

# **The effect of a major cigarette price change on smoking behavior in California: A zero-inflated negative binomial model**

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## **Abstract**

The objective of this paper is to determine the price sensitivity of smokers in their consumption of cigarettes, using evidence from a major increase in California cigarette prices due to Proposition 10 and the Tobacco Settlement. The study sample consists of individual survey data from Behavioral Risk Factor Survey (BRFS) and price data from the Bureau of Labor Statistics between 1996 and 1999. A zero-inflated negative binomial (ZINB) regression model was applied for the statistical analysis. The statistical model showed that price did not have an effect on reducing the estimated prevalence of smoking. However, it indicated that among smokers the price elasticity was at the level of -0.46 and statistically significant. Since smoking prevalence is significantly lower than it was a decade ago, price increases are becoming less effective as an inducement for hard-core smokers to quit, although they may respond by decreasing consumption. For those who only smoke occasionally (many of them being young adults) price increases alone may not be an effective inducement to quit smoking. Additional underlying behavioral factors need to be identified so that more effective anti-smoking strategies can be developed.