity for gain associated with the policies.[1] RMA has overall responsibility for administering the federal crop insurance program, including controlling costs and protecting against fraud, waste, and abuse. RMA administers the program through a financial agreement called the standard reinsurance agreement (SRA), which it negotiates with insurers.[2] RMA's most recent renegotiation of the SRA—the 2011 SRA—was completed in 2010. The previous agreement was the 2005 SRA.

Under the Federal Crop Insurance Act, the federal government is to reimburse insurance companies for the reasonable administrative and operating (A&O) expenses associated with selling and servicing crop insurance policies. The method for determining the level of this federal subsidy is set in the SRA. RMA provides A&O payments, which are based on a percentage of crop insurance premiums, to insurance companies. These payments are intended to cover the companies' expenses to sell and service policies. Crop insurance premiums and A&O expense subsidies rise and fall in value with, among other things, the

[1]USDA designated 16 companies to provide insurance coverage for the year 2017.

[2]The SRA incorporates the terms and conditions by which the private insurance companies that sell and service crop insurance policies are to abide.

price of the crop being insured.[3] A&O expenses can include company overhead, such as employee salaries; fees paid to insurance adjusters to verify claims; and sales commissions and other compensation (e.g., profit sharing) paid to the insurance agents who sell crop insurance to farmers. In January 2017, the Congressional Budget Office (CBO) projected that federal crop insurance would cost the federal government an average of about $7.9 billion per year for 2017 through 2026.[4] These costs include payments to private insurance companies for program delivery; these payments make up about one-third of the program's total annual costs and comprise a projected annual average of about $1.4 billion for A&O subsidies and about $1.3 billion for companies' underwriting gains.[5] As part of the crop insurance program, the federal government pays for an average of about 62 percent of the premiums. Farmers pay the remaining 38 percent. These premium subsidies make up the majority of the program's overall costs. The SRA does not affect the premiums that farmers pay.[6]

In 2009, we reported on the cost of A&O subsidies. From 2006 through 2008, a period of rising major crop prices and crop insurance premiums,[7] A&O subsidies increased from about $960 million to about $2 billion per year.[8] To better ensure that the A&O subsidies provided to the crop insurance industry are sufficient for program delivery, but not excessive,

[3]RMA sets premiums to cover the risk of insuring crops against expected crop losses. RMA calculates premiums by multiplying the value of the insured crop, a base premium rate, and adjustment factors that individualize the premium rate to a farmer's particular crop, yield history, geographic dispersion of the lands insured, and the percentage of the crop value that the farmer chooses to insure.

[4]Congressional Budget Office, *CBO's January 2017 Baseline for Farm Programs* (Washington, D.C.: Jan. 24, 2017).

[5]Companies' underwriting gains are the amount by which the premiums that companies retain exceed their share of the indemnities paid to farmers for crop losses followed by adjustments based on SRA provisions. The program's underwriting gains are the amount by which total premiums exceed the total indemnities paid to farmers for crop losses. In this report, we refer to companies' underwriting gains and A&O subsidies as program delivery costs.

[6]Premium subsidy percentages are set in the Federal Crop Insurance Act and require Congressional action to change.

[7]The major crops that experienced price increases during this time frame included corn, soybeans, and wheat.

[8]GAO, *Crop Insurance: Opportunities Exist to Reduce the Costs of Administering the Program*, GAO-09-445 (Washington, D.C.: Apr. 29, 2009).

we recommended that USDA develop a new methodology for calculating the A&O subsidies so that they are more closely aligned with business expenses. We also recommended that once this alignment was completed, the RMA Administrator should minimize annual fluctuations in A&O subsidies that were unrelated to business expenses, while recognizing variations in delivery expenses across regions of the country. RMA agreed with this recommendation. In 2010, partly in response to our report, USDA completed SRA negotiations and implemented the 2011 SRA to reduce A&O subsidies,[9] capping them for the most common types of policies.[10] The A&O subsidy for a crop insurance policy remains based on a fixed percentage (e.g., 18.5 percent) of the premium, which means that the dollar amount of the A&O subsidy rises and falls with the market price of the crop being insured because the market price of the crop affects the dollar amount of the premium. However, if the total A&O subsidies for policy types that are subject to the cap exceed the capped amount, the A&O subsidies for these policy types are proportionally reduced to make the total A&O subsidies for these policies equal to the capped amount.

The SRA sets the terms of the program's risk sharing between participating insurance companies and the government—in particular, the portion of total premiums (the sum of the portion paid by farmers and the premium subsidies provided by the government) that are "retained" by the insurance companies and the portion of claims payments to farmers that are the responsibility of the insurance companies. These allocations determine the companies' and the government's share of each year's program underwriting gain or loss. An insurance company's rate of return on crop insurance for a given year is the company's underwriting gain (or loss) divided by the premiums on which the company retains a risk of loss or an opportunity for gain. A 2009 USDA-commissioned study derived the annual rate of return that companies participating in the federal crop insurance program should be expected to earn.[11] This annual rate of return should produce earnings that are equal to earnings from alternative

[9]The Office of Management and Budget estimated that the 2011 SRA's 10-year budgetary savings, including savings from the cap on A&O subsidies, would be about $6 billion.

[10]In 2011, the cap on A&O subsidies for the subject policy types was $1.22 billion. The cap is based on a formula in the SRA that includes an annual adjustment for inflation.

[11]Milliman, Inc., *Rate of Return Update - 2008: Reasonable Rate of Return Section 3.1*, a report prepared at the request of the Risk Management Agency, U.S. Department of Agriculture, June 23, 2009. Milliman is a consulting firm.

investment opportunities relative to the risk assumed—a reasonable or market-based rate of return. This study found that from 1989 through 2008, participating insurance companies' actual rate of return on equity averaged 17.1 percent and that a reasonable rate of return on equity during this period was an average of 12.8 percent. The current target rate of return on retained premiums for federal crop insurance providers, as set by the 2011 SRA, is 14.5 percent.[12]

The cost of the federal crop insurance program has come under scrutiny as the nation's budgetary pressures have increased. In a January 2017 report on the federal government's fiscal future, we stated that, absent policy changes, the federal government's fiscal path is unsustainable and that to change the long-term fiscal path, policymakers will need to consider policy changes to the entire range of federal activities and spending.[13] Any savings found in the crop insurance program could be used for deficit reduction or other needs such as other farm program priorities. For example, part of the savings achieved by the 2011 SRA was used for the Pasture, Rangeland, and Forage crop insurance program.

In November 2015, a provision in the Bipartisan Budget Act of 2015 established a target rate of return on retained premiums of 8.9 percent for crop insurance providers.[14] CBO projected that the resulting 10-year savings would be about $3 billion.[15] However, this provision was repealed in a December 2015 transportation bill.[16]

In this context, you asked us to review issues related to the program delivery costs of the federal crop insurance program. This report examines (1) the changes, if any, in the distribution of A&O expense subsidies due to the implementation of the 2011 SRA's national cap on

[12]Participating insurance companies' rate of return on retained premiums is their underwriting gains divided by the premiums that they retain.

[13]GAO, *The Nation's Fiscal Health: Action is Needed to Address the Federal Government's Fiscal Future*, GAO-17-237SP (Washington, D.C.: Jan. 17, 2017).

[14]Pub. L. No. 114-74 § 201, 129 Stat. 584, 587.

[15]Congressional Budget Office, Estimate of the Budgetary Effects of H.R. 1314, the Bipartisan Budget Act of 2015, as reported by the House Committee on Rules on October 27, 2015.

[16]Fixing America's Surface Transportation Act (FAST Act), Pub. L. No. 114-94 § 32205, 129 Stat. 1312, 1740.

subsidies; (2) the extent to which the federal crop insurance program's target rate of return reflects market conditions; and (3) opportunities, if any, for the federal government to reduce its delivery costs for the program.

To address these objectives, we reviewed, among other things, sections of 2011 SRA drafts and the final 2011 SRA; RMA documents on the development and implementation of the 2011 SRA; crop insurance industry documents; provisions of the Food, Conservation, and Energy Act of 2008 (2008 farm bill), the Agricultural Act of 2014 (2014 farm bill), the Agricultural Risk Protection Act of 2000; prior GAO reports; and standards for internal control in the federal government. We also interviewed RMA officials to discuss the development and implementation of the 2011 SRA. To examine the changes, if any, in the distribution of A&O expense subsidies due to the implementation of the 2011 SRA's national cap, we reviewed and analyzed RMA crop insurance data by state, county, and crop for 2010 through 2015. We chose this period to examine changes associated with the implementation of the 2011 SRA because it contained the most recent data available at the time of our review. We analyzed changes in A&O subsidies per policy by state, county, and crop to identify and summarize trends during 2011 through 2015.

To examine the extent to which the federal crop insurance program's target rate of return reflects market conditions, our work included reviewing a 2009 USDA-commissioned study.[17] This study derived, for the 20 years from 1989 through 2008, the annual rate of return on equity that companies participating in the federal crop insurance program should be expected to earn. We identified the major factors that the study used to estimate the reasonable rate of return and collected data on these factors from sources of financial information, such as *Value Line Investment Survey.*[18] Using the two models that the USDA-commissioned study used, we then estimated the reasonable rate of return for 2009 through 2015, years that were not included in the study. In addition, for

[17]This study consisted of the following two reports: Milliman, Inc., *Rate of Return Update - 2008: Reasonable Rate of Return Section 3.1*, a report prepared at the request of the Risk Management Agency, U.S. Department of Agriculture, June 23, 2009; and Milliman, Inc., *Historical Rate of Return Analysis,* a report prepared at the request of the Risk Management Agency, U.S. Department of Agriculture, August 18, 2009.

[18]*Value Line Investment Survey* is an independent investment advisory service that provides extensive coverage on approximately 1,700 publicly traded stocks.

the 20 years from 1996 through 2015, we summarized RMA data on the actual rates of return on retained premiums of participating insurance companies. To examine opportunities for the federal government to reduce its delivery costs for the program, we also reviewed and summarized RMA data on companies' underwriting gains and risk sharing as expressed by total program premiums and premiums retained by companies for the 20 years from 1996 through 2015. We also reviewed the 2005 SRA and 2011 SRA sections on risk sharing, as well as crop insurance industry documents, including industry responses to 2011 SRA drafts. Regarding RMA's program monitoring, we reviewed RMA documents on data mining and other program integrity efforts; USDA Office of the Inspector General reports; and previous GAO reports, including our 2005 report on fraud, waste, and abuse[19] and our 2012 report that examined RMA's data mining.[20]

To evaluate the reliability of the RMA data, we reviewed an assessment for a previous GAO study, reviewed agency documentation related to the data systems, and obtained updated information on the data systems from knowledgeable officials. We assessed the reliability of the data from the 2009 USDA-commissioned study and the financial information sources by reviewing relevant documentation. In addition, for one of the financial information sources, we reviewed an assessment for a previous GAO study. In each case, we concluded that the data were sufficiently reliable for the purposes of this report. A more detailed discussion of our objectives, scope, and methodology is presented in appendix I.

We conducted this performance audit from April 2015 to July 2017 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence we obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

[19]GAO, *Crop Insurance: Actions Needed to Reduce Program's Vulnerability to Fraud, Waste, and Abuse,* GAO-05-528 (Washington, D.C.: Sept. 30, 2005).

[20]GAO, *Crop Insurance: Savings Would Result from Program Changes and Greater Use of Data Mining*, GAO-12-256 (Washington, D.C.: Mar. 13, 2012).

Background

Farming is an inherently risky enterprise. In conducting their operations, farmers are exposed to financial losses because of production risks—droughts, floods, hurricanes, and other natural disasters—as well as the risk of crop revenue loss resulting from declines in production, price, or both. The federal government has played an active role in helping to mitigate the effects of these risks on farm income by promoting the use of crop insurance.

A&O Subsidies

RMA partners with private insurance companies, which sell and service federal crop insurance policies. Under the Federal Crop Insurance Act, RMA pays these companies A&O subsidies to cover the reasonable expenses of selling and servicing crop insurance policies. Prior to the changes implemented in the 2011 SRA, RMA calculated A&O subsidies by using a fixed percentage of a policy's premium. This fixed percentage, which is called the A&O subsidy rate, varies by the type of insurance policy. In 2015, these rates ranged from 12 percent to 21.9 percent.[21] The most common type of insurance policy is revenue protection, which has had an A&O subsidy rate of 18.5 percent since 2011.[22] The price of the crop being insured is one of the factors in the premium amount. As a result, A&O subsidies rise and fall over time with changes in crop prices. For example, from 2000 to 2009, insurance companies' A&O subsidies nearly tripled as a result of increases in crop prices during that time frame. This increase in the A&O subsidies occurred without a proportional increase in the workload for selling and servicing policies as expressed by the number of policies, acres, and the amount of insurance coverage purchased. To address the increases in A&O subsidies, the 2008 farm bill directed RMA to consider alternative methods for determining A&O payment rates as part of the 2011 SRA, stating that changes should take into account current financial conditions of the program and ensure continued availability of the crop insurance program to producers on a nationwide basis.

Besides crop price changes, changes in premium rates cause changes in premium amounts and, in turn, A&O subsidies. RMA sets premium rates,

[21]For catastrophic policies, which provide farmers with less protection against losses than other policies, the A&O subsidy rate is zero. Instead, USDA pays a loss adjustment expense subsidy of 6 percent of the premium for these policies.

[22]Revenue protection policies protect against crop revenue loss resulting from declines in production, price, or both.

which are a percentage of the insured crop value. Premium rates can change because of changes in a farm's crop yield history and RMA updates of county premium rates that reflect past loss experience.

Insurance companies' expenses include overhead (e.g., employee salaries and rent), fees paid to insurance adjusters to verify loss claims, and commissions paid to insurance agents. Insurance agencies' expenses include salaries and benefits, training, rent and equipment, software to aid farmers' decisions, and legal services. Insurance agents' responsibilities can include (1) informing farmers about applicable crop insurance policy provisions and (2) accurately preparing and completing a farmer's insurance application, certification of production history, acreage reports, and other sales-related documents.

Risk Sharing and Underwriting Gains

The federal government is the primary reinsurer for the private insurance companies that take on the risk of covering, or "underwriting," losses to insured farmers. The SRA sets the terms of the risk sharing between the participating insurance companies and USDA. The insurance companies retain part of the premiums and associated risk, and USDA holds the remaining premiums and risk. In addition, the 2005 SRA introduced a quota share provision, under which each company cedes to USDA a percentage of its underwriting gains or losses.[23] The 2005 SRA set the quota share at 5 percent.

Crop Insurance Program Costs to the Government

In accounting for the crop insurance program's costs to the government,[24] the major categories are the following:

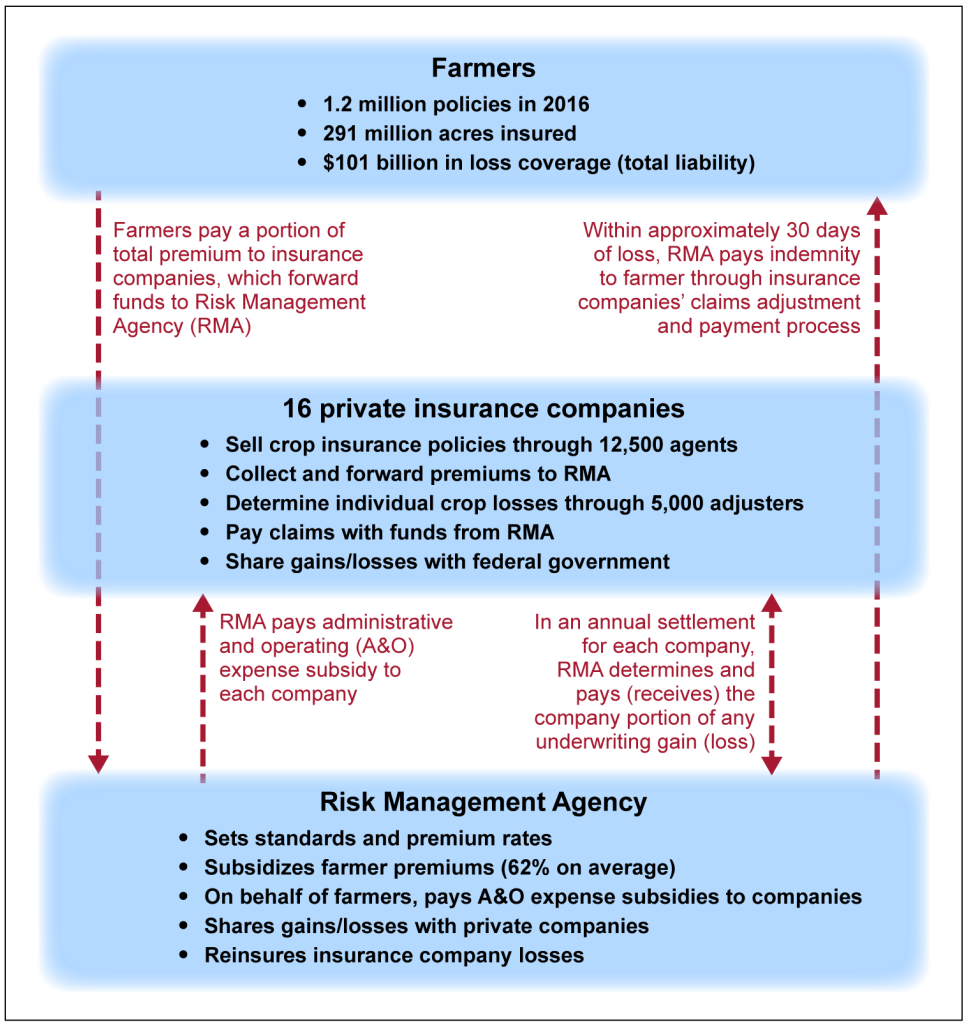
[23]A quota share is a type of reinsurance contract in which the insurer and reinsurer share premiums and losses according to a fixed percentage.

