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Market and Welfare Effects of the U.S. High-oleic Soybeans

by Yunkyung Lee

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Title: Market and Welfare Effects of the U.S. High-oleic Soybeans

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Abstract:

We analyze and quantify the market and welfare impacts of the gene-edited technology on the U.S. soybean and oil markets. Genetically edited high-oleic soybean is recently introduced to the farmers as there are increasing demand for healthy substitutes of low-oleic oils and the regulation of trans-fat in the processed foods. We use an equilibrium displacement model to represent the current supply chain of soybean and relevant markets, and then introduce three shocks (a) an increasing demand of high-oleic oil (b) a greater accessibility of high-oleic soybean seed, and (c) a higher marginal cost of high-oleic soybean production. Results show that, farmers, who own land, and equipment adopt a new high-oleic soybean seed, benefit from adopting a new seed variety, while high-oleic oil and soymeal consumers lose their welfare the most.

Keywords: Gene-edited (GE) crops, high-oleic soybean

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