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The Actuarial Performance of Prevented Planting Buy-Up Coverage

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On November 28, 2025, the U.S. Department of Agriculture's Risk Management Agency (RMA) issued the Expanding Access to Risk Protection (EARP) final rule, officially eliminating the 5% prevented planting (PP) buy-up option from the Federal Crop Insurance Program. This follows the removal of the 10% buy-up option starting with the 2018 crop year. Since prevented planting coverage was first introduced in the 1994 Crop Insurance Reform Act, a number of critiques of the provision have emerged including pointing out the potential for moral hazard and noting that excessive use of the provision may lead to higher loss ratios (Kim and Kim, 2018; Boyer and Aaron Smith, 2019; Adkins et al., 2020; Wu et al., 2020; Turner et al., 2025). Prevent plant buy-up coverage, however, is somewhat unique in the sense that it is optional (as opposed to base PP coverage that is bundled with a basic crop insurance policy) and mostly covers a single peril—excess moisture¹. This design potentially allows for adverse selection to occur where farmers that are most susceptible to the perils that typically lead to PP claims self select into purchasing buy-up coverage which may lead to an actuarially unsustainable risk pool if only high risk individuals elect the optional coverage. At the same time, PP buy-up coverage collects an additional premium which is theo-

¹ From 2011–2024, 80% of prevent plant indemnities were attributed to “Excess Moisture/Precipitation/Rain”

retically priced to compensate for the additional indemnities associated with the provision. The remainder of this brief attempts to provide some insight into what effect the recent removal of the PP buy-up option may have on FCIP actuarial performance.

Data for this analysis comes from policy level crop insurance records provided by the USDA, Risk Management Agency for six major crops² from 2011-2024. The data was first segmented into two groups based on whether the policyholder had purchased PP buy-up coverage (either the 5% or 10% option). Within the group of policies that had a buy-up election, the premium paid for the buy-up election was isolated. Similarly, indemnities associated with the PP buy-up portion were isolated by subtracting off the indemnities that would have been paid if base-only PP coverage was in effect. Isolating both premiums and indemnities for the PP buy-up election allows it to receive its own loss ratio calculation. Four loss ratios were then constructed:

- ⇒ **Base + Buy-Up: Buy-Up Only:** Equal to indemnities associated with just the PP buy-up portion of the policy divided by the additional premium paid for buy-up coverage.
- ⇒ **Base: Combined Experience:** Equal to all indemnities (PP and production losses) among policy holders with base PP coverage only (i.e. no buy-up election) divided by total collected premiums.
- ⇒ **Base + Buy-Up: Combined Experience:** Equal to all indemnities (PP and production losses) among policy holders with a PP buy-up election divided by total collected premiums.
- ⇒ **Base + Buy-Up: Production + Base PP:** Equal to indemnities associated with production losses and base PP coverage among policy holders that did have a PP buy-up election divided by premiums associated with the non-buy-up portion of the policy.

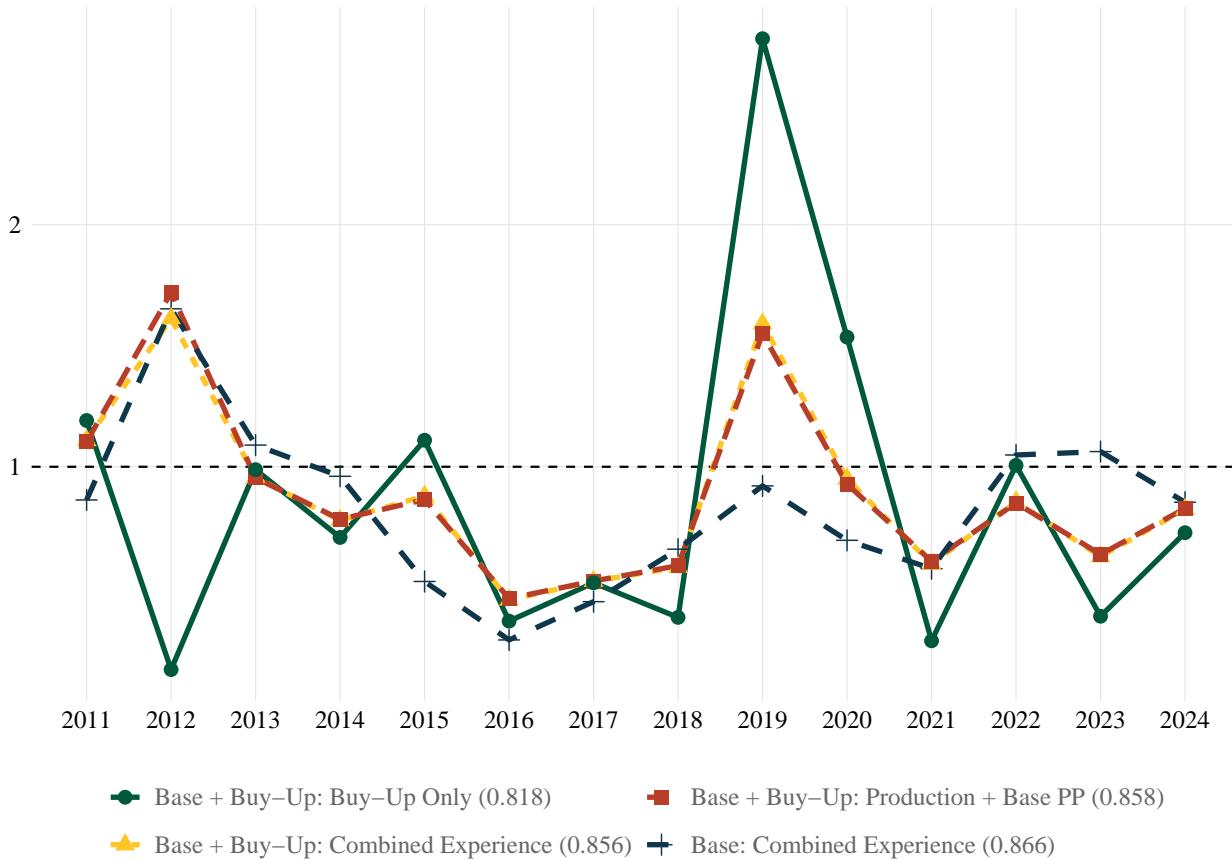
Figure 1 reports the loss ratios defined above on an annual basis along with cumulative loss ratios³ in parentheses next to each legend entry. The cumulative loss ratio for “Base: Combined Experience”, which represents the comprehensive loss ratio for policy holders who did not elect PP buy-up coverage, is 0.866. This indicates that over this time period, approximately 87% of collected premiums were paid back to producers as indemnities. The analogous calculation for policy holders with a buy-up election in place (“Base + Buy-Up: Combined Experience”) indicates a nearly identical loss ratio of 0.856. Isolating the buy-