[24]The costs to the government can be expressed in different ways, based on different groupings of the components of cost. For example: (1) as shown here in the text, the cost to the government is expressed as A&O subsidies, plus premium subsidies, plus excess losses (i.e., plus total underwriting losses), plus company underwriting gains; (2) since adding total underwriting losses is the same as subtracting total underwriting gains, the cost to the government can also be expressed as A&O subsidies, plus premium subsidies, minus total underwriting gains, plus company underwriting gains (here, total underwriting gains are expressed as savings to the government, but the portion of those underwriting gains that are shared with the insurance companies are a cost to the government); and (3) since total underwriting gains minus company underwriting gains equals the government's share of underwriting gains, the cost to the government can be expressed as A&O subsidies, plus premium subsidies, minus government underwriting gains.

- **Premium subsidies.** Premium subsidies are provided by the government on behalf of farmers. As of January 2017, CBO projected that premium subsidies from 2017 through 2026 would average about $6.2 billion per year.
- **A&O subsidies.** The government pays A&O subsidies to participating insurance companies to cover the companies' expenses to sell and service crop insurance policies. As of January 2017, CBO projected that A&O subsidies from 2017 through 2026 would average about $1.4 billion per year.
- **Companies' underwriting gains/losses.** The government pays underwriting gains to participating insurance companies in accordance with the SRA's gain/loss sharing provisions. The term refers to companies' retained premiums minus their share of the indemnities paid to farmers followed by adjustments based on the SRA's gain/loss sharing and quota share provisions. As of January 2017, CBO projected that companies' underwriting gains from 2017 through 2026 would average about $1.3 billion per year.
- **Excess losses.** Excess losses are total indemnities—payments to farmers for losses—minus total premiums (i.e., premiums paid by farmers plus premium subsidies provided by the government). As of January 2017, CBO projected that excess losses from 2017 through 2026 would average about -$1 billion per year, meaning that indemnities are projected to average about $1 billion less than total premiums per year.

Figure 1 shows an overview of the program.

Figure 1: Overview of the Federal Crop Insurance Program



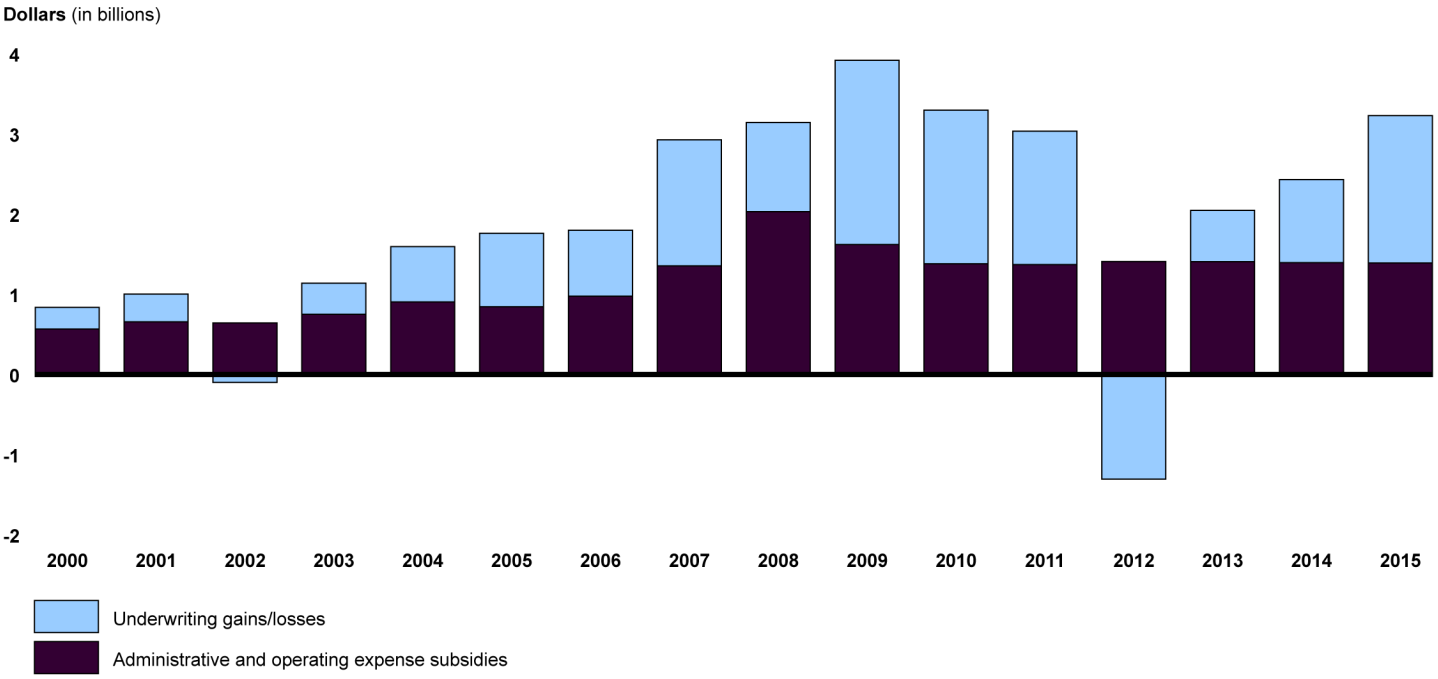
Sources: GAO, adapted from the Congressional Research Service, and analysis of RMA data. | GAO-17-501

Note: The number of acres insured and the amount of loss coverage are as of 2016. The number of insurance companies is as 2017. The numbers of agents and adjusters and the percentage of farmer premiums subsidized by RMA are as of 2014.

Figure 2 shows the A&O subsidies and underwriting gains that the government paid to insurance companies for program delivery from 2000 through 2015. In 14 of these 16 years, companies had underwriting gains,

with underwriting losses in 2002 and 2012.[25] From 2000 through 2015, companies' underwriting gains averaged $884 million per year. From 2011 through 2015—the first 5 years in which the 2011 SRA has been in in effect—companies' underwriting gains averaged $773 million per year. As of March 2017, preliminary RMA information indicates that 2016 underwriting gains will be about $2.6 billion. If 2016 underwriting gains were $2.6 billion, then during the 6 years in which the 2011 SRA has been in effect, companies' underwriting gains would average about $1.1 billion per year.

Figure 2: Administrative and Operating (A&O) Expense Subsidies and Underwriting Gains Paid to Insurance Companies, 2000 through 2015



Source: GAO analysis of Risk Management Agency data. | GAO-17-501

Note: The 2011 standard reinsurance agreement capped the total A&O subsidies for certain types of policies.

As mentioned above, CBO projected that A&O subsidies and companies' underwriting gains would average about $1.4 billion and $1.3 billion,

[25]In 2012, a major drought caused companies to have underwriting losses.

respectively, per year from 2017 through 2026. Thus, projected federal payments to the companies for delivering the federal crop insurance program would comprise about one-third of projected total program costs, which CBO projected would be about $7.9 billion per year.

A provision in the 2014 farm bill requires that any revised SRA is to be budget neutral with respect to estimates of future underwriting gains for the participating insurance companies, and the estimated total A&O subsidies cannot be less than the amounts that would have been provided under the previous SRA.[26] The 2014 farm bill conference manager's report states that a renegotiated SRA should not be used as a means of achieving further cuts in the federal crop insurance program. During the farm bill debate, according to a Congressional Research Service report, some Members of Congress argued that such cuts, if any, should be made by Congress so it could claim the budget savings toward either deficit reduction or to offset the cost of any new legislative initiative.[27] In addition, the 2014 farm bill requires that if any SRA savings are realized, they have to be used to increase participating insurance companies' underwriting gains or A&O payments. The conference report to the 2014 farm bill noted that crop insurance funding had been reduced over the previous 6 years, including in the 2008 farm bill and the 2011 SRA.

The Federal Government's Monitoring of the Program

In part to improve the government's ability to ensure the integrity of the federal crop insurance program, Congress passed the Agricultural Risk Protection Act of 2000.[28] The act provided RMA with new tools for monitoring and controlling program abuses. Among other things, the act required the Secretary of Agriculture to use data mining—a technique for extracting knowledge from large volumes of data that was made possible by advances in computing—to administer and enforce the crop insurance program. RMA uses data mining to detect potential cases of fraud, waste, or abuse. For example, RMA and the insurance companies use data mining results to conduct reviews of policies with anomalous loss claim payments. According to RMA documents, RMA's data mining efforts have

[26]Pub. L. No. 113-79 § 11012, 128 Stat. 649, 960 (codified at 7 U.S.C. § 1508(k)(8)).

[27]Congressional Research Service, *Crop Insurance Provisions in the 2014 Farm Bill (P.L. 113-79)*, April 22, 2014.

[28]The Agricultural Risk Protection Act of 2000, Pub. L. No. 106-224 § 121, 114 Stat. 358, 372 (codified as amended at 7 U.S.C. § 1515).

improved program monitoring. RMA estimates that from 2001 through 2014, its data mining to identify anomalous policies resulted in $1.1 billion in cumulative cost avoidance—or, reduction in the amount of indemnities claimed (i.e., losses claimed by farmers).

The 2011 SRA's Cap on A&O Expense Subsidies Has Stabilized Overall Costs, but Subsidies Have Fluctuated Widely by Crop, State, and County

The 2011 SRA's cap on A&O expense subsidies—payments to insurance companies to cover the cost of selling and servicing crop insurance policies—stabilized the program's overall costs, but subsidies have fluctuated widely by crop, state, and county. When negotiating the 2011 SRA, RMA adjusted the A&O subsidy calculation method by applying a national cap on the overall annual A&O subsidies. The cap was successful in stabilizing the overall subsidy amount. However, the revised calculation method has allowed changes in crop prices to result in substantial fluctuations in the subsidies for many crops as well as states and counties. For example, the average A&O subsidy per policy in California decreased by 32 percent from 2010 to 2011, when the subsidy declined for two of the state's leading insured crops, almonds and grapes. The average A&O subsidy per policy in California increased by 66 percent from 2013 to 2014, when the subsidy for almonds and grapes and other crops produced in California increased.

RMA Adjusted the A&O Subsidy Calculation Method by Applying a National Subsidy Cap

In developing the 2011 SRA, RMA sought to stabilize A&O subsidies to help make the program more sustainable over time. To control government costs and stabilize fluctuations in A&O subsidies from year to year, RMA considered revisions to the A&O subsidy calculation method when negotiating the 2011 SRA and ultimately chose to apply a national A&O subsidy cap. Specifically, through a revised subsidy calculation method, RMA capped annual A&O subsidies for the most commonly used types of policies and set a minimum annual subsidy for these policy

types.[29] The cap controls government costs when crop prices rise, and the minimum protects companies against low market prices. Because A&O subsidies remain linked to crop prices under the revised calculation method, initial A&O subsidy calculations may exceed the cap during years when crop prices are high. Under such circumstances, RMA has applied an "adjustment factor" to bring down overall annual A&O subsidy expenses to within the capped amount. For a given year, the adjustment factor is equal to the capped A&O subsidy amount divided by the total dollar amount of unadjusted A&O subsidies for all policies. RMA applies this adjustment factor to each policy by multiplying it by the policy's unadjusted A&O subsidy amount.[30] For example, in 2011 the total amount of unadjusted A&O subsidies was $2.12 billion, and the cap was $1.22 billion, or 58 percent of the unadjusted amount. Thus, the adjustment factor was 0.58.

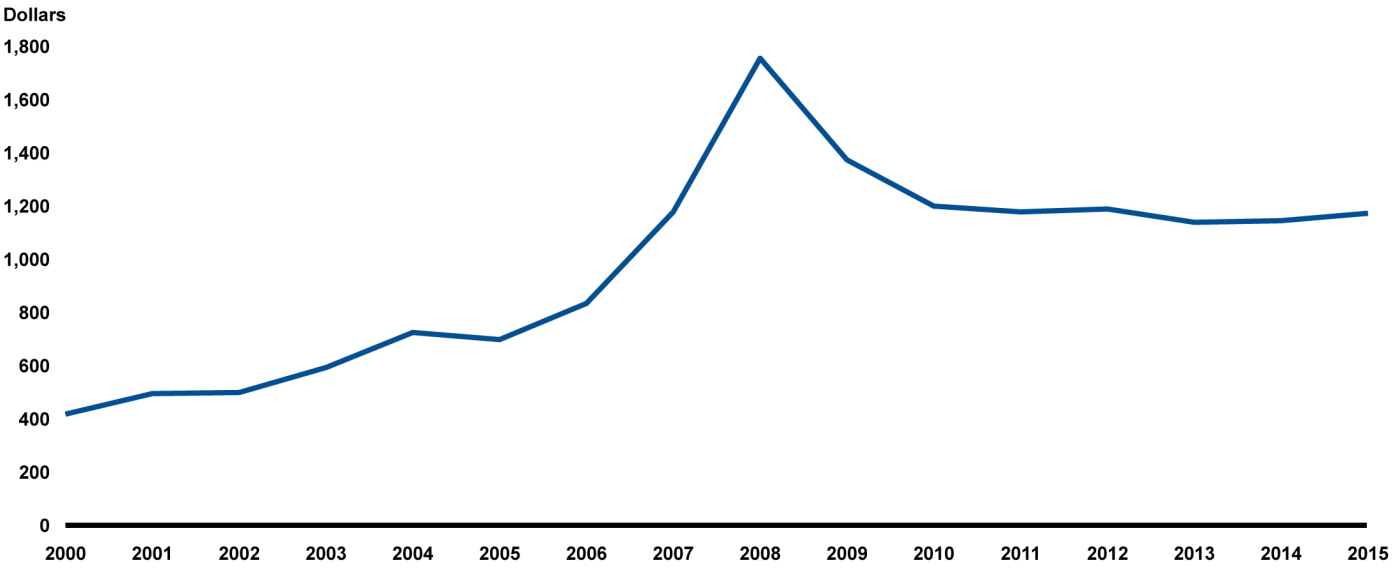
As a result of the revised calculation method, overall A&O subsidies have become more stable since 2010, staying at about $1.4 billion per year from 2011 through 2015. Figure 3 shows the average A&O subsidy per policy for 2000 through 2015. The average A&O subsidy per policy increased from $418 in 2000 to $834 in 2006. Then, as a result of higher prices for major crops, such as corn, soybeans, and wheat, the average subsidy increased sharply, reaching $1,756 in 2008. Crop price declines brought down the average A&O subsidy per policy to $1,200 by 2010. Although the prices of corn, soybeans, and wheat increased again in 2011, the 2011 SRA's cap on total A&O subsidies for the most common types of policies prevented the average A&O subsidy per policy from increasing, holding it at $1,178. From 2011 through 2015, the overall

[29]The subject policy types include revenue protection, which protects against crop revenue loss resulting from declines in production, price, or both, and yield protection, which protects against a production loss relative to the historical production per acre. In 2011, the cap on A&O subsidies for the subject policy types was $1.22 billion. The minimum annual subsidy was $1 billion. Calculations for both the maximum and the minimum include annual adjustments for inflation. In addition to the adjustment for inflation, additional A&O subsidies can be provided for loss adjustment expenses when losses exceed a threshold. Specifically, in states that have total loss payments greater than 120 percent of the total premiums, additional A&O subsidies amounting to 1.15 percent of the premiums are paid to provide additional funding for companies' loss adjustment expenses. In addition to limiting the total annual A&O subsidies for most policies, the 2011 SRA capped the amount of compensation (i.e., commissions and profit sharing) that a company can pay to crop insurance agents within a state to no more than the total A&O subsidy amount for that state.

[30]The adjustment factors were 0.58, 0.62, 0.60, 0.71, and 0.75 for 2011, 2012, 2013, 2014, and 2015, respectively.

average A&O subsidy per policy was relatively stable, ranging from $1,139 to $1,189.

