

# Competition and the Financial Impact of the Proposed Tobacco Industry Settlement



Requested by the  
Congressional Task Force  
on Tobacco and Health.

Prepared by the  
staff of the  
Federal Trade Commission.

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This report has been prepared by staff members of the Bureaus of Economics, Competition, and Consumer Protection. The views expressed do not necessarily reflect those of the Commission or any individual Commissioner.

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The information contained in this report is taken from public sources. References to trial exhibits reflect information made public in the *FTC v. B.A.T Industries p.l.c.* 94 Civ 7849 (filed October 31, 1994, S.D.N.Y.)

Questions about this report should be directed to Jonathan B. Baker, Director of the Bureau of Economics, at (202) 326-2930.

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## **Executive Summary**

This report has been prepared by staff of the Federal Trade Commission in response to the August 1, 1997 request from Representatives Martin T. Meehan, Henry Waxman, and James Hansen on behalf of the members of the Congressional Task Force on Tobacco and Health for an analysis of the potential economic impact of the proposed settlement with the tobacco industry on cigarette prices, industry profits, and government revenues. The report represents the work of the Bureaus of Economics, Competition, and Consumer Protection. As a staff report, it does not necessarily reflect the views of the Commission or any individual Commissioner.

### **Expertise of the Commission**

The staff of the Commission has extensive experience, collected over decades, examining the competitive structure of the tobacco industry as well as its advertising and marketing practices. Pursuant to the Federal Cigarette Labeling and Advertising Act, 15 U.S.C. § 1331, the Commission annually reports to Congress on sales volume and advertising expenditures by the major domestic cigarette manufacturers. The Commission has additional responsibilities under the Cigarette Labeling and Advertising Act, and has investigated and periodically challenged cigarette advertising under Section 5 of the FTC Act, 15 U.S.C. § 45, which prohibits unfair or deceptive acts or practices. In addition, the Commission has investigated competitive practices of the cigarette firms and challenged the 1994 merger between the American Tobacco Company and Brown & Williamson.

### **Summary**

One primary goal of the settlement is to reduce overall use of tobacco products, and in particular to reduce youth smoking. That goal is intended to be achieved by advertising and marketing restrictions, by raising the price of cigarettes and by a provision imposing financial penalties on cigarette manufacturers if certain goals for youth smoking reduction are not met. The price increase is realized by requiring manufacturers to make annual industry payments that will, among other things, fund various federal and state programs relating to tobacco usage. The proposed settlement contemplates that these industry payments will be "passed through" to consumers, which will result in higher cigarette prices, and presumably in turn, a reduction in youth smoking.

From an antitrust and economic perspective, a proposal that Congress enact a statute enabling private firms to agree to raise prices to pay past liabilities should be viewed with caution. This report does not directly address the policy choice between traditional antitrust and economic concerns and other important public policy and public health concerns. Rather, it is limited to the question posed by the Task Force -- the potential *economic* impact of the settlement on the industry and the public sector. Cigarette prices will rise if the settlement is enacted. This report addresses how much prices will rise and who will benefit from the anticipated increased revenues that flow from the price increases.

One critical aspect of the proposed settlement is a provision that confers on the tobacco companies a broad degree of immunity from the antitrust laws. A narrowly focused exemption, permitting the firms to collaborate with respect to certain conduct that would curtail advertising to underage smokers, might be appropriate to advance the stated goals of the settlement. But as currently drafted, the antitrust exemption would permit these firms to "jointly confer, coordinate, or act in concert" to achieve all the goals of the settlement. Such sweeping antitrust immunity appears to be unnecessary for implementation of the settlement. Moreover, broadly drafted immunity might permit a variety of activities that would enable the firms to raise prices of cigarettes beyond the level needed to satisfy industry payments under the settlement.

The important conclusions of the report are:

- The major cigarette manufacturers may profit from the proposed settlement by increasing the price of cigarettes substantially above the amount of the annual payments that are to be paid to the public sector. Based on the history of the industry and its current structure, the companies likely would raise prices by at least the per-pack payments they would be required to pay to the public sector under the settlement, even in the absence of an explicit requirement to "pass through" the cost of the payments. Moreover, certain features of the proposed settlement, particularly the antitrust exemption, have the potential to reduce competition and enhance the ability of the cigarette companies to "coordinate" price increases. If so, the industry may be able to increase prices and generate substantial profits.
- Even assuming that prices increase by no more than the annual payments, the major cigarette firms may profit substantially from the proposed settlement through limitations on liability and reductions in advertising and litigation costs. Thus, the industry may be able to achieve significant civil liability limitations for as little as \$15 billion (\$10 billion in present value, *i.e.*, in current dollars) in reduced domestic operating profits net of income tax. If coordination is enhanced, then they may gain both the liability limits and a significant increase in profits.
- The report provides several possible but uncertain illustrations of the potential effect of the settlement on prices, profits, and public sector revenues, if coordination is enhanced and the firms raise price by more than necessary to simply "pass through" to consumers the amount of the annual payments. Under one scenario, for example, the additional operating profits net of income tax due to enhanced industry coordination could amount to \$36 billion over the next 25 years (\$16 billion present value). Under another scenario, reflecting substantially more effective coordination than at present, possible additional operating profits net of income tax may be \$123 billion over the next 25 years (\$56 billion present value).
- Higher prices from more effective coordination would result in larger revenues for the public sector as well as increased operating profits to the cigarette manufacturers.

The public sector would benefit through greater excess profit penalties under the terms of the settlement and greater revenues from federal corporate income taxes. In general, the examples suggest that the companies would keep about two-thirds of the financial benefits of more effective industry coordination, leaving one-third for the public sector.

- The public sector would gain financially from the settlement proposal, although the annual payments made by the cigarette companies will most likely be considerably less than the \$368.5 billion "face value" of the proposed settlement. After taking into account the anticipated decrease in the volume of cigarettes sold (resulting from the likely increase in cigarette prices and a general decline in smoking in the U.S.), the public sector could realize revenues from taxes and the settlement payments of about \$207 billion (\$100 billion present value), assuming the settlement does not make coordination more effective.
- It is difficult to predict with confidence the price of cigarettes or profits to the cigarette manufacturers over 25 years because the nature of competition may be significantly affected by the proposed settlement. This report concludes that prices and profits could increase substantially, over and above what prices and profits would be in absence of any agreement -- particularly because of the present unduly broad scope of the antitrust exemption.

The report has three sections and an Appendix. The first section describes the history and structure of the industry. The second describes certain provisions of the tobacco settlement, highlighting those (such as the antitrust exemption) that might contribute to a lessening of competition. To provide a tangible view of the potential economic effect of the settlement, the third section provides examples of what might happen to prices, profits, and public sector revenues if the settlement is adopted. Although the examples are illustrations rather than predictions, they help to indicate the kinds of effects and the possible magnitude of the effects that may occur if competition is reduced. The Appendix provides a legal analysis of the proposed antitrust immunity for tobacco product manufacturers.

## **Industry History and Structure**

The cigarette industry has been characterized as an oligopoly in which the firms clearly recognize their mutual interdependence. Although no evidence of explicit collusion has been uncovered, economic histories indicate that the cigarette firms have, for long periods, been able to price cigarettes above competitive levels, notwithstanding infrequent episodes of more intense price competition and product innovation.<sup>1</sup>

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<sup>1</sup> As the Supreme Court observed recently when commenting on the pre-1980s industry: "The cigarette industry . . . has long been one of America's most profitable, in part because for many  
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Several structural factors support the industry's ability to raise prices above competitive levels. First, there are relatively few firms. Currently, there are only five significant firms and three (Philip Morris, R.J. Reynolds, and Brown & Williamson) account for about 90 percent of the market. Second, overall demand by adults for cigarettes is relatively insensitive to changes in price. Third, the industry is well insulated from entry by new firms. There has been some entry by extremely small firms but none of these firms has garnered a significant competitive presence. Finally, the opportunity for firms tacitly to coordinate price increases is enhanced because changes in price can be quickly matched by rival firms, making price-cutting an unprofitable short-run strategy.

The industry, however, while not an example of perfect competition, is pricing cigarettes today below the price that would be chosen by the industry if the companies were behaving as a perfect cartel. Firms that prefer a relatively low price, for example, may effectively limit the ability of their rivals to increase prices in a coordinated fashion.

The settlement could have an important effect on competition in this market. It has the potential to enhance the ability of these firms to coordinate their actions. In particular, as currently drafted, the antitrust exemption may allow explicit discussions of pricing and may also allow the firms to find means to tacitly collude or to induce reluctant firms to raise prices.

More effective coordination could have significant consequences. Any factors that enhance the firms' ability to coordinate likely would result in much larger price increases than would be associated with a simple pass-through of the settlement payments. While a substantial price increase in cigarettes may be contemplated as one immediate goal of the proposed settlement, the amount of the resulting price increase could be higher than the cost to industry of the settlement payments, resulting in higher industry operating profits.

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years there was no significant price competition among the rival firms. . . . List prices for cigarettes increased in lock-step twice a year, for a number of years, irrespective of the rate of inflation, changes in the cost of production, or shifts in consumer demand." Brooke Group, Ltd. v. Brown & Williamson Tobacco Corp., 509 U.S. 209, 213 (1993)(citation omitted).

## **Analysis of Specific Terms of the Settlement**

The report analyzes the effects of various aspects of the settlement on prices and competition. One of the most important aspects of the settlement is an annual payment structure which specifies certain levels of payments, beginning at \$8.5 billion in 1998, increasing to \$15 billion in 2002, and remaining stable thereafter. The precise amount of the annual payments is linked to the volume of cigarettes sold each year and industry profits.

The report observes that there is reason to believe that cigarette prices will increase by more than is necessary simply to "pass through" the annual payments to consumers. First, many economic studies have demonstrated that the industry has effectively passed through to consumers the full amount of federal and state excise tax increases in the past. Based on this history, the report observes that at least 100 percent of the annual payments will likely be passed through. Second, the settlement has the potential to make future coordination between the firms simpler and this, in turn, would better facilitate the achievement of opportunities for price increases. These two factors suggest that the firms could raise price substantially more than the minimum necessary to pass through the settlement payments to consumers, and thus the overall "price-increase ratio" could be much higher than 100 percent.

Three aspects of the settlement have the potential to enhance the ability of firms to coordinate price levels, and thus to facilitate price increases. First, the settlement contains a broad antitrust exemption. Although this exemption is intended to enable the firms to coordinate activities to reduce youth smoking, it may also permit the industry members to discuss pricing arrangements or other agreements that will have the effect of increasing prices. The exemption, as written, may increase the likelihood that prices will move closer to what a monopolist would charge. An Appendix to the report provides more specific analysis of the exemption.

Second, the settlement imposes important restrictions on advertising and marketing intended to reduce the access and appeal of cigarettes to youth. The settlement imposes these and other restrictions as a means to achieve public health goals. Nevertheless, it should be recognized that advertising and marketing are important competitive tools. Advertising and promotion make it easier for new entrants or maverick firms with new products, lower priced products, or new brands to gain market share from the other firms in the market. As a result, restrictions on marketing could raise barriers to entry and expansion and ultimately lead to higher prices.

Third, the settlement could have a disproportionate effect on the small firms at the fringe of the market as well as potential entrants. For example, the settlement envisions that the non-participating firms will pay almost 50 percent higher annual payments over the life of the settlement than would be required if they had decided to participate in the settlement. These payments would be placed in an escrow account and could be reclaimed, with interest, 35 years later if not paid out in liability payments. Because of the difficulty of predicting the amount of future liability payments and the long delay before any money could be reclaimed, these payments will likely be viewed as non-refundable costs of doing business. As a result, they could substantially raise the marginal costs borne



by small firms and potential entrants, and may make it less likely they can effectively compete in the market.

## **Impact of the Settlement**

To gauge the economic impact of the settlement on cigarette prices, quantity sold, retail sales revenues, cigarette manufacturing industry profits, and public sector revenues, the report provides several examples of possible outcomes. The report looks at several variables including (1) the extent to which cost increases have historically been "passed through" to consumers, (2) the level of competition and any change in that level of competition as a result of the settlement, (3) the reduction in advertising expenses and the reduction in litigation expenses, and (4) the consumer responsiveness to price increases. The examples are reported in Section III of the report.

The most critical factor is the ability of the firms to coordinate their actions as a result of the settlement. This factor is captured by the price-increase ratio. In the hypothetical examples analyzed below, industry operating profits decline if the firms are simply able to pass through 100 percent of the implicit tax increase, without achieving higher prices through a lessening of competition among the firms. Under such circumstances the price-increase ratio would be 100 percent. Operating profits increase, however, if coordination is made more effective and if, in consequence, the price-increase ratio is 125 or 200 percent. Assuming a 200 percent price-increase ratio, a possible but uncertain event, operating profit levels are over \$123 billion higher (\$56 billion in present value) than in the 100 percent price-increase ratio case. A 200 percent price-increase ratio augments public sector revenues by \$73 billion (\$33 billion in present value) in the example relative to the case in which the ratio is only 100 percent, reflecting the historical rate at which the industry passes through cost increases to consumers without any additional price increase resulting from improved coordination.

The hypothetical examples emphasize that as coordination is enhanced and the price-increase ratio rises, significant incremental profits and revenues are generated for industry and the public sector, respectively. The allocation of those additional monies between industry and the public sector, however, is quite unequal: about 2/3 of the resulting additional profits would be retained by the firms and 1/3 would go to the public sector in corporate taxes.

Finally, it is unlikely that the proposed settlement will generate the \$368.5 billion "face value" that has been posited as the public sector's gain from the settlement payments. After taking into account the anticipated decrease in the volume of cigarettes sold resulting from the likely increase in cigarette prices and a general decline in smoking in the U.S., the examples indicate that public sector revenues, including taxes along with the new payments proposed by the settlement, could increase by about \$207 billion (\$100 billion present value) even if the settlement does not make coordination more effective.

## **Further Information**

Questions about this report should be directed to Jonathan B. Baker, Director of the Bureau of Economics, at (202) 326-2930.

## Competition and the Financial Impact of the Proposed Tobacco Settlement

### I. Overview of the U.S. Cigarette Industry

Since the early years of the 20th century, the U.S. cigarette industry has comprised four to six major firms. Currently, five major firms -- Philip Morris, Inc., R.J. Reynolds Tobacco Company, Brown & Williamson Tobacco Corporation (B.A.T Industries), Lorillard, Inc. (Loews), and Liggett Group, Inc. -- produce over 99 percent of cigarettes sold in the U.S.<sup>1</sup> Overviews of the industry indicate that U.S. cigarette firms may have been able to set price above the level consistent with fully competitive behavior. Nonetheless, the history of the industry reveals instances of relatively more intense price or product competition. The inability of the industry to achieve full coordination that would lead to pricing approaching the monopoly level is probably attributable primarily to the inability of the firms to harmonize fully their divergent interests.

#### A. Brief History of the Cigarette Industry

Since its beginnings in the early 1900s, the U.S. cigarette industry has exhibited the characteristics of an oligopoly -- an industry comprising relatively few firms, each of which recognizes the interdependence of its actions with those of other firms. When such an industry is largely free from the threat of new competition by entrants, economic theory predicts that prices likely will exceed competitive levels. These supracompetitive prices could reflect coordinated behavior among industry participants,<sup>2</sup> although -- given the small number of competitors in this market -- supracompetitive prices also could emerge even absent coordinated behavior among the

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<sup>1</sup> The remainder of the market is divided among over 100 smaller manufacturers and importers.

<sup>2</sup> Coordination as discussed here does not require explicit agreements, and thus does not necessarily constitute a violation of the antitrust laws. As the Horizontal Merger Guidelines note (sec. 2.1, p. 18), "coordinated interaction includes tacit or express collusion, and may or may not be lawful in and of itself." U.S. Department of Justice and the Federal Trade Commission, Horizontal Merger Guidelines 18 (Apr. 2, 1992). Economic theory indicates that even without explicit coordination, the pricing that emerges from repeated oligopoly interaction can readily exceed the prices that firms would charge in settings where repeated interaction does not occur. See, e.g., J. Tirole, The Theory of Industrial Organization 239-276 (1988).

members.<sup>3,4</sup> In many periods including the 1950s through the 1970s, prices were generally stable or rising, with few outbreaks of more intense competition.

During other periods, however, prices and product innovation were less predictable. For example, lower-priced "ten-cent" brands were introduced at the start of the Great Depression as firms saw an opportunity to serve price-sensitive customers after the major cigarette makers had raised prices.<sup>5</sup> Another period of competitive instability, involving new products and unstable prices, occurred when filter cigarettes were introduced in 1953-55. Price variation also increased in the early 1980s, with the introduction of discount cigarette brands.<sup>6</sup> In 1980, Liggett introduced generic cigarettes that were sold with simple, plain labels and were priced 25 to 40 percent below the traditional full-priced premium cigarettes. This action was followed in 1984 by the introduction of branded discount cigarettes by Reynolds. These brands were priced between the generic and premium segments, packaged traditionally, and given greater marketing support than generics. Five years later, in 1989, Liggett introduced yet another category of discounted cigarettes, the deep-discount brands, that were priced below generics.<sup>7</sup>

Notwithstanding the price competition from discount brands during the period from 1980 to 1992, average cigarette prices appeared to rise faster than costs, and the price gap between the premium and discount brands grew through 1992.<sup>8</sup> A major alteration in that pattern of price

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<sup>3</sup> See, e.g., J Tirole, supra note 2, ch. 5.

