

# ERSA Research Brief

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## A Longitudinal Analysis of the Demand for Cigarettes in South Africa

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Tobacco use is a major health problem, resulting in many millions of needless deaths every year, including many third-party innocent non-smokers (second-hand smokers). This has prompted most governments and many international organisations like World Health Organisation (WHO) to develop a Framework Convention on Tobacco Control (FCTC), with the aim to reduce tobacco consumption and smoking-related morbidity and mortality. Among the various tobacco control policies, tobacco taxes are shown to be the most effective in reducing tobacco use. South Africa is noted to have used large excise taxes to reduce cigarette consumption by almost half per adult within 15 years after transition to democracy in 1994. In 2010, the tobacco market structure in South Africa changed substantial (from near monopoly to a more competitive market). From this period, cigarette prices and smoking prevalence have remained fairly constant. There is need to revisit the tobacco tax reform in this new market structure. However, this require new evidence on how the marginal changes in price within this period affect individual smoking behaviour.

There is strong evidence that an increase in the price of tobacco products reduces tobacco use. There are disturbingly few studies that used individual-level data to examine the effect of tobacco prices on tobacco use in low- and middle-income countries (LMICs). In South Africa, studies have predominantly relied on aggregate time-series data and have been unable to examine the effect of price on smoking participation. In this paper, we use longitudinal data to analyse changes in individual smoking behaviour, including smoking participation and intensity.

We compare the results of pooled OLS (POLS), Heckman two-step procedure, random and fixed effect (RE, FE) panel regression. Our results points to the importance of cigarette prices in reducing both smoking prevalence and intensity. The price estimates from the POLS and RE are generally small, but estimates from the Heckman procedure are between -0.52 for economy price and -0.61 for mid-price. Therefore, a 10% increase in cigarette prices reduces tobacco consumption by up to 6%. Fixed effect estimates show no significant effect of price on smoking intensity. This therefore suggest that additional attention be paid to the methodological approach vis-a-vis the nature of price when using panel data to estimate price elasticity. The findings suggest that in the presence of the changing market structure (from near monopoly to a more competitive market) in 2010, tobacco excise tax increases remain a desirable policy tool for reducing cigarette consumption.