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structure is best able to resolve the ambiguities created by having to regulate a hazardous product in a scheme designed to regulate safe products.

(d) Reduced Risks Products

Section E(4) of Title I creates incentives for the introduction of less hazardous products to the market by requiring the disclosure and cross-licensing of such technology. The FDA is imbued with the authority to require that such products be brought to market.

Advantages:

Many people view safer cigarettes as the holy grail towards improving the health of smokers. If one assumes static consumption rates and technology that reduces the harmfulness of cigarettes by 50%, close to a quarter million lives could be saved each year. By providing the FDA with the authority to act as repository of the developed technology and as a conduit for that technology to find its way to the market, will improve the likelihood that safer technologies will penetrate the market. It is further believed that once a safer alternative has penetrated the market, that product will have a market advantage spurring competition and creating market incentives to develop additional safer products.

Disadvantages:

A "safe cigarette" is an oxymoron to many in the public health community. Even a product which was 50% safer would result in a quarter million deaths annually. In addition, the illusion of safety that such products create could actually increase consumption rates or slow cessation rates which would actually increase the number of deaths. (In the same manner filtered cigarettes or "Light" cigarettes are perceived as acting as a barrier to some people quitting.)

In addition, the specific mandates are not likely to spur competition into safer technologies. First, the deal is predicated on the assumption that there is market interest in creating a safer product. No market has been demonstrated to exist. Second, due to the market failure extant within the current tobacco industry (discussed more later) there is no profit motive to create a safer product. Third, many of the barriers to creating and marketing a safer product will still exist. For example, it will imply that the existing products are hazardous, which will decrease the attractiveness of the existing product lines and possibly expose the tobacco companies to increased litigation exposure. (One must realize that though the deal would essentially resolve litigation in the United States, it will still be vulnerable to lawsuits throughout the rest of the world.) Fourth, the deal does not specifically require the disgorgement of all technology currently in existence and being withheld by the tobacco companies, only for that "develope[d] or acquire[d]." This, and the requirement to disgorge the licensing rights to the FDA should a manufacturer decide against marketing a new product, could actually stifle research within the industry. (It is unclear how this requirement segues with the document disclosure requirement of Section E(7). Presumably, if the information could lead to a marketable product it could be considered a trade secret and withheld from disclosure.) Fifth, the deal preserves the market barriers to new market entrants by restricting the cross-licensing requirement of new technologies to those covered by the same obligations. Many people believe that because of the

barriers within the industry, if a safer product is to be developed it will come from outside the industry. By erecting higher barriers for new market entrants, the deal may slow the introduction of a safer product.

If one were to support the development of safer technologies, one would have to find an alternative mechanism to reform the market by increasing innovations. In order to spur innovation incentives will need to be provided to surmount the barriers. For example, a requirement that the current form of cigarette would be rendered obsolete in a set time period would spur innovation in replacement technology. Similarly, research money, capital market incentives and capital provided to new market entrants would more likely result in market penetration by a safer product.

(e) Performance Standards

Section E(5) of Title I outlines the authority of the FDA to regulate the performance standards of tobacco products pursuant to its authority under 21 U.S.C. 360d. The FDA is prohibited from banning traditional tobacco products in their basic form. Subparagraph a holds that for the first twelve years after the deal is in place the Agency showing "substantial evidence" and after satisfying other procedural safeguards, can adopt performance standards which would modify existing tobacco products (including the reduction of but not the elimination of nicotine) a) will result in the significant reduction of health risks to consumers, b) is technologically feasible and c) will not result in the creation of a significant market for contraband. Sub-Subparagraph a also requires the appointment of a Scientific Advisory Committee to look at the effects of nicotine levels, and within three years the "tar" levels of cigarettes must be below 12mg.

Sub-Subparagraph B, establishes the regulatory standards for the time after the initial 12 year period. It keeps the same required findings of fact and establishes that the review standard for the findings would be governed by a "preponderance of the evidence" standard. It adds further procedural rights to the tobacco companies to challenge FDA actions and provides a 2 year phase in period for the elimination of nicotine.

Advantages:

The recognition that nicotine is addictive by the regulatory community has in some ways fixed the public's and regulators attention on nicotine as the solution to the tobacco problem. By removing the addictive substance from the product, the product becomes less desirable and people will be able to quit and enjoy a healthier lifestyle. This provision guarantees that the FDA will have the authority to remove nicotine. Because this is such a draconian solution, it moderates the FDA authority so that the action will be phased in so the tens of millions of addicted smokers and the industry can adapt with the least amount of disruption.

Disadvantages:

This section is so dense that it is difficult to see clearly, but by reviewing the elements of this section piece by piece, it is apparent that the tobacco companies are gaining special treatment, and that the FDA's authority is being restricted over the current state of FDA

jurisdictional authority. With the authority provided in Section E(3) to Title I, this section is unnecessary to ~~the FDA authority.~~ Its existence is only to limit the FDA authority.

First, the FDA cannot prohibit the sale of the cigarette in its basic form. It is worth reviewing this definition from 21 C.F.R. Section 897.3

(a) Cigarette means any product which contains nicotine, is intended to be burned under ordinary conditions of use, and consists of:

(1) Any roll of tobacco wrapped in paper or in any substance not containing tobacco; or

(2) Any roll of tobacco wrapped in any substance containing tobacco which, because of its appearance, the type of tobacco used in the filler, or its packaging and labeling, is likely to be offered to, or purchased by, consumers as a cigarette described in paragraph (a)(1) of this section.

(b) Cigarette tobacco means any product that consists of loose tobacco that contains or delivers nicotine and is intended for use by consumers in a cigarette. Unless otherwise stated, the requirements pertaining to cigarettes shall also apply to cigarette tobacco.

(1) Smokeless tobacco means any product that consists of cut, ground, powdered, or leaf tobacco that contains nicotine and that is intended to be placed in the oral cavity

This restriction will prevent the FDA from ever requiring the replacement of current technology with the use of new technological advancements such as, slow burn cigarettes, smokeless cigarettes, low burn temperature cigarettes, non-tobacco based cigarettes, which could otherwise be considered suitable and safe alternatives for consumers. This language could also be used as a shield by the tobacco industry to challenge any type of modification it opposes. The breadth of this clause cannot be exaggerated. It is sufficiently broad that the drafters of the agreement felt it necessary to clarify in Sub-Subparagraph B that the elimination of nicotine or other harmful constituent of tobacco will not violate this clause. This presupposes that there are non-harmful components of tobacco, which is not clear. This ambiguity can only serve to restrict the F.D.A. authority. It also implies, that during the initial twelve year period an effort to ban a harmful constituent of tobacco which would result in a reduction of consumer use, would violate this provision.

