Comments on:

"Proposed Resolution: For Settlement Discussion Purposes Only. 6/20/97, 3:00 p.m. DRAFT." 68pp.

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Commissioned by the American Cancer Society

Summary

It has been widely reported that U.S. cigarette manufacturers will be required to pay a total of $368.5 billion during the first 25 years of the Proposed Resolution. This characterization of the settlement is wrong for the following reasons:

- The reported 25-year total of $368.5 billion does *not* reflect the *present discounted value* of payments. The present discounted value (or "PDV") represents the current market value of the proposed stream of industry payments. Put differently, the PDV is the amount that investors would be willing to pay today for a portfolio of 25-year corporate bonds that promised to pay exactly what the Proposed Resolution mandates. Even when I take into account the "inflation protection" provision (Title VI, B4, at p. 34), I calculate that the PDV of the industry's payments amounts to $231.9 billion.

- The reported 25-year total of $368.5 billion does *not* take into account the "adjustment for volume" provision (Title VI, B5, at p. 34) in the Proposed Resolution. As I explain in more detail below, this provision essentially pegs all payments to the volume of cigarettes sold, and therefore renders the payment scheme equivalent to a unit tax on cigarettes. As the Proposed Settlement contemplates (Title VI, B7, at p. 35), this virtual tax will be passed on to consumers in the form of higher prices. As a result, the volume of cigarettes sold will decline, and therefore total payments will decline, too. I used a conservative model of the relation between cigarette consumption and cigarette prices to estimate the effect of the "adjustment for volume" provision. Based upon this model, I estimated the PDV of industry payments for the first 25 years to be $194.5 billion.

- Based upon my analysis of the "adjustment for volume" provision, I estimated that the real price of a pack of cigarettes (in 1996 dollars) will rise by $0.41 in the initial settlement year. Equivalently, the Proposed Resolution will impose a virtual tax of $0.41 per pack in 1996

[1] The views expressed in this document are those of the author alone. They do not necessarily represent the views of the American Cancer Society or of any other person or organization.

dollars at the outset. This virtual tax will gradually increase to $0.62 per pack (in 1996 dollars) by the fifth settlement year, and remain at that level indefinitely.

- During the current session of Congress, federal cigarette tax increases of up to $0.50 per pack (Hatch-Kennedy Bill; $0.20 per pack as proposed in the current Senate Finance Committee tax package) have been proposed. These developments augur that, even in the absence of an industry-wide settlement, Congress might eventually enact substantial increases in the cigarette tax. If enactment of the Proposed Resolution deterred Congress from taking future action to raise cigarette prices, then the settlement, in effect, would do no more than accomplish the inevitable. In fact, it is possible that the financial penalties imposed through the settlement could fall short of the revenues that might be ultimately attained through higher excise taxes.

- The above calculations of PDV and cigarette prices do not explicitly take into account the special penalty built into the payment schedule if manufacturers' domestic profits increased (Title VI, B5, at p. 35). Nor does it explicitly consider the so-called "look back" provision that would require payment of up to $2 billion in additional penalties if the prevalence of daily smoking among 13-to-17-year-olds does not reach a target level (Appendix V, at p. 51). Nonetheless, I estimate that these provisions are unlikely to have a significant effect on my conclusions above.

Present Discounted Value of Settlement Payments

Table 1 below shows my calculations of the present discounted value (PDV) of the first 25 years of industry payments. The first four columns are taken from the schedule laid out in Title VI, A.1 and B.1–B.3. The year "0" refers to payments due upon statute enactment (Title VI, A.1). The year "1" refers to December 31 of the first full year after statute signing. (See Title VI, B.2). The column entitled "3% Inflation-Protected Payments" shows the effect of the "inflation protection" provision (Title VI, B.4) under the assumption that the annual rate of increase of the Consumer Price Index remains at or below 3%. (See footnote 2 to Table 1.) The final column computes the present discounted value of the inflation-protected payments (See footnote 3 to Table 1.)