<sup>4</sup> Histories of the cigarette industry tend to support the possibility of supracompetitive pricing. D. Greer, Industrial Organization and Public Policy 278-279 (3rd ed., 1992); R. Kluger, Ashes to Ashes 43-53 (1996). The success of the Tobacco Trust was short circuited by an antitrust challenge and its subsequent dissolution into four separate firms. See F. M. Scherer and D. Ross, Industrial Market Structure and Economic Performance 250-251 (3rd ed., 1990) and R. Schmalensee, The Economics of Advertising 125-133 (1972).

<sup>5</sup> Various discount brands were introduced to undercut the major brands. "Battle Ax" and other colorful "fighting" brands introduced by the majors were successful in curbing the new entries. Scherer and Ross, supra note 4, at 250-251; Schmalensee, supra note 4, at 125-133.

<sup>6</sup> Scherer and Ross, supra note 4, at 250-251.

<sup>7</sup> The advent of the various discount cigarette brands and the resulting reactions of the other cigarette producers led to the litigation that culminated in the Supreme Court's Brooke Group predatory pricing decision in 1993. Brooke Group Ltd. v. Brown & Williamson Tobacco Corp., 509 U.S. 209, 213 (1993). For analysis and discussion, see J. Baker, Predatory Pricing After Brooke Group: An Economic Perspective, 62 Antitrust L.J. 585-606 (1994).

<sup>8</sup> C. F. Howell et al., Pricing Practices for Tobacco Products, 1980-94, 117 Monthly Lab. Rev. 3-16 (1994). BAT's economic expert in the 1994 BAT/American Tobacco Co. merger case

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increases occurred on “Marlboro Friday,” April 2, 1993, when Philip Morris led a price move to narrow the gap between pricing tiers by decreasing prices for its premium brands about 20 percent and increasing prices for its discount brands. Just prior to that event, discount brands accounted for over 40 percent of the overall cigarette market. After that time, the share of discount brands quickly eroded to less than 30 percent as consumers shifted back toward the now relatively less expensive premium brands. The previous pattern may be returning, however, as Philip Morris appeared to lead the most recent industry-wide price increase.<sup>9</sup>

Today, sales are concentrated in a small number of firms controlling 99 percent of a \$45 billion U.S. market. As indicated in Table 1, owing largely to its Marlboro brand, which grew rapidly since the late 1960s, Philip Morris is the largest firm with a domestic share of forty-eight percent of cigarettes sold. Reynolds, with twenty-five percent of the market, and Brown & Williamson, with seventeen percent, follow.<sup>10</sup> Lorillard has about eight percent of the market. A fifth firm, the Liggett group, has a share of about two percent. Numerous other smaller firms also sell in the U.S. cigarette market. Although these smaller companies have a combined market share of less than one-tenth of a percent, the entry that has occurred in the industry has come in this small-firm segment.

## **B. Structural Features Encouraging Industry Coordination**

As described above, the industry has historically experienced periods of both stability and instability in pricing. Prices appear frequently to have been less than fully competitive, although episodes of more competitive pricing have also been observed. This section examines some structural features of the cigarette market that might influence the firms' incentives and ability to reach and maintain a coordinated outcome, leading to less than fully competitive prices.

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accepted that the industry was appropriately characterized as a tightly coordinated oligopoly prior to 1980 and that prices and profits apparently rose during the 1980s as the industry became further concentrated. Testimony of Dennis Carlton concerning industry history, FTC v. B.A.T Industries p.l.c., 94 Civ 7849 (filed Oct. 31, 1994, S.D.N.Y.) (Tr. 01086-01087, Dec. 1994).

<sup>9</sup> See Glenn Collins, Cigarette Makers Are Increasing Prices by Record Amount, New York Times, Sept. 3, 1997, at A1.

<sup>10</sup> The most recent significant change in industry structure occurred in 1994, when B.A.T Industries (the owner of Brown & Williamson) proposed to acquire American Tobacco. The FTC challenged the acquisition on antitrust grounds. A settlement was reached in April 1995, while the case was in trial. Under the settlement, BAT agreed to divest certain assets including brand names (Montclair, among others) and production facilities. That divestiture was completed in October 1996. See FTC v. B.A.T Industries p.l.c., 94 Civ 7849 (filed Oct. 31, 1994, S.D.N.Y.).

Several factors contribute to the ability of firms in the cigarette industry to reach and maintain an implicit consensus from which they tend not to deviate. First, most economic models of oligopoly behavior conclude that price-cost margins will be higher as the number of firms decreases. This relationship might arise, for example, if fewer firms tend to have similar interests and incentives and consequently are better able to orchestrate coordinated behavior. As noted above, the same few firms have dominated the cigarette industry for decades,<sup>11</sup> and, as indicated in Table 2, concentration has been high and rising for many years.<sup>12</sup>

Second, the overall demand by adults for cigarettes is inelastic, or relatively insensitive to changes in price. Most adult consumers will continue to smoke notwithstanding a significant increase in price. As a result, an industry-wide price increase would be profitable for the cigarette companies, even though some smokers would react to the higher prices by smoking less or quitting altogether. Even substantial price increases are likely to be profitable, as long as they are made on a coordinated basis.

Estimates of the elasticity of demand for cigarettes, a measure of price sensitivity, are commonly reported to be in the vicinity of -0.4.<sup>13</sup> A demand elasticity of -0.4 indicates that a 1 percent increase in the price of cigarettes will be associated with a 0.4 percent decrease in the number of cigarettes sold. The -0.4 adult demand elasticity estimate is consistent with estimates derived from a variety of studies. Studies of per capita consumption report elasticity estimates in the range of -0.2 to -0.8.<sup>14</sup> This figure also represents the midpoint of the consensus range of elasticity estimates arrived at by a gathering of economists and other experts convened by the

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<sup>11</sup> One long-time industry participant, American Tobacco, was acquired by BAT, the owner of Brown & Williamson, in 1994.

<sup>12</sup> See generally Horizontal Merger Guidelines, *supra* note 2, at 15-25. The Merger Guidelines define highly concentrated markets as those with a Herfindahl-Hirschman Index ("HHI") of 1800 or above. As Table 2 indicates, the five major firms account for almost 100 percent of cigarette sales in the United States, with a HHI of 3260 in 1996.

<sup>13</sup> Record evidence in the FTC's 1994 challenge of BAT's acquisition of American Tobacco was also consistent with a relatively low demand elasticity. *FTC v. B.A.T Industries p.l.c.*, 94 Civ 7849 (filed Oct. 31, 1994, S.D.N.Y.) (testimony of Lewis Tatem, economic expert for the FTC, Tr. 543-544.)

<sup>14</sup> For reviews of cigarette demand studies see F. Chaloupka and M. Grossman, Price, Tobacco Control Policies and Youth Smoking, (National Bureau of Economic Research, Working Paper No. 5740, 1996); and Surgeon General of the United States, U.S. Department of Health and Human Services, Center for Disease Control and Prevention, Preventing Tobacco Use Among Young People (1994).

National Cancer Institute (-0.3 to -0.5).<sup>15</sup> Other studies allow for the possibility that smokers consider the future costs of developing a smoking habit when making current decisions to buy cigarettes.<sup>16</sup> Studies based on this approach generally imply price elasticities that are higher over a relatively long period because consumer response to a permanent increase in the price of cigarettes grows over time, until it reaches a final equilibrium. These models, nonetheless, still find that demand is inelastic even in the long run.<sup>17</sup> Applying this future-cost approach to state data, one study reports a short run price elasticity of -0.45 and a long run estimate of -0.75.<sup>18</sup>

Third, unlike in some other industries, changes in product or price are readily observed by all competitors. As a result, cigarette producers may not have effective means for increasing sales substantially before their competitors can respond to any strategic moves. Such marketplace visibility and responsiveness results from several factors. For example, restrictions on cigarette advertising in broadcast media make it difficult for firms to undertake major mass media campaigns, which would probably be the most effective way to launch new brands before their rivals could react.<sup>19</sup> Marketing campaigns using less effective media are likely to be observed and responded to before they have a major impact on sales. Even the introduction of generic cigarettes, which was largely undertaken without traditional marketing support, was highly visible

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<sup>15</sup> National Cancer Institute, National Institutes of Health, The Impact of Cigarette Excise Taxes on Smoking Among Children and Adults; Summary Report of a National Cancer Institute Expert Panel (1993).

<sup>16</sup> See G. Becker and K. Murphy, A Theory of Rational Addiction, 96 J. Pol. Econ. 675-700 (1988). For skeptical assessments of this model, see J. Harris, A Working Model for Predicting the Consumption and Revenue Impacts of Large Increases in the U.S. Federal Cigarette Excise Tax (July 1, 1994) (unpublished manuscript); and J. Gravell and D. Zimmerman, Congressional Research Service, Cigarette Taxes to Fund Health Care Reform: an Economic Analysis (1994).

<sup>17</sup> One study indicated that the time period for full adjustment to a new equilibrium might be as long as 69 years, a length of time calculated to allow full adjustment in the age distribution of smokers. See J. Gravell and D. Zimmerman, supra note 16.

<sup>18</sup> G. Becker et al., An Empirical Analysis of Cigarette Addiction, 84 Am. Econ. Rev. 396-418 (1994). Elasticity estimates based on survey data rather than observed consumption decisions tend to suggest demand is even more inelastic than these studies indicate. For example, in a study based on an economic model similar to that employed by Becker et al., using survey data, Chaloupka estimated long run price elasticities between -0.27 and -0.37. F. Chaloupka, Rational Addictive Behavior and Cigarette Smoking, 99 J. Pol. Econ. 722-42 (1991). Analysis of a similar database of survey respondents by Wasserman et al., resulted in a price elasticity estimate for adults of -0.28 for 1988. W. G. Wasserman et al., The Effects of Excise Taxes and Regulations on Cigarette Smoking, 10 J. Health Econ. 42-64 (1991).

<sup>19</sup> Schmalensee, supra note 4, at 125-133.

to competitors. In addition, price cutting to distributors likely would be observed directly (to the extent distributors are shared) or indirectly (in the form of lower prices to consumers).<sup>20</sup> In either case, rivals would be able to respond quickly to any price reductions, making “hit-and-run” price cuts unattractive as a strategy for increasing firm profits.<sup>21</sup> Accordingly, short-term deviation from the terms of a coordinated understanding on price and other competitive dimensions can be expected to be quickly observed and quickly countered, and therefore to be unprofitable for the industry participants.<sup>22</sup>

A fourth structural feature of the market is that entry does not significantly constrain market power. That is, entry of additional firms into the market (or its prospect) is unlikely to upset the stability of a coordinated pricing strategy. Despite increasing prices and increasing profit margins, as discussed below, the new firms that have recently entered the cigarette market have failed to garner significant shares to date. Although the absence of significant entry does not definitively demonstrate that incumbent pricing is unconstrained by new competition from entrants, characteristics of the cigarette market make entry difficult. For example, current restrictions on advertising may fall particularly hard on entrants or other firms seeking to expand rapidly. To the extent firms are less able to inform consumers about the availability and the attributes of their products or brands, they likely will be less able to be successful in the marketplace and likely will place less of a constraint on the behavior of the established firms. Under the proposed settlement, restrictions on advertising will be substantially tightened, making entry still more difficult.

In addition, three decades of stagnant or declining industry demand have reduced the attractiveness of the cigarette industry to prospective entrants. Until the intensification of health

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<sup>20</sup> After Marlboro Friday, Philip Morris established a large scale “Master” program in which retailers submitted information to Philip Morris regarding other cigarette manufacturers’ discount offers and volume in return for discounts from Philip Morris. *FTC v. B.A.T Industries p.l.c.*, 94 Civ 7849 (filed Oct. 31, 1994, S.D.N.Y.) (testimony of Lewis Tatem, economic expert for the FTC, Tr. 548-49).

<sup>21</sup> Similarly, large buyers in some markets may be able to induce lower prices by reducing their own demand for a product, but this does not seem to be a factor in the U.S. cigarette industry. Retailing of cigarettes is extremely diverse with hundreds of thousands of outlets. With such ubiquitous distribution, it is unlikely that any buyers have large enough shares to make secret price-cutting profitable or otherwise exercise buyer power.

<sup>22</sup> Given that deviations from an implicit consensus would likely be unprofitable, the main impediment to more effective coordination among cigarette producers is likely the difficulty in harmonizing divergent interests to reach such a consensus in the first instance, as discussed below. This is not to say that alterations in the consensus will not occur over time, for example in response to exogenous shocks to the market or the development of innovations that cannot be quickly copied and that alter the long-term strategies of individual firms in divergent ways.



concerns in the 1960s,<sup>23</sup> cigarette smoking was a ubiquitous and growing feature of American culture during the 20th century. Since that time, the market for cigarettes in the U.S. has decreased significantly. U.S. cigarette consumption per capita declined from a peak of 4,345 cigarettes in 1963 to 2,505 in 1996 (Table 3). The proportion of smokers among adults has also dropped from peak of 42.6 percent in 1966 to 25.5 percent in 1994.<sup>24</sup> Even in the face of some media marketing restrictions and generalized demand declines, however, small firms have continued to enter niches of the cigarette industry. Although none of these firms has grown to the point that its market share is significant, they appear to be a permanent feature of the market.<sup>25</sup>

### C. Evidence of Market Power from Industry Conduct

The Supreme Court has recognized a pattern of coordinated interaction in past cigarette industry practices.<sup>26</sup> Price and cost patterns during the post-1980 period also suggest that the cigarette oligopoly may not be performing competitively. The rise in prices during this period has been extensive, increasing at a much higher rate than the general price level. As shown in Table 4, inflation-adjusted prices rose from \$1.20 per pack in 1980 to \$1.85 per pack in 1996.<sup>27</sup> While

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<sup>23</sup> These concerns led to the report by the Surgeon General's advisory committee on January 11, 1964. Health concerns were also raised in the early 1950s. The introduction of filter cigarettes was closely related to these early expressions of concern about the health effects of cigarette smoking. Kluger, *supra* note 4, at 148-182, 258-262.

<sup>24</sup> Centers for Disease Control <[www.cdc.gov/nccdphp/osh/prevail.htm](http://www.cdc.gov/nccdphp/osh/prevail.htm)>. The smoking rate among men reached 56.9 percent in the 1950s. The rate among women peaked at 33.9 percent in 1965 and 1966.

<sup>25</sup> However, as discussed below, some features of the settlement could harm this market segment, potentially causing it to disappear.

<sup>26</sup> The three major cases are Brooke Group, Ltd. v. Brown & Williamson Tobacco Corp., 509 U.S. 209 (1993), American Tobacco Co. v. United States, 328 U.S. 781 (1946), and United States v. American Tobacco Co., 221 U.S. 106 (1911). Discussing the pre-1980 market for cigarettes, the Supreme Court in Brooke Group stated that "the cigarette industry . . . has long been one of America's most profitable, in part because for many years there was no significant price competition among the rival firms. . . . List prices for cigarettes increased in lock-step twice a year, for a number of years, irrespective of the rate of inflation, changes in the cost of production, or shifts in consumer demand." Brooke Group, 509 U.S. at 213 (citation omitted).

<sup>27</sup> Since Marlboro became the clear leading brand in the late 1970s, Philip Morris has typically been the price leader for premium-priced cigarettes, and Philip Morris led the most recent price increase. Scherer and Ross, *supra* note 4, at 250-251; FTC v. B.A.T Industries p.l.c., 94 Civ 7849 (filed Oct. 31, 1994, S.D.N.Y.) (testimony of Lewis Tatem, economic expert for the FTC, (continued...))

some of this price rise is a product of rising costs (including state and federal taxes), it appears that a significant portion may not be cost related. Comparing the rise in cigarette prices to costs for the 1980-94 period, one analysis concludes that “escalating prices for cigarettes cannot be attributed to higher input costs.”<sup>28</sup> The tendency for price rises to consistently outpace cost increases is unlikely to be observed in a fully competitive market over a long-term period.<sup>29</sup>

Consistent with the price and cost data, the publicly available evidence suggests that the cigarette industry has been relatively profitable.<sup>30</sup> Also, profit margins for the industry based on Census data show a rising trend over the 1980-94 period -- even in the face of declining demand.<sup>31</sup> This upward trend in profit margins halted, however, due to price declines in the aftermath of Marlboro Friday in 1993. In addition to the evidence on prices, costs and profits, econometric studies of pricing behavior in the cigarette industry have produced results consistent

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(...continued)

Tr. 544-545); and Glenn Collins, Cigarette Makers Are Increasing Prices by Record Amount, New York Times, Sept. 3, 1997, at A1. While prices increased for all brands, price increases for the discount brands lagged behind those for established premium brands.

<sup>28</sup> C. Howell, F. Congelio, and R. Yatsko, Pricing Practices for Tobacco Products, 1980-94, 117:12 Monthly Lab. Rev. 3 (1994). The authors generated an input cost series from Census (material, labor and capital) and FTC (advertising and marketing) data. They did not specifically include state and federal taxes in their calculations, but the addition of these two components does not change the general result that prices rose at a much greater rate than costs. Thus on a per unit basis, input costs plus federal and state excise taxes rose 87 percent over the 1980-94 period compared to a corresponding increase of 179 percent in nominal prices.