Moreover, the intent behind the provision is misplaced. The tobacco companies are supporting the impression that prohibition is a likely outcome of unfettered agency control over tobacco. This is not correct. At this time, no major health group supports the concept of prohibition, because of the fears of collateral damage to the country's addicted smokers and the creation of a black market. It is axiomatic that our culture is not prepared at this time to surrender its addiction to tobacco. Society, however, is not static. It is conceivable that within a generation there may be adequate market substitutes such that smokers and society would be welcoming a prohibition on the use of the hazardous products currently on the market. (For an

nicotine.

Sixth, The additional findings the FDA will need to make before it can eliminate harmful constituents from tobacco products are burdensome and unreasonable, and each of the three findings is counter to the interests of the public health. (a) To find that a specific action will result in a significant reduction in health risks may prove difficult. a specific toxic agent may prove to be harmful, but it may not be possible to identify the specific health improvement that arises from the removal of a single constituent. Moreover, to prove the reduction in health risks is "significant" could require extensive epidemiological testing, and even then be difficult to separate out from the other effects of tobacco usage. Then there is the definition of the term "significant". Would a drop in morbidity of .5%, approximately 2000 lives/year, be significant? To protect the public health, the constituent once deemed harmful should be eliminated from the product until the tobacco industry can prove it does not negatively affect the health of consumers. (There is also the problem that if the constituent is a significant part of the tobacco leaf, this FDA action may violate the restriction that it cannot prohibit tobacco products in their basic form.) In the second twelve years in order to reduce the nicotine the FDA will also need to evaluate the reduction in consumption and moderated use patterns as a result of a non-addictive product. Such research would be highly speculative at best. (b) To prove that a modification is technologically feasible may also prove to be difficult. There is no base of feasibility against which to compare a particular action. It is feasible to stop making the product but would an additional processing step that increases development costs by 10% be deemed feasible? If not, does that give the tobacco industry impunity to sell a known hazardous substance to protect profit margins? (c) Finally, it will be nearly impossible for the FDA to prove that a given action will not result in a demand for contraband. This demand could be due to increased price of the safer product, it could be due to brand affiliation, it could be due to some other factor. Because the agreement does not extend to overseas markets, the tobacco companies will be able to market their wares near U.S. borders. Product availability will ensure that a demand could be satisfied. (This can be seen when adjoining states or countries have greatly dissimilar taxing structures.) The tobacco companies, would even have an incentive to feed that demand. To prove the negative, that an action by the FDA will not increase demand, is a faulty logical construct to begin with. It is made worse when the incentives are in the hands of the tobacco industry to maintain a black market product. The result is that a small market penetration could result in a health benefit being denied to millions of smokers.

Overall, the restrictions placed on FDA oversight of tobacco products will place consumers at risk.

(f) Manufacturing Oversight

Section E(6) of Title I would have the FDA regulate the manufacturing practices of the tobacco industry, in a manner similar to other FDA-regulated manufacturers.

Advantages:

The FDA will have the best expertise to supervise and regulate the manufacturing practices of the tobacco industry, this provision guarantees that right.

Disadvantages:

This provision like many of the others, simply confirms FDA-authority which already exists. Although the FDA has not currently utilized this authority, because tobacco products are considered drugs and medical devices, it is reasonable to expect that the tobacco companies as manufacturers of the devices would be subject to the registration and supervision requirements contained within 21 U.S.C. Section 360d.

(g) Access to Company Information

Section E(7) of Title I would provide access to tobacco industry information and confirms the subpoena power of the FDA to obtain information from the tobacco companies in their regulatory authority. As set out in Appendix VIII, the tobacco companies and their trade groups will establish a depository in Washington D.C., which will house all non-privileged documents produced by the companies pursuant to the litigation or otherwise in their possession, which would be open to all interested parties. If there exists documents which have not been produced due to privilege, the industry will scrutinize those documents and either list the document on a privilege log or release the document. a special three judge panel will be put in place to hear all complaints regarding the claims for privilege. This panel's decisions will be binding nationwide, and only subject to review by grant of certiorari by the United States Supreme Court. The companies would be subject to a continuing obligation to disclose.

Advantages:

There is the perception that the tobacco companies have been lying regarding what it knew and when regarding the harmfulness of tobacco products and the addictiveness of nicotine. As more and more documents are reviewed in the course of the current lawsuits, the disclosures become even more damning for the industry. As a result, many public health groups have demanded that the tobacco companies "come clean" by releasing all of the documents about what it knew and when. This deal provides a mechanism for such a release of documents and ensures public access.

Disadvantages:

The tobacco industry has shown a great reluctance to release any documents. The discovery process in the ongoing lawsuits has been extremely contentious. Multiple appeals have been taken with many rulings against the tobacco companies. Nevertheless, there is still the perception that there are millions of documents which the plaintiffs are entitled and which the tobacco companies are not releasing. Some courts, notably in the Florida and Minnesota State Attorneys General actions, have even ruled that the claims of privilege filed by the tobacco companies is invalid due to the crime fraud exception. In addition, justified or not, there is the perception that the tobacco companies are "hiding" additional documents in warehouses overseas. (True, or not, this feeling indicates the significant lack of trust on this issue.)

Therefore, it strains credulity to believe that with the tobacco industry still vulnerable to attacks on their corporate character in the media and lawsuits in other countries, that the

similar process would be in place for the introduction of a new additive or a different use of an already accepted additive.

Advantages:

Many have criticized the current process for disclosure of tobacco ingredients as insufficient. Through these provisions the tobacco companies would be required to disclose to the federal government all ingredients added to cigarettes, disclose the pertinent ingredients to the public and prove the safety of all of the additives to cigarettes within a five year period. All of these changes are a substantial improvement over the status quo.

Disadvantages:

This section has been the subject of much criticism. It is seen by many as a microcosm of the deal as a whole in that it clearly allows room for abuse and incomplete information on the part of the tobacco industry. Although few would disagree with the concept of testing additives and ensuring their safety, many question whether the process outlined in Section F will accomplish these goals.

