THE PRICE OF CIGARETTES AND THE PROFITS OF CIGARETTE MANUFACTURERS WITH AND WITHOUT FEDERAL INTERVENTION, 1997–2006

A Report to the American Cancer Society

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Introduction

This report assesses the impact of proposed Congressional legislation on the future price of cigarettes and the profits of the domestic tobacco-producing divisions of U.S. cigarette manufacturers. I estimate prices and profits during the years 1997–2006 under two different scenarios: (a) enactment during 1998 of legislation substantially identical to the proposed National Tobacco Policy and Youth Smoking Reduction Act (S. 1415 Version RS, May 1, 1998);[2] and (b) no significant Federal legislation through 2006. The impact of Congressional legislation is the difference between these two scenarios.

To determine the effect of S. 1415 or any other bill, we need to recognize that cigarette prices will continue to rise even if no Federal statute is passed.[3] State governments will continue to raise cigarette excise taxes. Wholesalers and retailers will continue to adjust cigarette price markups to reflect their rising costs. Most important, cigarette manufacturers will continue to raise their prices in order to cover the costs of settling law suits. In 1997, as discussed below, U.S. cigarette manufacturers made settlement payments equal to approximately 4 cents per pack

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[1] The opinions expressed in this report are the author's sole responsibility. They do not necessarily reflect the opinions of the American Cancer Society, the Massachusetts Institute of Technology, or the Massachusetts General Hospital.

[2] Internet: http://thomas.loc.gov/cgi-bin/query/C?c105:./temp/~c1058qN43q

[3] Other analysts have attempted to predict how proposed Congressional legislation will affect future cigarette prices. See, for example, *Statements of Martin Feldman, Salomon Smith Barney, Before the Senate Commerce Committee*, March 19, 1998 and March 24, 1998; *Statement of Treasury Deputy Secretary Lawrence H. Summers, Senate Committee on Commerce, Science and Transportation*, March 24, 1998; *Statement of David J. Adelman, Tobacco Industry Analyst - Morgan Stanley Dean Witter, Before the Senate Judiciary Committee*, April 30, 1998. Unfortunately, their predictions of the rise in cigarette prices have often been misinterpreted as entirely the result of Federal intervention. What matter is not the absolute rise in price from its current level, but the additional increase in price, if any, that would result from Federal intervention.

of cigarettes sold. These increased costs have already passed on to their customers.

U.S. cigarette manufacturers have the market power to pass through very substantial cost increases to consumers in the form of higher prices. The U.S. cigarette industry is a 4-firm oligopoly. No significant new competitors have entered the domestic market for over 40 years, and barriers to new entry remain high. There are no close substitutes for cigarettes as a product. Other tobacco products and current nicotine replacement therapies are only partial substitutes. The demand for cigarettes is inelastic. As a result, an increase in price will raise more revenue even though it causes consumption to fall.[4] Historically, U.S. cigarette manufacturers have consistently passed on the costs of higher Federal excise taxes to their customers.[5]

Cigarette manufacture in the U.S. is a profitable enterprise. In recent testimony before the Senate Agriculture Committee, I estimated that in 1996, the operating profit per pack of cigarettes was $0.30.[6] With about 24.2 billion packs of cigarettes sold that year,[7] the total operating profits of the domestic tobacco-producing subsidiaries of U.S. manufacturers came to about $7.2 billion. So long as U.S. manufacturers can pass their costs through to customers – and thus retain their 30-cent-per-pack operating margins – cigarettes will remain profitable. Even if manufacturers were saddled with tens of billions of dollars of settlement payments or Federally-imposed assessments, and even if the resulting price hikes caused

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[4] The demand for a product is considered to be inelastic when a 1-percent increase in real price results in a drop in consumption that is less than 1 percent. Although consumption falls, total sales revenue (which equals price multiplied by consumption) rises. For cigarettes, the best estimate is that consumption falls about 0.4 percent for every 1-percent increase in real price. See: Sweanor D, Ballin S, Corcoran RD, et al. Report of the Tobacco Policy Research Study Group on tobacco pricing and taxation in the United States. *Tobacco Control* 1992;1(Suppl):S31-6; Harris JE. The 1983 increase in the federal excise tax on cigarettes. In: Summers L, ed. *Tax Policy and the Economy*, vol 1. Cambridge, Massachusetts: MIT, 1987:87-111; and Harris JE. A working model for predicting the consumption and revenue impacts of large increases in the US Federal cigarette excise tax. Working Paper No 4803. Cambridge, Massachusetts: National Bureau of Economic Research, Jul 1994.): Working Paper No. 4803. One group of economists claims to have measured 0.8-percent long-run decline in consumption for every 1-percent price increase, based upon pre-1985 data on states' tax receipts. See Becker GS, Grossman M, Murphy KM, An empirical analysis of cigarette addiction. *Am Econ Rev* 1994;84(3):396-418. Such an extreme finding has thus far not been clearly replicated. Even if the demand for cigarettes were as elastic as these authors suggest, price increases would still raise revenue.