<sup>29</sup> Scherer and Ross, supra note 4, at 339-347.

<sup>30</sup> Industry surveys based on SEC 10K submissions generally show the industry as displaying profit rates above the overall industry norm. See, e.g., the annual “Beverages and Tobacco” survey in Forbes Magazine. The exact translation between the concepts of accounting profits and economic profits is subject to considerable debate, however. Compare F. Fisher, and J. McGowan, On the Misuse of Accounting Rates of Return to Infer Monopoly Profits, 73 Am. Econ. Rev. 82-97 (1983) with W. Long and D. Ravenscraft, The Misuse of Accounting Rates of Return: Comment, 74 Am. Econ. Rev., 494-500 (1984).

<sup>31</sup> In this analysis, profit margins are gross margins as a percentage of value of shipments. Data came from the following sources: Federal Trade Commission, Report to Congress for 1994 Pursuant to the Federal Cigarettes Labeling and Advertising Act 15-18 (1996); U.S. Department of Commerce, Bureau of the Census, Tobacco Products, in 1992 Census of Manufacturers 21A-7 (1995). The Census figures include the value of shipments and costs involved in the production of cigarettes in domestic plants destined for export, while the FTC advertising and marketing data relate only to domestic operations.

with the view that the cigarette industry is not fully competitive, though also consistent with the view that the level of market-sharing coordination is not high.<sup>32</sup>

#### **D. Imperfect Coordination and Divergent Firm Incentives**

While the structural and behavioral evidence cited above is consistent with the possibility of coordination among the major cigarette producers, it is also clear that any such coordination is far from complete.<sup>33</sup> This is immediately evident from the econometric estimates of the industry demand elasticity, cited above, which suggest that adult demand is inelastic at prevailing prices. Because a monopolist facing inelastic demand would find it profitable to raise price until it reaches elastic portions of the industry demand curve and this has not occurred, we can infer that coordination is imperfect.<sup>34</sup> The occasional outbreaks of more intense price or product competition also suggest incomplete coordination.

Other evidence of incomplete coordination comes from the long-term shifts in market share that have occurred in the cigarette industry. Market shares covering the period from 1947 to 1996 are displayed in Table 5. Philip Morris, now the leading firm with the leading brand, has gained share from less than 10 percent to over 47 percent currently. Liggett and American both lost the vast majority of their initial shares over the period. Reynolds is the one major firm that maintained a fairly stable market share over the past 50 years.

The inability of the cigarette industry to achieve complete coordination is most likely attributable in large part to partially divergent interests among the firms. Firm interests may diverge for a number of reasons.

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<sup>32</sup> D. Sullivan, Testing Hypotheses about Firm Behavior in the Cigarette Industry, 93 J. Pol. Econ. 586 (1985); O. Ashenfelter and D. Sullivan, Nonparametric Tests of Market Structure: An Application to the Cigarette Industry, 35 J. Indus. Econ. 483-498 (1987); P. Barnett et al., Oligopoly Structure and the Incidence of Cigarette Excise Taxes, 57 J. Pub. Econ. 457-470 (1995).

<sup>33</sup> Incomplete coordination is discussed in the Horizontal Merger Guidelines, supra note 2, at section 2.11, p. 20. That section discusses the ability of firms to reach terms of coordination and factors that might make reaching a coordinated outcome more or less likely.

<sup>34</sup> That is, the fact that relatively low demand elasticity estimates are found even using prevailing prices is consistent with the view that cigarette firms are not pricing near the monopoly level. Scherer and Ross, supra note 4, at 250-251. In addition, one estimate of the full-blown monopoly price in cigarettes in 1995 was in the \$4.00 range. Prices of cigarettes today are at about half that level. See J. Harris, American Cigarette Manufacturers' Ability to Pay Damages: Overview and a Rough Calculation, 5 Tobacco Control 292-294 (1966).

First, product innovation may affect some firms more than others. Product competition has historically taken the form of innovations in product design, such as the addition of filters during the 1950s.<sup>35</sup> More recently, low-tar cigarettes were developed during the early 1970s,<sup>36</sup> and unbranded generic cigarettes were reintroduced in the early 1980s.<sup>37</sup> These innovations generally favored some firms more than others, and in consequence tended to lead to a more competitive period during which the firms, in effect, identified a new oligopolistic consensus.<sup>38</sup>

Second, as with most products that are not homogeneous, demand for some brands is more price sensitive than is demand for other brands.<sup>39</sup> Similarly, the sales of certain brands may be more sensitive than other brands to variations in the prices of specific rival brands. Moreover, industry participants recognize that the demand for individual brands often has a well-defined “life cycle” -- an initial period of growth in market acceptance, followed by a share plateau, followed by an extended period of share decline. The rise and fall of Lucky Strike, Pall Mall, and later Winston, as Marlboro became the largest brand in the late 1970s, provide examples. A firm with most of its brands in extended decline may have different views about industry pricing than a firm with more brands earlier in the life cycle.<sup>40</sup> As the end of a brand’s life cycle approaches, brand demand elasticity may increase above the norm, making a price increase more problematic for firms with declining brands.<sup>41</sup> Since a general price increase will accelerate the decline of the “aged” brands, leading firms with predominantly “aged” brands will likely prefer a lower industry price. The current major brands and the shares of these brands grouped by the five major companies are presented in Table 6.

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<sup>35</sup> Kluger, supra note 4, at 141-182.

<sup>36</sup> Id. at 190, 273-275, 379-382

<sup>37</sup> Id. at 516.

<sup>38</sup> For example, the introduction of generic brands led to tiered pricing. Premium brands, both established and new, are typically priced well above the discount segment consisting of generic and private label cigarettes and branded discount cigarettes. The extent of the gap between discount and premium brands has varied over time.

<sup>39</sup> Differences in brand elasticities were an important consideration in the FTC’s challenge of the 1994 proposal of BAT to acquire American Tobacco.

<sup>40</sup> Differences in brand mix across the life cycle may be responsible, in part, for the major shifts in market share among three of the leading firms over the past forty years.

<sup>41</sup> The differences in pricing incentives based on differences in rates of decline in premium brands were a theme of the FTC presentation in its challenge of BAT’s acquisition of American Tobacco. FTC v. B.A.T Industries p.l.c., 94 Civ 7849 (filed Oct. 31, 1994, S.D.N.Y.) (testimony of Lewis Tatem, economic expert for the FTC, Tr. 534-535).

Third, the most important recent divergence of interest comes from differences in product mix across the firms. Premium brands are the mainstay of four of the five leading manufacturers. In contrast, generic and non-premium brands today account for a far greater fraction of Liggett's sales and profits. Furthermore, there are significant differences among the major firms in their commitment to discount segments.

This commitment is indicated in Table 7, which quantifies the shares of each firm in the various pricing tiers. Philip Morris and Reynolds, the two largest firms in the industry, have approximately 16 percent and 37 percent respectively of their sales in the discount segment, and each does less than a quarter of that in private label and generics. Brown & Williamson, the third largest firm, ranks second in terms of its involvement in the discount segment. A little less than 60 percent of its sales are in the discount segment; however, only about 10 percent of that is due to generic or private label sales. Lorillard, the fourth largest firm, has approximately 5 percent of its sales in the discount segment and none of that is private label. Liggett, the smallest major U.S. cigarette manufacturer, is by far the most intensely involved in the discount segment and most of its discount business is in the low-end generic and private label components. No other major firm comes close to this degree of involvement in the discount segment and the generic/private label subcomponents. These product mix differences across the firms are likely to be an important factor causing divergence of interests among the firms.

#### **E. Current Limits on Coordination**

The divergence of interests among cigarette industry participants makes it likely that the firms will differ as to their preferred coordinated price. In particular, firms with a relatively low commitment to the market today (e.g., low share of current sales) but with a relatively high ability to expand (e.g., higher capacity share or other ability to expand output) can be expected to prefer an industry price well below the monopoly price.<sup>42</sup>

In this setting, the seller with the lowest preferred price acts as a constraint on increases in the industry price (so long as that firm can significantly expand output if price exceeds its preferred level).<sup>43</sup> Its rivals recognize that efforts to raise prices above what the constraining firm

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<sup>42</sup> See J. Baker, Two Sherman Act Section 1 Dilemmas: Parallel Pricing, the Oligopoly Problem, and Contemporary Economic Theory, 38 Antitrust Bull. 143, 202-207 (1993); and J. Baker, supra note 7, at 585-606, particularly at 599-602. The discussion in the text assumes that side payments are unavailable, and adopts the view that the threat of a reversion to competition is sufficient punishment to support high prices.

<sup>43</sup> For decades the cigarette industry has contained many tiny firms, though none has grown to garner any noticeable market share. Currently the non-majors account for less than one-tenth of one percent of industry output. These firms may have an ability to expand output that is comparable to that of a de novo entrant.

prefers would not be successful.<sup>44</sup> If that constraining firm could obtain a larger commitment to the current market or could be induced to raise the price it prefers,<sup>45</sup> however, then the constraint on industry pricing would be relaxed and prices would rise. Industry instability -- as reflected in price wars or other episodes of apparently more intense competition -- occurs when shifts in buyer preferences, changes in seller costs, variation in public policies, new product developments, or other exogenous factors lead one of the industry firms to prefer a new, lower, industry-constraining price. Under such circumstances, factors that eliminate the seller with the lowest preferred price or encourage that firm to prefer a higher price level likely will lead to a higher industry price.<sup>46</sup>

During the 1980s, for example, Liggett first and American (now part of Brown & Williamson) later came to prefer a lower industry price. Both firms' major brands increasingly were older, declining, and near the end of their life cycles. Market shares declined for both firms.<sup>47</sup> Each turned to discount and generic brands as a means of expanding sales.<sup>48</sup> Introducing new brands at a lower price point or switching old brands to a new, lower price point thus became an attractive strategy, first for Liggett and later for American.<sup>49</sup> In this way, Liggett and American became the constraints on industry pricing. The major firms responded initially by

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<sup>44</sup> Such a firm has been called a "maverick." Horizontal Merger Guidelines, *supra* note 2, at 21-22. The use of the term "maverick" in the Merger Guidelines is broader than the way the term is often employed elsewhere, because the seller with the lowest preferred price need not necessarily engage in price-cutting behavior in order to constrain the prices charged by its competitors.

<sup>45</sup> Rivals might induce the constraining firm to prefer a higher price by developing a scheme to compensate the maverick or by finding a way to raise the maverick's marginal costs, for example.

<sup>46</sup> As discussed further in Section II, the antitrust immunity envisioned in the settlement might allow firms to devise compensation schemes and the extra payments required of non-participating firms might increase the marginal cost of the firms that now constrain industry pricing. The proposed tobacco settlement may contain provisions that will alter the price preferences of the firm that currently prefers the lowest price.

<sup>47</sup> Liggett's older premium brands include L&M, Chesterfield, and Lark. American's older premium brands included Pall Mall and Raleigh.

<sup>48</sup> American, for example, developed its own unique and promising approach to product distribution in introducing discount brands in the late 1980s. *FTC v. B.A.T Industries p.l.c.*, 94 Civ 7849 (filed Oct. 31, 1994, S.D.N.Y.) (testimony of Dennis Carlton, economic expert for BAT, Tr. 1052).

<sup>49</sup> Introducing new premium brands may have become problematic for these firms with various restrictions on advertising of cigarettes on television.

selling discount brands as well<sup>50</sup> and later by lowering the relative price of premium brands on “Marlboro Friday.” Thus the industry came to recognize that the coordinated price could not be maintained above the level preferred by Liggett and American.<sup>51</sup> With the acquisition of American Tobacco by BAT, Liggett remains the only firm of significant size that has an appreciably older brand portfolio in terms of premium-brand life cycles and a primary commitment to the discount segments of the cigarette market. This likely makes Liggett one of the most significant constraints on higher industry pricing today.

The success of industry efforts to attain and maintain a coordinated price in the future will depend upon the extent to which the incentives of the constraining firm or firms diverge from the individual incentives of the remaining major producers. As discussed in the next section, the tobacco settlement has the potential to allow the major firms to coordinate their actions more effectively.

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<sup>50</sup> This response led to the Brooke Group litigation, where Brown & Williamson was the primary defendant. At the time of the alleged predatory behavior, evidence suggested that Brown & Williamson was the only other cigarette manufacturer with a substantial presence in the discount segment. See J. Baker, supra note 7, at 595.

<sup>51</sup> Philip Morris led the “Marlboro Friday” pricing move. Within a short time, most of the other firms raised discount prices and lowered premium prices to narrow the gap between the pricing tiers, as Philip Morris had done. American failed to follow the leader for an extended period of time. R. Margulis, The War of ‘93, Apr. 1994 Tobacco Rep. 22-24. Liggett was already viewed as outside the cooperative group with respect to the generic segment.

Table 1  
 U.S. Cigarette Company  
 Domestic Shares and Volume, and Exports  
 1996

Firm	Domestic Share of Cigarettes Sold 1996	Domestic Volume in 1996 (billions of cigarettes)	Export Volume in 1996 (billions of cigarettes)
Philip Morris	47.8%	230.84	173.59
Reynolds	24.6%	119.08	43.90
Brown & Williamson	17.2%	83.35	41.79
Lorillard	8.4%	40.40	--
Liggett	1.9%	8.95	.48
Others	0.1%	.68	--
Industry Total	100.0%	483.30	269.76

Source: John C. Maxwell, Market Up, Apr. 1997 Tobacco Rep. 22.



Table 2  
Concentration Trends

Year	HHI	Number of Major Firms
1930	2682	5
1950	2249	6
1970	2066	6
1980	2421	6
1990	2880	6
1993	2939	6
1994	2964	6
1995 (American + B&W)	3179	5
1996	3260	5

Sources and Notes: Data for 1930 to 1993 are taken from Exhibits PX345 and PX336-E used during the cross examination of Dr. Dennis Carlton in FTC v. B.A.T Industries p.l.c. et al., 94 Civ 7849 (filed Oct. 31, 1994, S.D.N.Y.), Tr. 1086-1087. BAT is now the owner of both Brown & Williamson Tobacco (B&W) and American Tobacco. Data for 1994 to 1996 are calculated from market share data in Maxwell, Market Up, Apr. 1997 Tobacco Rep. 22. HHI is an index of market concentration calculated by squaring the market share of each firm and adding the resulting products together across all firms. Market shares are measured in terms of units sold in the U.S. Markets with HHI statistics above 1800 are classified as highly concentrated under the April 1992 joint DOJ/FTC Horizontal Merger Guidelines.

Table 3  
U.S. Per Capita  
Cigarette Consumption  
1935-1996

Year(s)	Number of Cigarettes Per Capita
1935-1939	1,779
1940-1944	2,558
1945	3,449
1950	3,522
1955	3,597
1960	4,171
1965	4,259*
1970	3,985
1975	4,123
1980	3,849
1985	3,370
1990	2,826
1994	2,524
1995	2,505
1996	2,482

Notes: Economic Research Service, U.S. Department of Agriculture, Tobacco Situation and Outlook Report, various issues.

\* The peak year was 1963, with average per capita consumption of 4,345.

Table 4  
Inflation-Adjusted Price  
per Package of Cigarettes  
1980 to 1996

Year	Price Per Pack in 1996 dollars
1980	\$1.20
1981	\$1.20
1982	\$1.33
1983	\$1.49
1984	\$1.48
1985	\$1.52
1986	\$1.58
1987	\$1.64
1988	\$1.72
1989	\$1.82
1990	\$1.84
1991	\$2.00
1992	\$2.05
1993	\$1.84
1994	\$1.86
1995	\$1.85
1996	\$1.85

Source: Tobacco Institute, The Tax Burden on Tobacco (1996).

Table 5  
Cigarette Company  
Market Shares  
(percent)  
1947-1996

Year	Philip Morris	Reynolds	Brown & Williamson	Lorillard	Liggett	American Brands
1947	7.0	29.7	3.2	4.3	21.3	34.5
1952	9.6	27.3	6.0	6.3	18.0	33.0
1957	9.3	28.7	10.7	7.7	14.5	29.1
1962	9.4	35.0	9.3	11.0	9.8	25.6
1967	12.7	32.5	14.3	10.2	8.1	22.2
1972	20.0	31.4	17.3	8.9	5.6	16.8
1977	26.7	33.1	15.8	8.7	3.4	12.3
1982	32.9	33.6	13.4	8.6	2.9	8.8
1987	38.4	32.1	10.9	8.2	3.5	6.9
1992	40.9	29.5	12.2	7.4	3.1	6.9
1993	40.5	31.5	11.3	7.3	2.5	6.9
1994	44.8	26.7	11.3	7.5	2.3	7.4
1995	46.1	25.7	18.0	8.0	2.2	*
1996	47.8	24.6	17.2	8.4	1.9	*

Source: Robert Porter, The Impact of Government Policy on the U.S. Cigarette Industry in Empirical Approaches to Consumer Protection Economics 463 (P. Ippolito and D. Scheffman, eds., Mar. 1986, Bureau of Economics Conference, Federal Trade Commission). Data for 1947-1982 is based upon data from Schmalensee, supra note 4 and various issues of Business Week. Data for 1987-1996 update Porter's statistics and are taken from J. Maxwell, 1995 Maxwell Tobacco Fact Book, and Tobacco Rep. various issues.