To compute the PDV, I used an interest rate of 7%, which approximates the average long-term interest rate on corporate bonds and U.S. Treasury obligations. The use of the overall corporate interest rate (or the interest rate on treasury bonds) implicitly assumes that the cigarette industry will have a high debt rating. While the "payment protection" provision of the Proposed Settlement (Title VI, B.6, at p. 35) vaguely provides for "payment

priority/continuation during bankruptcy/reorganization proceedings," it is still arguable that the appropriate discount rate could be as high as 9 or 10%.[2]

[2] See Harris JE. "What can the industry afford? Structuring a long-term settlement." Remarks at the 12th Annual Conference of the Tobacco Products Liability Project, Northeastern University School of Law, Boston, MA, May 11, 1997. Internet: http://web.mit.edu/jeffrey/harris/afford.html.

Table 1. Present Discounted Value of the First 25 Years of Settlement Payments. No Adjustment for Volume Changes

Payment Year	Base Amount Payment (billions)[1]	Public Health Trust Payment (billions)[1]	Face Amount of Total Payments (billions)[1]	3% Inflation-Protected Payments (billions)[2]	Present Discounted Value (7%) (billions)[3]
0	10.0		10.0	10.0	10.0
1	6.0	2.5	8.5	8.8	8.2
2	7.0	2.5	9.5	10.1	8.8
3	8.0	3.5	11.5	12.6	10.3
4	10.0	4.0	14.0	15.8	12.0
5	10.0	5.0	15.0	17.4	12.4
6	12.5	2.5	15.0	17.9	11.9
7	12.5	2.5	15.0	18.4	11.5
8	12.5	2.5	15.0	19.0	11.1
9	15.0		15.0	19.6	10.6
10	15.0		15.0	20.2	10.2
11	15.0		15.0	20.8	9.9
12	15.0		15.0	21.4	9.5
13	15.0		15.0	22.0	9.1
14	15.0		15.0	22.7	8.8
15	15.0		15.0	23.4	8.5
16	15.0		15.0	24.1	8.2
17	15.0		15.0	24.8	7.8
18	15.0		15.0	25.5	7.6
19	15.0		15.0	26.3	7.3
20	15.0		15.0	27.1	7.0
21	15.0		15.0	27.9	6.7
22	15.0		15.0	28.7	6.5
23	15.0		15.0	29.6	6.2
24	15.0		15.0	30.5	6.0
25	15.0		15.0	31.4	5.8
Total	343.5	25.0	368.5	555.8	231.9

Notes:

1. *Proposed Resolution: For Settlement Discussion Purposes Only*, DRAFT, 6/20/97, "Title VI: Programs/Funding, A. Up Front Commitment, B. Base Annual Payments."
2. $X_1 = X_0 * 1.03^T$, where X_0 = Total Payments and T = Year. See "B.4. Inflation Protection for Annual Payments," *ibid*, p. 34.
3. $X_2 = X_1 / 1.07^T$, where X_1 = Inflation Protected Total Payments and T = Year. The 7% rate was based upon the average values of the following indices for the two week-period ending 6/21/97: Merrill Lynch Corporate Index, 7.34%; Lehman Bros. T-Bond Index, 6.97%;30-year Treasury Bonds, 6.87%.

Table 1 shows that the present discounted value of the first 25 years of industry payments would be $231.9 billion. By way of sensitivity analysis, I increased the CPI inflation rate to 4% but kept the long-term interest rate at 7%. In that case, the PDV of industry payments increased to $259.0 billion. I then maintained the inflation rate at 4%, but increased the long-term interest rate to 9%. In that case, the PDV of industry payments was $210.5 billion. These estimates, however, do not take into account the critical "volume adjustment" provision of the Proposed Resolution, which is discussed next.