Figure 3: Average Administrative and Operating (A&O) Expense Subsidy Per Policy, 2000 through 2015



Source: GAO analysis of U.S. Department of Agriculture's Risk Management Agency data. | GAO-17-501

Note: The 2011 standard reinsurance agreement (SRA) capped the total A&O subsidies for the most common types of policies.

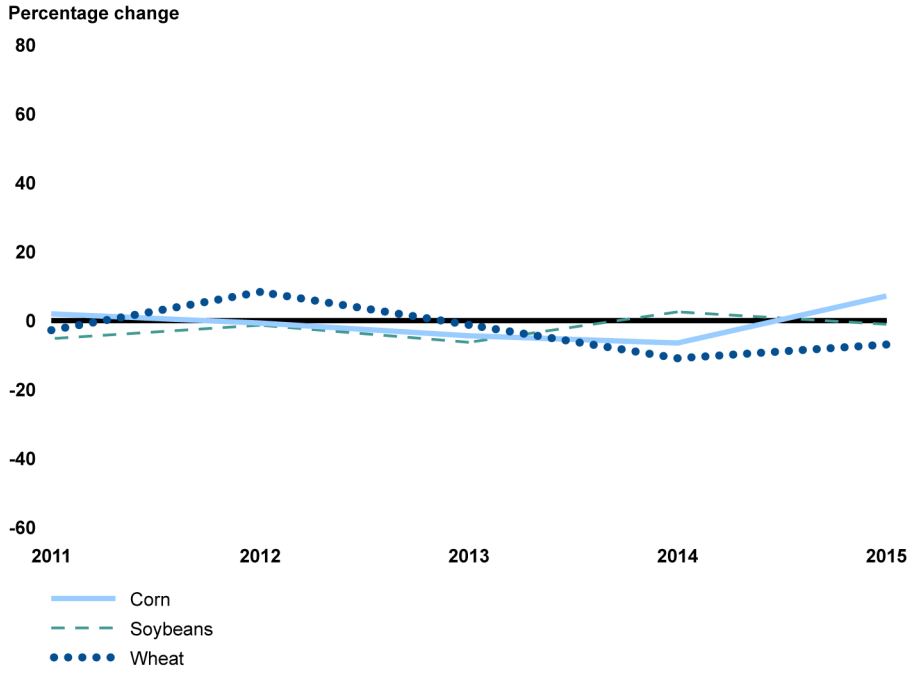
A&O Subsidies Have Fluctuated Substantially for Many Crops

Based on our analysis of RMA data, we found that for many crops the average A&O subsidy per policy fluctuated substantially between 2010 and 2015. Changes in crop prices and the A&O subsidy adjustment factor affected the extent of these fluctuations. The average A&O subsidy per policy for each of the three leading crops—corn, soybeans, and wheat—fluctuated modestly during this period.[31] The fluctuations were larger for many of the other crops. Figure 4 shows the annual percentage changes for corn, soybeans, and wheat, and figure 5 shows the changes for almonds, apples, and grapes. For corn, the largest change was a 7 percent increase in 2015. For soybeans, the largest change was a 6 percent decrease in 2013. For wheat, the largest change was an 11 percent decrease in 2014. In contrast, as shown in figure 5, the fluctuations for almonds, apples, and grapes were larger. For example,

[31]Corn, soybeans, and wheat are major crops in terms of program premiums. For example, in 2011, the total premiums for these three crops combined were 77 percent of the total premiums for all program crops.

the changes for almonds exceeded 29 percent in each year except 2013, including an increase of 75 percent in 2014. In addition to almonds, apples, and grapes, many other crops had large changes. For example, the average A&O subsidy for cotton increased 36 percent in 2011, and for peanuts increased 49 percent in 2013. Appendix II shows the annual percentage changes in the average A&O subsidy per policy for all crops that were insured under the federal crop insurance program during 2011 through 2015.

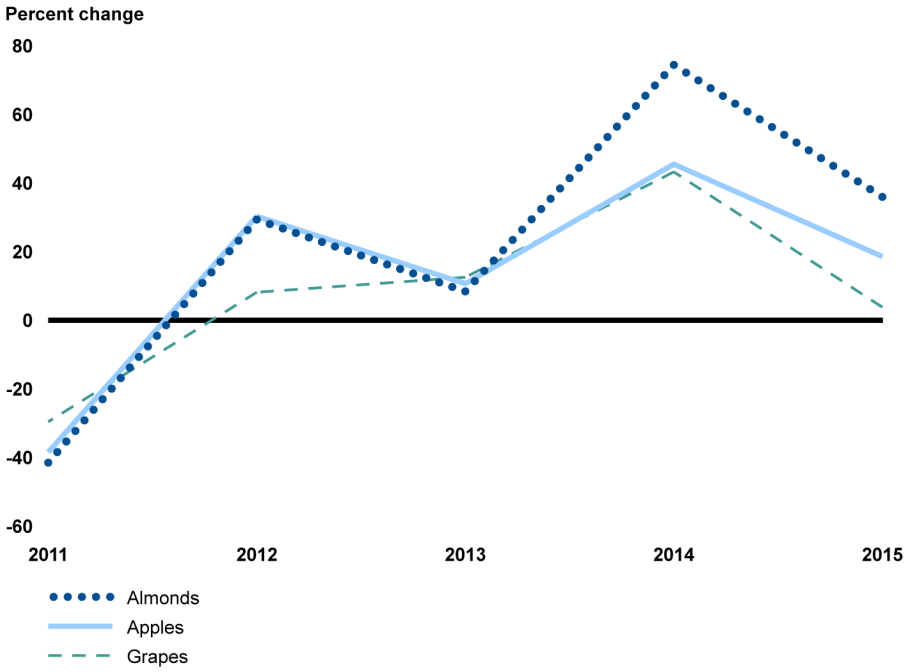
Figure 4: Annual Percentage Change in the Average Administrative and Operating (A&O) Expense Subsidy per Policy for Corn, Soybeans, and Wheat, 2011 through 2015



Source: GAO analysis of U.S. Department of Agriculture's Risk Management Agency data. | GAO-17-501

Note: Corn, soybeans, and wheat are major crops in terms of program premiums. For example, in 2011, the total premiums for these three crops combined were 77 percent of the total premiums for all program crops.

Figure 5: Annual Percentage Change in the Average Administrative and Operating (A&O) Expense Subsidy per Policy for Almonds, Apples, and Grapes, 2011 through 2015



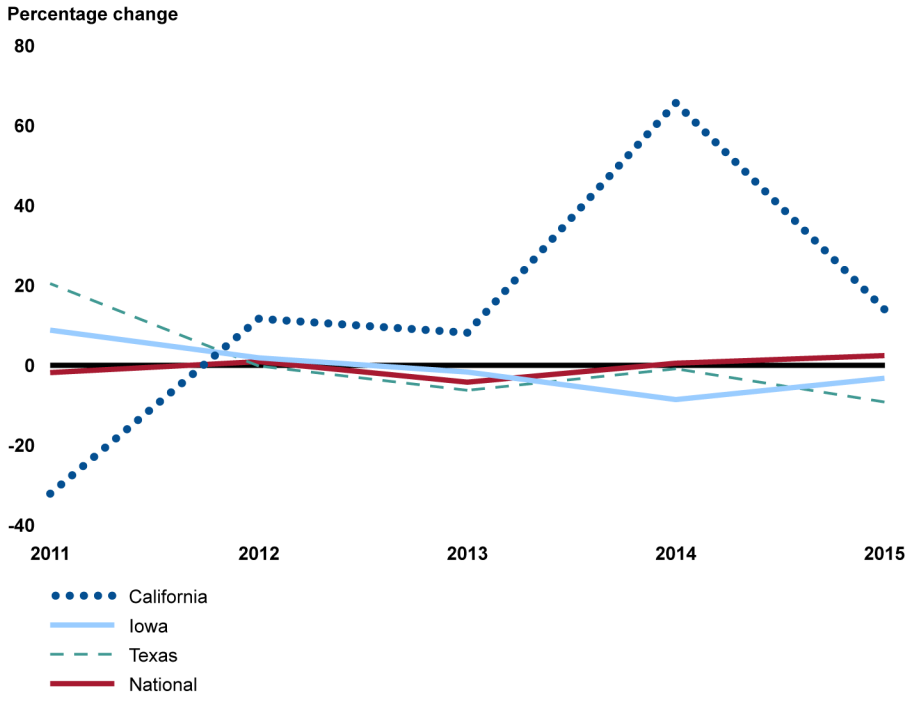
Source: GAO analysis of U.S. Department of Agriculture's Risk Management Agency data. | GAO-17-501

Note: Almonds, apples, and grapes are examples of crops other than corn, soybeans, and wheat, which are the three major crop insurance program crops. We selected almonds, apples, and grapes because they were among the leading crops in terms of program premiums. In 2015, almonds were seventh in premiums, apples were eighth, and grapes were fifteenth.

Fluctuations in A&O Subsidies Varied among States and Counties

Based on our analysis of RMA data, we found that the level of fluctuation in A&O subsidies varied among states and counties. Figure 6 shows the annual percentage change in the A&O subsidy per policy nationwide and for California, Iowa, and Texas since 2010; we selected these three states to review more closely because they have substantial crop insurance program participation, and they are located in different regions of the country. The 2011 SRA's cap on nationwide A&O subsidies stabilized the changes in the nationwide average A&O subsidy per policy in a relatively narrow range, as shown in the figure.

Figure 6: Annual Percentage Change in the Average Administrative and Operating (A&O) Expense Subsidy per Policy for Selected States and Nationwide, 2011 through 2015



Source: GAO analysis of U.S. Department of Agriculture's Risk Management Agency data. | GAO-17-501

Note: We selected these three states because they have substantial crop insurance program participation, and they are located in different regions of the country.

As shown in the figure, California's average A&O subsidy per policy was volatile between 2011 and 2015. California's average subsidy per policy decreased by 32 percent in 2011 and then increased during the next 4 years, especially in 2014, when it increased 66 percent. The A&O subsidy adjustment factor, which was 58 percent in 2011 and increased to 71 percent in 2014, contributed to California's 2011 decrease and its 2014 increase. Iowa, where the leading insured crops are corn and soybeans, experienced substantially less fluctuation than California.[32] Texas's average subsidy per policy increased by 21 percent in 2011. That increase coincided with increases in the prices of cotton and wheat,

[32]The effects of crop price changes on A&O subsidies for corn and soybeans were reduced by changes in the A&O subsidy adjustment factors.

Texas's two leading insured crops in 2011. Texas's average subsidy per policy decreased by 6 percent and 9 percent in 2013 and 2015, respectively.

Appendix III shows the annual percentage changes in the average A&O subsidy per policy for each of the 50 states from 2011 through 2015.

Figure 7 shows the percentage change in the average A&O subsidy per policy by county from 2011 through 2015. As shown in the maps, many counties had substantial fluctuations in their average A&O subsidy per policy.

Figure 7: Percentage Change in the Average Administrative and Operating Expense Subsidy per Policy by County, from 2011 through 2015

Interactive Graphic **Instructions: To view percentage changes by county, use cursor to select a year below. For a printable version of the interactive information, see appendix IV.**

2011 2012 2013 2014 2015

Sources: GAO analysis of U.S. Department of Agriculture's Risk Management Agency data; MapInfo (map). | GAO-17-501

According to a crop insurance industry organization document, a large decrease in A&O subsidies for a state can disrupt program delivery in that state.[33] In the 2011 SRA, RMA sought to stabilize A&O subsidies, according to an RMA document, which states that "because the A&O subsidy will be less vulnerable to extreme commodity price changes, companies and their agents will enjoy more stable and dependable subsidies in the future to support the cost of delivering the program," making the program more sustainable over time.[34] Furthermore, according to the RMA document, by providing relatively stable A&O payments and a cap on agent commissions, the new SRA will allow for a more sustainable delivery system in the future, protecting producers, companies, and taxpayers.

RMA had previously considered other A&O subsidy calculation methods to reduce fluctuations in A&O subsidies. For example, in the 1990s, RMA considered a fixed amount per policy plus a percentage of the policy's premium. More recently, in its first two drafts of the 2011 SRA, RMA proposed the use of reference crop prices—rather than market prices—to calculate A&O subsidies. In general, a reference crop price is a fixed amount that does not change from year to year. Reference crop prices have been used in other farm programs to stabilize farmers' incomes.[35] Specifically, RMA proposed the use of reference crop prices in calculating A&O subsidies for seven major commodities—corn, soybeans, wheat, grain sorghum, cotton, barley, and rice. The proposed reference prices were based on a 10-year average (1999 through 2008) of each crop's market price. However, the crop insurance industry expressed concerns about RMA's reference crop price proposal. For example, according to an RMA document, [36] many companies noted price volatility factors in comments on the draft SRA. [37] This document said that price volatility

[33]Frank Schnapp and Keith Collins, "The 2011 SRA: A Chronology and Assessment," *Crop Insurance Today* (November 2010).

[34]U.S. Department of Agriculture, Risk Management Agency, *Standard Reinsurance Agreement Frequently Asked Questions Updated for Final Draft – June 10, 2010.*

[35]For example, the 2014 farm bill's Price Loss Coverage program makes payments to farmers when the higher of either the annual average market price or the loan rate for a marketing assistance loan of an eligible crop is less than a fixed statutory price.

[36]U.S. Department of Agriculture Risk Management Agency, *Standard Reinsurance Agreement Frequently Asked Questions Updated for Final Draft – June 10, 2010*.

[37]Price volatility factors are based on price volatilities over the final 5 trading days of a price discovery period. Before the beginning of a crop growing season, RMA sets the projected crop price on the basis of a price discovery period.

factors have become significant in the determination of premiums for the increasing number of revenue-based policies and, consequently, the A&O subsidy for those policies. This document also said that using reference prices alone to stabilize the A&O subsidy accounts for levels of high commodity prices, but ignores changes in price volatility. In addition, this RMA document stated that incorporating reference crop prices for the seven major commodities could affect areas of the country differently, depending on the types and mixture of crops in each area. RMA ultimately removed its reference crop price proposal from the 2011 SRA and replaced it with the current calculation method to cap overall A&O subsidies.

Although the current calculation method has resulted in relatively modest fluctuations in A&O subsidies for corn, soybeans, and wheat, it has not done so for other crops or for all states and counties. In some cases, double-digit decreases were followed by double-digit increases. As mentioned earlier, RMA's intention was to stabilize A&O subsidies. Without stability in A&O subsidies, the sustainability of the program's delivery system in states and counties that experience large fluctuations may be compromised. For example, according to crop insurance industry organization documents, reductions may adversely affect the services provided to farmers. In addition, fluctuations may make it more difficult for insurance agencies to operate and budget effectively. By considering an adjustment to the A&O expense subsidy calculation method that reduces the effects of changes in premiums caused by changes in crop prices or other factors, when it renegotiates the SRA, RMA could reduce year-to-year fluctuations in the A&O expense subsidies that companies receive at the crop, state, and county levels.

RMA officials acknowledged to us that large fluctuations have occurred for some crops, states, and counties. However, the officials said that an advantage of the current method is its ease of administration and that the crop insurance industry has become familiar with and understands it. While changing the calculation method may add complexity, not changing it will likely result in continued large annual fluctuations for some crops, states, and counties.

The Federal Crop Insurance Program's Target Rate of Return Does Not Reflect Market Conditions

The federal crop insurance program's target rate of return—the average annual rate of return that insurance companies are expected to earn—does not reflect market conditions. A 2009 USDA-commissioned study,[38] which RMA used in SRA renegotiations, estimated a reasonable rate of return for crop insurance providers for 1989 through 2008 based on economic factors, such as interest rates, which are subject to changes in market conditions. Interest rates have decreased since 2008, and our analysis that updated the information in the USDA-commissioned study, in which we estimated the reasonable rates of return for 2009 through 2015 (years not included in the study), shows that the market-based (reasonable) rate of return has declined.

The USDA-commissioned 2009 study was based on the premise that government intervention should reflect competitive, market-based outcomes. The 2009 study derived the annual rate of return on equity that insurance companies participating in the federal crop insurance program should be expected to earn. This annual rate of return should produce earnings that are equal to earnings from alternative investment opportunities relative to the risk assumed—a reasonable or market-based rate of return. To determine a reasonable rate of return for companies participating in the federal crop insurance program, the USDA-commissioned study averaged the results obtained from using two generally accepted methodologies: the capital asset pricing model and the discounted cash flow model.[39] We conducted our updated analysis using the two methods that the 2009 study used. Our capital asset pricing model calculations estimate that the average reasonable rate of return from 2009 through 2015 was 9.7 percent.[40] Our discounted cash flow

[38]Milliman, Inc., *Rate of Return Update - 2008: Reasonable Rate of Return Section 3.1*, a report prepared at the request of the Risk Management Agency, U.S. Department of Agriculture, June 23, 2009.

