Price, tax and tobacco product substitution in Zambia: findings from the ITC Zambia Survey

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Abstract

Background: In Zambia, the number of cigarette users is growing, and the lack of strong tax policies is likely an important cause. When adjusted for inflation, levels of tobacco tax have not changed since 2007. Moreover, roll-your-own (RYO) tobacco, a less-costly alternative to factory-made (FM) cigarettes, is highly prevalent.

Data and methods: We modelled the probability of FM and RYO cigarette smoking using individual-level data obtained from the 2012 and 2014 waves of the International Tobacco Control (ITC) Zambia Survey. We used two estimation methods: the standard estimation method involving separate random effects probit models and a method involving a system of equations (incorporating bivariate seemingly unrelated random effects probit) to estimate price elasticities of FM and RYO cigarettes and their cross-price elasticities.

Results: The estimated price elasticities of smoking prevalence are −0.20 and −0.03 for FM and RYO cigarettes, respectively. FM and RYO are substitutes; that is, when the price of one of the products goes up, some smokers switch to the other product. The effects are stronger for substitution from FM to RYO than vice versa.

Conclusions: This study affirms that increasing cigarette tax with corresponding price increases could significantly reduce cigarette use in Zambia. Furthermore, reducing between-product price differences would reduce substitution from FM to RYO. Since RYO use is associated with lower socioeconomic status, efforts to decrease RYO use, including through tax/price approaches and cessation assistance, would decrease health inequalities in Zambian society and reduce the negative economic consequences of tobacco use experienced by the poor.

Recommended Citation

Stoklosa, M., Goma, F., Nargis, N., Drope, J., Chelwa, G., Chisha, Z., Fong, G.T. (2019). Price, tax and tobacco product substitution in Zambia: findings from the ITC Zambia Survey. *Tobacco Control*, *28*(Suppl 1), S45`-S52.

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