\* American Brands was acquired by Brown & Williamson in late 1994.

Table 6  
1996 U.S. Cigarette Industry: Leading Premium  
Brand Sales by Firm

Firm	Leading Brand (share)	2nd Leading Brand (share)	3rd Leading Brand (share)	4th Leading Brand (share)
Philip Morris	Marlboro (32.3)	Virginia Slims (2.4)	Merit (2.3)	Benson & Hedges (2.3)
Reynolds	Winston (5.3)	Camel (4.6)	Salem (3.6)	Vantage (1.1)
Brown & Williamson	Kool (3.6)	Carlton (1.3)	Pall Mall (1.1)	Capri (.6)
Lorillard	Newport (6.1)	Kent (.8)	True (.4)	Style (.3)
Liggett	Eve (.2)	L&M (.1)	Chesterfield (.1)	Lark (.1)

Source: John C. Maxwell, Market Up, Apr. 1997 Tobacco Rep. 22-28.

Table 7  
1996 U.S. Cigarette Industry: Participation  
by Segment

Firm	Firm's Share of U.S. Cigarette Unit Sales	Proportion of Firm's Sales in the Premium Price Segment	Proportion of Firm's Sales in the Discount Price Segment	Proportion of Firm's Sales in the Discount Segment Due to Generic and Private Label Sales
Philip Morris	47.8%	84.4%	15.6%	12.2%
Reynolds	24.6%	63.0%	37.0%	22.9%
Brown & Williamson	17.2%	42.9%	57.1%	10.7%
Lorillard	8.4%	93.7%	6.3%	--
Liggett	1.9%	25.3%	74.7%	80.1%
Industry Totals	100%	71.5%	28.5%	

Source: John C. Maxwell, Market Up, Apr. 1997 Tobacco Rep. 22-28.

Note: Premium priced cigarettes are the traditional brands whose prices are similar. The discount segment includes all non-premium priced cigarettes. This includes the branded discount category, generic cigarettes, and private label brands. Private label brands are those produced for distribution and sale by other firms under their own label.

## II. Competition and the Expected Effects of the Proposed Settlement

The proposed settlement has the potential to affect almost all aspects of cigarette industry behavior and performance. This section focuses on the provisions in the settlement with the greatest potential to affect competition in the industry and the effects that these competitive changes might be expected to have on market prices.<sup>52</sup>

### A. Selected Settlement Terms and Their Potential Effect on Competition

**1. Annual Payment Structure.** An important element of the settlement is the annual payment structure.<sup>53</sup> The settlement specifies "Annual Payments" that increase in face value to a maximum of \$15 billion in 2002 and following years (Title VI, pp. 34-35). Unlike the initial payment due at signing, these payments are not fixed in value, but instead vary according to the volume of cigarettes sold each year and industry profits.<sup>54</sup> Specifically, if the volume of cigarettes sold is less than the volume of sales in the base year, then the annual payment is reduced by the same proportion.<sup>55,56</sup> For example, if sales decline by 20 percent in the year 2002 compared to the

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<sup>52</sup> This report does not analyze the consequences of the proposed settlement for other domestic industries using tobacco products such as smokeless tobacco. Nor does it examine the impact of the settlement on tobacco farming.

<sup>53</sup> The proposed settlement also requires a fixed \$10 billion payment from the industry due at signing (Title VI.A, pp. 34-35). The settlement does not specify how this payment will be apportioned among firms in the industry, but if it is shared by all, it could weaken the smallest or more marginal firms in the industry disproportionately. If, in consequence, the firms that help constrain the major producers are led to exit the industry, the result would be to relax the competitive constraints faced by the major firms. Alternatively, if the initial payment is paid entirely by the largest tobacco firms, then concerns about competitive effects from this provision would be mitigated.

<sup>54</sup> The payments are also adjusted for inflation.

<sup>55</sup> Similarly, if cigarette sales should rise relative to the base year, the annual payments will proportionately increase. This outcome is less likely to occur, however, since the settlement will cause cigarette prices to rise and demand is expected to fall.

<sup>56</sup> The settlement specifies that "adult" sales volumes will be used in calculating any proportional reductions in the payment and that total sales volumes, including both adult and youth volumes, will be used in calculating any proportional increases. This distinction is not empirically relevant since sales to adult smokers, defined as ages 18 and over, account for approximately 98 percent of all cigarettes sold domestically. J. Harris, Comments on Proposed  
(continued...)

base year, then the payment is reduced by 20 percent, from \$15 billion to \$12 billion. However, if industry profits increase relative to the base year, then the industry will not be permitted to benefit by the full amount of this volume-related payment reduction. Rather, annual payments will be restored by an amount equal to 25 percent of the industry's enhanced profits. Thus, in the example, if industry profits in 2002 are \$4 billion greater than in the base year, then 25 percent of \$4 billion, or \$1 billion, of the annual payment will be restored, bringing it up to \$13 billion.

Because the actual size of the annual payment depends on the quantity of cigarettes sold each year, most of the payment can be treated conceptually as an excise tax per pack that will be passed on to smokers. The settlement, (Title VI.B.7, p. 35), envisions that the annual payments will be passed through to consumers in the form of higher prices for cigarettes. Assuming the settlement is enacted in 1997 as drafted, the implicit tax will be approximately 35 cents per pack in 1998, 39 cents in 1999, 48 cents in 2000, 58 cents in 2001, and 62 cents per pack from 2002 on.<sup>57</sup> However, under the Balanced Budget Act of 1997,<sup>58</sup> 10 cents per pack of the federal excise tax on cigarettes will be credited against the Annual Payments of the tobacco industry in the years 2000 and 2001, and this credit will be increased to 15 cents per pack in 2002 and subsequent years. Taking into account this credit, the implicit excise tax would be reduced to 38 cents per pack in 2000, 48 cents in 2001, and 47 cents in 2002. As of this writing the Senate and House have each passed legislation that would rescind the credit against the Annual Payments.<sup>59</sup> The potential effects of that rescission on the calculations used in the example are discussed in Section III. D. below.

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(...continued)

Tobacco Industry-Wide Resolution, Commissioned by the American Cancer Society 5 (June 26, 1997) (unpublished manuscript). For this and other reasons, the analysis *infra* does not address anticipated effects of the proposed settlement on youth smoking.

<sup>57</sup> For example, when the \$15 billion payment is divided by the approximately 24.2 billion packs of cigarettes sold in the base year, it amounts to about 62 cents per pack. Since the payment is volume adjusted, it remains at 62 cents per pack even if sales increase or decrease. However, the 62 cents per pack (and the other per pack figures above) do not include the profit-related adjustment that applies if sales decrease and profits increase. This adjustment can be viewed as a 25 percent tax on each firm's increase in profits assessed in addition to the excise tax of 62 cents per pack. The examples discussed in Section III account for both components of the payment.

<sup>58</sup> Balanced Budget Act of 1997, Pub. L. No. 105-33, 111 Stat. 251 (1997).

<sup>59</sup> Departments of Labor, Health and Human Services, and Education and Related Agencies Appropriations Act of 1998, S. 1061, 105th Cong. 1st Sess. (1997) (Senate bill); Departments of Labor, Health and Human Services, and Education and Related Agencies Appropriations Act of 1998, H.R. 2264, 105th Cong. 1st Sess. (1997) (House bill). If this legislation becomes law, the implicit excise tax will grow to 62 cents per pack as stated above.



As discussed below, the competitive conditions in the industry together with the low elasticity of cigarette demand are likely to enable cigarette companies to "pass through" to consumers the full amount of this implicit tax. In addition, other aspects of the settlement have the potential to increase the ability of the major firms to coordinate their behavior, so that the ultimate increase in consumer prices could be substantially higher than that required by the annual payment itself. The additional revenue would be expected to increase both corporate profits and public sector revenues.

**2. Broad Antitrust Immunity.** The settlement gives antitrust immunity to the tobacco companies to coordinate their activities taken "in order to achieve the goals of this Agreement and the Act relating to tobacco use by children and adolescents." (App. IV.C.2, p. 50). The Department of Justice would have review rights subject to this standard. However, the breadth of this language, as currently drafted, may permit the industry members to discuss pricing arrangements that reach beyond the amount of a 100 percent "pass-through" to consumers of the cost of the annual payments.<sup>60</sup> Also, the current language may permit a range of anticompetitive conduct involving non-price restrictions. Thus, the exemption increases the likelihood that prices will move closer to what a monopolist would charge.

As discussed in the previous section, the ability of firms to charge monopoly level prices is constrained by their inability to meet to discuss differences in preferred prices and to put into place mechanisms to compensate those firms that would lose market share at a higher price.<sup>61</sup> Such an agreement could make a firm like Liggett prefer a much higher industry price than it does today, loosening or removing a significant constraint on more effective coordination. In this way, antitrust immunity might allow the participating firms to agree to choose prices to maximize their total profits and then to allocate these profits in a manner that makes the agreement on prices acceptable even to the mavericks.

**3. Advertising and Marketing Restrictions.** The settlement includes a variety of advertising and marketing restrictions that are intended to reduce sales, especially to youth. These restrictions may also lead to reduced expenditures on advertising and other marketing activities, reducing industry costs and prices accordingly (Title I.A, pp. 8-11). The magnitude of these effects will depend in part upon the extent to which firms substitute toward the permitted non-price modes of marketing competition (such as direct mail advertising to smokers). In the opposite direction, the settlement would restrict advertising that can help new entrants or maverick firms with new products, lower priced products, or new brands to gain market share from the other firms in the market. As a result, restrictions on advertising could reduce competition in the industry and thus lead to higher prices.

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<sup>60</sup> The ramifications of the proposed antitrust immunity are addressed in greater depth in an Appendix to this Report.

<sup>61</sup> Compensation could take many forms, such as one firm making annual payments on behalf of another firm.

**4. Non-Participating Companies Could Face Added Costs .** Firms not signing the settlement (including Liggett and potential entrants not currently in the U.S. market) would be bound by the legislated regulatory rules envisioned by the agreement but not the other voluntary aspects of the agreement (Title III.C, p. 28). Thus, for instance, these firms would not receive the civil liability protections of the settlement. Similarly, wholesalers and retailers dealing with those firms would not receive protection.

Moreover, the legislation envisioned by the settlement would require the non-participating firms to pay higher annual payments than would be required if they had joined the agreement.<sup>62</sup> These payments would be made into an escrow account and could be reclaimed, with interest, 35 years later if not paid out in liability payments. Due to the difficulty of predicting the amount of future liability payments and the long delay before any money could be reclaimed, these payments are likely to be viewed as non-refundable costs of doing business. Thus, from the year 2002 onward, non-participating firms would have a cost disadvantage of nearly 23.5 cents per pack (half of the 47 cent implicit "excise tax") relative to participating firms.<sup>63</sup>

These provisions have the potential to raise the marginal costs borne by Liggett, which now appears to help constrain industry pricing. They may also discourage entry, another factor increasing the likelihood that the industry will move closer to a monopoly pricing level after the settlement. In addition, the provisions may force many of the current small firms out of business, eliminating the possibility that they could expand enough to affect pricing decisions by the major manufacturers.

**5. R&D Incentives.** The settlement requires that any safer cigarette technology developed by a firm in the agreement must be cross-licensed to all other firms in the industry at "reasonable" prices (Title I.E, pp. 14-15). This provision reduces each firm's incentive to develop safer cigarettes, since such R&D becomes less profitable to the firm, and thus helps to discourage the emergence of additional rivalry from a firm with a new product that is attractive to smokers.

In sum, all of these settlement terms, particularly the broad antitrust exemption, have the potential to increase the ability of the major industry members to coordinate their behavior so as to raise prices. The settlement terms also tend to discourage entry and innovation, including the

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<sup>62</sup> The settlement specifies that a non-participating firm will pay an amount equal to 150 percent of its share of annual payments had it participated, other than the portion allocated to public health programs and law enforcement. The settlement does not discuss the terms under which non-participants might later join the agreement. If such membership is not limited, and if it entails no lump-sum up-front payments, then concerns about anticompetitive effects on non-participating firms would be mitigated because they would have the option of joining the agreement on non-discriminatory terms.

<sup>63</sup> This cost disadvantage would be nearly 31 cents if the excise tax credit discussed above is rescinded.

development of alternative products. The resulting competitive effects on the cigarette market could be substantial, because inelastic demand characterizes the adult market. Thus, even small changes in competitive conditions could have sizeable effects on consumer prices and industry profits.

## **B. The Pass-Through of Tax Increases to Prices**

This section reviews the historical evidence on how the cigarette industry has responded to increased taxes. As examined below, research shows that the industry has commonly, in effect, "passed through" to consumers 100 percent or more of tax increases by raising prices. If, as suggested above, the terms of the agreement make coordination on the remaining dimensions of competition somewhat easier, then prices following the tobacco settlement could increase by even more than would be predicted by applying historical pass-through rates.

Pass-through rates are influenced by demand and supply conditions in an industry and by the extent of rivalry among industry members. Standard economic models of firm behavior predict that the pass-through rate in competitive markets will be no more than 100 percent, with the magnitude of the price increase depending upon supply and demand conditions.<sup>64</sup> Pass-through rates in monopolistic industries can be more or less than 100 percent, again depending on supply and demand conditions.<sup>65</sup>

Several empirical studies have found pass-through rates of 100 percent or greater in the cigarette industry. Barnett, Keeler, and Hu estimate a pass-through rate from federal taxes to retail prices of about 102 percent over the 1955 to 1990 period.<sup>66</sup> Harris finds that the 1983 increase of eight cents in the federal excise tax on cigarettes led to a rise of sixteen cents in the retail price.<sup>67</sup>

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<sup>64</sup> The more elastic the supply and less elastic the demand, the greater the extent to which a tax increase will be borne by consumers in a competitive market. The limiting situation in which all the tax is shifted to consumers (100 percent pass-through) occurs in the case of either perfectly inelastic demand or perfectly elastic supply. See J. Stiglitz, The Economics of the Public Sector 346-67 (1986).

<sup>65</sup> Id. at 359; J. Bulow and P. Pfleiderer, A Note on the Effect of Cost Changes on Prices, 91 *J. Pol. Econ.* 182-185 (1983).

<sup>66</sup> P. Barnett et al., Oligopoly Structure and the Incidence of Cigarette Excise Taxes, 57 *J. Public Econ.* 457-470 (1995).

<sup>67</sup> J. Harris, The 1983 Increase in the Federal Cigarette Excise Tax, in L. Summers, Ed., 1 Tax Policy and the Economy 87-111 (1987). Becker, Grossman, and Murphy suggest that a greater than 100 percent tax pass-through is consistent with their model: if smokers are addicted but take  
(continued...)

Analyses of state tax increases also find pass-through rates of 100 percent or more.<sup>68</sup> Using this approach, Sung et al. estimate a pass-through rate for state excise taxes of approximately 127 percent based on their analysis of 11 Western states for the 1967-90 period.<sup>69</sup> Similarly, examining differences in taxes and prices for the 1954-78 period for 50 states, Sumner reports pass-through rates ranging from 103 to 107 percent.<sup>70</sup> Using a later data set that included most states, Merriman estimates a pass-through rate of 106 percent.<sup>71</sup>

This literature on the pass-through of cigarette excise taxes examines the effect of a tax on retail prices regardless of the level in the distribution chain where the tax is legally imposed. The gains or losses from a pass-through different from 100 percent will accrue entirely to the manufacturing sector, so long as the wholesale and retail distribution of cigarettes is competitive, with distributors obtaining no more than a competitive rate of return for providing their services.<sup>72</sup>

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into account the future consequences of their current actions, then firms are induced to further increase prices now because of the tax's deflation of future demand. See G. Becker et al., supra note 18, at 413.

<sup>68</sup> Barnett, Keeler, and Hu, supra note 67, take a skeptical view of the literature focusing on state pass-through experiences, arguing that those studies are measuring pass-throughs by distributors rather than manufacturers because arbitrage prevents manufacturers from charging different wholesale prices in different states. Under such circumstances, an excise tax increase in a single state would not be expected to have much effect on the wholesale price, but simultaneous changes in excise taxes in many states would raise manufacturers' distribution costs, and these increases would be treated no differently than an increase in input costs by the manufacturing sector in determining the retail price.

<sup>69</sup> H. Sung et al., Cigarette Taxation and Demand: An Empirical Model, 12 *Contemp. Econ. Pol.* 91-100 (1994).

<sup>70</sup> D. Sumner, A Measurement of Monopoly Behavior: An Application to the Cigarette Industry, 89 *J. Pol. Econ.* 1010-19 (1981).

<sup>71</sup> D. Merriman, Do Cigarette Excise Tax Rates Maximize Revenue?, 32 *Econ. Inquiry* 419-428 (1994). In both the Sumner and Merriman studies, the estimated pass-through rates are statistically above one.