[39]The capital asset pricing model uses the return on a risk-free asset, usually a U.S. Treasury security, to calculate an estimate of the additional return an investor would expect as compensation for the additional risk associated with alternative investments. The discounted cash flow model is constructed on the assumption that the cost of an investment (e.g., a stock) would equal the present value of cash flows (e.g., future dividend payments or capital gains) resulting from the investment. If the present value of cash flows resulting from the investment does not equal the price, investors would bid on the investment until the values are equal. For a more detailed discussion of these models, see appendix V.

[40]We performed sensitivity analysis on our capital asset pricing model calculations by testing the impact of different risk-free rates and beta coefficients. For a discussion of this sensitivity analysis, see appendix V.

model calculations estimate that the average reasonable rate of return was 9.6 percent.[41] The average of the two methods was 9.6 percent. We also note that the reasonable annual rate of return generally trended downward from 2009 through 2015 and reached a low of 8.8 percent in 2015. Lower interest rates contributed to the decrease in the reasonable rate. For example, from 2008 to 2015, one measure of an average interest rate—U.S. Treasury securities—fell from 3.1 percent to 1.4 percent.[42]

An overview of the results of our updated analysis based on the 2009 study and our summary of RMA data on the actual rates of return on retained premiums of participating insurance companies for the 20 years from 1996 through 2015 is presented in table 1. Appendix V provides more information on the USDA-commissioned study, its results for 1989 through 2008, and our updated analysis for 2009 through 2015.

[41]We performed two sets of discounted cash flow model calculations. One set of calculations only included publicly traded property and casualty insurance companies that reported complete historical and forecasted earnings and dividends. This is the basis for the discounted cash flow rates of return reported on the average of the two methods. However, for comparison purposes, we also calculated the reasonable rate of return for all publicly traded property and casualty companies covered by *Value Line Investment Survey* by imputing zeros for missing values, which produced an average reasonable rate of return of about 8.5 percent from 2009 through 2015. However, out of concern that imputing zeroes could skew the rate of return estimate downward, we used the higher average rate of return of 9.6 percent based on the companies that reported complete data. For a more detailed discussion of our discounted cash flow model calculations, see appendix V.

[42]The "average interest rate" is the average of yields on short-, intermediate-, and long-term U.S. Treasury securities.

Table 1: GAO Calculation of Reasonable and Actual Rates of Return, 1996 through 2015

(In percentages)

Years	Capital asset pricing model rate of return on equity	Discounted cash flow model rate of return on equity	Reasonable rate of return on equity	Actual rate of return on retained premiums[a]
1996-2015 (20-year average)	11.4	10.7	11.0	18.0
2009-2015 (7-year average)	9.7	9.6	9.6	16.0
2015	9.0	8.6	8.8	24.8

Source: GAO analysis of data from the Federal Reserve; *Value Line Investment Survey; 2015 Ibbotson Stocks, Bonds, Bills, and Inflation (SBBI) Classic Yearbook; 2016 Ibbotson Stocks, Bonds, Bills, and Inflation (SBBI) Yearbook*; and a 2009 study commissioned by the U.S. Department of Agriculture. | GAO-17-501

Notes: A 2009 USDA-commissioned study found that the reasonable rate of return on equity for 1989 through 2008 was an average of 12.8 percent. Using the 2009 study's method for determining the reasonable rate of return on equity, we conducted our own analysis updating the study's results through 2015. The reasonable rate of return on equity is the average of the rates from the capital asset pricing model and the discounted cash flow model. For the 20 years from 1996 through 2015 and the 7 years from 2009 through 2015, we averaged Risk Management Agency data on the actual rates of return on retained premiums of participating insurance companies.

[a]These actual rates of return are calculated as a percentage of retained premiums rather than as a percentage of equity because of data limitations. However, crop insurers' premiums and equity have been fairly close to each other, on average. For instance, the ratio of premium to equity averaged 1.1 from 2005 through 2009. Moreover, the standard reinsurance agreement renegotiations use rates of return as a percentage of retained premiums, as data on retained premiums have been more easily obtainable than data on equity.

According to a document from a crop insurance industry organization, participating insurance companies' financial returns under the 2011 SRA have been lower than expected. The average rate of return on retained premiums for the first 4 years that the 2011 SRA was in effect—2011 through 2014—was less than the 14.5 percent target rate, and companies had underwriting losses in 2012, when a major drought occurred. However, 4 years is a short time for assessing the rate of return. The 2009 study noted that the federal crop insurance program has significant catastrophe exposure. According to the study, with most lines of insurance that have a significant catastrophe exposure, insurers expect to earn significant profits in non-catastrophe years and significant losses in years with catastrophes. As a result, average returns over relatively short sample periods are not necessarily indicative of the long-term pattern of returns.

Participating insurance companies' actual rate of return can vary significantly from year to year. Table 2 shows the participating insurance companies' actual rate of return on retained premiums for each year from 1996 through 2015. The average actual rate of return for these 20 years

was 18.0 percent. During the 5 years that the 2011 SRA has been in effect—2011 through 2015—the average rate of return on retained premiums was 9.4 percent.[43] A major reason the rate of return during these 5 years was less than the target rate was because the rate dropped to -15.3 percent in 2012. In that year, a major drought caused underwriting losses. Because the 2011 SRA's target rate of return is 14.5 percent, additional years of experience would, on average, likely result in an increase in the average rate of return under the 2011 SRA. For example, as of March 2017, preliminary RMA information indicates that the 2016 rate of return on retained premiums will be about 35 percent. If the 2016 rate of return on retained premiums were 35 percent, then in the 6 years in which the 2011 SRA has been in effect, companies' underwriting gains during those 6 years would average about 13.7 percent.

Table 2: Participating Insurance Companies' Actual Rate of Return on Retained Premiums, 1996 through 2015

(In percentages)

Year	Actual rate of return on retained premiums
1996	21.5
1997	27.9
1998	17.5
1999	14.8
2000	14.3
2001	14.6
2002	-2.1
2003	14.9
2004	22.0
2005	31.6
2006	23.5
2007	32.1
2008	14.4
2009	33.6

[43]We include the 5-year average only to describe the rate of return since the 2011 SRA has been in effect. Because of weather variations, more than 5 years of experience are needed to more fully assess the actual rate of return relative to the 14.5 percent target rate.

(In percentages)

Year	Actual rate of return on retained premiums
2010	31.6
2011	17.4
2012	-15.3
2013	7.0
2014	13.2
2015	24.8

Source: GAO analysis of U.S. Department of Agriculture's Risk Management Agency data. | GAO-17-501

Note: Preliminary RMA information indicated that the 2016 rate of return on retained premiums would be about 35 percent.

Two Opportunities Exist for the Federal Government to Reduce the Delivery Costs of the Program

We identified two opportunities for the federal government to reduce its delivery costs for the crop insurance program: (1) by reducing the target rate of return or (2) by reducing the portion of premiums that participating insurance companies retain. A reduction of either the target rate of return or the portion of premiums that companies retain would reduce companies' expected underwriting gains because those gains are equal to the companies' rate of return multiplied by the premiums that companies retain. (As mentioned earlier, premium subsidies make up the majority of the federal crop insurance program's costs. Information about our recent reports that identified potential actions that Congress or RMA could take to reduce the cost of the program and achieve budgetary savings is in app. VI.)

Reducing the Target Rate of Return

Given that our analysis shows that the federal crop insurance program's target rate of return does not reflect market conditions, an opportunity exists for the federal government to reduce the program's delivery costs. Adjusting the target rate of return to reflect market conditions could produce significant cost savings.[44] For example, if the target rate of return was reduced by 3.5 percentage points, from the current target rate of 14.5

[44]The SRA includes provisions for determining the portion of underwriting gain or loss retained by participating insurance companies. These portions vary with the loss ratio (ratio of indemnities to premiums) by state in a given year. The mechanism by which RMA could reduce companies' expected rate of return would be to negotiate changes to the provisions, such as by reducing the portion of underwriting gains, or increasing the portion of underwriting losses, retained by companies.

percent to 11.0 percent—the average reasonable rate that we calculated for 1996 through 2015—on the companies' 2015 retained premiums of $7.42 billion, the companies' expected underwriting gains would decrease by $259 million. If the target rate of return was reduced by 4.9 percentage points, from the current target rate of 14.5 percent to 9.6 percent—the average reasonable rate that we calculated for 2009 through 2015—on the companies' 2015 retained premiums of $7.42 billion, the companies' expected underwriting gains would decrease by $364 million.[45] With such a cost savings for a single year, the savings for the program would be significant over time with either reduction. As we reported in January 2017, absent policy changes, the federal government's fiscal path is unsustainable, and to change the long-term fiscal path, policymakers will need to consider policy changes to the entire range of federal activities and spending.[46] We have also reported that Congress and executive branch agencies can act to improve the efficiency and effectiveness of government programs and activities.[47]

However, any savings that the federal government could achieve through the SRA by reducing companies' expected future underwriting gains as a result of reducing the target rate of return cannot be implemented without congressional action to repeal a provision in the 2014 farm bill. This provision requires that any revised SRA be budget neutral with respect to estimates of future underwriting gains for the companies participating in the crop insurance program. In addition, the 2014 farm bill requires that if any SRA savings are realized, they have to be used to increase underwriting gains or A&O subsidies. If Congress directs RMA to adjust the participating insurance companies' target rate of return to reflect market conditions, the underwriting gains that insurance companies can expect to receive would decrease. Such a reduction would not affect the premiums that farmers pay,[48] but such an adjustment would reduce the

[45]Another example of the effects of reducing the target rate of return was illustrated in November 2015 when the Bipartisan Budget Act of 2015 established a target rate of return on retained premiums of 8.9 percent for crop insurance providers. In October 2015, CBO projected that the resulting 10-year savings from applying an 8.9 percent target rate of return would be about $3 billion. However, this provision was repealed in December 2015.

[46]GAO-17-237SP.

[47]GAO, *2016 Annual Report: Additional Opportunities to Reduce Fragmentation, Overlap, and Duplication and Achieve Other Financial Benefits*, GAO-16-375SP (Washington, D.C.: Apr. 13, 2016).

[48]As noted earlier, premium subsidy percentages are set in the Federal Crop Insurance Act and require congressional action to change.

cost of the crop insurance program and achieve budgetary savings for the federal government.

Reducing the Portion of Premiums that Companies Retain

In addition to the rate of return, participating insurance companies' underwriting gains are affected by the portion of premiums that they retain. Even if the target rate of return remained unchanged, reducing companies' portion of retained premiums would reduce their expected underwriting gains because they would earn their rate of return on a smaller premium base. The companies would have a smaller underwriting stake, retaining a smaller portion of underwriting gains or losses. The extent of sharing in premiums—and the associated opportunities for gains and risk of losses—between the federal government and the companies has long been a subject of debate. For example, according to a report by a former USDA official, the degree of this sharing has been controversial since the beginning of the public-private partnership created by the Federal Crop Insurance Act of 1980.[49] According to this report, part of the justification for the companies to share in the program's underwriting losses was that it would encourage the companies to more carefully adjust farmers' loss claims.[50] According to a crop insurance industry organization document, the structure of the program is such that companies have dollars at risk on every policy and are thus financially incentivized to reduce fraudulent loss claims.

The Agricultural Risk Protection Act of 2000, however, improved RMA's ability to monitor farmers' loss claims and companies' adjustment of these loss claims by enhancing the agency's data mining capabilities. Since 2001, RMA has used its enhanced data mining capabilities to identify policies with anomalous loss claims as compared to similar policies in a geographic region. For example, RMA and the companies review these policies with anomalous loss claims. As a result of its enhanced data mining capabilities, RMA's ability to monitor companies' adjustment of loss claims has improved. Furthermore, with more recent technological advances, such as the inclusion of satellite data in data mining methods, RMA's data mining ability has continued to improve. According to RMA

[49]Taxpayers for Common Sense, *Crop Insurance and Private Sector Delivery: Reassessing the Public-Private Partnership*, Joseph W. Glauber, October 2016.

[50]Although insurance companies participating in the federal crop insurance program share in the federal crop insurance program's underwriting risk and subsequent gains or losses, insurance companies participating in the National Flood Insurance Program do not share in the program's underwriting gains or losses.

documents, the agency's data mining efforts have improved program monitoring. RMA estimated its data mining resulted in $1.1 billion in cumulative cost avoidance—reduction in the amount of indemnities claimed—from 2001 through 2014.

Moreover, the 2005 SRA reduced the companies' share of the premiums and their potential underwriting gains or losses through a quota share provision. A quota share is a type of reinsurance contract in which the insurer—in this case, the insurance companies participating in the crop insurance program—and the reinsurer—in this case, the federal government—share premiums, gains, and losses according to a fixed percentage. The quota share concept was introduced in the 2005 SRA as a way to transfer underwriting gains from the companies to the government in order to generate a reduction in program costs, according to RMA officials. Under quota share provisions in the 2005 SRA and 2011 SRA, each company ceded to USDA a percentage of its premiums and potential underwriting gains or losses. The 2005 SRA's quota share was 5 percent, and the 2011 SRA's quota share was 6.5 percent.[51] For example, in 2010, the quota share reduced companies' retained premiums by $319 million (5 percent) from $6,382 million to $6,063 million and reduced companies' underwriting gains by $101 million (5 percent) from $2,017 million to $1,916 million. Thus, the quota share increased the government's underwriting gains by $101 million and reduced program delivery costs by that amount.

Although RMA's program monitoring has improved since 2000 and even with the implementation of a quota share, there has been little change in the level at which companies are allowed to retain premiums and share in program underwriting gains or losses—which provides companies with financial incentive to carefully adjust farmers' loss claims. In 2000, insurance companies retained $1,895 million (75 percent) of the program's $2,538 million in total premiums. In 2004, the insurance companies retained $3,140 million (75 percent) of the program's $4,186 million in total premiums. In 2015, 14 years after RMA implemented the Agricultural Risk Protection Act of 2000's data mining activities and 10

[51]The 2011 SRA's quota share was 6.5 percent of underwriting gains or losses, and up to 1.5 percent of any gain was to be distributed to companies that service underserved or less-served states according to the premiums generated in those states. In 2011, 2013, and 2015, the net underwriting gain transferred from companies to USDA was 5 percent. In 2014, this amount was 6.5 percent. In 2012, when companies had an underwriting loss, 6.5 percent of this loss was transferred from the companies to RMA.

years after RMA implemented a quota share, the insurance companies retained $7,422 million (76 percent) of the program's $9,744 million in total premiums.[52] Thus, during the period that RMA was improving its program monitoring, the portion of premiums that companies retained stayed about the same, the crop insurance program grew, and the potential amount of companies' underwriting gains increased. The last time RMA had an opportunity to assess and change the level of sharing in program gains or losses was in 2010 when it completed renegotiating the SRA.

Reducing the portion of premiums that companies retain by, for example, 5 percentage points, could save the government tens of millions of dollars per year by increasing the government's share of the insurance coverage, thereby giving the government more opportunity to reduce its cost by achieving underwriting gains.[53] For example, in 2009, the SRA's quota share provision, which reduced the premiums that companies retained by 5 percentage points, resulted in program cost savings of $121 million for that year. An additional adjustment in the portion of premiums that companies retain could result in comparable savings.

As mentioned earlier, we reported in January 2017 that, absent policy changes, the federal government's fiscal path is unsustainable.[54] However, any savings that could be achieved through the SRA by reducing insurance companies' expected future underwriting gains as a result of reducing the portion of premiums that participating companies may retain would require congressional action to repeal a provision in the 2014 farm bill. This provision requires that any revised SRA be budget neutral with respect to estimates of future underwriting gains for the companies. In addition, the 2014 farm bill requires that if any SRA savings are realized, they have to be used to increase underwriting gains. Given fiscal pressures and the improvement in RMA's program monitoring, an assessment and possible adjustment in the portion of

[52]Appendix VII provides more information on participating insurance companies' retained premiums, the government's quota share, and companies' underwriting gains/losses for 1996 through 2015.

[53]An increase in the government's share of the risk would also expose the government to greater risk of loss in years with unusually high levels of claims. On average, however, the government would be expected to achieve a greater underwriting gain, resulting in program cost savings.

[54]GAO-17-237SP.

premiums that participating insurance companies retain may be warranted.

Conclusions

Federally subsidized crop insurance, which helps farmers manage the risk inherent in farming, is one of the most important programs in the farm safety net. USDA and private insurance companies share in the risk of loss and the opportunity for gain associated with crop insurance policies. The 2009 USDA-commissioned study estimates an annual rate of return that would allow insurance companies participating in the crop insurance program to have expected earnings that are equal to earnings from alternative investment opportunities relative to the risk assumed—a reasonable or market-based rate of return. However, the reasonable rate of return has declined since the 2011 SRA. This decline indicates that the current target rate of return for the federal crop insurance program exceeds the reasonable rate of return. If Congress were to direct RMA to adjust the participating insurance companies' target rate of return to reflect market conditions, the underwriting gains that insurance companies receive would potentially be reduced, and any such reduction would not affect the premiums that farmers pay. Such an adjustment would, however, reduce the expected cost of the crop insurance program and achieve expected budgetary savings for the federal government, which could be used for deficit reduction or other purposes, such as other farm programs or enhancements of crop insurance products available to farmers. However, any savings that could be achieved through the SRA by reducing companies' expected future underwriting gains as a result of reducing the target rate of return would require congressional action to repeal a provision in the 2014 farm bill because this provision requires that any revised SRA is to be budget neutral with respect to estimates of future underwriting gains for the companies.