[5] Harris JE. The 1983 increase in the federal excise tax on cigarettes. *op. cit*.

[6] Harris JE. *Written Testimony Before the Senate Committee on Agriculture, Nutrition, and Forestry Hearings on the Tobacco Settlement and the Future of the Tobacco Industry,* Washington DC, September 11, 1997; Appendix Table 2.

[7] Maxwell Report for 1996. *Tobacco Reporter* April 1997.

consumption to decline by 50 percent, domestic tobacco profits would still be $3.6 billion in 1996 dollars.

An analysis of the impact of Federal legislation on the profits of tobacco manufacturers needs to consider the profitability of their parent companies. Cigarettes are sold by highly diversified multinational firms that derive income from international tobacco divisions and non-tobacco lines of business. In 1996, I estimated that the operating profits of the international tobacco divisions of U.S. tobacco manufacturers were nearly $5.1 billion, while the operating profits of non-tobacco lines of business were nearly $7.7 billion. Even after accounting for interest payments on corporate debt and other corporate-wide expenses, the total pretax income of the parent companies was $15 billion.[8]

In recent discussions of Federal tobacco legislation, some analysts have forecast that retail cigarette prices will exceed $5.00 per pack. Interpretation of these forecasts requires that we clearly distinguish between nominal and real (or inflation-adjusted) prices. Even at a relatively low inflation rate of 3% per year, a five-dollar bill in the year 2006 would be worth less than four dollars in 1998 currency. In this report, I will frame my results in constant, inflation-adjusted dollars. This convention conforms with the provisions of recent settlements between tobacco-manufacturing defendants and several states. It is also consistent with economic models in which the demand for cigarettes depends on the real, rather than the nominal, price.

<u>Cigarette Manufacturers Have Passed Through Their Recent Settlement Costs To Consumers in the Form of Higher Prices.</u>

During 1997, defendant cigarette manufacturers entered into settlement agreements with two states – Mississippi[9] on July 3 and Florida[10] on August 25 – as well as with plaintiffs in the *Broin* flight attendant case[11] on October 9. These settlements required payments of $896.8 million in 1997, including $246.8 million to

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[8] Harris JE. *Written Testimony Before the Senate Committee on Agriculture, Nutrition, and Forestry Hearings on the Tobacco Settlement and the Future of the Tobacco Industry. op. cit.*

[9] In the Chancery Court of Jackson County, Mississippi. In Re Mike Moore, Attorney General ex rel., State of Mississippi Tobacco Litigation, Cause No. 94-1429. Memorandum of Understanding. July 3, 1997. http://stic.neu.edu/MS/mssettle.htm.

[10] Circuit Court of the Fifteenth Judicial Circuit, In and For Palm Beach County, Florida. The State of Florida, et al., v. The American Tobacco Company, et al., Civil Action No. 95-1466 AH. Settlement Agreement, August 25, 1997. http://stic.neu.edu/Fl/flsettle.htm

[11] In the Circuit Court of the 11th Judicial Circuit In and For Dade County, Florida General Jurisdiction Division. Norma R. Broin, et al., v. Philip Morris Incorporated, et al. Case Number: 91-49738 CA (22). Settlement Agreement. October 9, 1997. http://www.tobacco.neu.edu/extra/hotdocs/broin.htm.

Mississippi, $650 million to Florida, and $149 million to the Broin plaintiffs.[12] During 1998, manufacturers have thus far entered into new settlement agreements with the state of Texas[13] on January 16 and most recently with the state of Minnesota and Blue Cross/Blue Shield of Minnesota[14] on May 8. These settlements – along with continuing obligations from the previous year's settlements – will require payments totaling $2.4 billion during 1998, including $1,324 million to Texas, $588 million to Minnesota and Minnesota Blue Cross/Blue Shield, $68 million to Mississippi, $320 million to Florida, and $100 million to the Broin plaintiffs.[15]

These financial obligations can be translated into cents per pack. Thus, total 1997 settlement payments of $896.8 million amounted to 3.7 cents per pack (that is, $896.8 million divided by 24 billion packs sold). As of April of this year, cumulative payments for 1997-1998 equaled $1.712 billion, which amounted to 10.9 cents per pack.[16]

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[12] Mississippi payments in 1997 included: $170 million in an initial lump-sum payment; $15 million in costs; and $61.8 million for a pilot program to prevent underage smoking. Florida payments in 1997 included: $550 million in an initial lump-sum payment and $100 million for a pilot program to reduce underage smoking.