First, the procedure is written to benefit the tobacco industry. The industry has five years during which it can provide information that a product is safe within the "intended conditions of use." The ambiguity of intended conditions of use versus actual use could be an area of great dispute, and will likely be an area of contention during the mandated FDA rulemaking process of the first year. Some of the issues to be addressed will be amount smoked, burn temperatures, oxygenation, filters, etc. Ultimately the question may come down to whom should the regulations protect? Should they be for the casual smoker, who does not block filter vents, who does not inhale quickly and deeply, and who smokes less than a pack a day, or for the more chronically addicted smoker? The tobacco companies have been arguing that heavy smokers are not using the product as intended without ever giving an analysis for what a "safe" amount of smoking would be. These safety tests could fall into the same traps, leaving heavily addicted smokers subjected to risks from additives, which the industry could now claim that they are simply meeting the federal requirements.

Even if these rules are promulgated in an appropriate manner the FDA will only have 90 days in which to review the data against the applicable standard and approve or disapprove of the additives safety. This overwhelming inequity, five years for the industry and only 90 days for the FDA, is magnified by the fact that if the FDA fails to meet its time deadline the additive is deemed safe. The time pressure placed on the FDA will limit the effectiveness of its review, while the industry is able to fully garner all of the support it needs. Another way to look at the inequity is that the risk is borne by the consumer. If there is an additive that is harmful, the industry has five years in which to develop a scientific trail to try to create a semblance of safety. If it fails to meet the five year deadline, there is no provision for the additive to automatically be deemed unsafe (although the company would presumably be subject to the Title III Section a \$10,000,000 civil penalty for failing to disclose to the FDA.) Then the FDA will have only 90 days to review the data presented to it to determine if it is safe. Even if it is unsafe, if the FDA fails to act in the 90 day period it will be deemed safe. If the FDA deems it unsafe after the 90 day period there is no

procedure to eliminate it from the tobacco products except in accord with Title I Section E above. Meanwhile, during this entire time this harmful additive has been on the market exposing consumers.

Critics argue that the incentives should be reversed. The tobacco industry should have a much shorter time frame, maybe two years, in which to prove that the additives when used in a reasonably expected manner are safe. If the tobacco industry fails to meet this time deadline the additive is automatically deemed unsafe. At any time the FDA deems the evidence incomplete or insufficient it can then, 1) require more testing yet allow the additive to remain on the market, or 2) require the industry to remove the additive from the market until such evidence can be produced. At no time would the tobacco companies be immune from liability for the hazardous nature for any of its additives, and the FDA rulings that an additive was harmful can be used as evidence in any suit against the tobacco industry. Besides providing increased safety to the consumers, it also places the burdens on the industry, which already has (or should have) the scientific data on the safety of its additives.

Second, the definitions of what needs to be listed and tested for the safety of cigarettes is incomplete. Much of the hazards related to tobacco use arises from the constituents of the tobacco plant itself, e.g. nicotine, nitrosamines, etc. To the extent that hazardous elements of the tobacco products can be discovered and tested for, they should be included in the testing and safety requirements. (Although the obvious dilemma is that tobacco is inherently dangerous, therefore no testing can ever prove it to be safe. But this loophole should protect the industry from using genetically engineered tobacco, or other techniques, which may result in higher exposures to naturally occurring toxic ingredients.) Furthermore, the requirement only extends to the manufacturing process. It should be extended to all processes associated with the production process. For example, pesticides and herbicides added in the growing process should be analyzed for at the production stage, as well as any substances which may be added during the curing process.

Third, the public disclosure requirements are inadequate. They are vague, and could preempt stronger disclosure laws in states, for example those in Massachusetts and Minnesota. Linking the regulations to the food requirements may prove to be insufficient given the unique usage of tobacco products as opposed to foodstuffs. Dry weight measures, and percentage of products may prove to be irrelevant measures of certain additives. The burning process of cigarettes, also creates unique hazards. When some additives are ingested they may prove to be safe, but those same additives could prove to be hazardous when burned, or create by-products which are hazardous. These by-products may also prove to be a function of burn temperature. The FDA, and the states, should have the flexibility to design a disclosure requirement which can take into account the unique status of tobacco products. Consumers should have full disclosure so that they can better understand the risks.

It is also clear from this and Title V Section B(2) that states could not enforce their own disclosure requirements for the first five years after the Act. What would happen after those five years is unclear. This provision implies that the states would have the ability to require the disclosure of additional ingredients. This, however, needs to be made much more clear, with protections given to states from challenges by the tobacco industry to more stringent disclosure requirements.

7. Compliance and Corporate culture

Section G of Title I provides requirements that the tobacco companies undergo a corporate reformation. Included within the requirements are the establishment of a new corporate culture which would be consistent with the enforcement of youth access restrictions and procedures which would promote obedience with the law. Another provision would require the tobacco companies to extend the controls to lobbyists. Other provisions would eliminate the Tobacco Institute and the Council for Tobacco Research and require that any reconstituted trade group be subject to governmental supervision, protect whistle blowers, and provide for enforcement of the changes in the changes of corporate governance.

Advantages:

It is clear that the main resistance to public health reform has been the actions of the tobacco companies themselves. Through their actions, the legislative and regulatory processes have been undermined. It is widely believed that they have engaged in conspiratorial and deceptive behavior which has hindered public health measures. Any policy which fails to account for these actions will be destined for failure. This deal accounts for this need by requiring a corporate reformation, and by eliminating the trade groups which many believe facilitated the conspiracies. It also goes the added step of requiring compliance by tobacco industry lobbyists. In addition, the deal provides protections for industry whistle blowers, ensuring an additional level of scrutiny.

Disadvantages:

There is no denying that true reform cannot occur without a reformation of the tobacco culture. Critics believe that the deal is insufficient at accomplishing these goals because it adopts the wrong model for reform. The model adopted appears to be the one used to inform and educate corporations about environmental compliance issues. This model is ineffective for two reasons

1) It is predicated on the theory that corporate officers will support a program and that violations occur in the lower employee ranks. For example, although a company may try to obey the environmental laws, if the factory workers are still throwing bucket of wastes out the back door, the program will fail. In many cases it is discovered that the employees were acting simply out of ignorance of the relevant law or corporate policy, and that once informed will comply with the appropriate standards. Therefore, in the environmental context an internal education and compliance program will be able to retrain the workers, remedy violations when they happen, and eliminate recalcitrant workers. In the tobacco industry, however, the recalcitrant individuals are at the highest levels of management. It is the corporate officers who appeared in Congress Waxman's hearing and who determine corporate direction. If the corporate officers were intent on changing the corporate culture, they could have done so already. Yet they still deny that Joe Camel is an advertising tool to hook young smokers. The provisions relating to the control of lobbyists will likely be useless unless the top tobacco corporate officers reform.