<sup>72</sup> In maximizing profits, manufacturers seek an efficient distribution system that passes forward to consumers no more costs than are necessary to obtain competitive distribution services. Any excess price passed through to the ultimate consumer only reduces potential manufacturer profits. Prior to the settlement, the cigarette producers, wholesalers, and retailers would have reached agreements on reimbursement terms that were acceptable to all parties and  
(continued...)

The above evidence suggests that the cigarette companies are likely to raise prices by an amount equal to 100 percent or more of the implicit excise tax imposed by the settlement. Therefore, the examples in the next section assume as a lower bound baseline that prices will increase by an amount equal to the implicit excise tax imposed by the settlement.<sup>73</sup>

As explained in the beginning of this section, the settlement will have various effects on competition in the cigarette industry that may result in substantial price increases beyond those that can be accounted for by changes in costs. For example, suppose that prices rise by 60 cents per pack due to the pass-through of costs, and that prices rise by an additional 60 cents per pack due to the enhanced coordination among industry members. Then prices will increase by \$1.20 in total, or 200 percent of the per-pack cost increase. In the next section, this possibility will be described as a "price-increase ratio" of 200 percent. For purposes of the illustrative examples, this ratio of 200 percent will be employed as an upper bound. Even this upper bound scenario would probably leave prices significantly below the monopoly price level.<sup>74</sup>

### **III. Examples of the Effect of the Settlement on Prices, Profits, and Public Sector Revenues**

This section presents hypothetical numerical examples illustrating the potential financial effects of the proposed settlement. The discussion highlights the potential effects of differing degrees of industry coordination on cigarette prices, cigarette manufacturing industry operating

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(...continued)

that provided a competitive return to the distributors. Only if the settlement raised the costs of wholesaling or retailing would one expect distributors to be able to increase the increments they receive for providing distribution services. The settlement does not, however, appear to raise distribution costs in any significant way. Without observing alterations in payments along the vertical chain that occur in reaction to excise tax increases (e.g., changes in promotional allowances, payments for shelving, wholesale price variations, etc.), it is impossible to verify empirically which level in the vertical chain retains any additional revenue associated with a tax change. The literature indicates that after a tax increase, retail prices may rise somewhat more than the tax. Because the wholesale and retail distribution sectors are competitive, any revenue increases that accrue after a tax increase must benefit the manufacturing sector, where, as discussed in section I, a fully competitive outcome is less likely.

<sup>73</sup> The baseline example also assumes a 100 percent pass-through of the excise tax that will be assessed beginning in the year 2000. In addition, the example assumes a 100 percent pass-through of cost savings due to anticipated reductions in advertising and legal costs.

<sup>74</sup> Under the 200 percent price-cost ratio assumption, prices rise to about \$3.04 per pack. Current prices in some European countries are substantially higher than this figure. Based on 1995 data, Harris estimates that the monopoly price for cigarettes in the U.S. is approximately \$4.08 per pack. See J. Harris, *supra* note 34, at 292-294.

profits, and public sector revenues. The baseline scenario assumes that the cigarette industry cannot exercise more market power as a result of the settlement, and therefore that the industry will "pass through" to cigarette consumers the costs of the settlement at the approximate historical rate of 100 percent, without any additional price increase due to enhanced coordination. Such a situation will be said to exhibit a price-increase ratio of 100 percent. To evaluate the impact of the increased industry coordination, which may be facilitated by the terms of the settlement, the baseline scenario is modified by raising the price-increase ratio from 100 percent to the higher levels of 125 percent and 200 percent.<sup>75</sup>

This comparison demonstrates that increased industry coordination could add to cigarette industry profits and to a lesser extent to public sector revenues. If coordination is improved only moderately, as modeled by an increase in the price-increase ratio from 100 percent to 125 percent, the present value of industry operating profits net of income tax over the first twenty-five years of the settlement potentially rises by about \$16 billion (in present value) and public sector revenues (mainly tax revenues) increase by nearly \$7 billion (in present value) relative to what these sectors might receive absent features of the settlement making coordination more effective. A substantial increase in the effectiveness of industry coordination, modeled by an increase in the price-increase ratio to 200 percent, could raise industry operating profits by about \$56 billion (in present value) and public sector revenues by around \$33 billion (in present value). In general, these calculations suggest that roughly two-thirds of the benefits of improved cigarette industry coordination would go to the firms.

The examples also show that regardless of the extent to which industry coordination increases, the cigarette industry and the public sector could benefit financially from the proposed settlement. The financial implications of the settlement for the cigarette industry depend upon the value of those features of the settlement calculated to limit civil liability in lawsuits, and also upon the direct effect of the provisions of the settlement on industry profits. In the baseline scenario, the cigarette manufacturers effectively purchase the liability limitations in the settlement for roughly \$10 billion (in present value) in lost operating profits. Unless the liability limitations are worth less than \$10 billion to the industry, which is unlikely, the manufacturers would benefit financially on balance in the baseline case with the 100 percent price-increase ratio. Moreover, if coordination is enhanced substantially, as modeled by a price-increase ratio of 200 percent, the cigarette industry gains both the civil liability limitations and a potential increase in operating profits of \$56 billion in present value relative to the settlement with a 100 percent price-increase ratio. Public sector revenues, including existing taxes as well as the new payments proposed by the settlement, increase in present value by roughly \$100 billion in the baseline scenario and an additional \$33 billion in present value if enhanced coordination generates a price-increase ratio of

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<sup>75</sup> A price-increase ratio of 125 percent corresponds to a long-term increase in the price of cigarettes of about 14 cents in addition to increases accounted for by the pass-through of costs. A price-increase ratio of 200 percent corresponds to a similar long-term price increase of 57 cents.

200 percent. Although these amounts are substantial, they are considerably less than the \$368.5 billion "face value" of the settlement's annual payments package.<sup>76</sup>

The examples presented in this section are not intended to provide precise predictions of the absolute levels of future prices, sales, profits, or public sector revenues. Their purpose is instead to illustrate the potential incremental effects of the settlement that are likely to depend on (1) any change in the level of competition in the industry as a result of the settlement, and (2) the consumer responsiveness to price increases. The examples provide a rough guide to the possible magnitudes of the financial flows that could be generated by the settlement. The remainder of this section details the basis for the conclusions set forth above.

### **A. Description of the Baseline Scenario and the Calculation Method**

The example illustrates the effect of the settlement in a baseline scenario that uses data on current prices, quantity, taxes and industry costs. The baseline scenario also incorporates estimates of the demand elasticity, the secular downward trend in demand,<sup>77</sup> the price-increase ratio, and the settlement-induced marketing and legal cost savings. The key assumption in the baseline scenario is that the price-increase ratio is 100 percent, reflecting the historical pass-through rate but not presuming improved industry coordination. Each assumption used in the baseline scenario is presented in Table 8.

To facilitate the analysis, the example views the volume-adjusted portion of the annual payment as the equivalent of a per-pack excise tax, and assumes that the per-pack amount will be passed through to consumers in the form of higher prices.<sup>78</sup> It also assumes that the profit-

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<sup>76</sup> Public sector revenues from the settlement will not reach the "face value" levels due to reductions in cigarette unit sales as prices rise and the continuation of the current U.S. trend toward reduced smoking. In addition, adjusting for the fact that the payments are made over a long time period rather than up front by discounting the future payments results in a lower present value of the settlement.

<sup>77</sup> The pattern of demand for cigarettes in the U.S. has shown a steady downward time trend that is unrelated to price changes. This trend is referred to as the secular trend in cigarette demand.

<sup>78</sup> As discussed in section II.A.1, the annual payment amount is determined by first proportionally adjusting the "face value" amount specified in the settlement by any changes in sales volume that have occurred since the base year of the settlement. If volume adjustment reduces the amount of the payment, the reduction will be reduced by 25 percent of any additional operating profits the industry earns in that year as compared to the base year. This latter adjustment is referred to here as the "profit penalty." The volume-adjusted portion of the annual payment can be viewed as the equivalent of a constant per-pack excise tax because the

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penalty portion of the annual payment and the initial "up-front commitment" of \$10 billion is not passed through in higher prices.

In the example, the price-increase ratio relates the increase in price from the baseline price to all net cost changes under the settlement. Therefore, price changes also reflect the settlement-induced advertising and legal cost savings, assumed to be five cents per pack.<sup>79</sup>

The quantity of cigarettes sold in each year is calculated by adjusting the 1997 quantity for the secular downward trend in demand, assumed to be -0.6 percent per year,<sup>80</sup> and for the quantity effect arising from the price increases caused by the settlement. The quantity effect arising from the price increase is calculated using the appropriate constant elasticity demand function, which in the baseline scenario is assumed to have a constant price elasticity equal to -0.4.<sup>81</sup> Total sales revenues are then calculated by multiplying the price and quantity figures.

The industry's operating profits in the baseline scenario are calculated by multiplying the estimated average profit margin times current quantity and subtracting the volume-adjusted amount of the annual payment.<sup>82</sup> Operating profits before income tax are calculated by

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proportional adjustment will lower the total amount of the payment but will always result in same per-pack amount, as in an excise tax.

<sup>79</sup> Cigarette industry advertising expenditures in media such as magazines, newspapers, billboards, and point of sale promotion totals about \$1.5 to \$2 billion a year, or about 6 to 8 cents per pack of cigarettes sold. The industry also spends another \$3 to \$3.5 billion per year in cents-off coupons and other promotional expenditures that would not be directly restricted by the settlement. See FTC Report to Congress for 1995 Pursuant to the Federal Cigarette Labeling and Advertising Act. The industry will likely reduce overall advertising expenditures under the settlement but continue some advertising in permitted media such as direct mail, adult-only magazines, and point of sale promotion in adult-only establishments. Cigarette industry legal costs appear to be around 2.5 cents a pack. The assumption of a five cent per pack reduction in advertising and legal costs is consistent with a reduction of 50 percent to 60 percent in those cost categories. No reduction is assumed in the other cents-off coupons or other promotional categories.

<sup>80</sup> J. Harris, supra note 56, at 5.

<sup>81</sup> The consequences of alternative assumptions about the functional form of industry demand are considered in Section III. D below.

<sup>82</sup> The profit levels are approximations at best and are used mainly to examine the potential incremental profits arising from an increase in the ability of the industry to coordinate pricing due  
(continued...)



subtracting from operating profits the "up-front commitment" paid at the start of the settlement and any annual payment profit penalties. Operating profits net of income tax are calculated by subtracting corporate income taxes,<sup>83</sup> which are calculated by multiplying pre-tax operating profits by the current marginal corporate income tax rate of 35 percent. The calculations of industry profits do not include estimates of the value of the limitations on civil liability, although this likely constitutes a major component of the financial benefits of the settlement to the industry.<sup>84</sup>

Federal and state excise tax revenues are calculated by multiplying the pre-existing excise tax rates by the quantity of cigarettes sold in each year. Settlement payments are the sum of the initial "up-front commitment" payment and the annual payment, including any adjustments of the annual payment for volume changes and excess profits. Public sector revenues are from federal and state excise taxes, settlement payments, and corporate income tax revenue. Corporate income tax revenues are calculated by multiplying pre-tax operating profits by the corporate income tax rate. And finally, present value calculations use a discount rate of 7 percent.<sup>85</sup>

## **B. Prices, Industry Profits, and Public Sector Revenues in the Baseline Scenario**

Table 9 presents the figures obtained for prices, quantities, sales revenues, and manufacturer domestic operating profits in the baseline scenario. Table 10 presents the figures obtained for public sector revenues. In both Tables 9 and 10, the main comparison presented for each quantity is what it would be without and with the proposed settlement. In each "without settlement" case, the example assumes that the existing state and federal excise taxes (including the recently passed federal excise tax) are in effect. In each "with settlement" case, the example

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to certain features of the settlement.

<sup>83</sup> The calculation assumes that payments under the settlement are tax-deductible.

<sup>84</sup> One Wall Street research firm has estimated that the value of a comprehensive tobacco settlement to Philip Morris is on the order of \$75 to \$100 billion. G. Black and J. Rooney, Tobacco: As Third Wave Draws to a Close, Revaluations Likely to Mirror 1987 4 (Bernstein Research, Aug. 6, 1997). Considering that Philip Morris is close to half of the cigarette industry, the liability reduction due to the settlement might be worth as much as \$150 to \$200 billion to the industry prior to consideration of any anticompetitive gains due to enhanced industry coordination fostered by the settlement.

<sup>85</sup> The Office of Management and Budget recommends a 7 percent real discount rate for present value calculations involving government programs. See Office of Management and Budget, Economic Analysis of Federal Regulations Under Executive Order 12866 9 (Jan. 11, 1996).

assumes that there are, in addition, the excise taxes needed to collect the settlement revenue and that the recently enacted excise tax credit is in effect.<sup>86</sup> All dollar figures are in 1997 dollars.

In the year 2002 in the baseline scenario (see Table 9), the year in which the annual payment reaches its full face value amount, the price with the settlement will be forty-two cents above what the price would be in 2002 without the settlement. The higher prices reflect the settlement costs passed through to consumers in the form of price increases at the baseline price-increase ratio of 100 percent.<sup>87</sup> Retail sales revenues increase by \$5.5 billion, reflecting the inelasticity of demand. Before accounting for the value of civil liability limitations provided by the settlement, Table 9 shows that industry pre-tax operating profits decrease by \$0.5 billion and operating profits net of income tax decrease by \$0.3 billion. Table 10 shows public sector excise tax revenues decreasing by \$1.2 billion in the year 2002, reflecting the lower quantity of cigarettes sold. Combined excise tax and settlement payments increase by \$8.8 billion, reflecting the addition of the settlement payments. The public sector's total gain from the settlement in 2002, including excise taxes, settlement payments, and corporate income tax revenues, is approximately \$8.6 billion.<sup>88</sup>

Table 9 also shows that in the baseline scenario, exclusive of the effect of the civil liability limitation, the sum of industry operating profits net of income tax over the first 25 years of the settlement is \$14.5 billion lower than it would be without the settlement, and that the discounted present value of operating profits net of income tax is \$10.2 billion lower over this period under the settlement.

Table 10 shows that public sector revenues solely from the settlement's "up-front commitment" and annual payments total \$241.8 billion over the first 25 years and have a

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<sup>86</sup> Under the Balanced Budget Act of 1997, Pub. L. No. 105-33, 111 Stat. 251 (1997), Federal excise taxes on cigarettes will rise 10 cents in the year 2000 and 5 cents more in 2002. Section 9302 of Pub. L. No. 105-33 provides that excise taxes collected under that law will be credited against payments to be made under Federal implementation of the tobacco industry settlement agreement of June 20, 1997.

<sup>87</sup> The forty-two cent price increase is less than the often cited sixty-two cent increase due to the existence of the recently passed settlement credit and the assumed advertising cost savings. In 2002, under the 100 percent pass-through assumption, the without settlement price per pack would be equal to  $\$1.90 + \$0.15 = \$2.05$ . The with settlement price would be increased by the \$0.62 settlement excise tax and reduced by the \$0.15 credit and the \$0.05 savings on advertising and legal expenses, resulting in a price of \$2.47. Therefore, the price difference would be \$0.42.

<sup>88</sup> Corporate income taxes fall significantly in the first year of the settlement due to the initial payment. After the initial year of the settlement, corporate income tax revenues fall slightly in the 100 percent price-increase ratio case because corporate profits decline modestly as consumers purchase fewer cigarettes at the new, higher prices.

discounted present value of \$118.1 billion in the baseline scenario. This is in contrast to the \$368.5 billion "face value" sum stated in the settlement. The sum of the settlement payments is reduced below the face value because of the decrease in smoking associated with the secular decline in cigarette demand and by the reduction in consumption that occurs due to the higher prices.

Table 10 also shows that under the baseline scenario the discounted present value of the sum of excise tax and settlement payments collected over the first 25 years is \$105.9 billion higher in the baseline scenario than the present value of the excise taxes that would be collected over this period in the absence of the settlement. With the settlement, the sum of excise tax revenues, settlement payments, and corporate income tax revenues is \$207.3 billion (\$100.4 billion in present value) higher than without the settlement.<sup>89, 90</sup>

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<sup>89</sup> The increase in overall public sector revenues is smaller than the settlement payment figures noted in the preceding paragraph because the settlement payments (and the increased corporate income tax revenues) are partially offset by the decrease in excise tax revenues.

<sup>90</sup> If the law crediting the ten to fifteen cent per pack excise tax passed in August 1997 against the settlement payments is rescinded, the implicit settlement-related excise tax will increase by the amount of this credit. If, as in the baseline scenario, this increase is passed on to consumers, it will have little effect on industry operating profits but will increase public sector revenues. The resulting higher price of cigarettes would be expected to further reduce cigarette consumption.

### C. The Effect of Increased Industry Coordination

As discussed earlier, the less-than-fully-competitive nature of the cigarette industry, the features of the settlement that may make industry coordination more effective, and the relatively inelastic demand for cigarettes may allow the industry to increase prices far in excess of the increased costs arising from the settlement. The effect of increased industry coordination on industry profits and public sector revenues can be illustrated by altering key assumptions and comparing the resulting scenarios to the baseline. It is not unreasonable to think that certain terms in the settlement, particularly the broad antitrust exemption, might make it easier for the cigarette producers to achieve a consensus on industry price and other dimensions of competition. Such enhanced coordination that might occur as a result of the settlement is captured in the examples as an increase in the price-increase ratio.