[13] In the United States District Court for the Eastern District of Texas, Texarkana Division, The State of Texas vs. The American Tobacco Company, et al., No. 5-96CV-91. Comprehensive Settlement Agreement and Release. January 16, 1998. http://stic.neu.edu/Tx/Texas-settlement.htm.

[14] The full text of the settlement agreement has not been made public as of this writing. The main financial terms are given at:
http://www.ag.state.mn.us/press/newssearch.qry?function=detail&Layout_0_uid1=33334.

[15] Texas payments in 1998 include: $725 million in an initial lump-sum payment, $264 million for certain public health and research programs, $45 million in costs and attorneys fees, and a first-year installment of $290 million, which equals Texas' 7.25% share of state payments under the first year of the Proposed Resolution of June 20, 1997. Mississippi payments in 1998 include: $68 million, which is the state's 1.7% share of state payments during the first year of the Proposed Resolution. Florida payments in 1998 include: $100 million toward the pilot program to reduce underage smoking; and $220 million, which is the state's 5.5% share of state payments during the first year of the Proposed Resolution. Minnesota payments in 1998 include: $240 million in retroactive damages; $142 million in attorneys' fees and costs; $10 million for a special research fund; $94 million to Blue Cross/Blue Shield; and $102 million, which equals Minnesota's 2.55% share of state payments under the first year of the Proposed Resolution. (It appears that, unlike Texas, Mississippi, and Florida, Minnesota's share was based on smoking-attributable Medicaid costs rather than state population. For the differential effects of these two criteria on state recoveries, see Harris JE. *Written Testimony Before the Subcommittee on Courts and Intellectual Property, Committee of the Judiciary, U.S. House of Representatives, Oversight Hearing on "Attorneys Fees and the Proposed Global Tobacco Settlement,"* Washington, DC, December 10, 1997.)

[16] All four parent companies – Philip Morris, RJR Nabisco, Loews, and BAT Industries – charged their respective shares of 1998 initial payments to Texas to the fourth quarter of 1997. See *Philip Morris Companies Annual Report 1997*, p.55; *RJR Nabisco Annual Report 1997*, p. 67; and *Loews Corporation Annual Report* 1997, p. 79; *BAT Industries Annual Report 1997*, p. 13, and *BAT*

Figure 1 below shows the wholesale price of premium-brand cigarettes quoted by U.S. manufacturers during the period from November 1993 through April 1998.[17] In November 1993, manufacturers set their wholesale price at $1.12 per pack. This price remained unchanged until May 1995, when it increased to $1.15 per pack. Wholesale premium prices were again raised to $1.19 per pack in May 1996 and $1.24 per pack in March 1997. Thereafter, from March 1997 through April 1998, wholesale premium price increased by 14 cents per pack.

Figure 1 also shows the expected trend lines in wholesale prices based on two different assumptions. For the solid line, I assume that the March 1997 increase anticipated the nationwide settlement on June 20 and the Mississippi settlement on July 3. For the dashed line, I assume that the March 1997 price increase did not reflect such anticipated payments. Under these two assumptions, respectively, the price of premium cigarettes increased by 14 and 9 cents per pack beyond the predicted trend.

<u>Other Components of the Retail Price of Cigarettes, Including State Excise and Sales Taxes and Wholesaler and Retailer Markups, Have Not Risen Sharply.</u>

Table 1 below shows my analysis of trends in the individual components of the retail price of cigarettes during 1994–1997. This analysis updates an earlier study of trends during 1994–1996.[18]

As shown on Line 7, the nominal average retail price of cigarettes increased from $1.92 per pack in 1994 to $2.02 per pack in 1996, which corresponded to a rate of increase just under the overall growth in the consumer price index (CPI). By contrast, the average retail price rose to $2.12 in 1997.[19] As shown in Line 8, state and local excise taxes increased at a real rate of 1.0 percent annually during 1994–1996 and 1.3 percent annually during 1994–1997. As shown in Line 3, state sales taxes actually declined when measured as a percentage of the pre-tax price. As shown in Line 10, the Federal excise tax remained constant in nominal terms but declined in real terms.