Advantages:

By providing dates certain, compliance with the deal will be more easily measured.

Disadvantages:

There is no disadvantage to providing dates in general. It is easy to quibble over whether any particular date is too long, but the time line in the dates is most likely insignificant compared to the time it will take Congress to pass the appropriate legislation. What the dates disclose, however, is that even under this proposed resolution the changes will not be happening overnight. It will take Congress and the Executive Branch months if not years to write and pass legislation implementing this agreement. And then there will be these phase in dates. This calls into question one of the advantages proponents of the deal point to as a selling point, its immediacy. Trials are scheduled to go forward this summer. Mississippi has already negotiated a private settlement and others are likely to follow, with many of the AGs insisting that public health measures similar to those contained within the agreement be a part of any settlement. *Thus, it is not clear at all that Agreement will implement health reforms any quicker than will continuing the litigation process.*

C. Title II: "Look Back" provisions/State Enforcement Incentives

Title II of the deal provides a mechanism to hold states and the tobacco companies accountable should youth prevalence rates not decrease. As set out in Appendix V, the prevalence of youths smoking must decrease by 30% by the fifth year after the deal is entered, 50% by the seventh year and 60% by the tenth year. The usage of smokeless tobacco is to decrease by 25% after the fifth year, 35% after the seventh year and 45% after the tenth year.

The idea of the look back provision is to deny tobacco companies any incentive to sell to underage youth (simply called youth hereafter) by capturing all the present discounted profits of any sales to youth over the target level. (For a more detailed economic analysis of the lookback provision, please refer to Appendix C of this report.) This means that the manufacturer is denied not only the profits from the current sale, but any that will occur on average over that smokers lifetime. Sales to a youth over the target will mean that all future expected profit from that customer is lost. Current sales to youth are indexed by the prevalence of daily youth smoking. The idea is apparently to use a weighted average of age specific daily smoking prevalence for ages 13 to 17 as an index of the aggregate proportion of youths who will smoke as adults. It is apparently assumed that there will be direct one for one relationship between changes in this index of daily smoking prevalence and the prevalence of all youth who will smoke as adults. If the penalty (called the surcharge) is levied on the number of percentage points missed, and the amount of the penalty for each percentage point by which the target is missed is set at the correct level, then the industry will lose all the future profits from sales to more youths than the target allows. The lookback provision targets and penalty become effective five years after the agreement is enacted.

This explains the "one time only" provision of the lookback in section B.1.b(1) of Appendix V. This provision means the tobacco industry is penalized only once for missing the target for a cohort of youth. The idea behind this is to prevent double counting. If the industry is

permanently denied all expected future profit from sales to Dick and Jane because they purchased cigarettes in 1998, it would be double counting to levy that penalty if Dick and Jane were observed buying cigarettes in 1999. The lifetime profits of a given customer can be taken away only once.

a cap on the damages is set at \$2 billion. However, youth smoking prevalence as measured in the lookback will be around 14 or 15 per cent. With a fine of \$80 million per percentage point, the cap will not become effective until the target is missed by 25 points. This is set so high that it is doubtful that it would ever become effective. It may be a safeguard against an unforeseen explosion in youth smoking. Inflation and demographic adjustments are made to keep the formula a rough approximation to the lifetime profit of an average smoker over time.

There is also a rebate provision. The industry can recover 75 per cent of the surcharge if they can show they acted in compliance with the settlement, had taken "all reasonable" measures to reach the target, or deserved a rebate because of "other relevant evidence". The terms of this provision very vague cannot be modeled. The surcharge is paid according to market share of the firms in the industry, but the rebates are applied for individually, so it is reasonable to suppose that the individual companies will have more incentive to attempt to get a rebate than reduce youth smoking.

In addition, the tobacco companies are provided an incentive to actively seek the reduction of youth tobacco usage, because they would be entitled to seek a refund of some of the penalties paid in the event that the targets are not met, so long as they produce evidence that they have obeyed the laws and pursued all reasonable measures to obtain the reductions.

As established in Appendix VI, each state will be required to have strict laws regarding youth sales. Each state must meet high levels of compliance and report annually to the FDA on its success. If the states do not meet the following performance targets, then the FDA will be able to withhold some moneys otherwise due to the state. 75% retailer compliance after the fifth year, 85% compliance after the seventh year, and 90% compliance after the tenth year. Should it states disagree with a decision to withhold money, the state will have a appeal mechanism available to it to recover some of the moneys it is entitled.

Advantages:

Tobacco initiation is primarily a youth health problem. Essentially all new smokers begin smoking prior to the age of 19, and each day 3000 minors begin smoking. There is also the perception that the current public health measures aimed at reducing smoking are having less impact on youth. Therefore, new measures which will directly attack the problem of youth tobacco use must be addressed. The implementation of the FDA regulations is a partial solution, but here is no guarantee that this will be sufficient. The tobacco companies will still have an economic incentive to addict young smokers. And apathy on the part of enforcement agencies will provide the tobacco companies the room necessary to exploit youth. Through economic incentives the deal will discourage the tobacco companies from intentionally exploiting youth and will ensure that states maintain the pressure on supply side controls.

The current market structure provides incentives for the tobacco companies to addict youth. The adult population is not likely to initiate smoking, but once a child is hooked they are likely to become a lifelong smoker. Therefore, each child addicted promotes a lifetime of profits for the tobacco industry. The penalty provision in the deal would remove the incentive by requiring the disgorgement of profits over the life course for each additional percentage of the defined population above the targets.

In addition, the deal puts pressure on the states to achieve targets for supply side controls which are even more restrictive than those contained within the Synar Amendment. These supply side controls are believed to affect youth consumption rates especially when they achieve compliance rates at the 90% threshold. It also establishes the ancillary benefit of linking the compliance rates with tobacco control money, as opposed to the current Synar requirements which link compliance with drug control money. a paradigm which many have questioned because of the non-overlapping interests of the tobacco control and drug control communities.

Disadvantages:

Critics feel that this Title is a sham. While it espouses the best of intentions, it actually provides little to no incentive to reduce youth consumption rates. First, the look-back provisions do not create a financial incentive for the tobacco industry to change their behavior. The tobacco companies currently find it profitable to have smokers addicted young, even should the tobacco companies fail to meet the required targets, the financial penalty they suffer would be small. This problem can be remedied by increasing the penalty level.