The "Volume Adjustment" Provision as a Virtual Tax

Title VI, B.5 contains the following important "volume adjustment" provision:

> 5. Adjustment for Volume Decrease (Adult Volume Only) or Total Volume Increase
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> ° Beginning in year 1; payment made equal to scheduled annual payment times the ratio of actual relevant domestic tobacco product unit sales volume to relevant base volume. In the event of a decline in volume, relevant actual volume and relevant base volume are adult volume figures; in the event of an increase in volume, relevant actual volume and relevant base volume are total volume figures. Base volume is 1996 volume.

This provision has the effect of making annual industry payments proportional to cigarette sales volume.[3] In essence, it imposes a virtual unit tax on cigarettes. In fact, the "pass through" provision (Title VI, B.7, at p. 35) provides exactly for an increase in price to finance such payments.

The "volume adjustment" provision contains an asymmetric feature in which decreases in payments are pegged to "adult volume," while increases in payments are pegged to "actual volume." The phrase "adult volume" is not part of established or accepted terminology among economists or financial analysts of the cigarette industry. However, I have estimated that the number of cigarettes purchased by persons aged 18 years or more in calendar 1996 constituted 97.9% of all cigarettes sold domestically.[4] Hence, the "adult volume" clause would appear to have minimal effect, if any, on the volume adjustment provision.

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[3] Let X_0 denote scheduled payments; q denote actual unit volume of cigarette sales; and q* denote the base volume (in 1996). Then volume-adjusted payments would be $X_0(q/q^*)$, which can be rewritten as $(X_0/q^*)q$. Equivalently, volume-adjusted payments are equal tq, where $t = (X_0/q^*)$ is a unit tax on cigarettes.

[4] Based upon the "Monitoring the Future" study and U.S. Census population estimates, I estimated that there were 2.692 million daily smokers aged 13–17 years in 1996. (See *"Monitoring the Future" Study. Cigarette Statistics Table 1: Long-Term Trends in Prevalence of Cigarettes for Eighth, Tenth, and Twelfth Graders.* Ann Arbor: Univ. Michigan, 1997. http://www.isr.umich.edu/src/mtf/mtfcig1.html. See also U.S. Census Bureau. Resident Population, Quarterly, by Single Year of Age, Sex, and Hispanic Origin, July 1995. Internet ftp://ftp.census.gov/pub/population/estimates/nation/e90s/e9595rmp.zip.) If each underage daily smoker consumed 180 packs of cigarettes annually, then total underage consumption would be 0.508 billion packs. This would represent 2.1% of the 24.165 packs of cigarettes shipped by manufacturers in 1996. (See

Table 2 shows my computations of the present discounted value of industry payments, in which I took explicit account of the volume-adjustment provision. The second column, entitled "Face Amount of Total Payments," is taken from the fourth column of Table 1. The third column of Table 2, entitled "Effective Tax (1996 dollars per pack)," computes the tax as equal to the face value of the payment divided by 1996 ("base") unit volume. (See text footnote 3, as well as footnote 2 of Table 2.) The fourth column, entitled "Real Price," shows the sum of the base retail price and the effective tax. (See footnote 3 of Table 2.)

The fifth column, entitled "Predicted Total Consumption," shows the predicted effect of the price increase on total domestic consumption. This prediction is based upon a model in which the current price elasticity of demand is -0.4, and in which there is a background decline in cigarette smoking equal to 0.6% annually. (See footnote 4 of Table 2.) The sixth column shows the effect of the "volume adjustment" provision on the face value of industry payments. Thus, in year 1, the face value of payments is $8.5 billion. To finance this payment, I estimate that cigarette manufacturers will raise retail prices by $0.35 per pack compared to the base year (1996). The resulting price increase will result a decline in consumption to 22.4 billion packs, which translates to a 7.2% decline in unit volume compared to the base year (1996). The resulting payment is therefore "volume adjusted" from $8.5 billion to $7.9 billion, as shown in the column entitled "Real Volume Adjusted Payments."

Finally, the last column shows the combined effect of the "inflation protection" provision and 7% discounting. Taking both the "inflation protection" and "volume adjustment" provisions into account, I estimate that the PDV of industry payments will be $194.5 billion. The bottom line of Table 2 also shows the separate effect of the "volume adjustment" provision: the face value of industry payments would decline from $368.5 billion to $304.3 billion.