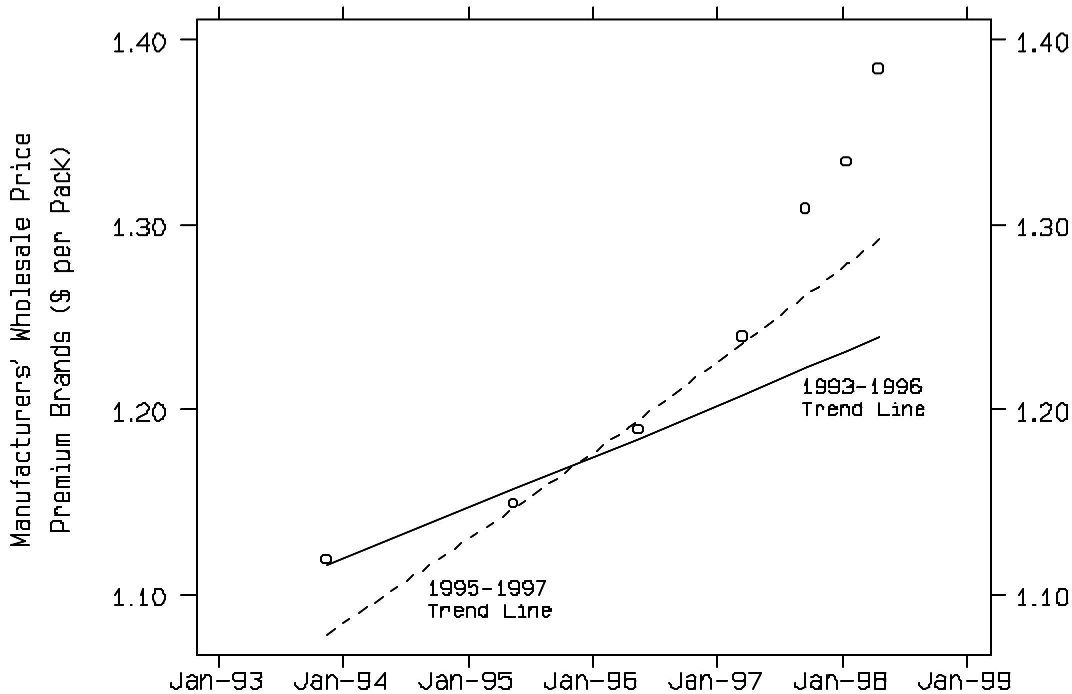
Industries Directors' Report and Accounts 1997, p. 56. As a result, total 1997–1998 settlement payments expensed during 1997 equaled $2.192 billion, or 9.1 cents per pack.

[17] Prices are quoted inclusive of the Federal excise tax, which remained unchanged at 24 cents per pack during the period covered by Figure 1.

[18] Harris JE. *Prepared Statement Before the Senate Democratic Task Force on Tobacco*, Sen. Kent Conrad (D-ND), Chairman, Washington DC, October 21, 1997

[19] The computed average retail prices in Table 1 are higher than those ordinarily reported by the Tobacco Institute, which exclude state sales taxes.

Figure 1. U.S. Cigarette Manufacturers' Wholesale Prices
on Domestically Sold Premium-Brand Cigarettes, November 1993 – April 1998



Caption to Figure 1: The open circles represent quoted wholesale prices per pack of 20 cigarettes. (Source: USDA Tobacco Situation and Outlook Report.[20]) The solid line represents the best-fitting log-linear regression line for the points from November 1993 through May 1996. The dashed line represents the corresponding best-fitting line for the points from May 1995 through March 1997. The predicted values of these two trend lines for April 1998 are, respectively, $1.24 and $1.29. The actual quoted wholesale price in April 1998 was $1.38.

[20] USDA Economic Research Service. *Tobacco Leaf Situation and Outlook Report*. Table 8: Wholesale cigarette price revisions, 1980-97. Updated 5/4/98. http://www.econ.ag.gov/Briefing/tobacco/Table8.htm

Table 1. Retail Price, Excise and Sales Taxes, Manufacturers Revenues, and Wholesale/Retail Margins on Cigarettes, 1994-1997

	Calendar Year				Real Annual Average Change (Percent)	
	1994	1995	1996	1997	1994-1996	1994-1997
1. Expenditures on Cigarettes, Excluding Sales Taxes ($billions)	44,544	45,793	47,233	48,734		
2. State Sales Tax Revenues on Cigarettes ($billions)	2,016	2,083	2,007	2,086		
3. State Sales Taxes as Percent of Pre-Tax Price	4.53%	4.55%	4.25%	4.28%		
4. Total Expenditures on Cigarettes ($billions)	46,560	47,876	49,240	50,820		
5. State and Local Excise Taxes on Cigarettes ($billions)	7,220	7,717	7,817	7,926		
6. Total Cigarette Consumption, USDA Series (billions, cigarettes)	486	487	487	480		
7. Nominal Retail Price per Pack (cents)	191.6	196.6	202.2	211.8	-0.2%	1.0%
8. Nominal State and Local Excise Tax per Pack (cents)	29.7	31.7	32.1	33.03	1.0%	1.3%
9. Nominal State Sales Tax per Pack (cents)	8.3	8.6	8.2	8.7	-3.1%	-1.6%
10. Nominal Federal Excise Tax per Pack (cents)	24.0	24.0	24.0	24.0	-2.8%	-3.9%
11. Nominal Mfrs + Wholesale/Retail Revenues per Pack (cents)	129.6	132.4	137.9	146.0	0.2%	2.0%
12. Nominal Manufacturers Revenues per Pack (cents)	70.1	72.6	76.5	83.20	1.5%	4.7%
13. Nominal Wholesale/Retail Margin per Pack (cents)	59.5	59.8	61.4	62.83	-1.3%	-1.3%
14. Wholesale/Retail Margin as a Percent of Manufacturers' Price (%)	20.0%	19.6%	19.4%	18.8%		
15. Consumer Price Index (percent of 1982-1984)	148.2	152.4	156.9	160.5		