Even if the tobacco companies did have the incentive to reduce youth smoking the deal memorializes an "acceptable" rate of youth smoking which the tobacco companies would never want to go below. Therefore, to effectively create a youth reduction strategy would pose financial risks to the company far greater than the look-back penalties. One, by changing the corporate culture a tobacco company could risk alienating other consumers. In this case the result of implementing an effective public health measure would be much greater than simply the lost profits for youth who do not begin smoking. An effective program could prove it impossible to convince young adults to initiate smoking, and may result in an increased cessation rate of current smokers. Two, there is a larger economic disincentive for the tobacco companies to exceed the threshold levels than for not meeting them. To exceed the target by 1% will result in incurring the cost of the program, the cost of any unintended consequences of alienating other consumers, plus the loss in profits over the life course of the percentage of the defined population. To fail to meet the target by 1% will result in the loss of profits for one percentage of the defined population, which would be tax deductible and could still be abated by as much as 75%. Three, the penalties do not begin to take effect for five years. This creates a five year window (or an entire cohort of 8th through 12th graders) for the tobacco companies to addict new smokers with impunity.

Second, the look-back provisions themselves are flawed by greatly undercounting the young smoking population. The use of average daily smoking over age groups will underestimate youth smoking. Many youth will become addicted who are not yet daily smokers until after they reach 18 years of age. a measure that does not undercount can be devised that also removes the

proportion of adult current smokers. As more adolescents first use cigarettes, a certain proportion discover a susceptibility to nicotine addiction, and escalate to daily smoking. However the percentage of frequent user increase rapidly with age, while the percent of one time experimenters remains about the same. This is more evidence that addiction develops over time from a group of people who less frequent users. As time since exposure to the first cigarette lengthen, those people susceptible to addiction are selected out at begin to use cigarettes more frequently.

The implication is that the lookback index of youth consumption flawed and susceptible to manipulation. a good way to evade the effect of the lookback penalty is to keep the number of daily smokers low, but keep the number of current smokers high enough so that most of them will become daily smokers, but not until they are at least eighteen. If this happens then the one to one relationship between changes in prevalence of daily smoking and prevalence of addiction no longer holds. Then a critical assumption behind the penalty is invalid, and the number of youth smokers may be seriously underestimated. If one is intent upon using a lookback provision based on targeted goals, the penalties for failing to meet those goals showed be increased dramatically, the counting measure should use a single test of age 17 or 18 year old ever-smokers.

Third, there is an active question as to how effective the tobacco companies can actually be at reducing youth consumption. Manufacturer controls over retailers will have the same limitations that government enforced supply-side controls have. There is also the paradox of youth motivation. If the tobacco companies present the tobacco products as for "adults only", this will increase the allure of tobacco as a forbidden fruit. If they present the tobacco products in a juvenile manner, they will be marketing towards kids directly. Furthermore, if they effectively educate about the hazards of tobacco, or change the culture so that tobacco itself is viewed differently, they would be committing economic suicide. It may be this "Catch-22" situation when a tobacco industry representative told Reuters that the targets will not be met by the industry. "The head of [B.A.T.] has said last week s U.S. tobacco settlement will not meet one of its key objectives, the Financial Times reported on Thursday. B.A.T. chief executive Martin Broughton told the paper the pact would not achieve drastic cuts in teenage smoking and described the targets for reductions as unrealistic. My expectation is that we will fail to meet them, he said." (Reuters, June 26, 1997.) Thus, it is likely the tobacco companies could construct a program which on its face would appear to be productive, yet have the opposite effect on youth consumption rates. For example, by creating an extensive campaign identifying tobacco products as an adult restricted activity and limiting marketing to adults only magazines and establishments could increase the allure for tobacco and cause an increase in smoking rates. Yet, because this program looks to be an aggressive technique to discourage youth smoking the tobacco companies would be entitled to a 75% rebate on the penalty paid. In other words, instead of making \$80 million worth of profit, the tobacco companies would be making \$60 million profit for each additional percent of children they get hooked on tobacco products.

If one wishes to provide an incentive for the tobacco companies to reduce youth tobacco consumption, the efforts must be much more dramatic. First, there can be no acceptable levels of youth smoking. Second, there can be no grants of immunity or forbearance for best efforts by the tobacco companies. Third, the penalties must be severe. One proposal that deserves further consideration is that the tobacco companies forfeit all gross revenues from all youth smokers

allocated by brand. Thus, if 50% of the cigarettes consumed by youth (all youth not just daily users) were Marlboros, then Philip Morris would have to pay 50% of the total amount of tobacco revenue generated by youth purchases of cigarettes.

Similarly, the requirement that the states forfeit money for failing to meet compliance rates on retailer sales, is a misplaced program. First, as argued above, there is at best a loose connection between youth access laws and youth consumption. This being the case, a state could find itself penalized for having relatively weak enforcement of the access laws, but a lower youth prevalence because it chose to use its resources to adopt a more effective programs.

Second, there is a philosophical problem that the police power can ensure compliance with the law. Under the police power the state can investigate and penalize transgressors. One hopes that conscience, and an understanding of the law will be sufficient to ensure compliance. With the recognition that it is not, one is left to hope that the consistent enforcement of the law with sufficient penalties will deter criminal activity. But even this is not a guarantee, because of anti-social factors, civil disobedience issues, and the profit motive to evade the law. The states who be penalized for the transgressions, only have control over one element of the model - the consistent enforcement of the law, for which an overly aggressive approach could result in a backlash. The penalties are established under this deal, and there is no evidence whether they are sufficient to ensure a deterrence effect. As a result of these problems it is unfair to penalize the states.

Finally, this Title is built upon the fallacy that eliminating the youth smoking problem will eliminate the tobacco problem. The tobacco companies appear to be targeting young adults (18-23 years) now as a particularly vulnerable population to initiate smoking. Smoking initiation by college undergraduates appears to be increasing. As a result, the tobacco companies may concentrate their efforts on these consumers. If effective, this measure will only deprive the tobacco companies with a few years of profit per smoker. The morbidity and mortality related to tobacco would decrease (and be delayed somewhat) but not drastically. And the public health tools may find themselves ill-equipped to handle this problem having been overwhelmingly committed to the narrow issue of youth smoking.

The delay of five years before the beginning of the program may lead the industry to addict more kids. Then it would be harder to reduce youth consumption even though the company showed good faith and made reasonable efforts to reduce consumption (after the first five years). Companies could apply for an abatement with a significant chance of increased profitability. At a minimum, the five year delay surrenders an entire cohort of youngsters. This choice is presumably made on the assumption that reductions in youth prevalence will be gradual and cumulative, and therefore the companies need five years to meet the goals. This assumption has been challenged by a number of people who feel that programs to affect youth prevalence can show immediate and dramatic results.