In addition, the portion of program premiums that participating insurance companies retain—which provides the companies with financial incentive to accurately adjust farmers' loss claims—has changed little since 2000. The last time RMA had an opportunity to assess and change the level of portion of premiums retained was in 2010 when it completed renegotiating the SRA. Given the improvement in RMA's ability to monitor the program, an additional assessment and possible adjustment in the portion of premiums retained by participating insurance companies may be appropriate. Such an adjustment could generate significant cost savings for the program. However, because a provision in the 2014 farm bill requires that any revised SRA is to be budget neutral with respect to estimates of future underwriting gains for the companies, any savings that

could be achieved through the SRA by reducing companies' expected future underwriting gains as a result of reducing the portion of premiums retained by participating insurance companies are not allowed under current law and would also require congressional action to repeal this provision in the 2014 farm bill.

Moreover, RMA sought to make A&O expense subsidies more stable and dependable when it negotiated the 2011 SRA, and the current calculation method has resulted in relatively modest fluctuations in A&O expense subsidies for corn, soybeans, and wheat, the program's three leading crops. However, our analysis shows the SRA's calculation method also resulted in substantial subsidy fluctuations for many crops, states, and counties with double-digit decreases followed by double-digit increases in some cases. Because large decreases in A&O expense subsidies can disrupt program delivery, and the sustainability of the program's delivery system in states and counties that experience large fluctuations can be compromised, an adjustment to the A&O expense subsidy calculation method that reduces the effects of changes in premiums caused by changes in crop prices or other factors when RMA renegotiates the SRA, could help RMA reduce year-to-year fluctuations in the A&O expense subsidies that companies receive at the crop, state, and county levels.

Matter for Congressional Consideration

To reduce the cost of delivering the crop insurance program, Congress should consider repealing the 2014 farm bill requirement that any revision to the standard reinsurance agreement not reduce insurance companies' expected underwriting gains, and directing the Risk Management Agency to, during the next renegotiation of the agreement, (1) adjust the participating insurance companies' target rate of return to reflect market conditions and (2) assess the portion of premiums that participating insurance companies retain and, if warranted, adjust it.

Recommendation for Executive Action

To reduce year-to-year fluctuations in the administrative and operating expense subsidies that companies receive at the crop, state, and county levels, we recommend that the Secretary of Agriculture direct the Administrator of the Risk Management Agency to consider adjusting the administrative and operating expense subsidy calculation method in a way that reduces the effects of changes in premiums caused by changes in crop prices or other factors when it renegotiates the standard reinsurance agreement.

Agency Comments and Our Evaluation

We provided USDA with a draft of this report for review and comment. RMA, responding on behalf of USDA, stated in its written comments (see app. VIII) that it had no comment on the matter for congressional consideration. RMA also stated that, consistent with our recommendation, it will examine with insurance companies the potential to reduce variations in A&O expense subsidies the next time the SRA is renegotiated.

RMA stated that the 2011 SRA produced substantial savings for taxpayers of approximately $4.5 billion, which was accomplished with no significant disruption of service. RMA also stated that our report omits the SRA's success. We agree that the 2011 SRA produced successful results, and we discuss some of them in our report. For example, the report states that the Office of Management and Budget estimated the 2011 SRA's 10-year budgetary savings would be about $6 billion and that the national cap on annual A&O expense subsidies controls government costs when crop prices rise. In addition, the report states that the 2011 SRA's national cap on annual A&O subsidies was successful in stabilizing the overall subsidy amount. In addition, we noted that for the three leading crops—corn, soybeans, and wheat—A&O subsidy fluctuations were relatively modest and linked these modest fluctuations to the 2011 SRA's A&O subsidy calculation method. However, as we state in the report, our analysis also found substantial subsidy fluctuations for many crops, states, and counties.

Further, RMA stated that our report gives the impression that the cap on A&O expense subsidies negatively impacted service to farmers and that stabilizing A&O subsidies would not lead to any discernible difference in service to farmers. However, crop insurance industry organization documents suggest that reductions in A&O subsidies could have negative effects. As we state in the report, according to crop insurance industry organization documents, reductions in A&O subsidies may adversely affect the services provided to farmers. Furthermore, in the 2011 SRA, RMA sought to stabilize A&O subsidies, according to an RMA document, which states that "because the A&O subsidy will be less vulnerable to extreme commodity price changes, companies and their agents will enjoy more stable and dependable subsidies in the future to support the cost of delivering the program," making the program more sustainable over time. According to this RMA document, by providing relatively stable A&O payments and a cap on agent commissions, the new SRA will allow for a more sustainable delivery system in the future, protecting producers, companies, and taxpayers.

As agreed with your office, unless you publicly announce the contents of this report earlier, we plan no further distribution until 30 days from the report date. At that time, we will send copies of this report to the appropriate congressional committees; the Secretary of Agriculture; the Director, Office of Management and Budget; and other interested parties. In addition, this report will be available at no charge on the GAO website at http://www.gao.gov.

If you or your staff members have any questions about this report, please contact me at (202) 512-3841 or morriss@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. Key contributors to this report are listed in appendix IX.

Sincerely yours,

Steve D. Morris
Director, Natural Resources and Environment

Appendix I: Objectives, Scope, and Methodology

Our objectives were to examine (1) the changes, if any, in the distribution of administrative and operating (A&O) expense subsidies due to the implementation of the 2011 standard reinsurance agreement's (SRA) national cap on subsidies, (2) the extent to which the federal crop insurance program's target rate of return reflects market conditions and (3) opportunities, if any, for the federal government to reduce its delivery costs for the program.

To address these objectives, we reviewed, among other things, sections of 2011 SRA drafts and the final 2011 SRA; Risk Management Agency (RMA) documents on the development and implementation of the 2011 SRA; crop insurance industry documents; provisions of the Food, Conservation, and Energy Act of 2008 (2008 farm bill), the Agricultural Act of 2014 (2014 farm bill), the Agricultural Risk Protection Act of 2000; prior GAO reports; and standards for internal control in the federal government. We also interviewed RMA officials to discuss the development and implementation of the 2011 SRA.

To examine the changes, if any, in the distribution of A&O expense subsidies due to the implementation of the 2011 SRA's national cap on subsidies, we reviewed and analyzed RMA crop insurance data by state, county, and crop for 2010 through 2015. We chose this time frame to examine changes associated with the implementation of the 2011 SRA because it contained the most recent data available at the time of our review. We analyzed changes in A&O subsidies per policy by state, county, and crop to identify and summarize trends during 2011 through 2015. We used A&O subsidies per policy because RMA used this benchmark in its development of the 2011 SRA. The RMA data we used provided unadjusted A&O subsidy amounts (i.e., the amounts before adjustment in accordance with the 2011 SRA's cap on total A&O subsidies for policy types that are subject to this cap). Based on the 2011 SRA's provisions and information from RMA officials, we performed calculations to convert these amounts to adjusted A&O subsidy amounts. We compared our adjusted A&O subsidy amounts with other RMA data—such as state and national totals—to confirm that our adjustments were accurate.

To examine the extent to which the federal crop insurance program's target rate of return reflects market conditions, our work included reviewing a 2009 study commissioned by the U.S. Department of Agriculture (USDA), the *Rate of Return Update - 2008: Reasonable Rate*

of Return Section 3.1.[1] This study derived, for the 20 years from 1989 through 2008, the annual rate of return on equity that companies participating in the federal crop insurance program should be expected to earn. We identified the major factors that the study used to estimate the reasonable rate of return and collected data on these factors from sources of financial information such as *Value Line Investment Survey*.[2] We then extended the study's results to estimate the reasonable rate of return on equity for 2009 through 2015, years that were not included in the study. In addition, for the 20 years from 1996 through 2015, we summarized RMA data on the actual rates of return on retained premiums of participating insurance companies. Additional information on our methods for this objective is in appendix V.

To examine opportunities, if any, for the federal government to reduce its delivery costs for the program, we reviewed and summarized RMA data on companies' underwriting gains and risk sharing as expressed by total program premiums and premiums retained by companies for the 20 years from 1996 through 2015. We also reviewed the 2005 SRA and 2011 SRA sections on risk sharing, as well as crop insurance industry documents, including industry responses to 2011 SRA drafts. Regarding RMA's program monitoring, we reviewed RMA documents on data mining and other program integrity efforts, USDA Office of the Inspector General reports, and previous GAO reports including our 2005 report on fraud, waste, and abuse,[3] and our 2012 report that examined RMA's data mining.[4]

To evaluate the reliability of the RMA data, we reviewed an assessment for a previous GAO study, reviewed agency documentation related to the data systems, and obtained updated information on the data systems from knowledgeable officials. We assessed the reliability of the data from the 2009 USDA-commissioned study and the financial information

[1]We also used a related report, Milliman, Inc., *Historical Rate of Return Analysis,* a report prepared at the request of the Risk Management Agency, U.S. Department of Agriculture, August 18, 2009.

[2]*Value Line Investment Survey* is an independent investment advisory service which provides extensive coverage on approximately 1,700 publicly traded stocks.

[3]GAO, *Crop Insurance: Actions Needed to Reduce Program's Vulnerability to Fraud, Waste, and Abuse,* GAO-05-528 (Washington, D.C.: Sept. 30, 2005).

[4]GAO, *Crop Insurance: Savings Would Result from Program Changes and Greater Use of Data Mining*, GAO-12-256 (Washington, D.C.: Mar. 13, 2012).

sources by reviewing relevant documentation. In addition, for one of the financial information sources, we reviewed an assessment for a previous GAO study. In each case, we concluded that the data were sufficiently reliable for the purposes of this report.

We conducted this performance audit from April 2015 to July 2017 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence we obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Appendix II: Percentage Change in the Average Administrative and Operating Subsidy, by Crop, 2011-2015

Table 3: Annual Percentage Change in the Average Administrative and Operating Expense Subsidy per Policy, by Crop, 2011-2015

Crop	2011	2012	2013	2014	2015
Adjusted gross revenue-lite[a]	-42.3	5.8	4.4	28.7	n/a
Adjusted gross revenue[a]	-38.9	10.8	1.7	41.2	n/a
Alfalfa seed	-43.1	15.6	31.1	56.9	-5.7
All other citrus trees	-43.0	29.1	-3.5	21.6	-3.7
All other grapefruit	-30.0	7.2	-22.7	n/a	n/a
Almonds	-41.5	29.4	8.4	74.5	36.0
Annual forage	n/a	n/a	n/a	n/a	0.0
Apiculture	13.7	40.2	-36.2	0.2	6.6
Apples	-38.4	30.3	10.7	45.5	18.6
Avocado trees	-27.8	3.9	0.4	37.1	9.7
Avocados	-22.2	-2.4	6.7	4.7	-7.3
Banana	-27.5	27.2	0.8	52.7	-75.8
Banana tree	117.8	13.9	7.9	-36.4	-27.3
Barley	7.6	19.5	-5.3	-6.5	27.1
Blueberries	-18.3	13.5	12.1	15.2	-0.8
Buckwheat	-20.3	19.5	9.5	33.3	-3.6
Burley tobacco	-39.3	41.7	-16.3	86.1	-2.9
Cabbage	-2.0	-18.8	46.7	22.5	25.9
Camelin	n/a	n/a	-45.4	n/a	n/a
Canola	-8.6	-2.8	-2.5	-9.6	5.7
Carambola trees	-37.1	-16.8	181.5	31.3	45.9
Cherries	-39.1	17.5	12.0	26.5	8.5
Chili peppers	-45.9	-24.6	70.5	-16.1	-2.6
Cigar binder tobacco	-31.5	26.5	6.2	13.5	18.4
Cigar filler tobacco	-49.2	24.0	35.1	26.0	6.3
Cigar wrapper tobacco	-40.8	-22.9	14.2	30.4	-15.5
Citrus I	-34.5	19.3	n/a	n/a	n/a
Citrus II	-21.0	24.8	n/a	n/a	n/a
Citrus III	-36.1	11.0	n/a	n/a	n/a
Citrus IV	-32.0	18.6	n/a	n/a	n/a
Citrus trees I	-47.3	n/a	n/a	n/a	n/a
Citrus trees II	-51.4	n/a	n/a	n/a	n/a
Citrus trees III	76.9	n/a	n/a	n/a	n/a
Citrus trees IV	-40.3	n/a	n/a	n/a	n/a
Citrus trees V	-63.2	n/a	n/a	n/a	n/a

Crop	2011	2012	2013	2014	2015
Citrus V	-39.6	21.5	n/a	n/a	n/a
Citrus VI	n/a	n/a	n/a	n/a	n/a
Citrus VII	-25.2	31.7	n/a	n/a	n/a
Citrus VIII	-39.9	24.3	n/a	n/a	n/a
Clams	-26.4	-21.2	47.2	18.6	84.5
Coffee	-69.1	-6.7	-14.7	49.9	33.2
Coffee tree	-47.4	-6.8	-51.3	195.0	47.1
Corn	2.0	-0.7	-4.4	-6.5	7.2
Cotton	36.0	-19.5	-12.2	14.2	-4.8
Cotton extra-long staple	-34.0	62.4	-8.8	150.3	11.8
Cranberries	-60.0	28.8	30.7	-14.7	-9.1
Cucumbers	n/a	n/a	n/a	n/a	0.5
Cultivated wild rice	-42.9	63.5	26.6	91.4	16.2
Dark air tobacco	-44.6	27.0	-2.8	44.6	12.1
Dry beans	-49.8	80.5	-27.1	25.6	-7.3
Dry peas	-40.9	24.0	-7.2	-3.8	41.5
Early and midseason oranges	-63.7	12.6	7.2	117.1	-39.0
Figs	-25.4	11.7	1.9	110.7	14.2
Fire cured tobacco	-38.1	14.8	-5.3	57.4	9.1
Flax	-38.5	61.0	-10.9	28.9	-9.2
Flue cured tobacco	-28.4	14.3	17.7	53.2	-16.0
Forage production	-34.6	28.7	36.2	41.3	-0.3
Forage seeding	-41.3	25.6	5.3	3.5	21.7
Fresh apricots	-21.0	24.0	6.9	11.7	34.4
Fresh freestone peaches	-32.8	-10.8	16.4	67.1	56.0
Fresh market beans	n/a	-9.0	-31.5	-11.2	40.8
Fresh market sweet corn	-23.7	9.0	22.2	25.2	-15.3
Fresh market tomatoes	-23.7	38.2	14.5	-9.5	-21.3
Fresh nectarines	-20.7	-7.1	22.3	42.3	60.3
Grain sorghum	0.1	4.8	3.1	-9.3	7.6
Grapefruit	-45.0	10.8	240.4	25.7	4.4
Grapefruit trees	-40.6	72.2	3.8	28.3	14.2
Grapes	-29.6	8.2	12.6	43.3	3.8
Grass seed	n/a	6.3	4.2	63.0	85.8
Green peas	-24.2	16.1	22.0	3.6	2.5
Hybrid corn seed	-15.9	22.9	9.8	-22.1	-16.4
Hybrid sorghum seed	-5.8	57.2	12.7	-34.3	-0.5

Crop	2011	2012	2013	2014	2015
Late oranges	-63.0	43.9	-9.0	114.3	25.7
Lemon trees	n/a	n/a	n/a	n/a	n/a
Lemons	-35.7	9.7	24.1	41.3	17.9
Lime trees	n/a	n/a	n/a	n/a	18.8
Macadamia nuts	-23.9	14.8	10.1	14.4	-24.5
Macadamia trees	-46.0	20.3	6.5	10.5	11.3
Mandarins	-38.5	22.1	2.4	n/a	n/a
Mandarins and tangerines	n/a	n/a	n/a	2696.3	19.1
Mango trees	-56.6	220.1	8.0	31.2	26.8
Maryland tobacco	-71.3	34.5	-42.4	58.7	-79.1
Millet	-10.6	-8.7	106.0	-16.5	-23.7
Minneola tangelos	-38.7	35.1	6.0	n/a	n/a
Mint	-37.1	-0.6	-13.2	0.5	-18.8
Mustard	-34.0	21.1	18.5	-22.3	15.6
Navel oranges	-39.6	10.3	4.5	n/a	n/a
Nursery (FGC)	-28.0	10.5	5.0	22.9	4.5
Oats	-31.7	45.8	17.3	4.6	5.1
Olives	n/a	n/a	-19.0	18.7	26.7
Onions	-26.4	8.6	20.5	27.2	7.0
Orange trees	-27.7	22.8	-7.5	14.6	-4.8
Oranges	n/a	n/a	n/a	69.7	7.8
Orlando tangelos	-1.1	2.1	-25.0	n/a	n/a
Oysters	n/a	n/a	n/a	n/a	n/a
Papaya	-68.2	21.8	27.8	-20.5	1817.6
Papaya tree	15.3	-72.2	51.4	325.4	5.1
Pasture rangeland forage	21.9	5.9	-0.7	14.2	5.0
Peaches	-27.2	25.8	3.5	27.9	-27.7
Peanuts	-30.1	42.0	-35.8	49.0	-3.3
Pears	-41.6	24.2	9.3	38.9	49.2
Pecans	-36.1	15.0	4.7	51.1	2.1
Peppers	-46.4	3.0	32.4	19.0	-44.3
Pistachios	n/a	n/a	-4.0	54.7	49.4
Plums	-32.7	-3.1	-3.3	6.5	38.9
Popcorn	-5.4	31.9	-5.9	16.3	-3.6
Potatoes	-31.4	11.7	3.1	18.6	0.9
Processing apricots	-44.2	25.2	4.8	70.6	30.1
Processing beans	-13.9	-1.4	-13.5	23.4	10.7

