

# **Do You have a Nickel for the Environment? Unintended Consumer Response to New York State Bottle Bill**

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## **Abstract**

In October 2009, New York State enacted a major amendment to its existing bottle deposit law to include water bottles to the beverage list requiring deposits. The aim of the bill was to expand deposits to the fast-growing non-carbonated water category in order to encourage consumers to increase recycling, thereby reducing litter, pollution, greenhouse gas emissions, and energy consumption. Using this bill as a large case study, in the present article we provide evidence of an unintended consequence of the piecemeal implementation of bottle bills: for some consumers, the requirement of a deposit for the focal beverage amounts to a price increase that results in substitution mainly to other beverage categories that do not require deposits, and this substitution could potentially be detrimental to consumers' long-term health. We create a quasi-natural experiment design and demonstrate using a difference-in-difference-in-differences (DDD) analysis that this substitution effect was indeed significant, and that the amendment to the bottle bill resulted in some consumers substituting higher calorie beverages for water. Calculations based on our estimates suggest that amongst the bottled-water-drinking consumers, this substitution could lead to an average weight gain of about 3.39 lbs per year. At a broader level, our study points toward a need to study sustainability initiatives beyond their obvious short-term benefits and underscores the importance of taking into account the consumer as being a strategic actor rather than a passive entity in the face of legislation in the marketplace.

(*Keywords:* Bottle Deposit Programs, Natural Experiments, Unintended Consequences, Difference-in-Difference Estimation)

## **Speaker Profile:**

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