Notes to Table 1:

1. Source: USDA Economic Research Service. *Tobacco Leaf Situation and Outlook Report*. Table 22 Expenditures for tobacco products and disposable personal income, 1986-97. Updated 5/4/98. http://www.econ.ag.gov/Briefing/tobacco/Table22.htm.
2. USDA Economic Research Service. op. cit. Table 23. Governmental revenues from tobacco products, 1986-96. Updated 5/4/98. http://www.econ.ag.gov/Briefing/tobacco/Table23.htm.
3. Line 2 ÷ Line 1.
4. Line 1 + Line 2.
5. USDA Economic Research Service. op. cit. Table 23.
6. USDA Economic Research Service. op. cit. Table 1. Cigarettes: U.S. output, removals, and consumption, 1988-97. Updated 5/4/98. http://www.econ.ag.gov/Briefing/tobacco/Table23.htm.
7. 2 × Line 4 ÷ Line 6.
8. 2 × Line 5 ÷ Line 6.
9. 2 × Line 2 ÷ Line 6.
10. Based on prevailing Federal tax rate of $12 per 1,000 units.
11. Line 7 – Line 8 – Line 9 – Line 10.
12. Based on the following data from company annual reports and the Maxwell Reports (*Tobacco Reporter*, March 1996, April 1997, May 1998, in press):

	1994	1995	1996	1997
3-firm (PM,RJ,Lo) shipments (billions)	386.6	383.8	390.3	393.9
3-firm (PM,RJ,Lo) revenues ($millions)	19,162.3	19,535.7	20,681.1	22,289.8
3-firm (PM,RJ,Lo) rev/pack (cents)	99.1	101.8	106.0	113.2
Less Federal Excise Tax (24 cents)	75.1	77.8	82.0	89.2
4-firm (PM,RJ,Lo,BW) revenues ($m)			23,807.3	
4-firm (PM,RJ,Lo,BW) rev/ pk (cents)			100.5	
Less Federal Excise Tax (24 cents)	70.1	72.6	76.5	83.2

The first row shows total unit shipments (in billions of cigarettes) for three firms: Philip Morris, RJ Reynolds, and Lorillard. The second row shows total net sales of these three firms. (The PM and Lorillard annual report include Federal excise taxes in net sales. Since the RJ annual report excluded Federal excise taxes, RJ Reynold's share was added back to this line.) The third line shows the 3-firm revenue per pack sold, inclusive of Federal excise tax, while the fourth line excludes the Federal excise tax. The latter data reflect receipts by firms with a disproportionate share of the premium-priced market. Data for Brown & Williamson, however, were available only for 1996. (See *Brown & Williamson Tobacco Corporation Annual Review* 1996). The fifth, sixth and seventh lines therefore compute revenues per pack less Federal excise taxes for four firms in 1996. The 4-firm estimates for the remaining years were based on the assumption that ratio of 4-firm to 3-firm prices remained constant.

13. Line 11 – Line 12.
14. Line 13 ÷ (Line 7 – Line 10 + Line 11).
15. CPI, All Urban Consumers, Annual Average.

If one subtracts all Federal, state and local taxes from the retail price, one is left with the revenues to manufacturers, wholesalers and retailers, as shown in Line 11. During 1994–1996, this quantity rose at about the same rate as the CPI. Lines 12 and 13 decompose this quantity into manufacturers' receipts per pack and wholesale/retail margins per pack. The data clearly show that wholesale/retail margins have been declining in real terms. The only significant component of recent price increases is manufacturers' wholesale prices (Line 12.)

The results in Table 1 contradict the hypothesis that increases in manufacturers' wholesale prices resulting from settlement costs somehow cause other components of price to rise in tandem. With the exception of state excise taxes, which have been rising about a 1-percent annual real rate, the other components of price – Federal excise taxes, state sales taxes, and wholesaler/retailer markups – have not kept pace with inflation.