Crop	2011	2012	2013	2014	2015
Processing cling peaches	-34.5	0.6	10.3	42.9	15.5
Processing freestone peaches	-42.6	23.3	6.8	54.5	-3.2
Prunes	-42.2	-0.9	-1.7	79.4	71.2
Pumpkins	3.1	5.6	-15.2	-9.7	5.3
Raisins	-40.8	32.4	-24.3	73.1	-35.9
Rice	-33.3	-1.7	6.7	61.3	-29.4
Rio red and star ruby	-37.8	11.9	17.5	14.1	-10.6
Ruby red grapefruit	-73.7	1.9	-7.7	33.3	-23.0
Rye	-39.8	47.1	54.2	0.9	14.8
Safflower	-27.9	33.6	6.8	18.2	-24.0
Sesame	n/a	16.9	16.9	-6.3	24.9
Silage sorghum	12.8	17.5	114.6	-24.4	-9.3
Soybeans	-5.2	-1.3	-6.3	2.6	-1.1
Strawberries	n/a	n/a	-7.5	-40.2	192.5
Sugar beets	-32.8	33.1	1.9	-21.6	7.1
Sugarcane	-32.7	8.5	23.9	14.4	-43.3
Sunflowers	-13.0	-3.4	-2.8	-6.6	-4.5
Sweet corn	-39.6	32.2	12.0	2.2	-7.7
Sweet oranges	-44.6	5.7	-7.3	n/a	n/a
Sweet potatoes	n/a	24.4	-28.3	43.4	-37.3
Table grapes	-27.0	-11.2	0.7	36.1	1.3
Tangelos	n/a	n/a	n/a	1268.6	17.4
Tangerine trees	n/a	n/a	-13.4	22.0	45.7
Tangors	n/a	n/a	n/a	30.5	13.8
Tomatoes	-54.1	7.6	-8.8	52.1	26.7
Valencia oranges	-42.0	22.5	0.1	n/a	n/a
Walnuts	-19.9	40.1	8.2	54.0	9.2
Wheat	-2.8	8.3	-1.2	-10.9	-6.9

Source: GAO analysis of U.S. Department of Agriculture's Risk Management Agency (RMA) data. | GAO-17-501

Notes: This table includes all crops that were insured under the federal crop insurance program from 2011 through 2015. In this table, n/a means not applicable. In certain years, federal crop insurance was not available for some crops. In other cases, RMA changed the crop name.

[a]Adjusted gross revenue-lite and adjusted gross revenue are types of policies that insure revenue of an entire farm rather than an individual crop.

Appendix III: Percentage Change in the Average Administrative and Operating Subsidy, by State, 2011-2015

Table 4: Annual Percentage Change in the Average Administrative and Operating Expense Subsidy per Policy, by State, 2011-2015

(In percentages)

State	2011	2012	2013	2014	2015
Alabama	-6.3	-6.2	-12.6	10.9	4.7
Alaska	23.1	23.3	34.8	-11.6	-14.1
Arizona	29.8	-30.8	-13.4	8.8	-6.5
Arkansas	-11.5	-12.8	1.9	2.4	0.4
California	-32.1	11.7	8.2	65.7	14.0
Colorado	-18.2	21.7	4.4	-9.9	-5.1
Connecticut	-27.9	9.7	0.3	15.2	28.7
Delaware	-11.4	-16.7	-9.8	-1.2	0.1
Florida	-24.3	15.4	15.3	15.8	0.5
Georgia	-4.2	-15.2	-20.8	23.9	5.7
Hawaii	-51.0	5.0	-0.3	16.9	-5.7
Idaho	-18.3	-4.2	-1.7	2.9	12.1
Illinois	9.9	-5.1	-15.1	-4.3	8.0
Indiana	10.9	-4.0	-13.3	-7.0	6.1
Iowa	8.8	1.9	-1.7	-8.6	-3.2
Kansas	-5.5	6.4	-9.4	-5.9	1.1
Kentucky	-4.1	3.7	-8.6	5.7	9.0
Louisiana	-22.8	-0.7	3.5	0.7	-0.7
Maine	-20.8	14.8	11.5	17.8	8.9
Maryland	-8.8	-6.8	-7.7	0.8	5.9
Massachusetts	-45.1	22.0	4.4	22.5	-2.6
Michigan	-4.4	-2.2	-6.4	10.3	6.0
Minnesota	-2.3	3.1	5.5	-7.2	-5.9
Mississippi	-21.9	-8.8	1.7	1.2	6.0
Missouri	-6.2	2.1	-8.1	6.9	18.6
Montana	-8.1	3.6	-0.2	-9.2	6.0
Nebraska	-3.4	4.6	-7.9	-6.1	3.8
Nevada	-24.7	1.6	60.7	91.0	17.3
New Hampshire	-27.3	41.1	-8.7	32.4	15.7
New Jersey	-5.9	-5.4	1.7	-2.3	-1.4
New Mexico	-2.2	41.8	-2.1	-3.8	-16.6
New York	-16.3	7.0	-0.7	21.5	12.2
North Carolina	-9.6	-13.7	-8.7	17.7	3.4
North Dakota	6.4	-9.9	9.4	0.7	0.8

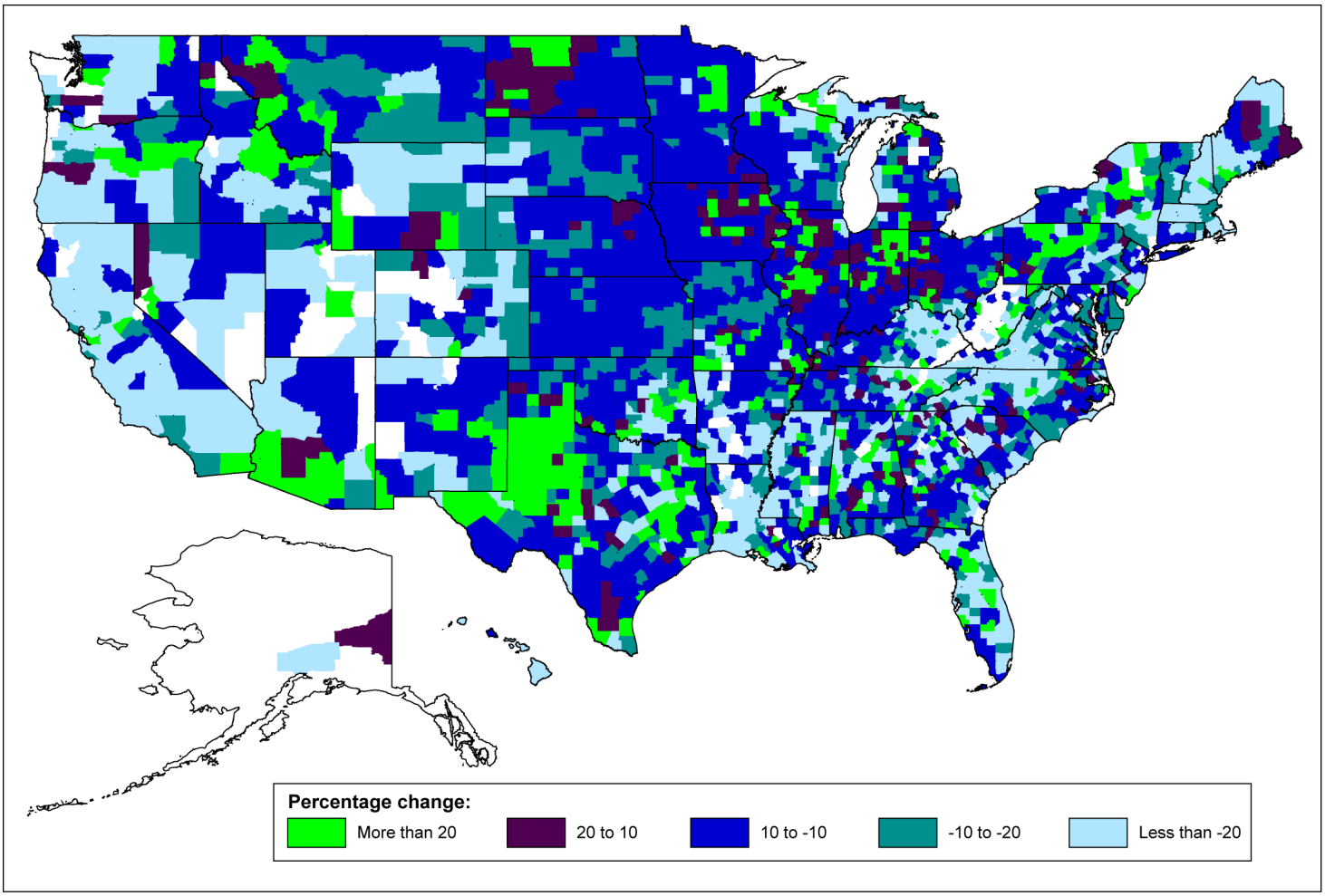
(In percentages)

State	2011	2012	2013	2014	2015
Ohio	7.1	-0.6	-15.7	-2.4	3.3
Oklahoma	-2.3	12.0	4.5	-7.6	-11.6
Oregon	-16.1	-1.5	3.5	8.5	7.3
Pennsylvania	-12.4	0.2	3.0	14.2	10.5
Rhode Island	-25.1	1.7	13.1	5.8	8.6
South Carolina	-12.7	-6.5	-10.1	12.5	2.1
South Dakota	-9.4	17.4	1.6	4.1	5.1
Tennessee	-10.5	-5.6	-12.0	8.5	0.8
Texas	20.5	-0.2	-6.2	-0.9	-9.2
Utah	-21.7	6.4	27.2	-4.1	16.5
Vermont	-11.9	29.4	21.7	10.1	20.6
Virginia	-11.7	-1.8	-6.2	13.4	11.6
Washington	-15.7	1.6	-3.0	18.3	19.7
West Virginia	-24.0	1.3	-2.6	10.5	13.4
Wisconsin	-5.8	2.7	-4.7	-2.0	5.7
Wyoming	-20.4	9.1	17.7	9.9	1.8

Source: GAO analysis of U.S. Department of Agriculture's Risk Management Agency data. | GAO-17-501

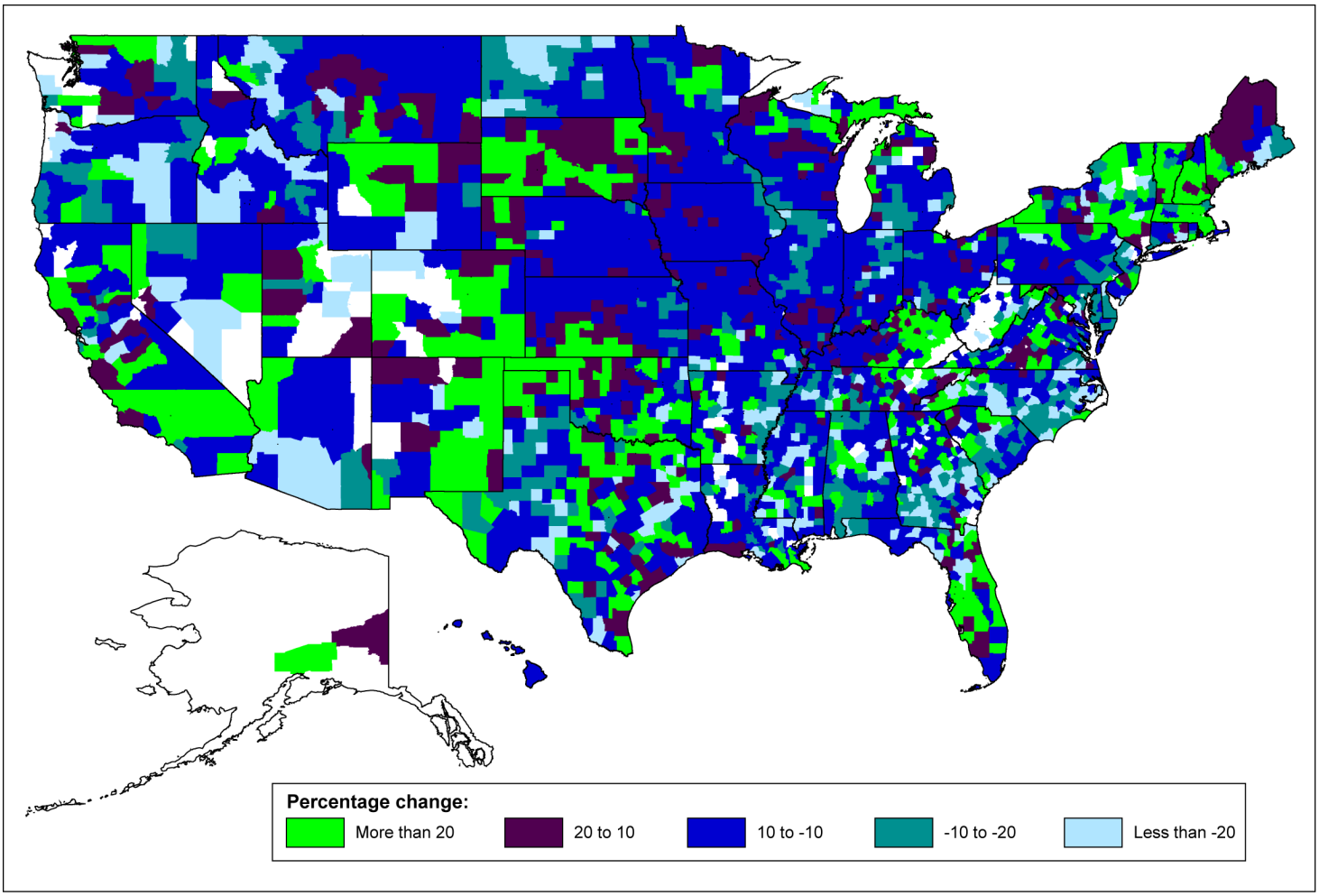
Appendix IV: Percentage Change in the Average Administrative and Operating Subsidy, by County, 2011-2015

Figure 8: Percentage Change in the Average Administrative and Operating Expense Subsidy per Policy, by County, 2011



