GMO Labeling Effects: Evidence from Supermarket Scanner Data

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Beginning January 1, 2022, all foods for sale in the U.S. will be required to carry disclosure labels if they contain Genetically Modified (GMO) ingredients. As the national mandatory compliance date inches closer, we still lack a clear understanding of how such labels will ultimately affect food demand. Most prior studies on consumer preferences regarding GMO foods rely on experimental or stated preference (survey) data rather than actual market transactions, and the corresponding results are highly sensitive to the elicitation method. This paper uses observed retail transaction data to study the impact of GMO and non-GMO food labeling on demand. We utilize the passage and implementation of a mandatory GMO food labeling law in Vermont in 2016 (the only state that has successfully implemented a mandatory GMO labeling law) as a quasi-natural experiment. Applying synthetic controls and difference-in-differences methods and leveraging a novel dataset from the Non-GMO Project Verified program, we find that the mandatory GMO label had no statistically discernible impact on demand. However, a close analysis of the timing and circumstances surrounding implementation of the Vermont law reveals strong evidence that market share and revenue share of non-GMO products significantly increased in Vermont relative to other states months before implementation of the law. These changes are actually tied to the national expansion of Non-GMO Project Verified brands and primarily attributable to substitution from GMO to non-GMO products. This suggests that it was in fact the informational environment surrounding the law along with increased non-GMO product availability—not mandatory GMO labeling itself—that had the largest effect on consumption patterns. We interpret these findings to mean that many consumers receptive to altering their purchasing behavior to avoid GMO ingredients already encountered alternative labels (non-GMO, organic) to facilitate those choices. Our revealed preference results based on observational data therefore provide a more realistic indication of how implementation of the national mandatory GMO label will affect food demand.