My analysis in Table 2 assumes a background 0.6% rate of decline of cigarette consumption. That is, industry volume would decline by 0.6% annually in the absence of price increases. This assumption is based on an analysis of historical trends.[5] If advertising curbs, restrictions on cigarette nicotine content, or other regulatory controls envisioned by the settlement were to accelerate the background rate of decline, then the value of industry payments would fall. By way of sensitivity analysis, I computed the

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Maxwell JC, "Market up: Philip Morris and Lorillard report 1996 growth in U.S. cigarette market." *Tobacco Reporter* 1997 (April):22-28.)

[5] Harris (cited in footnote 4 of Table 2) estimated a background rate of decline in per capita consumption equal to 1.6% for the years 1965–1993. If the rate of population growth is 1% annually, then the rate of decline in total consumption would then be 0.6% annually.

Table 2. Present Discounted Value of the First 25 Years of Settlement Payments. Adjustment for Volume Changes

Payment Year	Face Amount of Total Payments (billions)[1]	Effective Real Tax (1996 dollars per pack)[2]	Real Price (1996 dollars per pack)[3]	Predicted Total Consumption (bill. Packs)[4]	Real Volume-Adjusted Payments ($1996 bill.)[5]	Present Discounted Value ($1996 bill.)[6]
0	10.0	0.41	2.46	22.3	10.0	10.0
1	8.5	0.35	2.40	22.4	7.9	7.6
2	9.5	0.39	2.44	22.1	8.7	8.1
3	11.5	0.48	2.53	21.6	10.3	9.2
4	14.0	0.58	2.63	21.1	12.2	10.5
5	15.0	0.62	2.67	20.8	12.9	10.7
6	15.0	0.62	2.67	20.7	12.8	10.2
7	15.0	0.62	2.67	20.5	12.7	9.8
8	15.0	0.62	2.67	20.4	12.7	9.3
9	15.0	0.62	2.67	20.3	12.6	8.9
10	15.0	0.62	2.67	20.2	12.5	8.6
11	15.0	0.62	2.67	20.0	12.4	8.2
12	15.0	0.62	2.67	19.9	12.4	7.8
13	15.0	0.62	2.67	19.8	12.3	7.5
14	15.0	0.62	2.67	19.7	12.2	7.2
15	15.0	0.62	2.67	19.6	12.1	6.9
16	15.0	0.62	2.67	19.4	12.1	6.6
17	15.0	0.62	2.67	19.3	12.0	6.3
18	15.0	0.62	2.67	19.2	11.9	6.0
19	15.0	0.62	2.67	19.1	11.9	5.7
20	15.0	0.62	2.67	19.0	11.8	5.5
21	15.0	0.62	2.67	18.9	11.7	5.3
22	15.0	0.62	2.67	18.8	11.6	5.0
23	15.0	0.62	2.67	18.6	11.6	4.8
24	15.0	0.62	2.67	18.5	11.5	4.6
25	15.0	0.62	2.67	18.4	11.4	4.4
Total	368.5				304.3	194.5

Notes:

1. Face Value of Total Payments, derived from Table X, "Look-Back" penalties not included.
2. $t = X_0/q^*$, where X_0 = Total payments and q^* = 24.165 billion packs shipped in 1996.
3. $p = t + 2.05$, where the base price of $2.05/pack was computed from the ratio of total expenditures on cigarettes to total U.S. consumption, as reported in U.S.D.A., *Tobacco Outlook and Situation Report*, TBS-237 (Dec. 1996 Table 1) and TBS-238 (Apr. 1997 Table 33).
4. $q = exp(3.5849-0.1951p-0.006T)$, where p is real price per pack and T is year of payment, based on model reported in Harris JE, "A Working Model for Predicting the Consumption and Revenue Impacts of Large Increases in the U.S. Federal Cigarette Excise Tax," Cambridge MA: National Bureau of Economic Research, July 1994. See http://web.mit.edu/jeffrey/harris/workingmodel.html.
5. $R = tq$, where t = real tax per pack and q = number of packs.
6. $X_1 = R^*(1.03/1.07)^T$, where $T > 1$ is year of payment. See notes 2 and 3 to Table 1.