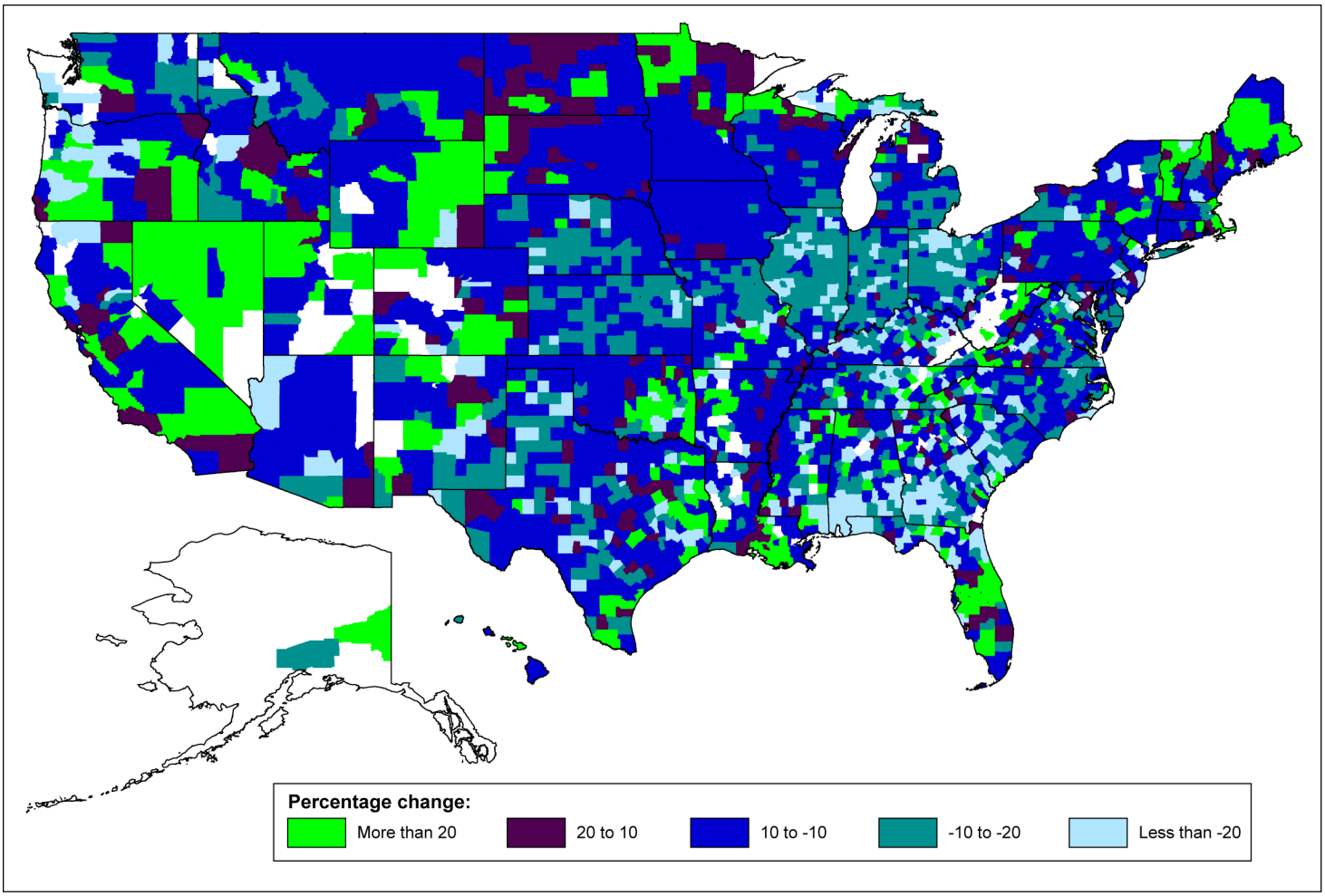
Sources: GAO analysis of U.S. Department of Agriculture's Risk Management Agency data; MapInfo (map). | GAO-17-501

Figure 9: Percentage Change in the Average Administrative and Operating Expense Subsidy per Policy, by County, 2012



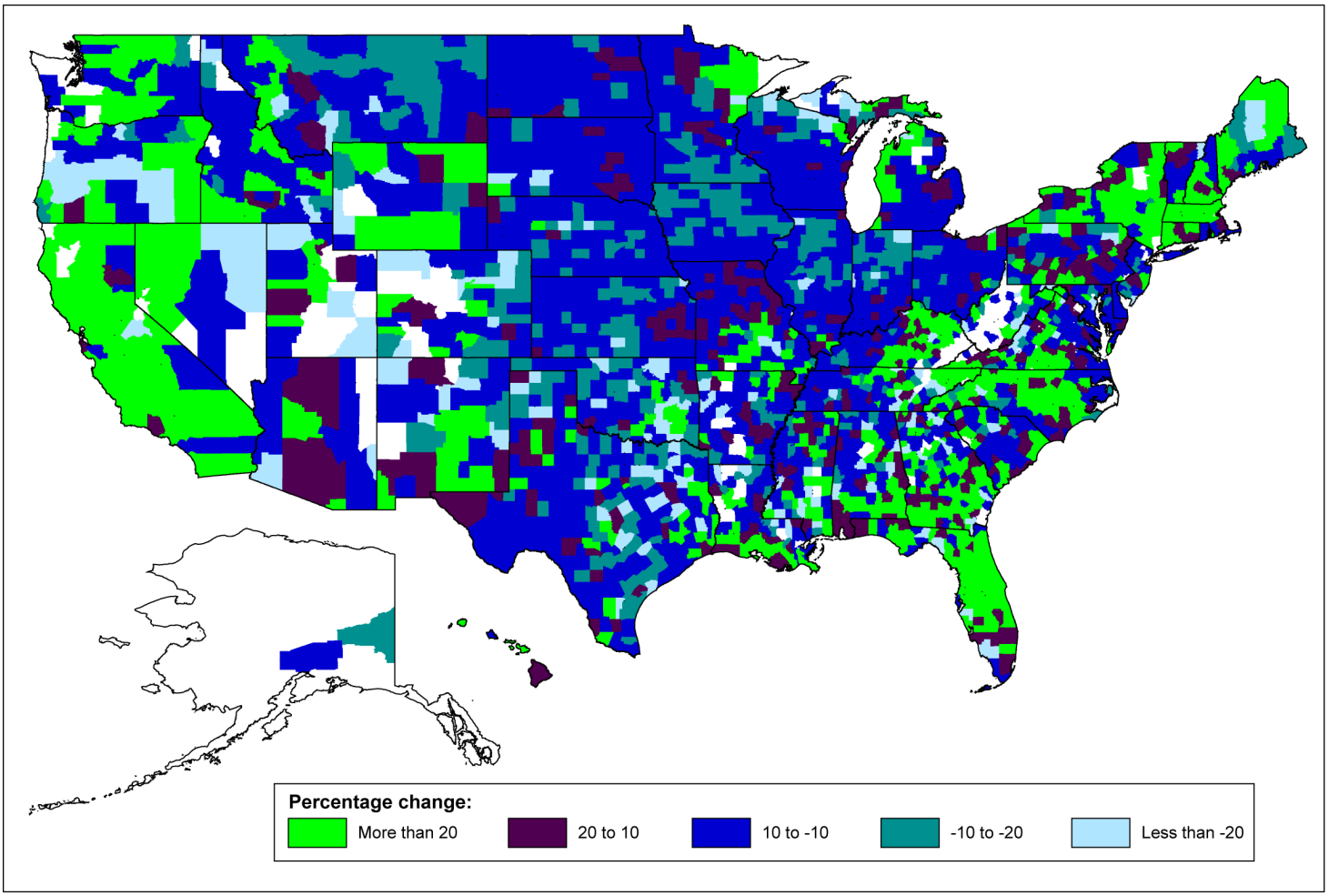
Sources: GAO analysis of U.S. Department of Agriculture's Risk Management Agency data; MapInfo (map). | GAO-17-501

Figure 10: Percentage Change in the Average Administrative and Operating Expense Subsidy per Policy, by County, 2013



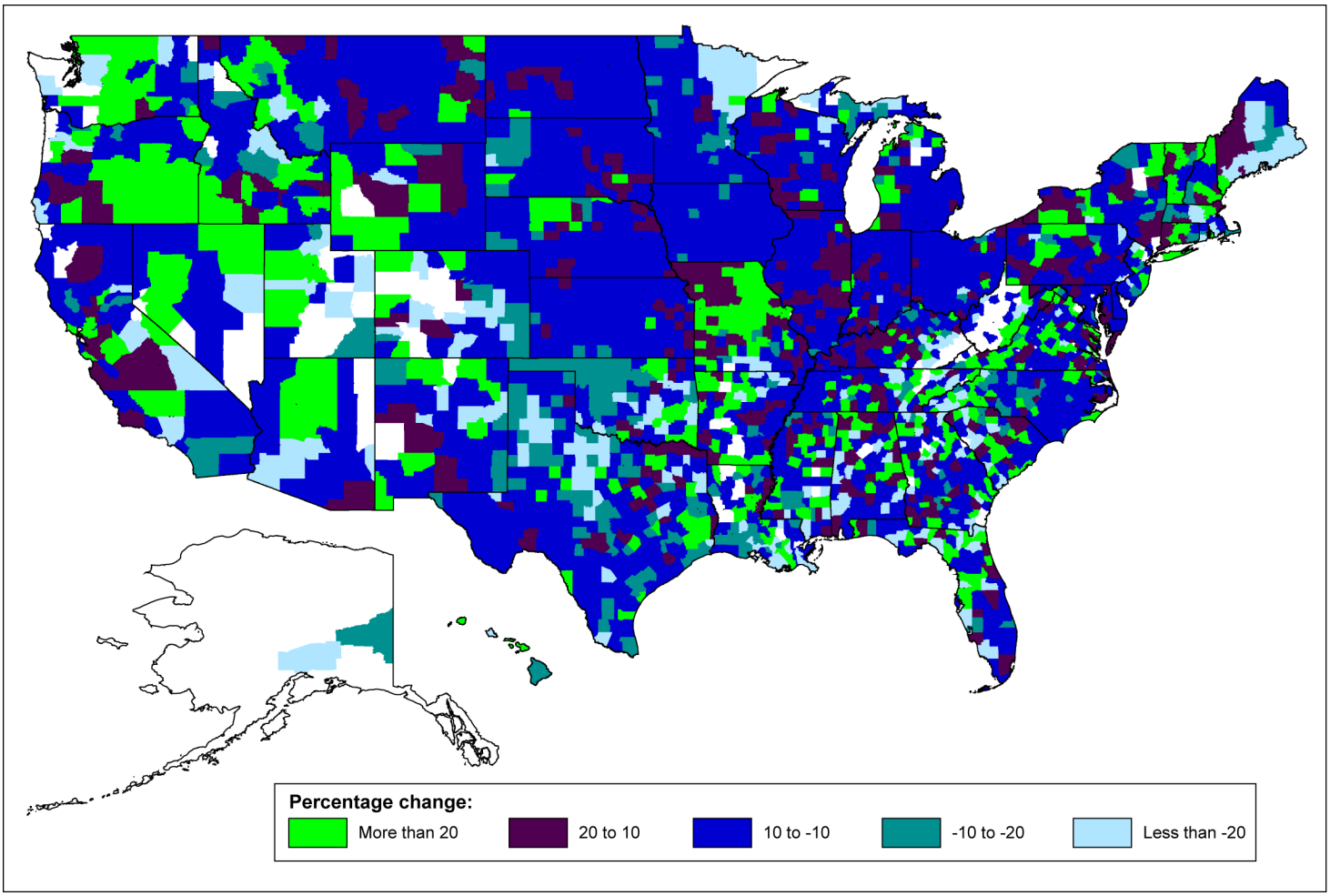
Sources: GAO analysis of U.S. Department of Agriculture's Risk Management Agency data; MapInfo (map). | GAO-17-501

Figure 11: Percentage Change in the Average Administrative and Operating Expense Subsidy per Policy, by County, 2014



Sources: GAO analysis of U.S. Department of Agriculture's Risk Management Agency data; MapInfo (map). | GAO-17-501

Figure 12: Percentage Change in the Average Administrative and Operating Expense Subsidy per Policy, by County, 2015



Sources: GAO analysis of U.S. Department of Agriculture's Risk Management Agency data; MapInfo (map). | GAO-17-501

Appendix V: Analysis of Reasonable Rate of Return

A 2009 study commissioned by the U.S. Department of Agriculture (USDA) estimated a reasonable rate of return for crop insurance providers for 1989 through 2008.[1] This study used the opportunity cost of capital as the definition of the reasonable rate of return for crop insurance. In order to determine a reasonable rate of return for companies participating in the federal crop insurance program, the 2009 study averaged the results obtained using two methods: the capital asset pricing model and the discounted cash flow model.

Capital Asset Pricing Model

The capital asset pricing model uses the return on a risk-free asset, usually a U.S. Treasury security, to estimate the additional return an investor should expect as compensation for the additional risk associated with alternative investments. The capital asset pricing model uses the following equation to calculate the cost of capital:

K= $r_f + \beta * r_d$

in which r_f is the risk-free rate, β is the beta coefficient, and r_d is the equity risk premium.

Risk-Free Interest Rate in the Capital Asset Pricing Model

According to a 2000 study, movements in the cost of capital for the insurance industry closely follow movements in the risk-free rate of return.[2] The 2009 USDA-commissioned study used the 3-month Treasury bill secondary markets, 5-year constant maturity Treasury bond, and the 20-year constant maturity Treasury bond as the risk-free interest rates to estimate the short-, intermediate-, and long-term costs of capital. The 2009 study used interest rate data from the Federal Reserve for the selected months of April, May, and June to estimate the cost of capital for each year reviewed.[3] We calculated the cost of capital using April, May, and June interest rates in the same way as the USDA-commissioned study. In addition, we calculated the cost of capital using the full 12-month average risk-free rate for each year as a test for the robustness of our

[1]Milliman, Inc., *Rate of Return Update - 2008: Reasonable Rate of Return Section 3.1*, a report prepared at the request of the Risk Management Agency, U.S. Department of Agriculture, June 23, 2009.

[2]Walter Kielholz, "The Cost of Capital for Insurance Companies," *The Geneva Papers on Risk and Insurance. Issues and Practice*, 25(1), 12 (2000).

[3]The reinsurance year begins on July 1.

results. Although our calculations begin with 2009 data, we note the significant decrease in interest rates from 2008, the last year covered by the USDA-commissioned study, to 2009, the first year for which we updated the analysis included in the study, as context for the downward trend in interest rates from 2009 through 2015. From 2008 to 2009, the average risk-free interest rate—defined as the average of the rates on the 3-month, 5-year, and 20-year Treasury securities—decreased from 3.1 percent to 2.2 percent. Furthermore, from 2009 through 2015, the average risk-free rate generally continued to decrease.

Relative Volatility Measure (Beta Coefficient) in the Capital Asset Pricing Model

The "beta coefficient" (β) is an estimate of the relative volatility of a particular security compared with that of a proxy for the market, normally the S&P 500 index. The USDA-commissioned study gathered estimates of the beta coefficients for a sample of publicly traded property and casualty insurance companies.[4] According to the study, beta coefficients should be adjusted to account for the long-run tendency of beta coefficients to revert to the market mean value of "1".[5] We calculated the cost of capital with both unadjusted and adjusted beta coefficients for each year. The average unadjusted beta coefficient for property and casualty insurance companies from 2009 through 2015 was 0.94. The average adjusted beta coefficient for property and casualty insurance from 2009 through 2015 was 0.98.[6] These results indicate that the property and casualty insurance industry has generally experienced slightly less volatility, on average, than the market as a whole.

Equity Risk Premium in the Capital Asset Pricing Model

The equity risk premium" ("r_d") is the additional return expected by investors for risk. That is, the equity risk premium is the average difference between the return on the risk-free asset and the return on a market portfolio, normally represented by the S&P 500 index. The equity risk premium is an arithmetic mean of this difference for each year beginning in 1926 through the year before which the cost of capital is

[4]We used beta coefficients from the June and July issues of *Value Line Investment Survey*. *Value Line Investment Survey* is an independent investment advisory service that provides extensive coverage on approximately 1,700 publicly traded stocks. We used the June and July issues from 2009 through 2015 to update the analysis included in the 2009 USDA-commissioned study.

[5]The formula for adjusting the beta is the following: Adjusted beta = 0.35 + 0.67 * β.

[6]We used the adjusted beta coefficients in our calculation of the reasonable rate of return.

being estimated.[7] The average equity risk premium fluctuated by no more than 50 basis points from 2009 through 2015.

Our capital asset pricing model calculations estimate that the average cost of capital from 2009 through 2015 was 9.7 percent when calculated using an average of monthly interest rates for April, May, and June of each year. The cost of capital or reasonable rate of return from 2009 through 2015 was 9.6 percent when calculated with a 12-month average of the interest rates for each year.

Discounted Cash Flow Model

According to the 2009 USDA-commissioned study, the discounted cash flow model is perhaps the most widely used method for estimating the cost of capital, particularly in regulated industries, such as public utilities. The discounted cash flow model is constructed on the assumption that the cost of an investment (for instance, a stock) will equal the present value of cash flows (such as future dividend payments or capital gains) resulting from the investment. If the present value of cash flows resulting from the investment does not equal the price, investors will bid on (or against) the investment until the values are equal. The USDA-commissioned study collected data for a sample of publicly traded property and casualty insurance companies from *Value Line Investment Survey*.

[7]We obtained equity risk premium data from the *2015 Ibbotson Stocks, Bonds, Bills, and Inflation (SBBI) Classic Yearbook* and the *2016 Ibbotson Stocks, Bonds, Bills, and Inflation (SBBI) Yearbook.*

The discounted cash flow model uses the following equation to calculate the cost of capital:

$$K = \frac{D_1}{P_0} + g$$

The first element, $\frac{D_1}{P_0}$, is the dividend yield expected in the first year. The dividend, D_1, reported by *Value Line Investment Survey*, is the estimate of the cash dividends payable in the next 12 months. P_0 is the price of the stock at the beginning of the 12-month period.

The second element in the discounted cash flow model, g, is an average of the growth forecast method and fundamental analysis. The growth forecast method is an estimate of growth based on an equally weighted average of 10-year historical earnings and dividends, 5-year historical earnings and dividends, and a Value Line analyst's forecasted dividends and earnings. Sustainable ("fundamental") growth is the rate at which companies retain and reinvest earnings. Fundamental analysis assumes that retained earnings can be reinvested and used to produce greater earnings in the future—earnings that might produce higher dividends in the future. Alternately, the company may grow by issuing stock above book value, proceeds from which could finance new investments, thereby generating higher dividends in the future.