<u>S. 1415 Will Result in a Real Retail Cigarette Price per Pack in 2003–2004 That is 85 Cents Higher Than the Expected Price Without Federal Intervention. By 2005–2006, the Effect of S. 1415 is 55 Cents per Pack.</u>

Figure 2 shows the results of my analysis of the path of real cigarette prices with and without Federal intervention. Both the triangles (corresponding to S. 1415) and the open circles (corresponding to no intervention) start at $2.12 per pack in 1997. Under S. 1415, the real price rises progressively to $3.38 in 2003–2004 as the required payments under Secs. 403-404 of the Act escalate. The real price then falls to $3.07 per pack by 2006 as a result of the volume adjustment provision (Sec. 404(2)) that takes effect in 2005. Without significant Federal intervention, the real price continues to rise to $2.54 in 2003, as manufacturers settle with an increasing proportion of states. Once all state settlements are in place by 2003, real price then declines slightly to $2.52 by 2006 as a result of the volume-adjustment provisions of the state settlement agreements.

My analysis of price entailed the following assumptions:

1. The Federal excise tax on cigarettes, currently at $0.24 per pack, will increase to $0.34 per pack in 2000, and to $0.39 per pack in 2002, but remain unchanged thereafter.

2. State and local excise taxes, which amounted to 33.03 cents per pack in 1997, will increase at a real, inflation-adjusted rate of 1% annually.

3. State sales taxes will remain at 4.28% of the pre-sales tax price.

4. Wholesaler and retailer markups, which amounted to 62.83 cents per pack in 1997, will keep pace with inflation.

5. The Consumer Price Index (CPI) will increase at an average annual rate of 3.0 percent.

6. Manufacturers' wholesale prices will have two components: a base component equaling 79.50 cents per pack, which rises at the same rate as the CPI; and an additional component reflecting the costs of all settlement payments or required Federal payments.

7. In the absence of significant Federal legislation, the major tobacco manufacturers will continue to settle with individual states, as they have so far done with Mississippi, Florida, Texas, and Minnesota. Based on the trial schedules and filing dates of the individual states' complaints, I assume that 10% of the remaining suits will be settled by the end of 1998; 20% by the end of 1999; 40% by the end of 2000; 60% by the end of 2001; 80% by the end of 2002; and 100% by the end of 2003.

8. Adequate licensing procedures, export controls, and enforcement mechanisms can be established to prevent a significant illegal market in contraband cigarettes.[21]

9. Total cigarette consumption (in billions of packs annually) will follow the model: $\log Q = 3.591 - 0.006T - 0.195P$, where Q is the number of packs, P is the real price of cigarettes in 1997 dollars, T is the number of years since 1997, and *log* represents the natural logarithm.[22]

10. Smokeless tobacco manufacturers will contribute an estimated 1.2 percent of payments required under Sec. 403–405 of the Act.[23]

My analysis of the impact of S. 1415, as given in Figure 2, does not include the effect on price of any additional "look-back assessments" imposed on cigarette manufacturers for failing to meet underage smoking targets (Sec. 202(b)). If manufacturers failed to meet

[21] Testimony of Lawrence Summers to Senate Judiciary Committee, April 30, 1998; Testimony of David Sweanor to Senate Judiciary Committee, April 30, 1998; and Testimony of David Sweanor to Senate Democratic Task Force on Tobacco Sen. Kent Conrad (D-ND), Chairman, May 4, 1998.

[22] Under this "log-linear" model, the price elasticity of demand for cigarettes rises from -0.42 at the current price of $2.12 per pack up to -0.66 at a real price of $3.38 per pack. See Harris JE. *Comments on Proposed Tobacco Industry-Wide Resolution*, Commissioned by the American Cancer Society, June 26, 1997, Table 2, note 4. Harris, JE. *Written Testimony Before the Senate Committee on Agriculture, Nutrition, and Forestry Hearings on the Tobacco Settlement and the Future of the Tobacco Industry*, Washington DC, September 11, 1997; Appendix Table 2, note 4. Harris JE, "A Working Model for Predicting the Consumption and Revenue Impacts of Large Increases in the U.S. Federal Cigarette Excise Tax," op. cit.

[23] Under Sec. 403(a)(1) of the Act, smokeless tobacco manufacturers are to contribute 3.2% of the initial $10 billion payment. Based upon Maxwell Reports (*Tobacco Reporter* April 1997, p. 22; *U.S. Trade Distribution Journal* November 21, 1997, p. 27), I estimate that 24.165 billion packs of cigarettes, 735 million 1.2-ounce cans of moist snuff, and 360 million cans of other smokeless products were sold in 1996. Under Sec.403(d)(3)(A)(1) of the Act, this would amount to 24.165 adjusted units of cigarettes, 0.29 billion adjusted units of moist snuff, and 0.09 adjusted units of other smokeless products.

such targets, then the real price of cigarettes could rise up to an additional 15 cents per pack beyond that specified in Figure 2.[24]

My analysis of both S. 1415 and the no-intervention scenario does not include the effect on price of any additional settlement payments or judgments resulting from other litigation, such as the law suits brought by Blue Cross/Blue Shield plans. If the tobacco industry were to enter into nationwide settlement agreements with Blue Cross/Blue Shield plans similar to that of Minnesota, then my preliminary estimate is that cigarette prices would gradually rise by an additional 20 cents per pack through 2003, but fall toward zero by 2008 as manufacturers completed their scheduled payments.[25] These additional effects on cigarette prices would apply to both S. 1415 and the no-intervention case.

