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Where is your Crop Insurance Agent? Understanding the Geographical Distribution of Agents

The delivery of crop insurance is facilitated through a collaborative partnership between the Federal Crop Insurance Corporation (FCIC) and private insurance entities. The program is administered by the United States Department of Agriculture Risk Management Agency (USDA RMA) on behalf of the FCIC. To encourage farmer participation, the government subsidizes the insurance costs, resulting in farmers typically paying approximately 40% of the actuarially fair premium. To further reduce costs for producers, the government provides subsidies for delivery expenses in the form of administrative and operating (A&O) expense reimbursements. These A&O reimbursements compensate private insurance companies for administering the program, which are subsequently used to incentivize agents who serve as intermediaries between the insurance companies and their farmer clients.

Prior to the enactment of legislation in 2010, Administrative and Operating (A&O) subsidies were directly correlated with producer premiums; higher premiums resulted in increased A&O payments, while lower premiums led to reduced payments. Between 2005 and 2008, A&O subsidies increased from under $1 billion to slightly over $2 billion annually, primarily due to rising commodity prices (Congressional Research Service, 2022). Despite the relatively unchanged nature of agents' responsibilities, their commissions experienced significant growth. Consequently, the Food, Conservation, and Energy Act of 2008 mandated a reduction in program delivery expenses (Congressional Research Service, 2008). In 2010, the Standard Reinsurance Agreement (SRA)—the financial agreement between the Federal Crop Insurance Corporation (FCIC) and insurance companies—implemented substantial modifications to the A&O subsidy formula to further curtail costs.

Following the modifications to the Standard Reinsurance Agreement (SRA) in 2010, there was limited understanding of the impact of policy changes on agent availability. Our objective is to construct a model of the equilibrium supply of crop insurance agents and to test hypotheses regarding the factors influencing agent concentration, such as commissions, competition, and risk. We developed a theoretical equilibrium model of the federal crop insurance market, which encompasses three tiers: insurance companies, agents, and farmers. The model incorporates key features of the federal program, including government-set premiums and the stipulation that agents cannot refuse coverage or modify premiums for farmers within their jurisdiction. Agents derive their income from commissions, which are a percentage of the premiums on the policies they sell. The model consists of:

- Farmer demand: Farmers determine the extent of insurance coverage (liability) they purchase based on the premium rate and subsidy established by the government. The aggregate demand for insurance within a local market (such as a county or region) is exogenous to both agents and companies, being influenced by the premium rate, which reflects local risk, and the level of subsidy. A rise in premiums or a reduction in subsidies, which effectively increases the cost of insurance, results in a decrease in demand.
- Insurance company behavior: With a fixed number of approved insurance providers, competition for market business is conducted through the establishment of commission rates paid to agents. A company offering higher commissions is likely to secure a larger share of the market's policies, as agents are incentivized to direct more clients to that company. However, the benefits of increasing commissions diminish over time, and a regulatory cap is imposed by the SRA, which limits commissions to a specific fraction of the government's A&O reimbursement. An increase in the number of insurance companies, indicating greater competition, results in a reduced market share for each company at a given commission rate, necessitating more aggressive competition (as the market share function adjusts with competition). Insurance companies derive expected underwriting profits from the policies they retain. Companies have the option to cede risk through the SRA's reinsurance funds, which vary by region. In high-risk states (Groups 2 and 3 under SRA), companies retain a higher proportion of gains and cede more losses, whereas in low-risk states (Group 1), they retain a lower proportion of gains. This suggests potential regional variations in profitability.
- Agent entry and equilibrium: In economic theory, agents are posited to enter a local market until their economic profit is reduced to zero at equilibrium, a condition known as free entry. The income of each agent is contingent upon the total premium volume, which is derived from farmer demand, multiplied by the commission rate they receive from insurers. Concurrently, agents incur costs associated with conducting business in that specific location. The equilibrium number of agents in a market is likely to increase if there are enhanced profit opportunities for agents, such as heightened insurance demand, elevated commission rates, or reduced operating costs. Conversely, a decline in agent presence is expected in areas where profit opportunities are limited, characterized by low demand or commissions, high costs, or elevated risk of loss that may restrict commissions. Agents are attracted to regions with (i) substantial insurance volume, indicating greater demand and a larger premium base, (ii) favorable commissions, which are influenced by insurer competition and profit-sharing incentives, (iii) reduced business costs, and (iv) agglomeration benefits, which lower transaction costs when agents are clustered together. These factors constitute testable hypotheses regarding agent concentration.

  The theoretical economic framework suggests that agent density is expected to be higher in regions where there is substantial demand for insurance, robust competition among insurers, elevated commissions (including profit-sharing), and favorable business conditions. Additionally, the framework underscores that government policy parameters, such as the SRA commission cap and reinsurance regulations, have the potential to modify these conditions and, consequently, influence the supply of agents.

What did we find?

Findings indicate that the distribution of agents is predominantly influenced by the size of the farm market and the level of competition among insurers, with these factors being moderated by risk considerations and enhanced by clustering effects. In the Corn Belt states, characterized by extensive acreage and a competitive insurance landscape, there is a natural propensity to support a substantial number of agents. Conversely, regions with high risk, despite policy support, exhibit a lower presence of agents, primarily due to reduced acreage and potentially differing market power among insurers. Notably, higher risk, as indicated by premium levels, does not attract more agents; rather, it tends to

deter them in low-risk regions, underscoring a potential challenge in servicing high-risk or marginal areas.

Policy Implications

Findings indicate that the FCIC reinsurance regulations significantly impact the geographical distribution of crop insurance agents, albeit in unanticipated ways. Our model of the crop insurance market reveals that regions where insurance companies retain a larger portion of underwriting gains tend to support a higher equilibrium number of agents. Specifically, the Group 1 reinsurance region, which includes much of the Corn Belt, offers less advantageous reinsurance terms; here, insurance companies retain a smaller share of underwriting gains while assuming a larger share of losses. Although this scenario presents increased risk, the FCIC permits insurance companies operating in Groups 2 and 3 states to retain a greater portion of their underwriting gains while transferring more of the risk to the government. Our model suggests that more favorable reinsurance terms in Group 2 and 3 states would result in a higher number of agents, assuming other factors remain constant. Additionally, agents may strategically position themselves near the borders of reinsurance regions to access markets with more lucrative commission structures.

For further details regarding the study, please refer to the journal article.

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