The discounted cash flow model thus relies on numerous financial metrics such as historical and forecasted earnings and dividends. However, the property and casualty insurance companies that make up the dataset may not report every figure. For instance, a company may not report dividends in a given year. In these places, *Value Line Investment Survey* may note the missing values. As a result, we performed two sets of discounted cash flow calculations. One set of calculations only included publicly traded property and casualty insurance companies that reported complete historical and forecasted earnings and dividends. However, we also calculated the reasonable rate of return for all publicly traded property and casualty insurance companies covered by *Value Line Investment Survey*; we imputed zeros for missing values. As a result, we are reporting a range for the discounted cash flow results. Thus, the average reasonable rate of return from 2009 through 2015 was 9.6 percent when calculated including only property and casualty insurance companies that reported complete data and 8.4 percent when calculated including all property and casualty insurance companies (imputing "0" for missing values). However, out of concern that imputing zeroes could skew the rate of return estimate downward, we used the higher rate of

return of 9.6 percent based on the companies that reported complete data.

Results

To obtain the reasonable rate of return on equity from 2009 through 2015, we averaged the results of the capital asset pricing model with the results of the discounted cash flow model. According to our calculations, the estimated reasonable rate of return on equity for 2015 was 8.8 percent. The estimated average reasonable rate of return from 2009 through 2015 was 9.6 percent. According to the capital asset pricing model, the average reasonable rate of return from 2009 through 2015 was 9.7 percent. According to the discounted cash flow model, the estimated average reasonable rate of return from 2009 through 2015 was 9.6 percent. The estimated average reasonable rate of return from 1996 through 2015 was 11.0 percent. Estimates of the reasonable rate of return by year for 1989 through 2015 are in table 5.[8]

[8]We calculated the reasonable rate of return by including only discounted cash flow results for property and casualty insurance firms that reported complete financial data. These results are in the discounted cash flow model column in table 5. However, we also calculated discounted cash flow results for all property and casualty firms by imputing zeros in the place of missing values. These results are in the discounted cash flow model (a) column in table 5, where they are presented for comparison with the discounted cash flow model results.

Table 5: Reasonable Rate of Return on Equity of Property and Casualty Insurance Companies, Beta, Inflation, Equity Risk Premium and Interest Rates, 1989 through 2015

Year	Reasonable rate of return (percent)	Capital asset pricing model (percent)	Discounted cash flow model (percent)	Discounted cash flow model (a) (percent)	Beta	Inflation (percent)	Equity risk premium (percent)	Average interest rate (percent)
1989	15.9	16.3	15.4	15.4	0.98	4.8	7.8	8.7
1990	16.2	16.2	16.2	16.2	0.97	5.4	8.0	8.4
1991	15.4	14.8	16.0	16.0	0.98	4.2	7.7	7.3
1992	14.5	13.8	15.2	15.2	0.97	3.0	8.0	6.1
1993	13.8	12.6	14.9	14.9	0.97	3.0	7.9	5.0
1994	13.7	13.8	13.6	13.6	0.99	2.6	7.8	6.0
1995	13.6	13.8	13.4	13.4	0.98	2.8	7.6	6.3
1996	13.3	13.7	12.8	12.8	0.93	3.0	8.0	6.2
1997	12.9	13.5	12.3	12.3	0.90	2.3	8.1	6.2
1998	13.1	13.2	13.0	13.0	0.91	1.6	8.4	5.5
1999	12.7	13.5	11.9	11.9	0.95	2.2	8.6	5.3
2000	13.1	14.5	11.8	11.8	0.96	3.4	8.7	6.2
2001	12.0	12.5	11.4	11.4	0.93	2.8	8.4	4.8
2002	10.8	11.6	10.1	10.1	0.95	1.6	8.0	4.0
2003	9.7	10.2	9.1	9.1	0.98	2.3	7.6	2.7
2004	10.3	10.9	9.8	9.8	0.97	2.7	7.8	3.4
2005	10.7	11.2	10.2	10.2	0.96	3.4	7.8	3.7
2006	11.8	12.6	10.9	10.9	0.99	3.2	7.7	5.0
2007	11.7	12.4	11.0	11.0	0.96	2.8	7.8	4.9
2008	11.5	10.2	12.9	12.9	0.93	3.8	7.7	3.1
2009	11.6	10.5	12.6	10.1	1.05	-0.4	7.9	2.2
2010	10.5	10.5	10.6	8.4	1.02	1.6	8.0	2.2
2011	9.6	10.2	8.9	7.7	1.01	3.2	8.0	2.0
2012	8.9	8.9	9.0	8.4	0.92	2.1	8.0	1.1
2013	8.8	9.3	8.4	8.2	0.92	1.5	8.3	1.3
2014	9.1	9.2	8.9	8.2	0.83	1.6	8.4	1.6
2015	8.8	9.0	8.6	8.1	0.84	0.1	8.3	1.4

Source: GAO analysis of data from the Federal Reserve; *Value Line Investment Survey; 2015 Ibbotson Stocks, Bonds, Bills, and Inflation (SBBI) Classic Yearbook; 2016 Ibbotson Stocks, Bonds, Bills, and Inflation (SBBI) Yearbook*; and a 2009 study commissioned by the U.S. Department of Agriculture. | GAO-17-501

Notes: Reasonable rate of return: Cost of capital estimates are based on an average of the “Capital asset pricing model” and “Discounted cash flow model” columns for each year from 2009 through 2015. We used reasonable rate of return results for 1989 through 2008 from the 2009 USDA-commissioned study.

Capital asset pricing model: Our estimated cost of capital is based on the capital asset pricing model. We used results for 1989 through 2008 from the 2009 USDA-commissioned study.

Discounted cash flow model: We computed the estimated cost of capital for 2009 through 2015 using only property and casualty insurance companies for which all required values were available in Value Line Investment Survey. We used discounted cash flow model results for 1989 through 2008 from the USDA-commissioned study.

Discounted cash flow model (a): We computed the estimated cost of capital for 2009 through 2015 using data from all property and casualty insurance companies included in *Value Line Investment Survey*. We imputed a "0" for missing values. We used discounted cash flow model results for 1989 through 2008 from the 2009 USDA-commissioned study.

Beta: Average beta coefficient for each year from *Value Line Investment Survey*. The beta coefficient is an estimate of the relative volatility of a particular security compared with that of a proxy for the market, normally the S&P 500 index. We used the adjusted beta coefficients in our calculation of the reasonable rate of return. However, to be consistent with a similar table in the 2009 USDA-commissioned study, table 5 shows the unadjusted beta coefficients for 2009 through 2015. We used beta coefficients for 1989 through 2008 from the 2009 USDA-commissioned study.

Inflation: Consumer Price Index-Urban average inflation rate for the year.

Equity risk premium: Equity risk premium from *2015 Ibbotson Stocks, Bonds, Bills, and Inflation (SBBI) Classic Yearbook* and *2016 Ibbotson Stocks, Bonds, Bills, and Inflation (SBBI) Yearbook* based on arithmetic mean of equity risk premium from 1926 through the year before which the cost of capital is being estimated. We used the equity risk premiums for 1989 through 2008 from the 2009 USDA-commissioned study.

Average interest rate: Average of yields on short, intermediate, and long-term U.S. Treasury securities. We used average interest rates for 1989 through 2008 from the 2009 USDA-commissioned study.

The reasonable rate of return estimates in the "Capital asset pricing model," "Discounted cash flow model," and "Discounted cash flow model (a)" columns are based on information as of July 1 of the indicated calendar year. Since July is the inception of the next reinsurance year, however, the reinsurance year is 1 year ahead of the calendar year. The reasonable rate of return for July 1989 should be viewed as the fair return for reinsurance year 1990 (the year from July 1, 1989 through June 30, 1990).

We performed sensitivity analysis on our capital asset pricing model results by testing the impact of different risk-free rates and beta coefficients. None of these tests produced results that contradict our findings.

Appendix VI: Summary of Potential Actions and Estimated Savings for the Crop Insurance Program, 2012 through 2015

From 2012 through 2015, we issued four reports that identified potential actions that could be taken by Congress or the Risk Management Agency to reduce the cost of the crop insurance program and achieve budgetary savings. Table 6 shows the reports, potential government actions we reviewed, and estimated federal dollar savings associated with each potential action, at the time we issued these reports.

Table 6: GAO Reports on Potential Savings in the Crop Insurance Program, 2012 through 2015

Year	Report Title	Potential action to achieve savings	Estimated dollar savings
2015	CROP INSURANCE: Reducing Subsidies for Highest Income Participants Could Save Federal Dollars with Minimal Effect on the Program (GAO-15-356)	Reducing premium subsidies by 15 percentage points for the highest income participants (those that exceeded income limits in place for farm and conservation programs from 2009 through 2013)	More than $70 million from 2009 through 2013
2015	CROP INSURANCE: In Areas with Higher Crop Production Risks, Costs Are Greater, and Premiums May Not Cover Expected Losses (GAO-15-215)	Increasing adjustments of premium rates by as much as 20 percent annually, in areas with higher crop production risks.	Tens of millions of dollars in 2013
2014	CROP INSURANCE: Considerations in Reducing Federal Premium Subsidies (GAO-14-700)	Reducing premium subsidies for revenue insurance policies by 5 percentage points at the low end, up to 20 percentage points at the high end	From $439 million to $1.8 billion in 2012
2012	CROP INSURANCE: Savings Would Result from Program Changes and Greater Use of Data Mining (GAO-12-256)	Capping premium subsidies at $40,000 per participant	Up to $358 million for 2010, and up to $1 billion for 2011

Source: GAO. | GAO-17-501

Appendix VII: Participating Insurance Companies' Retained Premiums and Underwriting Gains/Losses, 1996-2015

Table 7 shows, for 1996 through 2015, the premiums on which the participating insurance companies retained risk and these companies' underwriting gains or losses. It also shows the quota share amounts for 2005 through 2015, the years for which a quota share was in effect, and how the quota share reduced the premiums retained by the companies, thus reducing their underwriting gains or losses. For example, companies' 2010 underwriting gains before deduction of the quota share were $2.017 billion. This amount was multiplied by the agreed-upon quota share of 5 percent, which resulted in the quota share amount of $101 million. This $101 million was deducted from the $2.017 billion, which resulted in companies' final underwriting gains of $1.916 billion. In each year beginning with 2005, except 2012, the quota share reduced the government's program costs by reducing companies' underwriting gains, thereby increasing the government's underwriting gains. For example, the quota share reduced companies' underwriting gains for 2009 by $121 million, thereby increasing the government's underwriting gains by the same amount. In 2012, a year of major drought, the quota share reduced companies' underwriting losses by $92 million, increasing the government's underwriting losses by that amount.

Table 7: Participating Insurance Companies' Retained Premiums, the Government's Quota Share, and Companies' Underwriting Gains/Losses, 1996 through 2015

Year	Total premiums[a]	Retained premiums before deduction of quota share[b]	Retained premiums after deduction of quota share	Retained premiums after deduction of quota share as a percentage of total premiums	Companies' underwriting gains/losses before deduction of quota share	Quota share	Companies' underwriting gains/losses after deduction of quota share	Actual rate of return on retained premiums[c]
1996	1,627	1,155	1,155	71	248	0	248	21.5
1997	1,689	1,263	1,263	75	352	0	352	27.9
1998	1,876	1,592	1,592	85	279	0	279	17.5
1999	2,312	1,837	1,837	79	272	0	272	14.8
2000	2,538	1,895	1,895	75	270	0	270	14.3
2001	2,979	2,373	2,373	80	346	0	346	14.6
2002	2,912	2,295	2,295	79	-47	0	-47	-2.1
2003	3,436	2,615	2,615	76	389	0	389	14.9
2004	4,186	3,140	3,140	75	691	0	691	22.0
2005	3,945	3,044	2,891	73	963	48	915	31.6
2006	4,709	3,684	3,500	74	865	43	822	23.5
2007	6,547	5,156	4,898	75	1,655	83	1,572	32.1
2008	9,839	8,103	7,698	78	1,171	59	1,112	14.4
2009	8,950	7,190	6,831	76	2,419	121	2,298	33.6
2010	7,595	6,382	6,063	80	2,017	101	1,916	31.6
2011	11,965	10,199	9,536	80	1,752	88	1,664	17.4
2012	11,120	9,242	8,642	78	-1,410	-92	-1,319	-15.3
2013	11,800	9,868	9,227	78	675	34	641	7.0
2014	10,068	8,439	7,890	78	1,115	72	1,042	13.2
2015	9,744	7,938	7,422	76	1,934	97	1,838	24.8

Source: GAO analysis of U.S. Department of Agriculture's (USDA) Risk Management Agency data. | GAO-17-501

Notes: Companies' underwriting gains/losses are companies' retained premiums minus their share of the indemnities paid to farmers followed by adjustments based on the standard reinsurance agreement's (SRA) gain/loss sharing and quota share provisions. Under the SRA's quota share provision, each company cedes to USDA a percentage of its underwriting gains or losses. The 2005 SRA set the quota share at 5 percent. The 2011 SRA's quota share was 6.5 percent with up to 1.5 percent of any gain to be distributed to companies that service underserved or less-served states according to the premiums generated in those states.

[a]Total premiums include premiums paid by farmers and premium subsidies provided by the government.

[b]Retained premiums are the premiums on which companies retain risk.

[c]Rate of return on retained premiums is equal to companies' underwriting gains/losses after deduction of quota share divided by retained premiums after deduction of quota share.

Appendix VIII: Comments from the U.S. Department of Agriculture

United States Department of Agriculture

Farm and Foreign Agricultural Services

Risk Management Agency

1400 Independence Avenue, SW
Stop 0801
Washington, DC
20250-0801

June 13, 2017

TO: Steve Morris
Director, Natural Resources and Environment
General Accountability Office

FROM: Heather Manzano
Acting Administrator
Risk Management Agency

Heather Manzano

Digitally signed by Heather Manzano
DN: dc=net, dc=usda, ou=Agencies, ou=RMA, ou=Users, cn=Heather Manzano, email=heather.manzano@rma.usda.gov
Date: 2017.06.13 09:50:59 -04'00'

SUBJECT: Crop Insurance: Opportunities Exist to Improve Program Delivery and Reduce Costs (GAO-17-501)

The U.S. Department of Agriculture (USDA) appreciates the opportunity to respond to the U.S. Government Accountability Office (GAO) draft report Crop Insurance: Opportunities Exist to Improve Program Delivery and Reduce Costs (GAO-17-501) dated June 2017.

The 2011 SRA has produced substantial savings for taxpayers of approximately $4.5 billion. This was accomplished with no significant disruption in service. However, GAO's report omits the significant success of the 2011 SRA. GAO's report gives the impression that the Administrative and Operating (A&O) payment limit in the 2011 SRA negatively impacted service to farmers, which is simply not the case. On the contrary, the 2011 SRA added incentives for insurance companies to increase their participation in underserved areas. Insurance companies rose to the challenge and participation in crop insurance has generally held steady since the implementation of the 2011 SRA.

The GAO report's first recommendation to stabilize payments to insurance companies would not lead to any discernable difference in service to farmers. Further, much of the variation in payments identified by GAO is not related to the overall cap on A&O implemented in the 2011 SRA. Compensation to insurance companies has varied for decades due to changes in commodity prices, premium rates, purchasing patterns of farmers, and legislative changes to the crop insurance program. Crop insurance companies have effectively managed this variation both before and after the 2011 SRA.

During the 2011 SRA negotiations, RMA worked with the insurance companies on how best to accomplish the goal of limiting overall A&O payments. Several approaches were discussed between RMA and insurance companies during the negotiations, with each approach having particular advantages and disadvantages.

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The approach that was ultimately agreed upon and implemented in the 2011 SRA has resulted in significant program savings without disrupting program delivery to farmers.

As the GAO report recommends, RMA will examine with insurance companies the potential to reduce variations in A&O payments the next time the SRA is renegotiated.

Since GAO's recommendation regarding underwriting gains is directed at Congress, RMA has no comment.

Thank you again for the opportunity to review and respond to the GAO draft report.

Sincerely,

Heather Manzano
Acting Administrator
Risk Management Agency

USDA is an equal opportunity provider and employer.

Appendix IX: GAO Contact and Staff Acknowledgments

GAO Contact

Steve D. Morris, (202) 512-3841 or morriss@gao.gov

Staff Acknowledgments

In addition to the individual named above, Thomas M. Cook, Assistant Director; Ron Aribo; Kevin S. Bray; Gary Brown; Serena Epstein; Farrah Graham; Michael Kendix; Emei Li; Joshua Parr; Anne Rhodes-Kline; Dan C. Royer; Kiki Theodoropoulos; and Frank Todisco made key contributions to this report. In addition, Martin (Greg) Campbell, Diana C. Goody, Michael Meleady, and Oliver Richard made important contributions to this report.

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