

ADVICE TO GOVERNMENTS:

Tobacco Taxes, Control Policies, and Tobacco Use

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Price and Demand for Cigarettes

- **Basic Principle of Economics: the Downward Sloping Demand Curve**
 - **In the past, conventional wisdom was that cigarette smoking and other addictive behaviors were unresponsive to price**
- **Numerous econometric studies, from variety of developed countries over past 25 years confirm that cigarette demand responds to changes in cigarette taxes and prices**
 - **Price Elasticity of Demand: the percentage change in consumption resulting from a one percent increase in price**
 - **Estimated Price Elasticity of Cigarette Demand: -0.3 to -0.5**

Price and Cigarette Demand

- **Two effects of price on demand:**
 - **Effect on smoking prevalence: estimated price elasticity of prevalence: -0.1 to -0.2**
 - **Effect on average cigarette consumption by smokers: estimated price elasticity of cigarette demand by smokers: -0.2 to -0.3**
- **Effects of price on smoking prevalence for adults imply that as price increases, smoking cessation increases**
 - **Recent estimates: 10 percent increase in price reduces duration of smoking habit by about 10 percent**
- **Recent estimates suggest important differences by race/ethnicity and socioeconomic status:**
 - **Blacks and Hispanics much more price sensitive than whites**
 - **Lower income persons much more responsive to price than higher income persons**

Price and Cigarette Demand

- **Recent research applies economic models of addictive behavior to the demand for cigarettes**
 - **Key implication of these models is that the long run effects of price on the demand for an addictive substance will exceed the short run effects**
 - **Estimates of long run price elasticity of cigarette demand about double estimates for short run: -0.7 to -0.8**
 - **Estimates imply cigarettes are highly addictive**

Youth/Young Adult Smoking

- **Economic theory suggests that youth and young adults will be more responsive to changes in price than older adults:**
 - **Proportion of disposable income youth spends on cigarettes likely to exceed corresponding portion of adult smoker's income**
 - **Peer influences much more important for young smokers than for adult smokers**
 - **Young smokers less addicted than adult smokers**
 - **Young people tend to discount the future more heavily than adults**
- **Empirical findings generally find an inverse relationship between price sensitivity and age, with youth and young adults two to three times more sensitive to price than adults**

Taxes, Prices, and Other Tobacco Products

- **Recent estimates of the demand for smokeless tobacco products, cigars, and other tobacco products consistent with that for cigarette demand:**
 - **Both the prevalence and quantity of other tobacco use are responsive to changes in smokeless tobacco taxes and prices**
 - **Demand for smokeless tobacco products by youth more responsive to price than demand by adults**
 - **Evidence of substitution between cigarettes and other tobacco products**

Price, Cigarette Smoking, and Developing Countries

- **Several factors implying greater price sensitivity by youth and young adult smokers also imply greater price sensitivity of cigarette demand in developing countries**
 - **Lower income**
 - **Less educated**
 - **Relatively low daily cigarette consumption by smokers**
- **Several recent studies on cigarette demand in developing countries find that demand is approximately twice as responsive to price than in established market economies**
 - **China: -0.65 to -1.0**
 - **Taiwan: -0.70**
 - **South Africa: -0.59 to -0.68**
 - **Zimbabwe: -0.85**
 - **Brazil: -0.80**
 - **Papua New Guinea: -0.71 (tax elasticity)**

Tobacco Tax Increases and Revenues

- **Given relatively inelastic demand for cigarettes and other tobacco products, and, in many countries, relatively small share of taxes in price, large cigarette tax increases can produce both large health benefits and large increases in cigarette tax revenues**
- **Tobacco tax increases are politically popular as well, particularly when revenues from tax increase are earmarked for health or education**
- **Cigarette smuggling ("buttlegging") imposes some constraints on the magnitude of the tax increases that can be adopted, although several policy options available that could be easily implemented and that would reduce smuggling problem**

Restrictions on Smoking and Cigarette Demand

- **Widespread adoption in numerous countries of national and local policies restricting smoking in variety of public places and in private worksites in response to the growing evidence about the harmful effects of exposure to environmental tobacco smoke**
- **Consistent evidence from many recent studies that strong restrictions on smoking in numerous public places and private worksites have significantly reduced both the prevalence of cigarette smoking and overall cigarette demand**
 - **Estimates imply that overall demand is 4 to 5 percent lower than it would have been in the absence of these restrictions**

Limits on Youth Access to Tobacco and Youth Smoking

- **Limiting youth access to tobacco is the focus of much of recent national, state, and local tobacco control policy in US and other countries:**
 - **Synar amendment**
 - **FDA Rules**
 - **Proposed tobacco settlement**
- **Evidence from several empirical analyses concludes that the limits themselves have little impact on youth smoking**
 - **attributed to the lack of enforcement of these limits and very low compliance with them**
- **Recent estimates mixed concerning effects of limits on youth access that are aggressively enforced and highly complied with**
 - **Chaloupka and Pacula (1998) conclude that comprehensive, aggressively enforced and highly complied with limits on youth access lead to significant reductions in youth smoking**

Advertising, Promotion and Cigarette Demand

- **Variety of approaches to estimating the impact of advertising and promotion on cigarette demand:**
 - **Econometric analyses of the impact of aggregate advertising and promotion expenditures on aggregate cigarette consumption**
 - **Generally provide little or no support for the hypothesis that cigarette advertising and promotion leads to significant increases in cigarette demand**
 - **Given subtle effects of advertising and high levels of aggregate advertising, unlikely that econometric analysis focusing on marginal changes in advertising will have a statistically significant impact on aggregate measures of demand**

