

# **Effect of a Proposed Amendment to Section 405 of the National Tobacco Policy and Youth Smoking Act (S.1415MGR.3, Managers' Amended Version) to Make Tobacco Manufacturers' Payments Non-Tax-Deductible**

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This report is an extension of my recent analysis of the impact of the proposed National Tobacco Policy and Youth Smoking Act (S.1415, "the Act") on the price and consumption of cigarettes in the United States during 1997–2006.<sup>2</sup>

In particular, I consider the impact of an amendment to eliminate the tax-deductibility of tobacco company payments, as currently provided for in Section 405 ("Tax Treatment of Payments") of the Managers' Version of the Act (S.1415MGR.3, May 18, 1998).

Removing the tax-deductibility of tobacco companies' payments will have five main effects.

- Tobacco-manufacturing companies will have to raise their wholesale prices even higher than would be required under the present version of the Act.
- The higher prices would depress cigarette consumption even more than under the present version of the Act.
- Under the Volume Adjustment provision (Section 403(2) of the Act) that becomes effective in 2002, the required annual payments to the National Tobacco Trust Fund (under Section 402(b)) will be lower than under the present version of the Act.
- The reduced annual payments will be substantially offset by increased income tax payments by manufacturers.

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<sup>1</sup> This report was prepared at the request of the staff of Sen. Edward M. Kennedy (D-MA). However, the opinions expressed in this report are the author's sole responsibility. They do not necessarily reflect the positions of the Massachusetts Institute of Technology, the Massachusetts General Hospital, or any other organization.

<sup>2</sup> Harris JE. *The Price of Cigarettes and the Profits of Cigarette Manufacturers With and Without Federal Intervention, 1997–2006*. Report to the American Cancer Society. May 11, 1998. Harris JE. *Prepared Statement Before the Senate Democratic Task Force on Tobacco, Sen. Kent Conrad (D-ND), Chairman*. May 13, 1998.

- Manufacturers' total Federal payments (including annual payments under Section 402(b) of the Act and corporate income tax payments) will rise.

My results are given first. My model and assumptions follow.

## Results

Table 1 shows the main results of my analysis. Under the Managers' Amended Version of the Act, the real price of a pack of cigarettes (in constant 1997 dollars) will rise from \$2.12 in 1997 to \$3.20 in 2002 and then to \$3.31 in 2006. By contrast, if manufacturers' payments were non-tax deductible, then the real price would rise to \$3.74 in 2002 and \$3.92 in 2006. Under the Managers' Amended Version, total domestic cigarette consumption would fall from 24 billion packs in 1997 to 18.9 billion packs in 2002 and 18.0 billion packs in 2006. By contrast, under the non-tax-deductibility provision, consumption would fall to 17 billion packs in 2002 and 16 billion packs in 2006.

The effect of the non-tax-deductibility provision on manufacturers' Trust Fund payments is not seen until 2002, when the Volume Adjustment provision of the Act becomes effective. In that year, manufacturers' real Trust Fund payments are \$18.1 billion under the Managers' Amended Version and \$16.3 billion with the non-tax-deductibility provision. However, manufacturers will also pay an additional \$8.8 billion in corporate income taxes, so that total real Federal payments will be \$25.1 billion. By 2006, manufacturers' real Trust Fund payments are \$19.7 billion under the Managers' Amended Version and \$17.4 billion under the non-tax-deductibility provision. In that year, manufacturers will also pay an additional \$9.4 billion in income taxes, so that total real Federal payments will equal \$26.8 billion.

Although not shown explicitly, the results in Table 1 can be used to assess the impact on manufacturers' profits from domestic tobacco sales. In 1997, manufacturers' pre-tax operating profits from domestic tobacco sales were \$7.2 billion.<sup>3</sup> At a corporate income tax rate of 35%, these operating profits would contribute \$4.68 billion to after-tax profits. Under the Managers' Amended Version of S.1415, total consumption is expected to decline by 25% during 1997–2006 (that is, from 24 to 18 billion packs). I have already presented evidence that manufacturers can raise cigarette prices to maintain a constant real profit margin per pack.<sup>4</sup> Accordingly, under the Managers' Amended Version, real after-tax profits on domestic cigarette sales will also decline by 25%, that is, from \$4.68 billion to \$3.51 billion by 2006. Under a non-tax-deductibility provision, total consumption will fall by 33.3% during 1997–2003 (that is, from 24 to 16 billion

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<sup>3</sup> Harris JE. *op. cit.* Note 2.

<sup>4</sup> Harris JE. *op. cit.* Note 2.

packs; see Table 1). Thus, real after-tax profits on domestic cigarette sales will decline by 33.3%, that is, from \$4.68 billion to \$3.12 billion.

### Model and Assumptions

The main assumptions concerning the components of cigarette retail prices and the demand for cigarettes were set forth in an earlier reports.<sup>5</sup> Here, I discuss specifically the economic analysis of the tax deductibility provision.

Let the required annual real payment in year  $t$  equal  $R_t$  dollars, where  $t = 0$  represents calendar year 1998;  $t = 1$  represents 1999; etc. Let  $x_t$  denote cigarette consumption in year  $t$ , and let  $X$  denote "base volume" as defined in Sec. 403(2) "Volume Adjustments." Then the volume-adjusted payment equals  $R_t(x_t/X)$ , which can be expressed as  $f_t x_t$ , where  $f_t = R_t/X$ . Thus, the imposition of a volume-adjustment provision has the effect of converting the required payment  $R_t$  into a unit tax of  $f_t$  per pack. If payments are tax-deductible, as provided for in the current Managers' Amended Version, then passing on the full cost of the required payments would mean a price increase equal to  $\Delta p_t = f_t$ .