In the baseline scenario it is assumed that price increases by 100 percent of the volume-adjusted portion of the settlement payment. A price-increase ratio of 125 percent would represent somewhat more effective coordination. A price-increase ratio of 200 percent would represent substantially greater coordination, though still less than monopoly pricing. Table 11 presents the results of the example when figures of 100 percent, 125 percent, and 200 percent are alternatively used for the price-increase ratio.<sup>91</sup> The baseline price-increase ratio of 100 percent corresponds to a price increase (after 5 years) of \$0.42 per pack to consumers from the baseline price of \$2.05. A price-increase ratio of 125 percent corresponds to a price increase of \$0.56 per pack and a price-increase ratio of 200 percent corresponds to a price increase of \$0.99.<sup>92</sup>

The results in Table 11 examine the effect, under the settlement, of industry coordination under a variety of assumptions about the elasticity of demand and the secular annual decline rate of cigarette sales.<sup>93</sup> The results show that increasing coordination has a dramatic impact on

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<sup>91</sup> As noted in Section II, estimates of the monopoly price for cigarettes calculated by Harris imply that the pass-through rate could extend beyond the 200 percent level. See J. Harris, *supra* note 34, at 292-294.

<sup>92</sup> With the 100 percent price-increase ratio, the full \$0.57 cost increase (the \$0.62 minus the \$0.05 savings in advertising and legal costs) is added to the base price of \$1.90, bringing it to \$2.47. With the 200 percent price-increase ratio, double the \$0.57 (= \$1.14) is added to the base price of \$1.90, bringing it to \$3.04. In both cases the new price is compared to the without-settlement price of \$2.05. Thus the change in price under the 100 percent is \$0.42 (= \$2.47 - \$2.05) and under the 200 percent is \$0.99 (= \$3.04 - 2.05).

<sup>93</sup> An elasticity of demand of -0.2 represents a smaller consumer response to changes in cigarette prices than does the scenario presented in Tables 9 and 10, implying that the quantity of cigarettes sold would not fall as much as in the original baseline scenario. Conversely, an elasticity of demand of -0.8 represents a greater consumer response to changes in prices, which  
(continued...)

industry profits, for each demand elasticity assumption. Using the assumptions in the baseline scenario, where the price-increase ratio is 100 percent, the sum of industry operating profits net of income tax over the first 25 years of the settlement would total \$49 billion in present value terms. If the price-increase ratio is 125 percent, the sum of operating profits net of income tax over this period would total \$65 billion in present value. And if the price-increase ratio is 200 percent -- a figure suggestive of what could happen if the industry is given a broad antitrust exemption -- the present value of the sum of operating profits net of income tax over this period could total \$105 billion, or roughly \$56 billion more than what the industry obtains in the baseline scenario.<sup>94</sup> These potential gains to the industry represent a market power premium that could accrue if the settlement leads to an enhanced ability to coordinate behavior among the firms.

This same pattern of results holds for the various assumptions about the elasticity of demand and the secular rate of decline in cigarette sales. Under all of the scenarios, industry profits under the settlement increase substantially if the industry is able to increase the price-increase ratio from the base level of 100 percent to the higher, and more uncertain, level of 200 percent. For example, as shown in Table 11, with a 100 percent price-increase ratio and a -0.2 elasticity level, the present value of industry operating profits net of income tax is \$51 billion compared to \$117 billion if the price-increase ratio is 200 percent. At the much larger elasticity of -0.8, the corresponding values are \$44 billion and \$90 billion. In both cases the change in profits net of income tax due to the change in price-increase ratio is substantial.

Changes in the price-increase ratio have a much smaller effect on public sector revenues. When consumer demand is inelastic, more effective industry coordination generally increases public sector revenues, because revenues from corporate income taxes and the profit-penalty portion of the annual payment increase as industry profits increase, and the inelastic consumer demand limits the quantity decrease and the resulting negative impact on excise tax revenues. In the baseline scenario, which uses the price-increase ratio of 100 percent, overall public sector revenues from the cigarette industry total a present value of \$322 billion over the first 25 years of the settlement. If the price-increase ratio is changed to 200 percent, public sector revenues would increase to \$355 billion in present value. The potential increase in public sector revenues resulting from the higher price-increase ratio is even larger when demand is more inelastic.<sup>95</sup>

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(...continued)

would result in a larger fall in quantity.

<sup>94</sup> As with all the industry profit figures discussed in this section, these profits would accrue mainly to the major cigarette companies, the firms with significant market shares.

<sup>95</sup> In contrast, when demand is more elastic, the consumer response to the price increase is larger and the resulting larger drop in quantity causes a larger drop in excise tax revenues, offsetting the income tax and profit-penalty gains and causing the higher price-increase ratio to generate a small decrease in public sector revenues. In all cases involving a change from a 100

(continued...)

Table 12 illustrates how the increased revenue from improved industry coordination would be shared between the public sector and the tobacco industry under the proposed settlement. When increased industry coordination occurs, industry profits rise because prices rise and demand does not fall off enough to offset the price rise. Public sector revenues tend to rise because, under the assumed corporate income tax, the manufacturers pay 35 percent of their increased profits to the public sector. However, the increase in income tax revenues is offset somewhat by a reduction in revenues from excise taxes as the quantity demanded falls.

As the entries in Table 12 show, in the illustrative calculations the industry receives approximately two-thirds of the gains from the increases in industry coordination. These incremental gains represent a market power premium received by the industry due to the enhanced ability to coordinate. As the price-increase ratio changes from 100 percent to 125 percent, the industry could receive a present value of \$16 billion (or 70 percent) of the total of \$23 billion of additional surplus generated by the enhanced industry coordination.<sup>96</sup> And, the industry could receive a present value of \$56 billion (or 63 percent) of the \$89 billion in additional surplus generated by increasing the price-increase ratio from 100 percent to the more uncertain level of 200 percent. In the examples, the public sector receives approximately one-third of the total surplus generated by increasing the price-increase ratios.

These results suggest that industry coordination is not likely to have a large negative impact on public sector revenues and may even lead to increased revenues. The main effect of more effective coordination, however, is to increase cigarette prices and industry profits. Industry operating profits may increase substantially above pre-settlement levels if the settlement enables the industry to coordinate more effectively. The additional profits would be obtained primarily at the expense of smokers, whose inelastic demand for cigarettes allows the industry to increase prices substantially while causing only a proportionally smaller effect on sales. Also, these additional profits are separate and apart from whatever value the firms might gain from civil liability limitations.

#### **D. Issues Not Addressed in the Examples**

A number of factors have not been explicitly incorporated into the example in order to simplify the analysis. These factors and their potential effect on the results are discussed here.

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(...continued)

percent to a 200 percent price-increase ratio, corporate income tax revenues rise because the government obtains a 35 percent share of the higher profits obtained by the firms as price increases much more than the cost of the excise tax increase.

<sup>96</sup> In this context, the term “surplus” refers to the total of excise tax revenues, settlement payments, income tax revenues, and manufacturers’ operating profits net of income tax related to cigarette sales. The dollar amounts presented in Table 12 are the present discounted values of the 25-year streams of payments.

While the example does not explicitly include all of the complexities discussed in this section, many of the issues are captured within the parameters of the sensitivity analysis, which varies the assumptions about the elasticity of demand and the secular decline in cigarette sales used in the example. Furthermore, as noted earlier, the example is not intended to provide precise predictions of the absolute levels of future prices, sales, profits, or public sector revenues, but rather mainly illustrates the potential incremental effect of the settlement and how that incremental effect depends upon the ability of the industry to coordinate effectively and the consumer demand response to price increases.

The example uses a constant elasticity of demand to estimate the demand effect of price increases. In alternative specifications of demand such as a linear demand curve, the elasticity will rise as price rises, implying that the reduction in quantity will be larger than that predicted under a constant elasticity assumption and that sales revenues, industry profits, and public sector revenues will be lower.<sup>97</sup> The possible effect of a changing elasticity is largely captured in the sensitivity analysis presented in the top half of Table 11, which varies the elasticity assumption from a low of -0.2 to a high of -0.8. For example, if the demand elasticity rises from -0.4 to -0.8 at the same time the price-increase ratio increases from 100 percent to 200 percent -- that is, if demand grows more elastic as price rises -- then, according to Table 11, the present value of industry operating profits net of income tax rises by \$41 billion (rather than \$56 billion in the constant elasticity case)<sup>98</sup> and public sector revenues decline by \$22 billion (rather than rising by \$33 billion). Thus, under this alternative assumption about demand, only the industry benefits from more effective coordination; the public sector loses. These alternative specifications of demand may not, however, be appropriate for the cigarette industry, because in this industry it is possible that the demand elasticity will fall as price rises, as a higher price forces casual smokers with elastic demand out of the market and leaves only committed smokers with inelastic demand.<sup>99</sup> In this case, quantity will fall by a smaller amount than predicted under a constant elasticity assumption, and sales revenues, industry profits, and public sector revenues will be higher.

The example also applies the same elasticity of demand to all smokers. Some studies have suggested that teenage smokers have a higher elasticity of demand than adult smokers, reflecting the fact that they are not yet as "hooked" as long-time smokers and that they have a much tighter

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<sup>97</sup> Another alternative specification of demand, a semi-log curve, also has the property that elasticity rises as price rises.

<sup>98</sup>This can be seen by comparing the change in the present values of industry operating profits net of income tax for the constant elasticity base case of -0.4 with the change in the present values moving from the base case to the larger elasticity of -0.8 ( \$90 billion minus \$49 billion).

<sup>99</sup> G. Becker et al., supra note 18, at 412-413. Moreover, the international evidence is consistent with the assumption of constant elasticity. See M. Stewart, The Effect on Tobacco Consumption of Advertising Bans in OECD Countries, 12 Int'l J. Advertising 164 (1993).

income constraint on their expenditures.<sup>100</sup> A higher elasticity would imply that the price increases caused by the settlement will lead to proportionally larger decreases in demand in the youth market than in the adult market. The youth access restrictions required by the settlement also may contribute to a larger impact on the youth market. While both of these factors are important in any analysis of the effect of the settlement on youth smoking, they do not have much of an effect on the overall sales, profits, and public sector revenue figures calculated in the example. Youth smoking has been estimated to account for only about 2.1 percent of total cigarette sales.<sup>101</sup> Even a relatively large reduction in demand in the youth market would thus have only a minor effect on overall market demand, at least in the short term.

The impact of any reduction in youth smoking would have a larger impact on overall market demand in the long term, however, because fewer youth smokers would grow into adult smokers. If the settlement substantially reduces youth smoking, which in turn substantially reduces adult smoking in the future, then the long-term demand-reduction effect of the settlement would be larger than indicated in the example, and long-term sales revenues, industry profits, and public sector revenues would be lower.<sup>102</sup>

The example also does not explicitly account for the potential reduction in demand caused by the advertising restrictions specified in the settlement. Any effect of the advertising restrictions is likely to be larger in the long term rather than short term. The biggest potential impact may be in the youth market of the future, where children may go through their teen and pre-teen years without seeing the number and variety of advertisements for cigarettes that exist today. The potential effect of the advertising restrictions is likely to be less on the current youth market because current teens have already been exposed to years of cigarette ads. The restrictions are also less likely to have a significant effect on adult smokers, who have already formed the smoking habit. An effect of advertising restrictions on the future youth market might be similar to the possible impact of higher prices and access restrictions on youth smoking noted above. With such an effect, the settlement likely would cause a larger decrease in cigarette sales than estimated in the example, and sales revenues, industry profits, and public sector revenues would be lower. The intended effects of the advertising restrictions on aggregate youth smoking are suggested by

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<sup>100</sup> See, for example, F. Chaloupka and M. Grossman, supra note 14.

<sup>101</sup> J. Harris, supra note 56, at 4.

<sup>102</sup> If future industry sales and profits drop far enough, public sector revenues could actually fall below pre-settlement levels, because excise and corporate income tax revenues would fall and would not be offset by settlement payments, which could be substantially reduced due to the volume decrease.



the sensitivity analysis presented in the bottom half of Table 11, which assumes a faster secular decline in demand with the settlement than in the baseline case.<sup>103</sup>

The example uses a 7 percent discount rate to calculate the present values of the 25-year streams of payments and revenues. This rate is used by the Office of Management and Budget in evaluating federal projects. If 4 percent, the approximate real interest rate for long-term U.S. Treasury bonds,<sup>104</sup> is used instead of the 7 percent used in the example, the present values of the profit and public sector revenues would be approximately one-third greater than reported in Tables 10-12. Specifically, under a 4 percent discount rate, the present value of the industry's operating profits net of income tax in the baseline scenario would be \$65.4 billion rather than the \$48.9 billion shown in Table 9, and the present value of the public sector's excise tax plus settlement payments plus income tax revenue would be \$423.6 billion rather than the \$322.0 shown in Table 10. The pattern of amounts and changes in Tables 10-12 would otherwise be unchanged.

Another factor not included in the example is the possibility that the excise tax credit may be removed. As noted earlier, the U.S. Senate and House of Representatives both recently approved legislation that would eliminate the credit of the new excise taxes toward settlement payments. Eliminating the credit will increase the volume-adjusted annual payment under the settlement by 15 cents per pack, bringing the per-pack payment back to the original 62 cents provided for in the settlement. In the baseline scenario, the elimination of the credit makes little difference to industry operating profits while adding to industry settlement payments and public sector revenues.<sup>105</sup> More effective coordination continues to benefit both the cigarette industry and the public sector, in about the same amounts as were reported in Table 12b under the prior

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<sup>103</sup> The assumption of a 2 percent annual decline in the demand for cigarettes under the settlement is not intended to be an estimate of the likely effect of the settlement's advertising and marketing restrictions, but is used only to illustrate the effect of a larger annual decline in smoking on industry profits and government revenues. The financial effects on firms due to changes in the Food and Drug Administration jurisdiction or regulations or due to reductions in sales due to enhanced public health campaigns are also not included in the calculations provided here, but any negative effects on firm profits from such changes might be suggested by the scenario with the faster secular decline.

<sup>104</sup> A real interest rate is the nominal interest rate adjusted for the estimated rate of price inflation.

<sup>105</sup> Without the credit, industry operating profits net of income taxes over the first twenty-five years of the settlement in the baseline scenario will decrease slightly to \$101.8 billion (\$48.0 billion in present value), industry settlement payments will increase to \$302.5 billion (\$143.9 billion in present value), and total public sector revenues will increase to \$714.3 billion (\$344.2 billion in present value).

assumption that the excise tax credit remained in force, with the industry still retaining about two-thirds of the resulting gains.<sup>106</sup>

Several additional factors not incorporated in the example could result in lower public sector revenues. There is a possibility that the higher cigarette prices caused by the settlement payments could lead to a larger black market in cigarettes.<sup>107</sup> The black market may circumvent annual payments and excise taxes and act to reduce public sector revenues.<sup>108</sup> It is also possible that cigarette companies could adopt accounting strategies to reduce book profits, and so limit their payments of the profit-penalty and any increased corporate income taxes. This could also reduce public sector revenues below the levels estimated in the example. In addition, higher cigarette taxes could reduce the demand for other tobacco-related products and services and thereby indirectly affect public sector revenues derived from these related markets.<sup>109</sup>

Public sector revenues also may be reduced by awards in private suits against the industry. While the settlement (if enacted into law) would prohibit class action suits and punitive damage awards in private suits, it allows compensatory damage awards in private suits. The settlement specifies that the annual amount of compensatory damage awards will be limited to 33 percent of that year's annual payment, and that any award payments will reduce that year's annual payment

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<sup>106</sup> If the industry is able to coordinate somewhat more effectively under the settlement (as in the 125 percent price-increase ratio case), industry operating profits net of income taxes will increase to \$137.8 billion (\$64.1 billion in present value), industry settlement payments will increase to \$303.4 billion (\$144.8 billion in present value), and total public sector revenues will increase to \$727.7 billion (\$350.6 billion). If the industry is able to coordinate substantially more effectively (as in the 200 percent price-increase ratio case), industry operating profits net of income taxes will increase to \$223.2 billion (\$103.3 billion in present value), industry settlement payments will increase to \$330.4 billion (\$156.9 billion in present value), and total public sector revenues will increase to \$782.4 billion (\$375.5 billion).

<sup>107</sup> The higher prices could induce the smuggling of cigarettes from foreign countries and the diversion of U.S. produced cigarettes to a black market.

<sup>108</sup> An extensive black market would also lower the price-increase ratio, since it would be the equivalent of additional competitors in the market.

<sup>109</sup> The example also does not take into account any indirect effects of the settlement on overall U.S. economic activity and public sector revenue derived from this activity.

at an 80 percent rate.<sup>110</sup> Thus, any future private suit awards will reduce public sector revenues from the settlement. It is difficult to predict the size of any such effect.

Public sector revenues may be increased by the payment of “look-back” surcharges if youth smoking is not reduced to the target levels specified in the settlement. The surcharges could total up to \$2 billion per year, though up to 75 percent of the surcharge could be abated on a company-by-company basis if the FDA determines that the company has engaged in good faith efforts to reduce youth smoking. It is difficult to predict the likely amount of surcharges that will be paid by the industry, which will depend on the future levels of youth smoking and on the abatement decisions of FDA.

