Cost-benefit analysis of tobacco consumption in Peru

Key Messages

- Increasing tobacco taxes is pro-poor in the short-term: Increasing the Special Consumption Tax (SCT) on tobacco products reduces spending on cigarettes among the poor. A 10 percent increase in cigarette prices, as a result of tobacco tax increases, would save low- and middle-income groups a total of 3.3 million soles per year just by reducing cigarette consumption.
- Increasing tobacco taxes is pro-poor in the medium- and long-term as well. Reduced consumption translates into lower medical expenses for tobacco-related illness and increases in income as result of the reduction in premature death associated with tobacco use.
- Combining the short-, medium-, and long-term savings from reduced tobacco consumption, a tax increase would be beneficial for all income groups, but especially the poor.

Introduction

Tobacco use has a significant negative impact on health and productivity. It is the cause of 12.5 percent of all deaths in the country, and 396,069 years of life are lost annually due to premature death and disability. This translates into 5.52 and 4.65 years of life lost for female and male smokers, respectively.[1] Evidence shows that tax increases on tobacco are the most cost-effective means of counteracting the negative effects of tobacco use.[2]

Policy recommendation

Increasing the Special Consumption Tax (SCT) on cigarettes would not only reduce smoking and have a positive health impact but would also increase disposable incomes by lowering medical expenses and mortality rates, creating a positive impact on well-being for all, and especially lower-income households.

Evidence

Global evidence suggests evaluating the net gains from a tobacco tax beyond the short-term impact on household income. There are other medium- and long-term indirect effects, such as a decrease in medical expenses and an increase in working years, which figure into the total aggregate impact on population's welfare.

Studies of the impact of a cigarette tax increase in middle-income countries show that spending on cigarettes could increase, depending on the price sensitivity of each income group. Nevertheless, an extended analysis shows that short-term effects (increases in spending on cigarettes) are offset by medium-term (decreases in health costs) and long-term (increases in disposable income) effects, increasing well-being, mainly among lower-income households.[3] In Peru, Bardach *et al* (2016) finds that over 10 years, an increase of about 50 percent in cigarette taxes could avoid about 13,000 deaths and 320,000 years of life due to premature death and disability.

To determine the total impact of a cigarette tax increase in Peru, it is necessary to incorporate the effect on health and productive years of life; and to determine the distributive impacts of such a measure, it is necessary to evaluate the total impacts on different income groups.

Integral effect of a cigarette tax increase in Peru

In the "Cost-benefit analysis of tobacco consumption in Peru," a study by the Institute of Peruvian Studies (*Instituto de Estudios Peruanos*, IEP), the effects of a potential 10 percent increase in cigarette prices, as a result of increasing taxes, are estimated. In accordance with international evidence, considering not only the short-term effect (spending on cigarettes), but also medium-term (tobacco-related medical costs), and long-term (reduced income due to premature death) effects, this study finds a positive impact on household welfare with poorer households benefiting most.[4]

Lower-income households reduce their tobacco consumption far more than higher-income groups because the tax burden does not fall equally on all income groups. In other words, evidence shows that cigarette tax increases which lead to higher cigarette prices do not increase income gaps. Moreover, this study finds that a cigarette price increase discourages consumption in all income groups with a greater effect in lower-income groups.

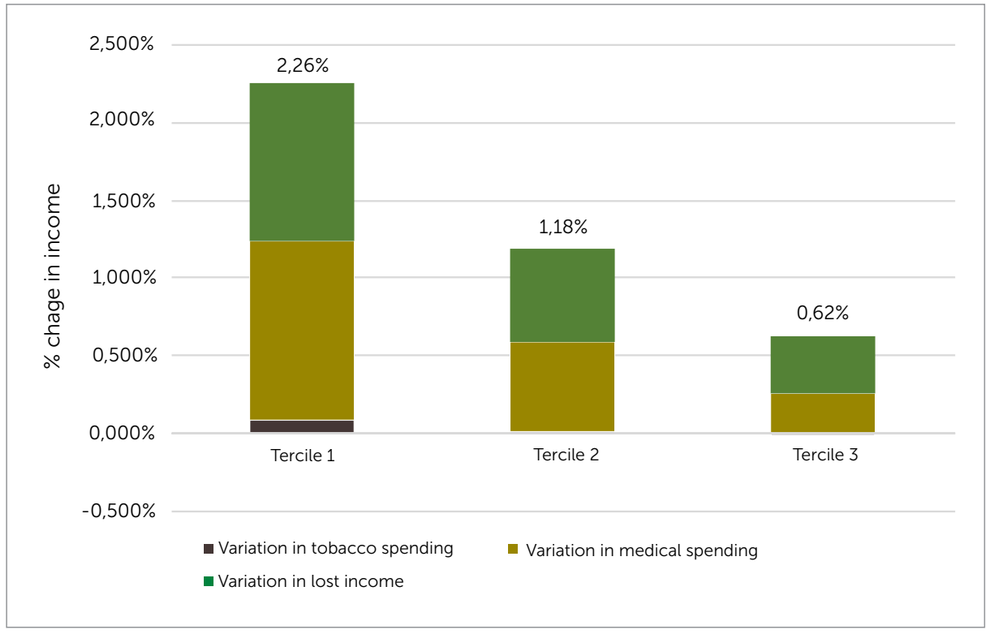
When short-, medium-, and long-term effects are taken together, results show that a tax increase which increases cigarette prices by 10 percent would have a positive impact on the welfare of the population through better health and lower mortality. This translates into an increase in income with lower-income groups benefiting most[5] (see Figure 1).

