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On the Fairness of Cigarette Excise Taxation

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Excise taxes on cigarettes, some have argued, are unfair because cigarette smoking is more prevalent among lower income groups. Any further increase in such taxes, it is claimed, would just "hurt the little guy."

In this note, I ask whether the claimed unfairness of cigarette taxes fits the facts. I find that the very lowest income Americans actually smoke less than middle income Americans. In particular, older Americans, who make up a sizeable fraction of the low income group, have much lower smoking rates. Moreover, when I consider not only the proportion of smokers, but also the number of cigarettes smoked per day, I find the burden of a cigarette tax hike to be no greater for blacks than for whites.

My discussion is predicated on the assumption that manufacturers and retailers would largely pass on any new tax to cigarette smokers. If, to the contrary, a tax increase were not reflected in a higher retail price, then the burden of the tax hike might fall on the stockholders of cigarette manufacturers, the owners of domestic tobacco allotments, and others in the chain of cigarette production and distribution. (For a more complete discussion, see Harris 1982.)

The analysis here is based on unpublished data from surveys conducted by the U.S. Government. In particular, from July 1978 through December 1979 and July through December, 1980, the U.S. National Center for Health Statistics appended a Cigarette Smoking Supplement to its continuing Health Interview Survey. Details of the Health Interview Survey, a stratified, household-based, face-to-face interview sample that is representative of the U.S. noninstitutionalized civilian population, are reported elsewhere (National Center for Health Statistics 1977, 1979; Harris 1983).

During 1979-1980, the Health Interview survey attempted to contact 50,875 persons aged 17 or over concerning their cigarette smoking practices. Of those contacted 47,286 (93%) reported their age and current cigarette smoking practices. The results below derive from the tabulated responses of this group.

Table 1 shows the percentage of current cigarette smokers by income

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and age. As the right-most column shows, among all adults, the percentage of smokers in the group earning less than $5,000 annually is equal to the percentage of smokers in the group earning $25,000 or more. The highest prevalence of cigarette use is in the middle income groups. Further, as the last row shows, cigarette use is relatively infrequent in the older population. While elderly persons represented almost 14% of the total sample, they made up 34% of the lowest income group (not shown in Table 1). A genuine inverse relation between income and smoking prevalence is found only in the middle age range.

Table 2 shows the percentage of current cigarette smokers by income and race. Neither group shows a genuine inverse relation between income and the percentage of smokers. Among blacks, there appears to be virtually no income-related gradient in the prevalence of cigarette use.

Table 2 shows that a slightly higher percentage of black adults smoke cigarettes. But data on the proportion of smokers do not tell the whole story. We need to know the number of cigarettes smoked per day by current smokers in each group.

Accordingly, I made the following computation. First, for each age-race-income category, I calculated the average reported number of cigarettes smoked per day among current smokers. Second, since current smokers are known to underreport the actual amount smoked, I multiplied the reported sample averages by 150%. (From national cigarette consumption data, I estimate that the average smoker actually consumed about 31.4 cigarettes daily in 1979. By contrast, the sample mean reported smoking frequency was 20.9 cigarettes daily. My use of the ratio 31.4/20.9 = 150% assumes that the underreporting was uniform among the subgroups.)

Having estimated both the percentage of current smokers and the daily

Table 1. Percentage of Regular Cigarette Smokers in Relation to Family Income and Age, 1978-80.

Annual Family Income (Dollars)	Age (Years) 17-30	31-65	>65	All ages 17+
<5,000	38	42	14	31
5,000-9,999	41	41	16	35
10,000-14,999	36	39	18	36
15,000-24,999	32	36	15	34
25,000+	28	33	17	31
All incomes[a]	34	36	16	33

Source: U.S. National Center for Health Statistics, Health Interview Survey, unpublished data.

a. Includes those with unreported incomes, who represented 8 percent of the total sample.

smoking frequencies among current smokers, I then estimated the possible impact of an 8 cent per pack (that is, a 0.4 cent per cigarette) increase in the retail price of cigarettes. If such an increase had no effect on cigarette use, then the annual dollar burden per capita would equal:

percentage of cigarette smokers	x	number of cigarettes smoked daily among current smokers	x	$0.004 per cigarette	x	365 days per year

Since a price increase might deter some cigarette use, such a computation yields the maximum additional expenditure on cigarettes resulting from the specified tax increase. (In making such a calculation, I finesse the question of the relative price sensitivities of different age-race-income groups. The artificial assumption of zero price elasticities permits me, for purposes of exposition, to assess the pure redistributive effects of the tax.)