Another simplification in the example is that it treats the cigarette market on an aggregated basis rather than breaking down the market into component segments, such as premium brands, discount brands, and generics. If the settlement causes the price differential between premium cigarettes and discount brands to change or if an identical dollar increase affects segment consumption in different ways, however, then the market shares of the component segments could also change. The effect of any such changes on the demand for cigarettes, industry profits, and public sector revenues, would be largely reflected in the example through their effects on the average price of cigarettes.<sup>111</sup>

Finally, while the volume-adjusted face value of the annual payment is passed on to consumers in the form of higher prices, the example treats the profit-penalty portion of the annual payment (should it be implicated in any year) and the \$10 billion “up-front commitment” payment as fixed costs that are not passed through to consumers. If these payments were passed through to consumers, industry profits would increase. Public sector revenues would likely increase in the relatively more inelastic demand scenarios and decrease slightly in the more elastic demand scenarios. The increase in industry profits would occur under all assumptions about the price-increase ratio, and industry profits would still increase substantially under more effective coordination.

While all of the factors discussed in this section add complexity to the analysis, none changes the basic pattern illustrated in Tables 11 and 12 and discussed above -- that increased industry coordination, possibly facilitated by terms of the settlement, could lead to substantially

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<sup>110</sup> The 33 percent limit applies to the combined amount of judgments and settlements. Amounts in excess of the limit are carried over to be paid in the following year, or in the next year below the limit.

<sup>111</sup> For instance, if the market share of generics grew, it would pull down the average price of cigarettes. This effect could be captured in the example by using a slightly lower price-increase ratio, which would result in slightly lower industry profits and public sector revenues. If the settlement led to increased industry coordination, however, the industry might be able to narrow the price gap between the segments and thus avoid growth of generic market share.

increased profits under the settlement and that any additional surplus resulting from the increased coordination would likely disproportionately benefit industry, not the public sector.

**Table 8**

**Assumptions Used in the Baseline Scenario**

1997 Price (per pack)							\$1.90
1997 Quantity (billions of packs)							24.2
Current Excise Taxes (per pack):							
Federal							\$0.24
State (national average)							\$0.32
Advertising and Marketing Costs (per pack)							\$0.23
Legal Costs (per pack)							\$0.025
Initial Average Profit Margin from Operations (per pack)							\$0.32
Corporate Income Tax Rate on Incremental Industry Profits							35%
Present Value Discount Rate							7%
Cost Change Price-increase ratio							100%
Demand Trend Growth Rate							-0.6%
Demand Elasticity							-0.4
Settlement Induced Advertising and Legal Cost Savings (per pack)							\$0.05
New Budget Bill Excise Tax (per pack):							
Year:	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002+</u>	
	----	----	----	0.10	0.10	0.15	
Settlement Payments (\$billion):							
Year:	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002+</u>	
Up Front Commitment	10.0	----	----	----	----	----	
Annual Payment	----	8.5	9.5	11.5	14.0	15.0	
Lookback Surcharge	----	----	----	----	----	0	
Private Suit Award Credit	0	0	0	0	0	0	
Annual Payment as Excise Tax per Pack (\$)	0	.352	.393	.476	.579	.621	
New Budget Bill Tax Credit (per pack):							
Year:	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002+</u>	
	----	----	----	0.10	0.10	0.15	

Sources for assumptions: (listed on the following page)

## NOTES TO TABLE 8: Sources for Assumptions

1. price:

Base price of \$1.85 per pack comes from Tobacco Institute, The Tax Burden on Tobacco (1996), p. vii. This is the weighted average price of cigarettes for the U.S. as of November 1, 1996. This price was converted to a 1997 estimate by adjusting it by the rate of change in the BLS Tobacco and Smoking Products CPI index for the October 1996-July 1997 period.

2. output:

Total 1996 cigarette consumption of 24.4 billion packs is based on the USDA estimate. This was then adjusted downward by the assumed 0.6 percent decline rate to get an estimated consumption figure of 24.2 billion packs for 1997.

3. taxes:

1996 federal and state taxes from Tobacco Institute, The Tax Burden on Tobacco (1996).

4. profit margin:

Estimate of \$0.32 is based on weighted average of operating profits per pack from SEC 10K submissions of Philip Morris, R.J. Reynolds, Loews, and Liggett. The profits figures are based on domestic tobacco operations of the companies.

5. secular decline rate:

Estimate of assumed rate of decline in cigarette consumption of 0.6 percent from J. Harris, A Working Model for Prediction the Consumption and Revenue Impacts of Large Increases in the U.S. Federal Cigarette Excise Tax, (July 1, 1994)(unpublished manuscript).

6. advertising and promotion costs:

Unpublished estimate from FTC, based on various FTC reports to Congress pursuant to the Federal Cigarette Labeling and Advertising Act.

**Table 9**

**Prices, Quantities, Sales Revenues, and Profits  
in the Baseline Scenario**

	(Year 0)	(Year 1)	(Year 5)	(Year 10)	(Year 25)	<u>Year 0 through 25</u>	
	<u>1997</u>	<u>1997</u>	<u>2002</u>	<u>2007</u>	<u>2022</u>	<u>Sum</u>	<u>Present Value</u>
<u>Price (\$ per pack):</u>							
Without Settlement	1.90	1.90	2.05	2.05	2.05	---	---
With Settlement	1.90	2.20	2.47	2.47	2.47	---	---
Change	0.00	0.30	0.42	0.42	0.42	---	---
<u>Quantity (billions of packs):</u>							
Without Settlement	24.2	24.1	22.8	22.1	20.2	569.3	---
With Settlement	24.2	22.7	21.1	20.5	18.7	531.0	---
Change	0.0	-1.4	-1.6	-1.6	-1.5	-38.4	---
<u>Retail Sales Revenues (\$billions):</u>							
Without Settlement	46.0	45.7	46.7	45.3	41.4	1154.0	570.7
With Settlement	46.0	49.9	52.2	50.7	46.3	1282.4	630.4
Change	0.0	4.2	5.5	5.4	4.9	128.4	59.7
<u>Manufacturer Profits, Exclusive of Value of Liability Limitations (\$billions):</u>							
<u>Operating Profits Before Income Tax:</u>							
Without Settlement	7.7	7.7	7.3	7.1	6.5	182.2	91.0
With Settlement	-2.3	7.3	6.8	6.6	6.0	159.9	75.2
Change	-10.0	-0.4	-0.5	-0.5	-0.5	-22.3	-15.8
<u>Operating Profits Net of Income Tax:</u>							
Without Settlement	5.0	5.0	4.7	4.6	4.2	118.4	59.1
With Settlement	-1.5	4.7	4.4	4.3	3.9	103.9	48.9
Change	-6.5	-0.3	-0.3	-0.3	-0.3	-14.5	-10.2

Note: All dollar figures are 1997 dollars.

**Table 10**

**Public Sector Revenues in the Baseline Scenario**

	(Year 0)	(Year 1)	(Year 5)	(Year 10)	(Year 25)	<u>Year 0 through 25</u>	
	<u>1997</u>	<u>1997</u>	<u>2002</u>	<u>2007</u>	<u>2022</u>	<u>Sum</u>	<u>Present Value</u>
<u>Federal &amp; State Excise Tax (\$billions):</u>							
Without Settlement	13.6	13.5	16.2	15.7	14.3	391.1	189.8
With Settlement	13.6	12.7	15.0	14.6	13.3	364.4	177.6
Change	0.0	-0.8	-1.2	-1.1	-1.0	-26.7	-12.3
<u>Settlement Payments (\$billions):</u>							
Without Settlement	0.0	0.0	0.0	0.0	0.0	0.0	0.0
With Settlement	10.0	8.0	9.9	9.6	8.8	241.8	118.1
Change	10.0	8.0	9.9	9.6	8.8	241.8	118.1
<u>Corporate Income Tax (\$billions):</u>							
Without Settlement	2.7	2.7	2.6	2.5	2.3	63.8	31.8
With Settlement	-0.8	2.5	2.4	2.3	2.1	56.0	26.3
Change	-3.5	-0.2	-0.2	-0.2	-0.2	-7.8	-5.5
<u>Excise Tax + Settlement Payments (\$billions):</u>							
Without Settlement	13.6	13.5	16.2	15.7	14.3	391.1	189.8
With Settlement	23.6	20.7	24.9	24.2	22.1	606.2	295.7
Change	10.0	7.2	8.8	8.5	7.8	215.1	105.9
<u>Excise Tax + Settlement Payments + Income Tax (\$billions):</u>							
Without Settlement	16.3	16.2	18.7	18.2	16.6	454.8	221.7
With Settlement	22.8	23.2	27.3	26.5	24.2	662.2	322.0
Change	6.5	7.0	8.6	8.3	7.6	207.3	100.4

Note: All dollar figures are 1997 dollars.



**Table 11**

**The Effect of Increased Industry Coordination on Industry Profits and Public Sector Revenues  
Under Various Assumptions About Demand Elasticity and Annual Decline Rate of Demand**

<u>Scenario Assumptions</u>		<u>The Present Value of Industry Profits and Gov't Revenues Over Years 0 Through 25 (\$billions)</u>					
		<u>Settlement Payments Years 0 through 25 (\$billions)</u>		<u>Industry Operating Profits Net of Income Tax</u>	<u>Public Sector Revenues</u>		
<u>Demand Elasticity</u>	<u>Price-Increase Ratio</u>	<u>Sum</u>	<u>Present Value</u>		<u>Excise Taxes</u>	<u>Excise Taxes and Settlement Payments</u>	<u>Excise Tax, Settlement Pmts, and Corporate Income Tax</u>
<u>Secular Annual Rate of Decline in Demand Under the Settlement = 0.6%:</u>							
-0.2	100%	254	124	51	186	309	337
-0.2	125%	263	128	68	184	312	349
-0.2	200%	295	140	117	179	320	383
<u>-0.4</u>	<u>100%</u>	<u>242</u>	<u>118</u>	<u>49</u>	<u>178</u>	<u>296</u>	<u>322</u>
-0.4	125%	245	120	65	174	294	329
-0.4	200%	275	133	105	165	299	355
-0.8	100%	220	108	44	163	271	295
-0.8	125%	213	105	59	156	262	294
-0.8	200%	224	111	90	141	252	300
<u>Secular Annual Rate of Decline in Demand Under the Settlement = 2.0%:</u>							
-0.2	100%	214	109	45	164	274	298
-0.2	125%	216	111	61	163	274	307
-0.2	200%	247	125	102	159	284	339
-0.4	100%	204	105	43	157	262	285
-0.4	125%	202	104	58	154	259	290
-0.4	200%	224	116	93	147	262	312
-0.8	100%	186	96	39	144	240	261
-0.8	125%	178	93	52	139	232	260
-0.8	200%	182	96	80	126	221	264

Notes: (1) Baseline scenario underlined. (2) All dollar figures are 1997 dollars.

**Table 12a**

**Financial Flows Under Four Scenarios  
(billions of 1997 dollars)**

<u>Scenario</u>	<u>Price-Increase Ratio</u>	<u>Operating Profits Net of Income Tax</u>		<u>Public Sector Revenue</u>		
		Sum	Present Value	Sum	Present Value	
Without Settlement	-----		118	59	455	222
Settlement Baseline Scenario	100%	104	49	662	322	
Settlement With More Effective Coordination	125%	140	65	677	329	
	200%	227	105	735	355	

**Table 12b**

**Financial Implications of More Effective Coordination  
(billions of 1997 dollars)**

<u>Comparison of Settlement Scenarios</u>	<u>Additional Operating Profits Net of Income Tax</u>		<u>Additional Public Sector Revenue</u>		<u>Industry Share of Additional Surplus</u>
	Sum	Present Value	Sum	Present Value	
125% Price-Increase Ratio vs. Baseline (100%)	36	16	15	7	70%
200% Price-Increase Ratio vs. Baseline (100%)	123	56	73	33	63%

Notes: (1) The size of the Additional Industry Operating Profits Net of Income Tax can be viewed as the industry's market-power premium. (2) Industry share of additional surplus is calculated by dividing additional industry operating profits by the sum of additional profits and additional public sector revenues, using the present value amounts.

## Appendix

### **An Analysis of the Proposed Antitrust Immunity For Tobacco Product Manufacturers**

The proposed Tobacco Settlement contemplates enabling legislation that, among other things, would grant antitrust immunity for collaboration and joint conduct by the cigarette manufacturers for the purpose of achieving the goals of the settlement. This Appendix will assess the possible need for immunity and the degree to which the proposed language is tailored to that need. The discussion takes as given that the goals of the settlement are legitimate and that the intent of the parties in proposing an exemption is simply to accomplish those goals without undue antitrust risk.

#### **Antitrust Implications of the Proposed Settlement**

The proposed tobacco settlement has, as a major goal, the reduction of tobacco usage by adolescents. To that end, the proposed settlement calls for a number of restrictions on marketing and advertising activities of cigarette manufacturers, including a ban on all outdoor tobacco product advertising, a ban on tobacco advertising on the Internet that would be accessible within the United States, restrictions on point-of-sale advertising in retail establishments that are accessible to minors, and a number of other restrictions.<sup>112</sup> In addition, the settlement would require the manufacturers to make annual payments (denominated in the proposed settlement as "Industry Payments" or "Annual Payments"), part of which would fund various federal and state programs relating to tobacco usage; the settlement contemplates that these payments would be passed on to consumers through higher cigarette prices to discourage smoking by minors.<sup>113</sup> These and other provisions of the proposed settlement would be implemented through federal legislation, consent agreements between the manufacturers and individual States, and an industry "Protocol" that would bind the manufacturers to the requirements.

Whether the proposed settlement might require some form of antitrust immunity depends in large measure on whether agreement among the manufacturers on price or other sensitive elements of competition is necessary to achieve the settlement's goals. There are two principal classes of conduct contemplated by the settlement that might have antitrust implications if implemented by agreement among the manufacturers: the pass-through of Annual Payment amounts and the restrictions on marketing and advertising activities. In addition, it has been suggested that manufacturers may find it necessary to join forces to deal with retailers that undermine efforts to reduce smoking by adolescents — for example, by terminating sales to such retailers.

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<sup>112</sup> See Title I, Part A.

<sup>113</sup> See Title VI, Part B.7.

An agreement concerning pass-through amounts likely would be viewed as a restraint on price competition, one of the most serious of antitrust violations. An agreement on price is per se unlawful (i.e., without consideration of actual effects or possible justifications) unless it is a reasonably necessary aspect of some cooperative relationship that may result in efficiencies and enhance competition. Certain kinds of marketing or advertising restraints that are directly related to price, such as a restraint on price advertising, could have similar detrimental effects on price competition and would be regarded as per se unlawful.

Restraints that are less directly related to price, such as limits on advertisements that draw consumer attention to the attributes of a particular brand, could also have adverse effects on competition. For example, such a restraint could lead to non-competitive pricing by enabling the firms to better coordinate their conduct along the remaining dimensions of business conduct, either tacitly or overtly, with less concern that one of them will seek to gain a competitive advantage through the kind of advertising that has been restricted. Such restraints are evaluated under a “rule of reason” analysis that balances the anticompetitive effects against any procompetitive effects of the arrangement.

An agreement by manufacturers to stop dealing with retailers that failed to curtail sales to minors would be regarded as a group boycott. Such boycotts are sometimes treated as per se unlawful, although under many circumstances they are afforded “rule of reason” treatment.

### **The Immunity Provision**

Those proposing the settlement appear to contemplate that implementation of the settlement would, indeed, involve joint action by the manufacturers on price and other competitive restraints, and therefore would entail a risk of antitrust liability. To remove this risk, the settlement proposes a general grant of antitrust immunity for actions undertaken in furtherance of the settlement and the proposed statute. The settlement agreement provides:

In order to achieve the goals of this Agreement and the Act relating to tobacco use by children and adolescents, the tobacco product manufacturers may, notwithstanding the provisions of the Sherman Act, the Clayton Act, or any other federal or state antitrust law, . . . jointly confer, coordinate or act in concert, for this limited purpose. Manufacturers must obtain prior approval from the Department of Justice of any plan or process for taking action pursuant to this section; however, no approval shall be required of specific actions taken in accordance with an approved plan.<sup>114</sup>

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<sup>114</sup> Appendix IV, part C.2.

## **The Asserted Need for, and Appropriate Scope of, Antitrust Immunity**

The desire for an antitrust immunity appears to focus on three hypothetical situations: (1) manufacturers may have to discuss and agree on issues relating to the pass-through of Annual Payments amounts; (2) manufacturers may have to agree on implementation of the proposed marketing and advertising restrictions; and (3) manufacturers may find it necessary to join forces to deal with retailers that undermine efforts to reduce smoking by adolescents. The following discussion considers whether any of these situations is realistic and warrants a grant of immunity and, if so, how that immunity might be framed to avoid unintended harm to competition.

### **(1) Collaboration on the Pass-Through of Annual Payment Amounts**

The proposed settlement contemplates that "[i]n order to promote maximum reduction in youth smoking, the statute would provide for the Annual Payments to be reflected in the prices manufacturers charge for tobacco products."<sup>115</sup> The proposal for antitrust immunity raises two issues in that regard. First, is collaboration by the manufacturers on the pass-through amounts necessary to give effect to this goal? Second, what unintended consequences — beyond achievement of this goal — could antitrust immunity have?

