

## **Effects of Trade Policy on Technological Innovation in Agricultural Markets**

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The paper is motivated by a new EU regulation change. The new regulation has lowered the residue level of a chemical that is commonly used in apple production. To continue exporting apples to the EU market, technological innovation was developed in apple production in the United States. This paper adopts the Ex Ante approach to stimulate potential U.S. market reaction to both the trade policy change as well as the technological innovation. The model is carefully designed to consider 1) the output substitution between different varieties of apple and 2) the vertical linkage between the input and output markets. The paper finds that the policy induced technological innovation (if effective) is beneficial, particularly to the product that is initially negatively affected by the policy change. It also has the potential to lead to product quality upgrade in the long run. The model and conclusion from this paper can be generally applied to other markets with highly differentiated products. IO data could be applied for more accurate parameter calculation in the future.