face value of industry payments to be $289.3 billion and the present discounted value of industry payments to be $186.4 billion in the event that the background rate of decline in cigarette volume were 1.0% annually.[6]

Effect of Advertising Restrictions on Manufacturers' Profits and Payments

The above calculations of PDV and cigarette prices do not explicitly take into account the special penalty built into the payment schedule if manufacturers' domestic profits increased (Title VI, B.5, at p. 35). One might argue that the marketing restrictions built into the Proposed Resolution (Title I, A, at pp. 8–9; see also Appendix VII) will result in a significant reduction on advertising and promotional expenditures, and thus a windfall gain for cigarette manufacturers. My analysis of these marketing restrictions, however, suggests otherwise.

Table 3 below shows U.S. domestic cigarette advertising and promotional expenditures for the years 1990–1994, as reported by the Federal Trade Commission. (Data for 1995 are likely to be issued by the FTC later this year.) The most important components of current cigarette advertising and marketing are promotional allowances (28%) and coupons and retail value added (37%). The promotional allowances are predominantly incentive payments for high-volume purchases and priority shelf space. While the coupons and retail value added category includes some specialty items offered at the time of purchase, most of the dollars in this category are coupons ("ten cents off" on next purchase) and multiple-back promotions ("buy one, get one free"). These activities are not barred by the Proposed Resolution.

Table 4 shows my estimates of the effects of the Proposed Resolution on industry advertising and promotional expenditures. While outdoor and transit advertising will be banned[7] and specialty item distribution and public entertainment will likewise be outlawed, I expect that industry promotional allowances and conventional media advertising will increase. These predictions are based in part on the industry's reaction to the 1971 Congressional ban on radio and TV advertising, after which print and other non-broadcast advertising increased substantially.[8] Overall, I estimate that the industry's advertising and promotional budget will decline from an average of $4.9 billion to approximately $4.5 billion. The gain in profit resulting from this net decline in advertising expenditures, I estimate, is less than the loss of profit from

[6] The "volume adjustment" provision does not apply to the "year 0" or "up front" industry payment. However, my analysis in Table 2 assumes that the "year 0" payment will likewise be financed by price increases.

[7] Title I, A, page 9 actually bans all "outdoor" advertising, but does not explicitly mention transit advertising. My interpretation is that transit advertising would come under this provision.

[8] For example, newspaper advertising increased seven-fold and magazine advertising increased 2.5-fold from 1970 to 1975. While the broadcast ban caused a reduction of nearly $220 million in TV and radio advertising, overall advertising and promotion expenditures increased by over $50 million from 1970 to 1975. See *FTC Report for the Year 1994*, cited in Table 3, at p. 14.

higher cigarette prices (about $550 million in year 1). Accordingly, the effect of the windfall is likely to be minimal.

The Look-Back Provision

Appendix V of the Proposed Resolution would require payments of up to $2 billion in additional penalties if the prevalence of daily smoking among 13-to-17-year-olds does not reach specified target levels within 5 to 10 years. Based upon my analyses of data from the "Monitoring the Future" Study, I estimate that the "base percentage" of underage daily smokers (that is, the 1986–1996 historical average) is 15.2%.[9] Hence, the five-year goal of a 30% reduction in underage smoking prevalence would mean a target rate of 10.6% daily smokers. This target actually amounts to a 58% reduction from the current 1996 prevalence of 18.2% among eighth- to twelfth-graders.[10]

These target reductions in teenage smoking rates are large. Even if the price elasticity of demand among teenagers were as high as -1.2, the expected $0.62 increase in the real price of cigarettes (Table 2) would translate into only a 36% reduction in teenage smoking from its 1996 level, that is, to about 11.6% daily smokers. Under the surcharge provisions of Appendix V, the resulting smoking prevalence would amount to a 24% reduction from the "base percentage" of 15.2%. Hence, the reduction in underage smoking rates would fall 6 percentage points below the 30-percent target. Under the provisions of Appendix V (B.1(b), at p. 53), the surcharge would be $80 million × 6 = $240 million annually. If this surcharge were passed onto all consumers in the form of higher retail prices, the effect would be less than $0.01 per pack.