D. Title III: Penalties and Enforcement; Consent Decrees; Non-Participating Companies

Title III provides for the mechanisms by which the deal is to be enforced.

1. Penalties and Enforcement

Subparagraph a of Title III provides for enforcement of the ultimate legislation by both the federal government and the states. The deal would be subject to the penalties of the statutes for which the deal is drafted, including the Food Drug and Cosmetic Act, and states would not be able to go beyond the scope of penalties established within the legislation. Special penalty provisions of \$10 million per occurrence for failing to meet the FDA disclosure requirements. There is also a requirement that the Companies enter into an "enforceable national tobacco protocol" ("Protocol") which would provide contractual rights to the states and the federal government to enforce certain provisions of the deal.

Advantages:

As with any law there needs to be an effective enforcement mechanism to ensure obedience. This deal provides the broad enforcement authority to the federal government and to the states, subjecting the tobacco companies to a maximum amount of scrutiny. In addition, by entering into the Protocol, the Federal Government and the States would be able to hold the tobacco industry responsible through a civil proceeding enforcing contractual obligations. This advantage will help eliminate the possibility of a Constitutional challenge of the laws by the tobacco companies. Finally, the deal would elevate the penalties for violations of the FDCA to 10 times higher than that for any other industry.

Disadvantages:

The enforcement provisions of the law are a retrenchment of current state and federal authority. The tobacco companies are now subject to multi-jurisdictional attacks to enforce the laws of the different states and the federal government. For example, the current lawsuits represent an enforcement of antitrust laws, racketeering laws, and consumer protection laws. Suits are being pursued by states, cities, counties, the federal government and private citizens. This enforcement scheme would preempt all of these enforcement mechanism for any matters covered by the Act or the Protocol. The Act and the Protocol are so broad, however, that it incorporates most if not all of industry behavior effectively barring enforcement. Moreover, the deal would not provide for citizen enforcement of the laws or the Protocol.

The states would also be prohibited from enforcing their own laws in their own courts. With the grant of federal jurisdiction, states would have their actions removed to federal courts. There would also be a weakening of the vast array of penalties currently available and replaced with the civil penalties contained within the new legislation.

Furthermore, it is not clear what result the new law would have on the enforcement of state or federal criminal laws. It is possible that this scheme would be intended to replace the patchwork quilt of criminal law liabilities which the tobacco companies are subject. Yet to provide any form of criminal immunity would be inappropriate.

As for the Protocol, it is not clear what effect that this would have. Because a Protocol has not been drafted, or is at least unavailable for review, it is unclear how effective and

appropriate that this document would be. One can easily picture a document that is illusory or otherwise unenforceable. Its implications could also be far broader than intended actually acting as a barrier to future regulation, acting as a binding contract on behalf of the States and Federal government as well as the Tobacco Companies. To cavalierly present such an important document without fully defining the term, or providing the text of the Protocol, is consistent with the criticism that the authors of the deal are asking people to make a blind horse trade. The Tobacco Companies are too sophisticated to allow decisions to be made solely on such leaps of faith.

2. Consent Decrees

Subparagraph B of Title III provides a separate enforcement mechanism for the states which have sued the tobacco companies. The Tobacco Companies and the States will enter into consent decrees by which the states will be able to enforce many of the terms of the agreement.

Advantages:

One of the main criticisms of the settlement process has been that the Congress would substantially weaken the terms of the deal and “sell out” the public health. By resolving the lawsuits through the use of Consent Decrees the states will retain the ability to enforce the terms of the deal as entered into.

Disadvantages:

The Consent Decrees do not provide any additional protections against Congressional action and are themselves faulty. First, it is axiomatic that the Congress will be able to void the terms of the Consent Decrees. For example, Subparagraph a of this Title limits the jurisdictions and scope of penalties that states could seek enforcing the laws. Similarly the states could not enforce an action which would be a known violation of the federal law or would otherwise be preempted.

It also does not matter, because the Consent Decrees themselves as constituted are weak. As with the Protocol discussed above, there is no Consent Decree which has been drafted for review, but it is clear that there are substantial restrictions on the enforcement of the Consent Decrees. For example, the States can only seek injunctive relief to enforce, and cannot seek sanctions even for intentional violations of the Consent Decrees by the Tobacco Industry. This limitation on authority is dramatic and unnecessary. In addition, there is a requirement that the consent decrees be interpreted consistent with the other federal laws and the other Consent Decrees. This could result in a least common denominator problem, where the tobacco industry forum shops to find a weak interpretation of the Consent Decrees and forces that interpretation upon other jurisdictions. Finally, the Consent Decrees appear to be duplicative of the Protocol, and it is not clear which would take priority.

The Consent Decrees would also not cover many of the more important public health measures such as design modification of tobacco products the youth look-back provisions, the testing of toxic constituents, and good manufacturing practices. And even those terms which are

covered will only be as good as the underlying terms of the deal, which as identified throughout this analysis, are relatively weak.

3. Non-participating Companies

Subparagraph C to Title III tries to address the problem of tobacco companies, either new market entrants or foreign market entrants from subverting the intent of the deal. It provides mechanisms by which non-participating manufacturers would be subject to the same regulatory authority as the other tobacco companies, and would be required to pay "user fees" to account for some of additional moneys paid to the states, and they and their agents would not be exempt from liability.

Advantages:

These provisions will guarantee that the deal is not undermined by new market entrants, or that such entrants become bound to the terms of the deal. The deal also recognizes the potential Constitutional implications of some of its provisions, so it does not seek to hold the new market entrants subject to these questionable provisions.

Disadvantages:

The current tobacco market is an oligopoly with many allegations of conspiratorial behavior. The barriers erected to new and foreign market entrants are quite large. Yet such entrants could provide unique innovation in tobacco industry dealings. These non-participating company provisions, erects even more barriers to market entry further protecting the current industry's oligopoly. The new entrants would be forced to pay a user fee equal to the payments already made, they would have to pay an amount equal to 150% of their share for liability expenses, yet they would not be given civil liability protections, and their distributors and retailers would be subject to future liability. Even under the Agreement, it is not clear that participating manufacturers are responsible for the actions of the retailers. This specific exemption will make it more difficult for a new market entrant to develop a distribution pattern.