<u>Under S. 1415, total U.S. cigarette consumption and manufacturers' real profits on domestic sales of cigarettes will have declined by 21.3 percent. If there were no Federal intervention, I estimate that total U.S. consumption and manufacturers' real domestic profits will decline by 12.4 percent.</u>

Table 2 shows my estimates of the impact on price, consumption, and manufacturers' operating profits, based upon the model detailed above. Under enactment of S.1415, consumption will decline from 24 to 18 billion packs during 1997 through 2004, but will then rebound under the current volume-adjustment provision (Sec. 404(2)). By contrast, consumption under the no-intervention scenario will decline from 24 to 21 billion packs by 2006. So long as manufacturers can pass their costs on to consumers and thus retain a 30-cent-per-pack operating margin, domestic cigarette profits will follow consumption. Under S.1415, as Table 2 shows, real operating profits will fall by $1.8 billion during 1997–2003 and then rise by $0.3 billion during 2003–2006. Under a no-intervention scenario, real profits will fall by $0.9 billion during 1997–2003. In the year 2003, enactment of S.1415 would thus result in a $1 billion loss in real profit compared to a scenario in which tobacco manufacturers continued to settle cases on their own.

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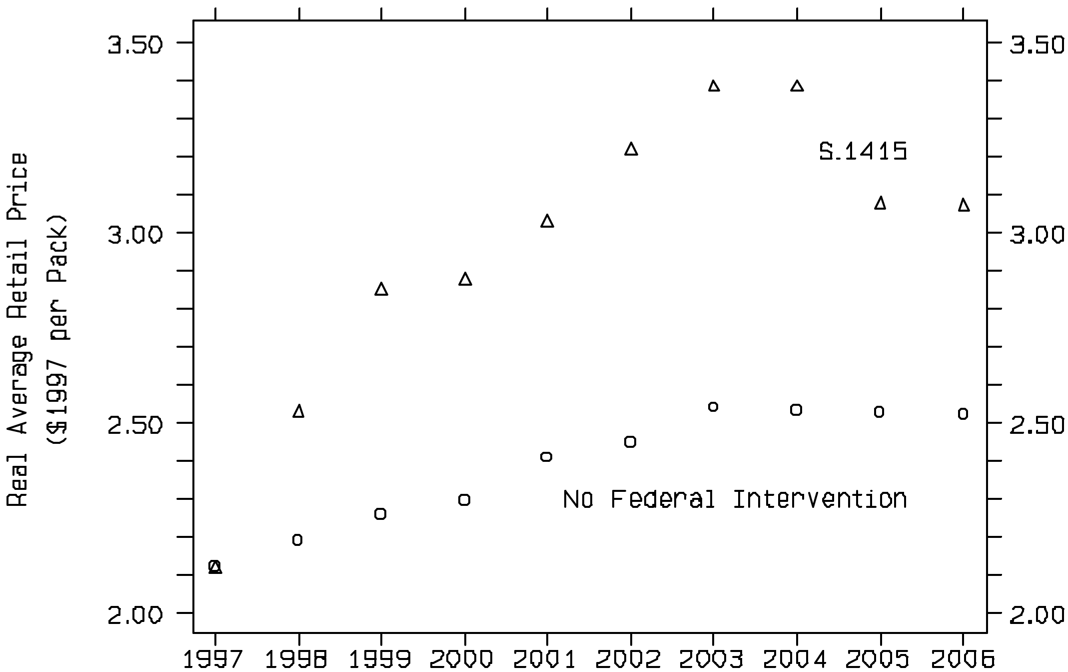
[24] Since the real payments under Sec. 202(b) are adjusted for changes in industry volume, they function essentially as an excise tax. (Harris JE. *Comments on Proposed Tobacco Industry-Wide Resolution*, Commissioned by the American Cancer Society). The maximum impact on price can therefore be calculated as the maximum real payment ($3.5 billion) divided by base consumption (24 billion packs).

[25] The Minnesota settlement provides for payment of $469 million to Blue Cross/Blue Shield over a five year period. Since Minnesota's population is approximately 1.75% of the total U.S. population, a comparable payment to all remaining BC/BS plans would equal $5.3 billion. If manufacturers gradually entered into comparable 5-year settlement agreements with the remaining BC/BS plans during 1998–2003, then annual payments would peak at $4.7 billion in 2003 and then fall to zero by 2008.