Advertising, Promotion, and Cigarette Demand

- **Econometric analyses of international data comparing countries with partial or full bans on cigarette advertising and promotion to those with no limits on cigarette advertising**
 - **Addresses problems from using aggregate measures of advertising expenditures to look for marginal impact of an additional dollar spent on advertising**
 - **Several recent studies conclude that bans on advertising and promotion produce significant reductions in smoking prevalence and overall cigarette consumption**
 - **Estimates imply that partial bans on advertising relatively ineffective given substitution towards other media, but that comprehensive bans do reduce smoking**

Advertising, Promotion, and Cigarette Demand

- **Strong evidence from psychological and marketing research concluding that exposure to cigarette advertising and promotion alters expectancies concerning smoking and, consequently, leads to increases in cigarette smoking, including smoking initiation**
- **1989 Surgeon General's report concludes that " the collective empirical, experiential, and logical evidence makes it more likely than not that advertising and promotion activities do stimulate cigarette consumption."**

Counter-Advertising, Health Information and Demand

- **More consistent evidence that anti-smoking advertising leads to significant reductions in cigarette demand**
 - **Early evidence based on the anti-smoking advertising in the US during the late-1960s under the Fairness Doctrine**
 - **More recent evidence from counter-advertising campaigns in California, Massachusetts, and elsewhere that are financed by earmarked cigarette taxes, as well as mass media anti-smoking campaigns in numerous other countries**
- **Similarly, consistent evidence that significant, new information on the health consequences of cigarette smoking and other tobacco use can lead to a sharp reduction in tobacco use**

Summary

- **Strong evidence that increases in cigarette taxes and prices lead to significant reductions in cigarette smoking, with particularly among youth and young adults**
 - **Many consider sizable cigarette tax increases to be the single most effective policy available for producing large reductions in youth and adult smoking**
- **Consistent evidence that restrictions on smoking in public places and private workplaces lead to significant reductions in smoking**
- **Mixed evidence on the effectiveness of limits on youth access to tobacco in reducing youth smoking**
- **Compelling evidence from variety of studies that cigarette advertising and promotion affects smoking prevalence and cigarette consumption and that advertising and promotion bans and counter-advertising can produce significant reductions in smoking**

Impact Analysis

VERY PRELIMINARY

- **Methods:**
 - **Use existing population and tobacco consumption data, along with prevalence estimates from several countries to derive estimates of smoking prevalence (including by age and gender) and consumption (per smoker, also by age and gender) in seven World Bank regions**
 - **Account for use of other tobacco products where very prevalent (i.e. bidis in South Asia)**
 - **Use conservative estimates from existing epidemiological evidence on relationship between tobacco use and tobacco-related premature mortality**
 - **Use relatively conservative short-run price elasticity estimates for cigarette smoking of -0.4 for high income countries and -0.8 for low income countries; somewhat lower estimates for other tobacco use**
 - **Use relatively conservative assumption that comprehensive package of non-price interventions, including complete ban on advertising and promotion, smoking restrictions, and more would produce 2-10 percent reduction in smoking**

Impact Analysis

VERY PRELIMINARY

- **Estimates of Global Smoking Prevalence:**
 - **World:**
 - **Males: 47%**
 - **Females: 12%**
 - **Total: 30%**
 - **1.16 billion smokers**
 - **Nearly half in the 20-39 year age range**
 - **Low and Middle Income Countries:**
 - **Males: 49%**
 - **Females: 10%**
 - **Total: 30%**
 - **Almost 950 million (82% of total)**
- **Health Consequences - Smoking attributable deaths among smokers in 1995:**
 - **Total: 382 million**
 - **Low and Middle Income Countries: 313 million**
 - **High Income Countries: 69 million**

Impact Analysis

VERY PRELIMINARY

- **Potential Impact of Price Increases:**
 - **10 percent increase in prices globally:**
 - **40 million fewer smokers globally**
 - **36 million fewer smokers in low/middle income countries**
 - **10 million fewer premature, smoking-attributable deaths**
 - **9 million fewer deaths in low/middle income countries**
 - **Larger price increases would lead to larger health benefits**
- **Potential Impact of Non-Price Interventions:**
 - **Assumes modest 2 percent reduction in smoking:**
 - **23 million fewer smokers globally**
 - **19 million fewer in low/middle income countries**
 - **5 million fewer premature smoking-attributable deaths globally**
 - **Over 4 million fewer deaths in low/middle income countries**

Advice to Governments

- **Strong tobacco control policies, particularly in developing countries where the tobacco epidemic is in an earlier stage, can have enormous health and economic benefits and can help reduce the health gaps between the rich and poor**
- **Market failures, including incomplete or imperfect information about the health consequences and addictive nature of tobacco use, externalities from ETS exposure, environmental consequences of tobacco growing, processing, and manufacturing, and others argue strongly for government intervention to reduce tobacco use**
- **Sustained, large increases in tobacco taxes will lead to significant reductions in smoking and its health and economic consequences, particularly among the poor and young who are less receptive to other policies, while at the same time generating substantial new revenues**
- **Strong tobacco control policies, including a comprehensive ban on tobacco advertising and promotion, restrictions on smoking, improved dissemination on the health consequences of smoking and others can also produce significant reductions in smoking and its consequences**