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4-1-2020

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Delay, Nathan; Chouinard, Hayley; Walters, Cory; and Wandschneider, Philip, "Examining the Role of the Crop Insurance Selling Agent" (2020). *Cornhusker Economics*. 1047.
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Cornhusker Economics

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Market Report	Year Ago	4 Wks Ago	3-27-20
Livestock and Products,			
Weekly Average			
Nebraska Slaughter Steers, 35-65% Choice, Live Weight.	*126.00	*	*
Nebraska Feeder Steers, Med. & Large Frame, 550-600 lb.	198.82	179.59	166.36
Nebraska Feeder Steers, Med. & Large Frame 750-800 lb.	170.00	146.74	139.67
Choice Boxed Beef, 600-750 lb. Carcass.	228.20	206.34	255.07
Western Corn Belt Base Hog Price Carcass, Negotiated	*	*	*
Pork Carcass Cutout, 185 lb. Carcass 51-52% Lean.	79.80	64.05	75.76
Slaughter Lambs, woolled and shorn, 135-165 lb. National.	381.53	160.41	162.63
National Carcass Lamb Cutout FOB.	140.93	424.41	433.70
Crops,			
Daily Spot Prices			
Wheat, No. 1, H.W. Imperial, bu.	4.10	4.10	4.44
Corn, No. 2, Yellow Columbus , bu.	3.44	3.64	3.04
Soybeans, No. 1, Yellow Columbus , bu.	7.92	8.36	8.19
Grain Sorghum, No.2, Yellow Dorchester, cwt.	5.48	5.74	5.38
Oats, No. 2, Heavy Minneapolis, Mn, bu.	3.26	3.18	2.96
Feed			
Alfalfa, Large Square Bales, Good to Premium, RFV 160-185 Northeast Nebraska, ton.	*	*	*
Alfalfa, Large Rounds, Good Platte Valley, ton.	112.50	*	90.00
Grass Hay, Large Rounds, Good Nebraska, ton.	*	95.00	85.00
Dried Distillers Grains, 10% Moisture Nebraska Average.	161.50	141.58	198.00
Wet Distillers Grains, 65-70% Moisture Nebraska Average.	47.50	50.67	54.37
*No Market			

The United States Department of Agriculture, Risk Management Agency (RMA) partners with private insurance companies to deliver the federal crop insurance program through agents who sell policies directly to producers. The government subsidizes producers in the form of premium discounts and reimburses private insurance companies for administrative and operating (A&O) costs. The government provides further assistance to the industry by offering a cooperative reinsurance agreement that reduces loss exposure for insurance companies (Appel and Borba, 2009).

Subsidization of private market players may facilitate rent-seeking behavior—efforts to capture larger shares of tax dollars devoted to the program—especially in the settings of asymmetric information, moral hazard, and adverse selection which typically characterize crop insurance markets (Glauber, 2012; Lusk, 2016; Smith, Glauber, and Dismukes, 2016). Ker and Ergun (2007) show that insurance companies can use private information in the reinsurance market to generate excess returns, which go uncaptured by the government’s premium-setting mechanism. Similarly, Coble, Dismukes, and Glauber (2007) show that crop insurance companies take individual policyholder characteristics into account when allocating policies to reinsurance funds—ceding high risk policies to the government and retaining safe policies for themselves. Rejesus et al. (2004) consider the role of the selling agent and find evidence of collusion between crop insurance agents, producers, and insurance adjusters. Our work extends the cropinsuranceliterature by investigating the

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potential for selling agents to influence producers' choices of insurance coverage.

The Standard Reinsurance Agreement (SRA) establishes the guidelines under which the government, private insurance companies, and crop insurance agents operate and interact. Authorized private insurance companies sell and service insurance products and share underwriting gains and losses with the Federal Crop Insurance Corporation (FCIC). The government provided A&O reimbursement, calculated as a proportion of total premiums, covers agent commissions, adjustor costs, and regulatory compliance. Insurance companies allocate their total premiums net of A&O subsidies, or *net book premium*, between two FCIC reinsurance funds: the Assigned Risk Fund, in which insurance companies cede most of their risk exposure to the government, and the Commercial Fund, where insurance companies retain more risk but enjoy a larger share of any underwriting gains. Crop insurance agents act as intermediaries between farmers and insurance companies by procuring policies from producers and selling their portfolio of contracts, referred to as the *book of business*, to authorized insurance companies.