On the first issue, no antitrust exemption would be needed for firms individually to comply with a legal requirement that they pass on the Annual Payments. Even without such a requirement, the historical record and economic logic demonstrate that firms would be able to pass on the Annual Payments required by the settlement without an antitrust exemption. This is because the Annual Payments would be treated as an added (marginal) cost of business and would be taken into account in setting price. In fact, as discussed in section II of this report, cigarette manufacturers, even without express collaboration, could increase prices by at least the amount of the Annual Payments, and might well be able to increase prices by more than that amount.

On the second issue, unintended consequences, it should first be recognized that the proposed regime for implementing immunity is somewhat unusual. Statutory grants of immunity for joint action of competitors more typically exclude specific classes of commerce from the antitrust laws<sup>116</sup> or exempt a specific transaction<sup>117</sup> or agreement<sup>118</sup> that has been approved by a

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<sup>115</sup> Title VI, part B.7.

<sup>116</sup> Examples include the Webb-Pomerene Act, 15 U.S.C. §§ 61-66 (1994), which provides a limited exemption from the Sherman Act for associations formed solely for the purpose of engaging in export trade; Section 6 of the Clayton Act, 15 U.S.C. § 17 (1994), and the Capper-Volstead Act, 7 U.S.C. §§ 291-292 (1994), which grant broad immunity to agricultural cooperatives engaged in the processing and marketing of certain products; the McCarran-Ferguson Act, 15 U.S.C. §§ 1011-15 (1994), which excludes the "business of insurance" from the reach of the antitrust laws (with the exception of boycotts) to the extent that the business is  
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federal agency, usually in the context of a regulated industry.<sup>119</sup> Prior approval of an agreement by a federal agency has not been required where the scope of the immunity was very limited,<sup>120</sup>

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regulated by state law; and the Shipping Act of 1984, 46 U.S.C. app. §§ 1701-1721 (1994), which immunizes the activities of ocean common carriers in the foreign commerce of the United States, so long as the activity is undertaken pursuant to an agreement filed with the Federal Maritime Commission, or an agreement that is not required to be filed. The statute describes the specific kinds of agreements that are subject to the filing requirement. See 15 U.S.C. app. § 1708.

<sup>117</sup> Examples include the Interstate Commerce Commission Termination Act (ICCTA), which exempts from the antitrust laws railroad mergers approved or exempted by the ICC (now the Surface Transportation Board), see 49 U.S.C.A. § 11321(a) (West 1996); a provision of the Sports Broadcasting Act that permitted the merger of two professional football leagues, 15 U.S.C. § 1291 (1994); the Newspaper Preservation Act, which exempts, subject to approval by the Attorney General of the United States, joint operating agreements between newspapers in economic distress, 15 U.S.C. § 1803; and a provision of the ICCTA which exempts a merger of motor carriers of passengers if approved by the Surface Transportation Board, 49 U.S.C. §1403.

<sup>118</sup> Examples include the Federal Aviation Act, 15 U.S.C. §§ 41308-41309 (1994), which authorizes the Department of Transportation to approve and exempt from the antitrust laws code sharing and other marketing agreements between U.S. and foreign air carriers; the approval of motor carrier rate bureau agreements by the Surface Transportation Board, see 15 U.S.C.A. §§ 13703-13704 (West 1997); the approval of motor carrier service pooling agreements by the STB, see 49 U.S.C.A. §14302; the approval of rail carrier rate agreements by the STB, see 49 U.S.C.A. § 10706; and the Sports Broadcasting Act, 15 U.S.C. §§ 1291-1295 (1994), which exempts certain agreements by the members of professional baseball, basketball, football or hockey leagues to pool their television broadcast rights for sale in a package to purchasers such as television networks.

<sup>119</sup> In addition, there has been a trend to deregulate industries and remove antitrust immunities. For example, section 601(b)(2) of the Telecommunications Act of 1996 repealed the FCC's ability to confer immunity to telephone company mergers that were submitted to the FCC for review, and DOT's authority to approve domestic airline mergers expired in 1989 pursuant to 49 U.S.C. app. § 1551 (1988); such mergers are now subject to ordinary application of the antitrust laws. Similarly, there has been substantial reduction of rate regulation of motor and rail carriers under the Interstate Commerce Act.

<sup>120</sup> For example, the Television Program Improvement Act of 1990, Pub. L. No. 101-650, § 501, 104 Stat. 5089 (1990), granted an antitrust exemption for agreements among participants in the television industry for the purpose of "developing and disseminating voluntary guidelines

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but broader grants of immunity have been accompanied by strict controls on the development and implementation of agreements.<sup>121</sup> In contrast, the immunity proposed in the tobacco settlement does not seek to exempt defined categories of transactions or agreements, and the scope of its application is left for future determination.<sup>122</sup> For example, the broad language of the proposed immunity provision could be construed to permit manufacturers to agree on the actual prices of their cigarettes, not simply on the amount of their Annual Payments. The result could well be a price increase that would exceed substantially the Annual Payment amounts and would substantially increase the manufacturers' profits.<sup>123</sup>

Even if the immunity provision were read as authorizing agreement only to the extent of ensuring a 100 percent pass-through of costs, immunity, once granted, could have effects not contemplated by the statute. Not only would it be difficult to monitor and control the manufacturers' collaborations to ensure that the prescribed boundaries are not exceeded,<sup>124</sup> but the back-and-forth communications, even on "permissible" pass-through of costs, could well affect the firms' pricing behavior on subjects that were not the subject of explicit agreements. For example, during the course of such discussions firms could signal an intention to pass through more than 100 percent of their costs, or even signal an intention regarding price. Such "signaling"

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designed to alleviate the negative impact of violence in telecast material." The exemption was limited to a three-year period following enactment of the law, and did not apply to any joint action that resulted in a boycott of any person.

<sup>121</sup> For example, the Defense Production Act of 1950, 50 U.S.C. App. § 2158, and the International Energy Program, 42 U.S.C. § 6272, provide broad grants of antitrust immunity for voluntary agreements to accomplish specific national objectives, but both statutes contain detailed provisions for monitoring the formation and execution of such agreements, including rulemaking for the establishment of standards and procedures for such agreements, public notice of meetings to discuss the development of such agreements, and participation in such meetings by representatives of the Federal Trade Commission and the Department of Justice.

<sup>122</sup> Manufacturers are left to determine on their own, in the first instance, what joint activity may be appropriate to carry out the purposes of the statute. Although those determinations are subject to review, the resolution may require costly litigation.

<sup>123</sup> See Section II of this report.

<sup>124</sup> There are many examples in antitrust law where a meeting of competitors for otherwise legitimate purposes resulted in law violations when their discussions crossed permissible boundaries. For example, members of a trade or professional organization may adopt a code of conduct that in most respects is perfectly acceptable under the antitrust laws, but some provisions may unreasonably restrict competition.

behavior can raise serious concerns under antitrust law because it can enable firms to coordinate their actions without reaching explicit agreements.

The generality of the immunity provision forces great reliance on the provision requiring prior approval by the Department of Justice of “any plan or process for taking action pursuant to this section.”<sup>125</sup> That provision, however, may not be effective in preventing a number of anticompetitive agreements because the Department would not be able to require prior approval of “specific actions taken in accordance with an approved plan.”<sup>126</sup> This provision is vaguely worded and may permit the manufacturers to engage in activities that are not fully disclosed to the Department. For example, the plan submitted for Department approval might be an industry resolution committing its members to operate in accordance with the purposes of the legislation, and the undisclosed “specific action” undertaken pursuant to that plan could be a price-fixing agreement or an agreement on other aspects of business conduct that could result in higher prices and industry profits. Issues will arise as to the scope of an “approved plan,” what actions may reasonably be taken “in accordance” with an approved plan, and whether those actions are reasonably necessary to carry out the purposes of the statute. While the Department might be able to mitigate some of these problems by requesting additional disclosures before approving a plan (as it does in reviewing a request for a Business Review Letter) and by conditioning immunity on adherence to the factual representations made in seeking approval, it is unlikely that it would be able to anticipate all contingencies. And in contrast to a Business Review Letter, the purpose of immunity might be to *change* the legal standard that antitrust law would apply, not merely to clarify it. Consequently, the extensive set of doctrines that have developed to interpret the antitrust laws might not be available to aid in interpretation.

In short, it appears that immunity is not necessary to assure the pass-through of the Annual Payments, and that the proposed immunity could have substantial unintended consequences that would not be cured by the broad requirement that a plan for taking action be reviewed by the Department of Justice.

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<sup>125</sup> The provision assigns oversight responsibilities solely to the Department of Justice. Both the Federal Trade Commission and the Department of Justice, however, have jurisdiction in most industries that are generally subject to the antitrust laws, which would still be true of the cigarette industry apart from the special immunity provision proposed by the settlement, and the responsibility for handling a particular matter is decided through an inter-agency liaison process. In recent years a substantial amount of antitrust work involving the tobacco industry has been handled by the FTC, including the 1994 litigation challenging the acquisition of American Tobacco by B.A.T Industries p.l.c. The FTC also has major responsibilities involving marketing and advertising practices of the tobacco industry under Section 5 of the Federal Trade Commission Act, 15 U.S.C. § 45, and the Federal Cigarette Labeling and Advertising Act, 15 U.S.C. § 1331.

<sup>126</sup> See Appendix IV, part C.2.



The foregoing discussion focuses on assuring the pass-through of costs once they are paid by the individual manufacturers. A related issue is whether immunity is required so that the manufacturers can discuss and agree among themselves as to what portion of the Annual Payments each will bear. Such discussion does not appear to be a necessary part of implementing the proposed settlement. Although the proposed settlement does not specify precisely how the Annual Payments are to be allocated, if it contemplates allocation by each manufacturer's share of sales or some similar allocation method, some mechanism would be needed to determine periodically what that share is. However, there would be no need for direct discussion among the manufacturers in order to do so. The statute could simply direct the companies to transmit sales information to a neutral third party that would make the appropriate adjustments. No immunity would be needed beyond that statutory directive.

## **(2) Collaboration on Marketing Restraints Due to First Amendment Concerns**

Another argument that has been raised as a reason for providing antitrust immunity is that certain marketing or advertising restrictions may have to be implemented by agreement among the manufacturers. At first blush, it is not clear why such agreement would be necessary, since no antitrust issue would be raised if the legislation embodied the restrictions and each manufacturer simply complied unilaterally with the statutory requirements. Although each manufacturer would be expected to conform to the same standards of conduct, that would be achieved through operation of the statute, and collaboration with competitors would be unnecessary. The argument has been made, however, that legislation imposing such restrictions might be challenged by a nonparticipant in the settlement as a violation of the First Amendment guarantee of freedom of expression. If such a challenge were successful, and were to result in complete invalidation of the provision (as opposed to its unenforceability against any company that had not waived its First Amendment rights by entering into the settlement), the participant companies would no longer be under a legal obligation to refrain from the specified types of advertising and marketing.<sup>127</sup> They might nonetheless have some incentive to refrain from such advertising and marketing in order to help meet the targets for reducing youth smoking and thus avoid the penalties for failing to meet

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<sup>127</sup> This assumes that their obligation to refrain from such advertising and marketing as embodied in their consent decrees with the states (III.B. of the settlement) would fall along with the parallel requirement in the federal statute. If not, reasonable arguments could be made that activities undertaken in compliance with a consent decree issued by a state court would not violate the antitrust laws. Actions in compliance with the order could be viewed as unilateral conduct, notwithstanding the manufacturer's agreement to accept such an order, because the court's order becomes a separate, enforceable command. Cf. Fisher v. City of Berkeley, 475 U.S. 260 (1986). Alternatively, to the extent that compliance with the order is viewed as joint conduct, it may be exempt from the antitrust laws under the "state action" doctrine enunciated by the Supreme Court in Parker v. Brown, 317 U.S. 338 (1943) (holding that the antitrust laws were not intended to apply to the actions of a state). If greater certainty is desired, however, one could provide authorization for a limited grant of immunity on a contingent basis, as discussed in the text.

that target, so long as they could be assured that most other companies would similarly refrain from such advertising and marketing.<sup>128</sup>

Without intimating any views on the possible success on the merits of such a First Amendment challenge, it appears that there is a realistic possibility that such a challenge could be brought.<sup>129</sup> Assuming, for purposes of this discussion, that such a challenge resulted in complete invalidation of the advertising and marketing restraints, and that the participating firms wished to agree with each other to continue to refrain from such advertising and marketing despite the successful challenge and despite the fact that at least some firms would likely begin such advertising and marketing,<sup>130</sup> such an agreement might become the subject of an antitrust suit as a restraint of trade. While the availability of advisory opinions from the FTC or the Department of Justice could eliminate uncertainty regarding a possible suit by the antitrust agencies, it could not provide any assurances against antitrust challenges from private parties. Accordingly, if it is desired to remove that uncertainty, so as to encourage the manufacturers to refrain from such advertising and marketing in the event of a successful First Amendment challenge, some provision for immunity might be necessary. Such a provision would need to be carefully circumscribed, however, to avoid the kinds of unintended consequences described in the previous section. It would need to be limited to implementing specific marketing restrictions and not allow discussions on price. Moreover, since the prospect for a successful First Amendment challenge is still speculative, the exemption could be made contingent on that event, or authorization could be

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<sup>128</sup> In all likelihood, they could not count on universal compliance, since, at a minimum, the company that had taken the trouble to mount a First Amendment challenge would likely seek to achieve a competitive advantage by engaging in the specified forms of advertising and marketing at a time when most of its competitors did not. Given this likelihood, it may be that the other companies would be unable to reach an agreement to refrain from such advertising and marketing. For purposes of this discussion, however, we assume that the participants would wish to reach such an agreement and that such an agreement would be desirable. The question we address, therefore, is whether antitrust immunity might be necessary for such an agreement to be reached.

<sup>129</sup> For one thing, a First Amendment challenge has already been brought against similar (but in some ways less restrictive) cigarette marketing provisions adopted by the Food and Drug Administration. The case is pending before the United States Court of Appeals for the Fourth Circuit. Coyne Beahm, Inc. v. FDA, 966 F. Supp. 1374 (M.D.N.C. 1997), appeal pending. The merits of such a case could be complex. Courts have held that advertising constitutes “commercial speech” that is entitled to qualified protection under the First Amendment, e.g., 44 Liquormart, Inc. v. Rhode Island, 116 S. Ct. 1495 (1996); Central Hudson Gas & Elec. Corp. v. Public Serv. Comm’n, 447 U.S. 557 (1980), but that the Constitution affords lesser protection to commercial speech than to other constitutionally guaranteed expression, Central Hudson, 447 U.S. at 562-63.

<sup>130</sup> See note 16, supra.

given to the antitrust enforcement agencies to grant a specific exemption if that prospect were realized.

### **(3) Joint action to address problems associated with uncooperative retailers**

The third concern is that the sales practices of some retailers may frustrate the manufacturers' efforts to reduce adolescent smoking at the target rates specified in the settlement and proposed legislation. Failure to meet the target rates would result in monetary penalties for the manufacturers, and a state could lose part of its allocation of funds from the manufacturers' Annual Payments. The argument is that joint action may be needed to respond to demands by a state to reduce sales to such retailers.

The hypothetical (and, at this point, speculative) situation would not seem to warrant antitrust immunity for private enforcement against non-complying retailers because there are other ways to address those concerns. First, the proposed legislation already contains sufficient incentives for the manufacturers to respond individually to non-complying retailers. There are strong penalties for not meeting target reductions in underage smoking, but the proposed legislation provides for abatement of the penalty if a manufacturer has acted in good faith and taken all reasonable steps to achieve the required reductions.<sup>131</sup> A unilateral decision to reduce or stop dealing with a non-complying retailer would be evidence of good faith, and hence a manufacturer would have a strong incentive to do so. No antitrust immunity would be required to achieve this result.

Second, there would be mechanisms for enforcement by the state if a retailer fails adequately to control sales to minors. For example, the state could suspend or revoke the retailer's license to sell cigarettes, or assess other penalties.<sup>132</sup> Similarly, if there is a problem with legal-age persons buying for minors, that also could be addressed through state enforcement.

In sum, based on our understanding of the possible factual situations as presented thus far, it is unnecessary to authorize antitrust immunity for boycott activities against uncooperative retailers.

### **Conclusion**

In summary, the proposed immunity provision appears to be unnecessary to achieve the contemplated pass-through of Annual Payment amounts or to deal with retailers that fail to curtail

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<sup>131</sup> See Title II and Appendix IV. Failure to take steps that may violate the antitrust laws (such as a boycott) presumably would not be evidence of bad faith or failure to take reasonable steps. The proposed legislation could provide assurances to that effect. A state could avoid a reduction of its allocation of funds on similar grounds.

<sup>132</sup> See Title I, part D, and Appendix II.

sales to minors, and to be far broader than necessary to allow adherence to the marketing restrictions in the event of a First Amendment challenge. Moreover, passage of an unnecessary or overly broad immunity runs the risk of facilitating price increases greater than that required simply to pass through the per-unit cost of their Annual Payments.