Now consider the case where the required payments are not tax-deductible. Let  $m$  denote the Federal marginal corporate income tax rate. If a manufacturer seeks to pass the full costs of the required payments to consumers, it must raise its wholesale price by the amount  $\Delta p_t = f_t/(1-m)$ . The total cost to manufacturers is now  $x_t \Delta p_t = x_t f_t/(1-m)$ . This total cost has two components: (i) the non-deductible fee, that is,  $x_t f_t$ ; and (ii) the additional income taxes paid when price is raised to finance payment of the fee, that is,  $m x_t f_t/(1-m)$ .

The following numerical example walks through the calculation for the year 2006:

- According to Sec. 403(2) of the Act, the "base volume"  $X$  equals "80 percent of the number of units of taxable domestic removals and taxed imports in calendar year 1997." The Economic Research Service of the USDA currently estimates taxable domestic removals at 271.4 billion units and imports at 3.2 billion units in 1997.<sup>6</sup> Hence, base volume comes to  $X = 80\% \times (471.4 + 3.2) = 379.68$  billion units, or approximately 19 billion packs.
- In the year 2006 (which would correspond to "year 8"), the required unadjusted nominal payment by all tobacco companies is \$23.6 billion (as shown in Sec.

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<sup>5</sup> Harris JE. *op. cit.* Note 2.

<sup>6</sup> USDA, Economic Research Service. *Tobacco Situation and Outlook Report*. TBS-241, April 1998; Table 1.

402(b)). If cigarettes constituted 98.8% of all units sold,<sup>7</sup> then cigarette manufacturers' share would be \$23.3 billion. Applying the inflation-adjustment provision (Sec. 403(1)(A), based on 3-percent annual inflation during 2003–2006) gives an inflation-adjusted nominal payment of \$27.0 billion. In constant 1997 dollars, that comes to  $R_8 = \$20.7$  billion. Hence, under the volume adjustment provision, the adjusted real payment to the National Tobacco Trust Fund is  $R_8 (x_8 / X) = \$19.7$  billion, and the effective real tax is  $f_8 = R_8 / X = \$1.09$  per pack. Under Sec. 404 of the current Managers' Amended Version, manufacturers will be required to pass through this real tax of \$1.09 on each pack sold. (In Table 1, the real retail price increases by \$1.19 because other components of price – particularly state excise taxes – are assumed to rise faster than inflation.)

- Now consider the effect of the non-tax-deductibility provision. If the Federal corporate income tax rate was  $m = 0.35$ , then manufacturers would have to raise their wholesale price by  $\Delta p_8 = f_8 / (1 - m) = \$1.68$  per pack. (In Table 1, the actual increase in retail price is \$1.80 per pack.) As a result, projected total domestic consumption will fall to  $x_8 = 16$  billion packs. Therefore, manufacturers' pre-tax profits will rise by  $x_8 \Delta p_8 = \$26.8$  billion. (This number appears in the bottom right-hand corner of Table 1.) These profits will be used to finance: the non-deductible payments of  $x_8 f_8 = \$17.4$  billion; and additional income taxes of  $m x_8 f_8 / (1 - m) = \$9.4$  billion.
- Thus, under the current Managers' Amended Version, total real payments by cigarette manufacturers to the National Tobacco Trust Fund will be  $f_8 x_8 = \$19.7$  billion in 2006. Under a non-tax-deductibility provision, total real payments would consist of National Tobacco Trust Fund contributions equal to  $x_8 f_8 = \$17.4$  billion; and additional income taxes of  $m x_8 f_8 / (1 - m) = \$9.4$  billion.

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<sup>7</sup> Harris JE. *op. cit.* Note 2.

**Table 1. Impact of Removing the Tax Deductibility of Tobacco Manufacturers' Payments on Cigarette Price, Consumption, and Federal Receipts under the National Tobacco Policy and Youth Smoking Act (S.1415MGR.3), 1997-2006<sup>a</sup>**

Year	Enactment of S.1415MGR.3 Mgrs. Amend.				Enactment of Non-Tax Deductibility Amendment					
	Nominal Retail Price (\$/pack)	Real Retail Price (\$/pack)	Total Consump (billions)	Real Trust Fund Payment (\$billions)	Nominal Retail Price (\$/pack)	Real Retail Price (\$/pack)	Total Consump (billions)	Real Trust Fund Payment (\$billions)	Real Inc. Tax Payment (\$billions)	Real Total Payment (\$billions)
1997	2.12	2.12	24.0		2.12	2.12	24.0			
1998	2.61	2.53	22.0	9.4	2.88	2.80	20.9	9.4	5.1	14.5
1999	3.02	2.85	20.6	13.4	3.52	3.31	18.8	13.4	7.2	20.6
2000	3.14	2.88	20.3	13.9	3.69	3.38	18.4	13.9	7.5	21.4
2001	3.41	3.03	19.6	15.5	4.09	3.63	17.4	15.5	8.4	23.9
2002	3.71	3.20	18.9	18.1	4.33	3.74	17.0	16.3	8.8	25.1
2003	3.89	3.26	18.5	19.0	4.58	3.84	16.6	17.0	9.2	26.2
2004	4.08	3.32	18.2	19.8	4.84	3.93	16.2	17.6	9.5	27.1
2005	4.20	3.31	18.1	19.8	4.97	3.93	16.1	17.5	9.4	27.0
2006	4.32	3.31	18.0	19.7	5.12	3.92	16.0	17.4	9.4	26.8

a. All real quantities in constant 1997 dollars.