The "look back" provisions set a maximum surcharge of $2 billion annually (Appendix V, B.1(4), at p. 54). If the industry were liable for the entire $2 billion surcharge, and if the surcharge were passed on to consumers in the form of higher prices, then the retail price of cigarettes would increase by an additional $0.08 per pack. To assess the effect of the additional penalty, I analyzed industry payments in the event the surcharged equaled the $2 billion maximum from year 5 onward. While the face value of industry payments increased from $368.5 billion to $400.5 billion, the volume adjusted payments increased to only $333.7 billion and the PDV increased to only $211.7 billion. Thus, while imposition of the maximum surcharge would raise industry payments by $32 billion, the PDV of total industry payments would increase by only $17.2 billion.

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[9] See citation to "Monitoring the Future" Study in footnote 4 above. I estimate the base percentages to be: 8.5% for 8th graders; 14.7% for 10th graders; and 19.2% for 12th graders. The population-weighted average, as specified in Appendix V, A.1, would then be 15.2%.

[10] The 1996 rates of daily smoking in the "Monitoring the Future" Study were: 10.4% for 8th graders; 18.3% for 10th graders; and 22.2% for 12th graders. The population-weighted average, as specified in Appendix V, A.1, would then be 18.2% for 1996.

The economic rationale underlying this conclusion is straightforward. Imposition of an additional $2 billion surcharge will result in a further increase in the retail price of cigarettes. The rise in cigarette price will further decrease total cigarette sales– not merely underage smoking. Under the “volume adjustment” provision, manufacturers will therefore get a credit for reducing smoking.

Table 3. U.S. Domestic Cigarette Advertising and Promotional Expenditures, 1990-1993

Type of Advertising	1990	1991	1992	1993	1994	5-Yr Ave.	%
Newspapers	71,174	48,212	35,467	36,220	24,143	43,043	0.9%
Magazines	328,143	278,110	237,061	235,253	251,644	266,042	5.4%
Outdoor	375,627	386,165	295,657	231,481	240,024	305,791	6.2%
Transit	60,249	60,163	53,293	39,117	29,323	48,429	1.0%
Point of Sale	303,855	344,580	366,036	400,943	342,650	351,613	7.1%
Promotional Allowances	1,021,427	1,156,280	1,514,026	1,557,635	1,678,917	1,385,657	28.1%
Sampling Distribution[1]	100,893	56,970	49,315	40,202	6,974	50,871	1.0%
Specialty Item Distribution[2]	307,037	184,348	339,997	755,780	850,810	487,594	9.9%
Public Entertainment	125,094	18,622	89,739	84,276	81,292	79,805	1.6%
Direct Mail	51,875	65,002	34,345	31,463	31,187	42,774	0.9%
Coupons and Retail Value Added[3]	1,183,798	1,882,905	2,175,373	2,559,387	1,248,896	1,810,072	36.7%
All Others (Including Audio-Visual)	62,917	68,758	41,608	63,680	47,672	56,927	1.2%
Total	3,992,089	4,550,115	5,231,917	6,035,437	4,833,532	4,928,618	100.0%

Source: *Federal Trade Commission Report to Congress For 1994.* Washington DC: FTC, 1996; Tables 3D and 3E.