Agent compensation is proportional to the total amount of insurance transferred to insurance companies (total premiums), though the percentage of premium transferred (commission rate) may be influenced by the actuarial value of the book of business as determined by underwriting gains or losses (Rejesus et al., 2004; Walters et al., 2010). Hence, the agents' incentives include the maximization of premiums collected from farmers and optimization of the actuarial performance of the policies they sell to insurance companies. We refer to these motivations as the *volume incentive* (premiums collected) and the *quality incentive* (actuarial performance).

The SRA restricts agent behavior in two important ways. First, neither agents nor insurance companies can influence the premium for a given policy type under penalty of being banned from the industry (Pearcy and Smith, 2015). Second, an agent operating in a state must sell any approved policy to a producer who requests it. Agents cannot compete with other agents on the basis of premium price or refuse the business of high-risk farmers (Glauber, 2004). However, agents may pursue rents by writing contracts for insurance products and coverage levels that maximize the agents'

total compensation—premium commission (volume incentive) plus book-of-business value (quality incentive)—which may not maximize producer outcomes. In this context, we define agent rent-seeking as pursuing excess profit by selling coverage that would not be chosen by the producer in the absence of agent influence. This definition of agent rent-seeking does not specifically include the case of collusion between producers and insurance adjusters (Rejesus et al., 2004).

When choosing a crop insurance product, farmers select from a menu of options including the coverage level, policy type (individual [revenue vs. yield] vs. area protection), unit structure, and price election. Insurance product characteristic combinations can easily number in the hundreds, making many producers reliant on agent expertise (Schnitkey and Sherrick, 2017). Agents with large market shares or few competitors may take advantage of these and other information asymmetries to maximize their compensation. More comprehensive insurance policies carry higher premiums which increase agent compensation. Alternatively, if an agent expects an insurance customer to suffer large losses, the quality incentive may lead the agent to minimize the insurance company's exposure.

We examine how agent market share and the market concentration of agents influence the crop insurance contract decisions of producers. We model the interaction between a representative crop insurance agent and producer and examine how competition among agents impacts their selling behavior. We hypothesize that the effect of a decrease in agent competition on producers depends on the agent's beliefs about the producer's risk of loss and the agent compensation mechanism, which may vary by region. We test these hypotheses using crop insurance contract level data from five states with different growing conditions and crops: Iowa, Nebraska, Oklahoma, Montana, and Washington. For each state, we estimate the relationship between measures of agent market competition (market share and market concentration) and the insurance coverage choices of producers (policy coverage level, premium, and insured liability). For our

analysis, we focus on the producer coverage level choice as this decision directly influences the amount of liability transfer and therefore potential indemnities and premiums.

Discussion and Implications

We model the interaction between a representative crop insurance agent and producer. Using a comprehensive unit level dataset covering over 400,000 individual crop insurance contracts across five states, we test the impact of agent market share and agent market concentration on the coverage choices of producers. We hypothesize that market competition affects an agent's ability to influence the insurance decisions of producers and that the direction of the effect depends on the producer's risk level and the importance of the quality incentive for agents.

In general, we find that both agent market share and market concentration are associated with higher coverage levels, policy premiums, and insured liability but the economic magnitude of these effects is small, suggesting limited market influence by agents. Agent market shares are positively correlated with insurance coverage in Iowa, Nebraska, and Montana, while overall agent concentration is positively related to coverage in Iowa and Nebraska. Small positive relationships between insurance coverage and agent market shares and concentrations point to the existence of a weak volume incentive for insurance agents. Evidence that agents distinguish between high and low-risk producers, and therefore that the quality incentive matters for agents, is limited and not consistent across locations.