In the two lowest-income terciles, there is a reduction in the absolute spending on cigarettes (9 percent reduction for the first tercile and 2.3 percent reduction for the second tercile). This suggests an increase in household disposable income. Considering this change and the proportion of tobacco expenditure by income group, the reduction of spending will increase the income available for other uses by 0.08 percent and 0.02 percent, respectively. The highest-income tercile would increase the absolute spending on cigarettes by 0.65 percent. When combining with the proportion of tobacco expenditure on wealthier households, this shows a very small decrease on income available for other uses (see Table 1).

Reducing tobacco consumption generates (in the medium term) savings in spending on tobacco-related illnesses, resulting in more income, especially for lower-income groups. Households in the first tercile would increase their income by 1.16 percent; those in the second tercile by 0.59 percent; and those in the third tercile by 0.26 percent (see Table1).

Figure 1

Effects on income by component and total effect of a cigarette price increase (percent increase over current income)



Compiled by: Instituto de Estudios Peruanos
Source: ENAPREFs Peruanos.

Increased income because of a reduction in years of life lost is also a key component in the population's income increase. The reduction in years of life lost or mortality results in an increase in household income (income for years of life gained) of 1.02 percent for the first tercile, 0.58 percent for the second tercile, and 0.36 percent for the third tercile (see Table 1).

Examining the combined effect on income by income group, the greatest beneficiary in the three components is the lowest-income tercile. The total effect is the sum of short-, medium-, and long-term effects on income due to the variation in spending on cigarettes, a reduction in household medical expenses, and an increase in income because of the decrease in mortality. The income of the lowest-income group (first tercile) would increase by 2.26 percent over current income; the second tercile by 1.18 percent; and the third tercile by 0.62 percent. This effect on well-being significantly affects all income groups.

Table 1

Final effect on income (percent)

Expenditure by income level	Var. Cigarette spending	Reduction on Medical expenses	Increase on Income	Total effect
	(i)	(ii)	(iii)	(i)+(ii)+(iii)
Low	0.083	1.157	1.016	2.255
Medium	0.016	0.576	0.593	1.186
High	-0.004	0.260	0.363	0.619

Compiled by: Instituto de Estudios Peruanos
Source: ENAPREF

With a 10 percent variation in prices attributable to an increase in excise taxes on cigarettes, the society would increase its available income by 205 million soles annually. Spending on cigarettes would decrease by 3 million soles, while medical expenses associated with tobacco use would decrease by 97 million soles, and households would recover 106 million soles in income that would have been lost because of early mortality. The change in prices would benefit the lowest-income households most as they would increase their income by 68 million soles per year: 2.5 million due to a reduction in cigarette spending, 34 million due to a reduction in tobacco-related medical expenses; and 30 million in avoided income loss due to early mortality.

Conclusion

There is evidence that increasing the cigarette tax, and therefore increasing cigarette prices, reduces consumption. This results not only in a decrease in spending on cigarettes, but also an increase in household well-being because of a decrease in medical spending and a decrease in years of life lost due to tobacco use. The people with the lowest incomes would benefit most from this fiscal measure.

1. Bardach, Ariel E.; Caporale, Joaquín E.; Alcaraz, Andrea; Augustovski, Federico; Huayanay-Falconí, Leandro; Loza-Munarriz, Cesar; Hernández-Vásquez, Akram; and Andrés Pichón-Riviere (2016). *Carga de enfermedad por tabaquismo e impacto potencial del incremento de precios de cigarrillos en el Perú*. Revista Peruana de Medicina Experimental y Salud Pública 33(4): 651-61.
2. See https://www.who.int/tobacco/economics/taxation/en/ and Chetty, R. (2015). *Behavioral economics and public policy: A pragmatic perspective*. American Economic Review, 105(5), 1-33.
3. Fuchs Tarlovsky, A.; Gonzalez Icaza, M. F.; Paz, D. (2019). Distributional Effects of Tobacco Taxation: A Comparative Analysis. Poverty and Equity Global Practice Working Paper Series; no. 196. Washington, D.C.: World Bank Group. http://documents.worldbank.org/curated/en/358341554831537700/Distributional-Effects-of-Tobacco-Taxation-A-Comparative-Analysis
4. The distributive nature of the tax could be progressive or regressive. A tax is progressive when the tax pressure falls on the part of the population with the highest income. It is regressive when the tax pressure falls on the lowest-income population, creating greater inequality.
5. For simplicity, the study assumes an average price increase of 10 percent stemming from an increase in excise taxes, acknowledging that an increase in specific tax that increases average prices by 10 percent would mean higher price changes for lower priced brands, typically consumed by lower income groups; and smaller price changes for higher priced brands, typically consumed by higher income groups. This implies that impacts would have been even more progressive when analyzing the effects of an increase in specific excise taxes.