Ultimately, it may not be bad to eliminate new market entrants, but there are problems with this structure. First, it is such a blatant power grab by the tobacco companies, one is skeptical of its benefits other than to preserve the profitability of the those tobacco industries we know are culpable. Second, the restrictions are so broad that they may implicate Constitutional issues. For example, the specific prosecution of a tax, because a company would otherwise voluntarily forfeit its rights to a trial before a jury or its First Amendment rights, raises multiple due process issues (takings, separate application of the laws, etc.) It also raises the First Amendment issues the deal was hoping to avoid. Third, much of the consideration for the deal is based upon relieving the tobacco companies for past bad acts such as fraud and conspiracy. As a matter of justice, it may not be reasonable to hold new market entrants responsible for these activities.

Thus, other than trying to preserve an oligopoly market structure, it is not clear what is gained by this provision. Much of the issues could be resolved by simply allowing the normal

course of regulatory development, and shifting the payment schedule to a tax payable by all market participants.

E. Title IV: Nationwide Standards to Minimize Involuntary Exposure to Environmental Tobacco Smoke

Title IV presents a national program to significantly reduce exposure to environmental tobacco smoke by restricting smoking in workplaces. Smoking would be restricted to areas which were ventilated outside and maintained at a negative pressure to adjoining areas, with exceptions made for the hospitality industries.

Advantages:

The adverse health effects due to exposure to environmental tobacco smoke are well documented, resulting in a calculated 53,000 deaths a year and extensive morbidity including a significant amount of childhood asthma. By restricting smoking in public places this deal will help reduce the this morbidity and mortality. The deal is necessary to accomplish these goals because the current efforts to regulate environmental tobacco smoke have been futile. Furthermore, this deal protects the rights of states and localities to pass more extensive regulations.

Disadvantages:

The rights of people to be protected from environmental tobacco smoke is one the leading issues for public health officials and for tobacco control advocates. The issue is important as a matter of public health, of personal liberty and of public policy. By reducing or eliminating exposure to environmental tobacco smoke, enormous health benefits would be realized immediately. It is also a matter for which individuals, find it vital to take control of ones life to limit the exposure to a known health hazard. Finally, many feel that the continued acceptance of smoking in public is hindering efforts to de-normalize tobacco use. In those places which have harsher restrictions on public smoking, have decreased smoking rates. *The deal, while embracing many proper restrictions on exposure to environmental tobacco smoke, is insufficient and unnecessary.*

The deal fails to effectively address the mode it purports to, workplaces. The extensive list of exceptions included in the deal will reduce its effectiveness. Workers in hospitality industries suffer the greatest exposures and should be entitled to the same protections that other workers gain. This will also restrict the ability of individuals who wish to both maintain a healthful lifestyle and visit any of the hospitality industries. Finally, it is these places, for example restaurants and bars, which will have the biggest impact on the social acceptability of smoking. By allowing smoking in these institutions, the efforts will lose much of their significance to move the culture towards a smoke-free society. Furthermore, there is no legitimate reason to exclude these industries. (Allowing hotels to maintain separate smoking and non-smoking rooms is a reasonable accommodation and is not factored into the following calculation.) The most common argument for allowing this form of exception, is that otherwise the hospitality industries would suffer economically without such an exception. This is incorrect for two reasons. First, it is based on a faulty premise that smoking prevalence will stay constant. To the contrary, many

expect consumption patterns to change, resulting in a large demographic shift to non-smokers. Second, even under current demographic patterns, research has shown that the in communities which pass strict clean indoor air legislation, the restaurants do not suffer economically from the change. Similar results are expected in the other hospitality industries.

Critics are also concerned that the deal is insufficient because it may hinder stricter clean air legislation. The greatest strides towards clean indoor air has been occurring at states and localities. Although the deal states that it will not preempt stricter measures, care must be taken to carefully craft the appropriate legislation such that none of the legislative acts or future OSHA regulation will prohibit stricter controls. OSHA is a strongly preemptive act and would have to be carefully amended to ensure full local flexibility. In addition, there is the concern that many localities and states, which might have otherwise passed stronger more effective legislation will fail to act on the misguided impression that the federal standard is sufficient. Finally, it appears that the deal would pre-empt OSHA from adopting stricter regulations in the future adopting either stricter controls or limiting/eliminating the hospitality exemption. This restriction on Agency authority would limit its future flexibility and impair its ability to improve the public health.

Second, it is not necessary to enter into a deal in order to reduce exposure to environmental tobacco smoke. OSHA is currently reviewing an preparing to issue final regulations governing environmental tobacco smoke. Although it is true that no regulations have been promulgated to date, that is due to the slowness of the regulatory process not a lack of motivation. In addition, with the science becoming so clearly established, with for example the Surgeon General's report on secondary smoke and the EPA declaring environmental tobacco smoke carcinogenic, and the California EPA report, the regulatory environment is ripe for passing more restrictions on environmental exposures. In addition, the proposed OSHA regulations are more restrictive than the terms of the deal. For example the OSHA deal requires smoking areas to be enclosed, and it doe snot include the hospitality exemption within the deal.

Moreover, as mentioned above, states and localities have been the focus of much of the clean indoor air efforts with great success. There are some in the tobacco control community who see immeasurable value in keeping this debate local. First, experience suggests that the states and localities will pass stricter laws. Second, there is an advantage obtained by the process of educating a community and community leaders about the benefits of restricting environmental tobacco smoke, which would be lost with the passage of federal legislation.

Whichever approach is better, national or local, it can be and is being enacted without the necessity of the deal. If anything, the deal is slowing that process.

F. Title V: Scope and Effect

Title V of the deal outlines the scope and effect of the regulatory authority under the deal.

1. Scope of FDA Authority

Subparagraph a of Title V set out the regulatory authority of the FDA. It gives the FDA

authority over all products sold in U.S. commerce, but sustains the current regulatory authority of the Bureau of Alcohol Tobacco and Firearms, the Federal Trade Commission (except as to testing of tobacco products) and the United States Department of Agriculture.

Advantages:

By giving broad authority to the FDA and preserving other regulatory oversight of the tobacco industry, the deal presents a complete regulatory structure to control the actions of the tobacco companies.

Disadvantages:

The grant of FDA authority is misleading in two respects. First, it eliminates the ability to address international issues. Second, it overlooks the ways in which FDA authority can be undermined.

The FDA authority is limited to domestic products. This is an abdication of America's responsibility to global health issues. As tobacco companies increase their international market sales, the health problems related to tobacco increase. This deal, if it accomplishes the goals established by the drafters will be aiding the health of this country at the expense of the rest of the world. In other industries, the dumping of hazardous products overseas, which would not be allowed in the United States is in many cases illegal and in all cases immoral. Similarly, corporate practices which are frowned upon in our country, if they are found to exist in other countries can become a matter of public embarrassment. The principles of justice do not allow for such double standards. Yet this deal memorializes such double standards to ensure tobacco company profitability.