The incentives of crop insurance agents have implications for taxpayers who subsidize the federal crop insurance program. A mechanism through which agents can benefit taxpayers depends on insurance companies rewarding agents with high commission rates for policies that contribute to underwriting gains, i.e. the quality incentive must be meaningful for agents. Where agent commissions do not reflect actuarial performance, or when the volume incentive dominates, limiting competition could hurt taxpayers by incentivizing agents to raise coverage and risk exposure. However, our results indicate that marginal changes in agent competition are unlikely to produce these effects on a large scale.

The relative power of crop insurance agents to crop insurance companies may partially explain the weak influence of agents over producers found in this paper. Agents—particularly those with loyal customers—can shop around their books of business to insurance companies who attract agents with profit-sharing agreements. Given that the underwriting gains or losses of insurance companies are calculated at the state level, as well as the reinsurance channels and A&O cost-reimbursements made available to crop insurance companies by the federal government, the actuarial performance of any one agent's book of business may not be a significant factor in their compensation. Moreover, production shocks such as drought or excess precipitation are typically experienced on a large scale. Variation in risk between agents' books of business in a single time period will be less important than year-to-year variation in a company's state-wide underwriting gains.

The policy implications drawn from our findings can be summarized as follows: the influence of crop insurance agents over the decisions of producers is driven both by the incentives provided by insurance companies and policymakers and in small part by the level of competition among agents. Policymakers wishing to improve the performance of the federal crop insurance program for various stakeholders should consider both forces.

The above discussion comes from the following article:

Delay, N., H. Chouinard, C. G. Walters, and P. Wandschneider. Forthcoming. "The Influence of Crop Insurance Agents on Coverage Choices: The role of Agent Compensation" *Agricultural Economics*

For a copy of the complete manuscript or questions, please contact either Nathan Delay, Assistant Professor at Perdue University, ndelay@perdue.edu or Cory Walters Associate Professor University of Nebraska, cwalters7@unl.edu

References

Appel, D. and P. S. Borba. 2009. Historical Rate of Return Analysis. New York, NY: Milliman Inc.

- Coble, K. H., R. Dismukes, and J. Glauber. 2007. Private Crop Insurers and the Reinsurance Fund Allocation Decision. *American Journal of Agricultural Economics* 89 (3): 582-595.
- Glauber, J. 2004. Crop Insurance Reconsidered. *American Journal of Agricultural Economics* 86: 1179-1195.
- Glauber, J. 2012. The Growth of the Federal Crop Insurance Program, 1990-2011. *American Journal of Agricultural Economics* 95 (2): 482-88.
- Ker, A. and T. Ergun. 2007. On the Revelation of Private Information in the U.S. Crop Insurance Program. *The Journal of Risk and Insurance* 74 (4): 761-776.
- Lusk, J. 2016. Distributional Effects of Crop Insurance Subsidies. *Applied Economic Perspectives and Policy* 39 (1): 1-15.
- Pearcy, J. and V. H. Smith. 2015. The Tangled Web of Agricultural Insurance: Evaluating the Impacts of Government Policy. *Journal of Agricultural and Resource Economics* 40 (1): 80-111.
- Rejesus, R. M., B. B. Little, A. C. Lovell, M. Cross, and M. Shucking. 2004. Patterns of Collusion in the U.S. Crop Insurance Program: An Empirical Analysis. *Journal of Agricultural and Applied Economics* 36 (2): 449-465.
- Schnitkey, G., B. Sherrick. 2017. Crop Insurance Premiums for 2017. *Farmdoc Daily* (7): 22.
- Smith, V. H., J. Glauber, and R. Dismukes. 2016. Rent Dispersion in the US Agricultural Insurance Industry. International Food Policy Research Institute Discussion Paper 01532.
- Walters, C., H. Chouinard, and P. Wandschneider. 2010. Insurance Contracts and the Role of the Selling Agent: Empirical Evidence from Federal Crop Insurance. Paper presented at AAEA, CAES, & WAEA Joint Annual Meeting, Denver, Colorado, July 25-27, 2010.

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