Figure 2. Real Average Retail Price of Cigarettes, 1997–2006, With Enactment of S.1415 Compared to No Federal Intervention



Caption to Figure 2: The triangles represent the real average retail price resulting from enactment of S. 1415 (RS). The open circles represent the real average retail price if no significant Federal legislation is enacted. The real price under S. 1415 falls in 2005 because the volume adjustment provision (Sec. 404(2)) takes effect. See text for assumptions.

Table 2. Comparative Impact on Cigarette Retail Prices, Total Consumption, and Operating Profits of Domestic Tobacco Divisions of U.S. Cigarette Manufacturers, 1997-2006

	No Federal Intervention				Enactment of S.1415(RS)			
Year	Nominal Retail Price ($/pack)	Real Retail Price ($/pack)	Total Cons. (billions)	Real Operating Profits ($billions)	Nominal Retail Price ($/pack)	Real Retail Price ($/pack)	Total Cons. (billions)	Real Operating Profits ($billions)
1997	2.12	2.12	24.0	7.2	2.12	2.12	24.0	7.2
1998	2.26	2.19	23.5	7.1	2.61	2.53	22.0	6.6
1999	2.39	2.26	23.1	6.9	3.02	2.85	20.6	6.2
2000	2.51	2.29	22.8	6.8	3.14	2.88	20.3	6.1
2001	2.71	2.41	22.1	6.6	3.41	3.03	19.6	5.9
2002	2.84	2.45	21.8	6.6	3.73	3.22	18.8	5.6
2003	3.03	2.54	21.3	6.4	4.04	3.38	18.1	5.4
2004	3.11	2.53	21.2	6.4	4.16	3.39	18.0	5.4
2005	3.20	2.53	21.1	6.3	3.90	3.08	19.0	5.7

2006	3.29	2.52	21.0	6.3	4.01	3.07	18.9	5.7

Discussion and Conclusions

My analysis of the provisions of S. 1415 indicates the peak effect of the proposed legislation will occur during 2003–2004. Starting in 2005, the volume-adjustment provision (Sec. 404(2)) will substantially reduce required payments by participating manufacturers.[26]

At its peak impact in 2003–2004, S. 1415 will raise the real price of a pack of cigarettes by 85 cents in comparison to the case where there is no significant intervention. At its peak impact in 2003–2004, S. 1415 will cause total cigarette consumption to decline by an additional 3.2 billion packs in comparison to the base case. The Act will also cause manufacturers' real annual pre-tax operating profits to decline by $1 billion in comparison to the no-intervention scenario.

By 2006, S. 1415 will raise the real price of cigarettes by 55 cents in comparison to the no-intervention case. At that time, the Act will result in a decline in annual cigarette consumption by 2.1 billion packs more than the base case. It will also cause manufacturers' real pre-tax operating profits to decline by $0.6 billion per year in comparison to the no-intervention scenario.

My analysis does not predict financial insolvency for the U.S. domestic tobacco industry. The industry as a whole – as well as individual firms – will lose money but remain profitable.

My analysis entailed three key assumptions. First, I assumed that manufacturers can and will pass through the costs of legal settlements and legislative assessments to consumers in the form of higher prices. My analysis of the impact of the industry's legal settlements on cigarette prices during 1997–1998 amply supports this assumption. Cigarette manufacturers have already raised the price of their product to pay for their legal costs. Second, I assumed that the payments required under S. 1415 would not have a multiplier effect on other components of cigarette retail prices, including state excise and sales taxes, Federal excise taxes, and wholesaler/retailer markups. My analysis of trends in the components of cigarette retail prices during 1994–1997 amply supports this assumption. In particular, when cigarette manufacturers raised their prices by approximately 7 cents per pack during 1997, the other components of cigarette price simply continued to follow past trends.

Third, I assumed that in the absence of significant Federal intervention, defendant cigarette manufacturers would continue to settle law suits filed by individual states according the basic model set forth in the agreements with Mississippi, Florida, and

[26] In 1997 constant dollars, manufacturers payments will fall $20.7 billion in 2004 to $16.4 billion in 2005, when the volume-adjustment provision takes effect.

Texas. Under such a model, total payments to all states would rise to $8 billion by 2003, with each state receiving a negotiated share of the total. Although the details of the Minnesota settlement are not available at this writing, it appears that this state has likewise followed the industry's model. Accordingly, in my base no-intervention scenario, the defendant manufacturers would gradually settle state cases until all were concluded by 2003. Previous analyses of the impact of Federal tobacco legislation have not generally been explicit about their base-case assumptions. Many analysts appear to have assumed implicitly that the industry would enter no more settlements and prevail in court. The experience of the first four state suits does not support this assumption.