1. Money spent giving cigarette samples to the public. (See FTC Report, p. 6).
2. Specialty item advertising is the practice of branding items such as T-shirts, caps, sunglasses, key chains, calendars, lighters and sporting goods with a brand's logo, and then giving them away or selling them to customers. (See FTC Report, p. 7, note 6.)
3. Includes cents-off coupons, multiple pack promotions ("Buy one, get one free."), retail value added offers (non-cigarette specialty items distributed along with purchase of cigarettes), and coupons sent via direct mail. (See FTC Report, pp. 7-8, including note 7).

Table 4. Projected Impact of Proposed Settlement on U.S. Domestic Advertising and Promotional Expenditures

Type of Advertising	1990-1994 5-Yr Ave.	Projected Effect	Projected % Change	Post-Settlement
Newspapers	43,043	Increase	100%	86,086
Magazines	266,042	Increase	100%	532,084
Outdoor	305,791	Banned	-100%	-
Transit	48,429	Banned	-100%	-
Point of Sale	351,613	Decrease	-50%	175,806
Promotional Allowances	1,385,657	Increase	50%	2,078,486
Sampling Distribution	50,871	Decrease	-50%	25,435
Specialty Item Distribution	487,594	Banned	-100%	-
Public Entertainment	79,805	Banned	-100%	-
Direct Mail	42,774	Increase	100%	85,549
Coupons and Retail Value Added	1,810,072	Decrease	-20%	1,448,057
All Others (Including Audio-Visual)	56,927	Decrease	20%	68,312
Total	4,928,618			4,499,817

JEFFREY E. HARRIS: Biographical Sketch

Jeffrey Harris, M.D., Ph.D. is a physician and an economist. He is a primary-care internist at Massachusetts General Hospital and a professor at M.I.T, where he teaches health economics and a freshman seminar entitled "AIDS in the 21st Century."

Dr. Harris has advised numerous public and private agencies on health-care policy and health economics, including the Consumer Product Safety Commission, Centers for Disease Control, National Cancer Institute, Congressional Budget Office, American Cancer Society, Federal Trade Commission, Massachusetts Department of Public Health, and the Robert Wood Johnson Foundation. He has served on National Academy of Sciences committees on AIDS, low birthweight, diesel emissions, and most recently on the Academy's committee on risk characterization. He was on the National Advisory Research Resources Council at the N.I.H.

Dr. Harris has testified before the House Ways & Means Committee on financing health-care reform, and before the Massachusetts legislature on public disclosure of cigarette ingredients. He was an expert witness at the *Cipollone* trial on the liability of cigarette manufacturers, and testified as an expert witness for the Attorney General of Canada in a constitutional challenge to the Canadian ban on tobacco advertising. He has given deposition testimony concerning the State of Florida's smoking-attributable damages in *Chiles v. American Tobacco Company*.

Dr. Harris wrote the seminal chapter in the 1989 *Surgeon General's Report*, in which he estimated that smoking caused nearly 400,000 deaths annually. In a 1990 article in the *Journal of the American Medical Association*, Dr. Harris was one of the first researchers to document that AIDS victims were surviving longer. He authored *Deadly Choices: Coping with Health Risks in Everyday Life* (1993), a book that took controversial stands on sex and HIV, weight control, exercise, quitting smoking, cholesterol screening, and breast cancer detection. He recently published an evaluation of the impact of the Massachusetts anti-smoking campaign, and is now starting work on a new textbook on health economics and health policy.

Dr. Harris' writings extend beyond scholarly publications. In 1990, he wrote on the "New Economics of AIDS" for *U.S. News & World Report*. In June, 1993, in an Op-Ed in the *New York Times*, he argued for an increase in the Federal cigarette excise tax. In August, 1993, in a Focus article on NBA star Reggie Lewis's death in the *Boston Globe*, he explained how basketball and treadmill running can place very different kinds of stresses on the heart. Dr. Harris has made numerous appearances on radio, television, and university lectures in connection with his writings. He has discussed issues of sex and HIV on radio with Mort Downey; family inheritance of breast cancer on TV with Joan Lunden and Dr. Tim Johnson (*Good Morning America*); and the economics of supply and demand for abortion services in the U.S. with Chris Wallace (*Nightline*).