The results are shown in Tables 3 and 4. Overall, an 8 cents per pack tax increase would impose a maximum per capita burden of $15 annually. As shown in the top panel of Table 3, among all races, the per capita burden of the tax tends to show a positive (rather than an inverse) relation to income. Further, as the bottom panel of Table 3 shows, the annual dollar burden per black person would be only about three-quarters of that per white person. As Table 4 shows, the annual dollar burden per middle aged person would be three times that per elderly person.

The bottom panel of Table 3 and the right-most column of Table 4 express the computed dollar burdens as percentages of reported annual income. As a proportion of income, the estimated burden of the tax

Table 2. Percentage of Regular Cigarette Smokers Among Adults in Relation to Family Income and Age, 1978-80.

Annual Family Income (Dollars)	Race		
	White	Black	All Races[a]
<5,000	30	35	31
5,000-9,999	34	35	35
10,000-14,999	36	36	36
15,000-24,999	34	36	34
25,000+	31	35	31
All incomes[b]	33	35	33

Source: U.S. National Center for Health Statistics, Health Interview Survey, unpublished data.

a. Includes other races and those with unreported race.

b. Includes those with unreported income.

increase is virtually identical across races. Moreover, a tax increase would impose a much smaller proportionate burden on elderly incomes.

I have focused on an 8 cent per pack price increase because the federal cigarette excise tax was raised by exactly that amount in 1983. With total federal, state and local tax receipts equal to about 31 cents per pack

Table 3. Maximum Annual Dollar Burden per Capita of an 8-Cent Per Pack Tax Increase: by Family Income and Race.[a]

Annual Family Income (Dollars)	Race		
	White	Race Black	All Races[b]
<5,000	13	11	12
5,000-9,999	16	10	15
10,000-14,999	17	12	16
15,000-24,999	16	12	16
25,000+	15	12	15

Race	$/year[c]	% Annual Income[d]
White	15	0.13
Black	11	0.14
All Races[b]	15	0.13

Source: U.S. National Center for Health Statistics, Health Interview Survey, unpublished data.

a. See text for details of computation.

b. Includes other races and those with unreported race.

c. Includes those with unreported income.

d. Excludes those with unreported income.

Table 4. Maximum Annual Dollar Burden per Capita of an 8-Cent Per Pack Tax Increase: by Age.[a]

Age Group	$/year	% Annual Income[b]
17-30 years	14	0.13
31-65 years	18	0.14
66+ years	6	0.08
all ages	15	0.13

Source: U.S. National Center for Health Statistics, Health Interview Survey, unpublished data.

a. See text for details of computation.

b. Excludes those with unreported income.

(U.S.D.A., 1985, Tables 31 and 1), the dollar figures (and the proportions of income) could be scaled up by a factor of 31/8 to reflect the total dollar tax burden. Still, the relative magnitudes in Tables 3 and 4 would remain the same.

How do we assess the fairness of a tax increase? Among economists, the conventional wisdom is to assess tax regressivity: that is, to check whether low income persons pay a greater proportion of their income than high income groups. The focus on tax regressivity, I would argue, is too narrow here. If the "little guys" are the elderly, then the data show that the cigarette tax in fact hits the "big guys." In this respect, a cigarette tax increase is fairer than, say, subjecting Social Security benefits to income taxation. Moreover, the evidence demonstrates that the average black person would in fact pay less (not more, as some would suppose) than the average white person. In this respect, the cigarette tax is fairer than cutbacks on government transfer programs that are targeted to minorities.

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