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"Supply effects of crop insurance and compatibility with WTO rules"

Abstract: Yu, Smith and Sumner (AJAE forthcoming) finds that U.S. crop insurance premium subsidies have significant and substantial effects on acreage of major field crops in the United States. Econometric results, based on about 180,000 county-crops-year observations, indicate that, per dollar of subsidy, crop insurance premium subsidies have much larger production effects than do price subsidies. The implied acreage elasticity scaled to be analogous to an own-price elasticity is 1.24, which far exceeds the estimated acreage elasticity in Yu, Smith Sumner and other recent studies, which indicates that crop insurance subsidies have an effects of supply in addition to those of, for example, a generic price subsidy.

These econometric results for major crops in the United States are consistent with findings in Yu and Sumner (2017), which shows conceptually and with calibrated simulations that subsidies for crop insurance shift investment toward risky crops by more than would the same amount of generic input subsidies. This is especially true in situations where some crops are significantly more risky and farmers are at least moderately risk averse.

These results have potentially important implications for cropping patterns and may affect market prices and supply patterns. The United States and China are among the countries that provide substantial crop insurance subsidies for major exported or import-competing crops. Both countries are large farm commodity producers and consumers. Both play substantial roles in global markets for major crops, including corn, soybeans, wheat, rice and cotton. To the extent that crop insurance and similar policies have larger production enhancing impacts than other subsidies, they have the potential for bigger distortion on world markets. And, when practiced by major exporters and importers, crop insurance has the potential to contribute measurably to large trade distorting impacts.

Under provisions of the WTO Agreement on Subsidies and Countervailing Measures (SCM Agreement) members may be successfully challenged if their policies cause serious prejudice (harm) to the trade interests of other members, such as by depressing prices or displacing exports. Lau, Schropp and Sumner, (ITCSD Issue paper 58, 2015) found substantial world price suppression caused by U.S. 2014 Farm Bill subsidies for cotton in a calibrated simulation that used a modest supply response to U.S. crop insurance subsidies. (The magnitude of simulated price suppression was comparable to that found by the WTO arbitrator in the Upland Cotton case.) The simulated impacts would have been larger yet if the enhanced impact of crop insurance premium subsidies were incorporated into their model. Based on these results, the potential for crop insurance subsidies to cause substantial distortions in trade for cotton, corn and other commodities deserves careful consideration. The issue may be important for several commodities in specific markets, and especially important because crop insurance subsidies have been large and growing in major market participants such as the United States and China.