² These include corn, soybeans, wheat, cotton, rice, and sorghum

³ Cumulative loss ratios represent the sum of indemnities over the full time period divided by the sum of premium over the full time period.

up coverage component (“Base + Buy-Up: Buy-Up Only” in Figure 1) indicates a cumulative loss ratio of 0.818 while the non-buy-up component of the policies that had buy-up coverage (“Base + Buy-Up: Production + Base PP” in Figure 1) indicates a slightly higher, but comparable, loss ratio of 0.858.

Figure 1: FCIP Loss Ratios, 2011–2024



Note: Cumulative loss ratios from 2011–2024 are reported in parentheses.

Source: ARPC calculations using data from USDA Risk Management Agency.

Counter to the idea that buy-up PP coverage may be particularly susceptible to adverse selection, all four loss ratio series presented above exhibit similar cumulative values ranging from 0.818 to 0.866, suggesting that PP buy-up coverage does not systematically degrade actuarial performance relative to base-only policies. These findings suggest that, at least at the national level, PP buy-up coverage was priced in a way that was actuarially sustainable and that the premiums collected for the optional coverage adequately compensated for the additional indemnities paid. However, this analysis examines FCIP performance in aggregate and does not decompose results beyond the buy-up election. The EARP final rule

specifically cited the Prairie Pothole Region as the primary beneficiary of PP buy-up coverage meaning it is possible that actuarial performance varies substantially across regions, commodities, or particular insurance plans. It is possible that a more extensive analysis decomposing these results geographically may reveal localized imbalances not captured in this national-level analysis.

References

Adkins, Kevin, Christopher N. Boyer, S. Aaron Smith, Andrew P. Griffith, and Andrew Muhammad (2020). *Analyzing corn and cotton producers optimal prevented planting decision on moral hazard*. *Agronomy Journal* 112(3): 2047–2057. [https://doi.org/https://doi.org/10.1002/agj2.20173](https://doi.org/10.1002/agj2.20173).

Boyer, Christopher N. and S. Aaron Smith (2019). *Evaluating Changes to Prevented Planting Provision on Moral Hazard*. *Journal of Agricultural and Applied Economics* 51(2): 315–327. <https://doi.org/10.1017/aae.2019.2>.

Kim, Taehoo and Man-Keun Kim (2018). *Ex-post moral hazard in prevented planting*. *Agricultural Economics* 49(6): 671–680. <https://doi.org/https://doi.org/10.1111/agec.12451>.

Turner, Dylan, Francis Tsiboe, Hunter Biram, and Lawson Connor (2025). *Actuarial implications of prevented planting coverage*. *Applied Economic Perspectives and Policy* 47(1): 394–415. <https://doi.org/10.1002/aapp.13471>.

Wu, Shenan, Barry K. Goodwin, and Keith Coble (2020). *Moral hazard and subsidized crop insurance*. *Agricultural Economics* 51(1): 131–142. <https://doi.org/https://doi.org/10.1111/agec.12545>.

About the Agricultural Risk Policy Center

The Agricultural Risk Policy Center at North Dakota State University conducts independent, evidence-based economic research to inform agricultural policy and strengthen the U.S. farm safety net. The Center's work focuses on evaluating risk management tools such as crop insurance and disaster assistance, analyzing market disruptions, and providing timely insights that support producers, policymakers, and industry leaders.

ARPC Briefs communicate the outcomes of this research by presenting data, methods, and findings in a structured format. Designed to make rigorous analysis accessible, these briefs translate complex economic issues into clear insights that enhance understanding and support evidence-based decisions, contributing to the resilience and long-term prosperity of U.S. agriculture.

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