In addition, simply granting the authority in the FDA to regulate the industry will not be sufficient to ensure effective regulation. Protections should be established to protect the FDA's autonomy from influence by either political forces or by the industry. Even assuming that the money provided in Title VII(a)(2) for the enforcement of FDA programs is protected from the vagaries of the legislative process (which it will not be) there are substantial ways in which the FDA can be undermined. First, restrictions could be placed on the FDA's actions, such as limiting for what programs the FDA could use its money. Second it would be subject to intense political scrutiny. The office of the Commissioner could be a highly politically charged office which would be only as strong as the political process allowed. Third, the industry could work through official and unofficial channels to influence agency behavior. The FDA should be protected from these influences.

2. State Authority

Subparagraph B of Title V provides for the authority of state and local regulatory controls over tobacco products. Subparagraph B(1) identifies that the regulatory controls within the deal establish a base minimum for tobacco control efforts and preserves state and local flexibility to regulate further more strictly. Subparagraph B(2) limits state and local control for the sake of having national warning labels and national performance standards for tobacco products. After

five years, states can apply for a special exemption related to ingredients.

Advantages:

The deal clearly embraces the principle that tobacco control activities should not be preempted on a local basis. As written, the deal would preserve the authority for states and localities to pass stricter control laws, except in those areas where a single national solution presents the most effective solution.

Disadvantages:

Subsection B(1) is fine in principle but is wholly ineffective. In order for it to have any effect it will need to be embraced in the drafting the legislation. Specifically, laws will need to be drafted to give the states and localities specific authority to regulate in various areas. About the only areas in which the authority appears to be explicitly granted within the deal is for taxes, youth access and clean indoor air laws. Even for youth access the federal licensing scheme with table of penalties would seem to preclude much of the ability of states and localities to create a stronger enforcement mechanism. The remaining area of the law and regulations appears to be a comprehensive scheme intended to be put forth by the federal government which will replace all existing laws. This combined with the limitation on enforcing the terms of this deal contained within Title III means that states and localities will have little room to develop their own regulatory structure. Thus, this provision reserving the authority for states to create stronger tobacco control mechanisms is deceptive.

Furthermore, the continued preemption of local efforts to control labeling and advertising, as well as expanding that to include manufacturing practices, and product content will eliminate a great deal of local control. Only through a formal application for an exception to the FDA can a State exceed these public standards established by the FDA. As a result, all of the power will vest in a single agency. Should that agency be captured by political or industry influences, there will be no mechanism to affect tobacco company behavior to create safer products. This is a dramatic shift of authority away from the states and into a single agency, and leaves no protections for the public health. Even the 5 year stay on granting exemptions for listing ingredients is a blatant attempt to deny the states regulatory authority. There is no public health reason for this restriction.

States and localities should have no restrictions beyond those established in the Constitution, to control tobacco products. Furthermore, they should be given authority to supervise and act as a public watchdog over the FDA, being able to force it to act in a reasonable manner.

G. Title VI: Programs/Funding

Title VI provides for the financial component of the deal. It requires an upfront payment of \$10 billion and annual payments beginning at \$8.5 billion in year 1 and rising to \$15 billion in year five.

3. Up Front Commitment

Subparagraph A of Title VI requires that the tobacco companies pay a lump sum cash payment of \$10 billion upon the signing date.

Advantages:

This upfront payment reflects a significant amount of money which will be used to fund the programs under the deal and to reimburse those damaged by the tobacco industry. By requiring an upfront payment this will penalize the tobacco companies and reward the plaintiffs who have fought to put pressure on the tobacco companies.

Disadvantages:

If we assume this is payment for all past damages the amount is small especially considering that all governmental actions for cost reimbursement are included within this (medicare, medicaid, city county suits) as well as all current class action lawsuits. The use of the lump sum payment is unspecified, as is the allocation of the payments from the tobacco companies. As demonstrated below, there may be significant problems with fully funding all of the programs mentioned in the settlement. The extent to which the lump sum payment can remedy this is unclear. If medical inflation is low, and approximately equal to the general rate of inflation, then the lump sum payment could approximately offset the rather small funding shortfall that exists in the first three or four years. If medical inflation remains substantially higher than general inflation, as it has historically, then it cannot remedy the shortfall.

4. Base Annual Payments

Subparagraph B to Title VI of the deal provides for the annual base payments by the tobacco industry. These sums breakdown in the following manner.

Summary of Funds (in billion current dollars)

Year	Base Payment	Public Health Trust Fund	Total
1	6.0	2.5	8.5
2	7.0	2.5	9.5
3	8.0	3.5	11.5
4	10.0	4.0	14
5	10.0	5.0	15
6	12.5	2.5	15
7	12.5	2.5	15
8	12.5	2.5	15
9	15.0	0.0	15
10	15.0	0.0	15
11+	15.0	0.0	15

The payments will be inflation adjusted, reduced for drops in consumption and be given priority in the event of bankruptcy. The intent of the deal is to pass through the costs to consumers to reflect to drive demand down.

Advantages:

The payments are large enough to compensate the public for a portion of the Medicaid costs due to smoking, even if the compensation is not full under the most reasonable scenarios. The payments are also in perpetuity, which an inflation adjustment clause. This amortizes a very large lump sum award that the industry might not be able to finance otherwise. It also provides permanent relief to the public for Medicaid expenditures, as long as a reasonable proportion of the expenses are covered.

Disadvantages:

The primary disadvantages with the payment allocation is that it fails to provide enough money to adequately compensate those injured, and it fails to provide adequate economic incentives to induce proper corporate behavior on the part of the tobacco companies or to substantially reduce demand on the part of consumers. The full economic analysis relating to the following points has been attached as Appendix A, with many of the following conclusions drawn from that analysis.

Presumably, based upon statements in the Preamble, the primary recipient of damages will be the states, but as the analysis in Appendix A shows, they will not receive full compensation for amount of excess medical expenditures incurred by the states due to tobacco-related disease. Furthermore, the problem is compounded because this analysis assumes that the states are the only ones being reimbursed. This would shut out all other parties who have their cases legislatively settled or precluded including the federal government, territories, cities and counties as well as the private class actions. If those parties are to share in the settlement funds it will inevitably split the pie into much smaller segments increasing the magnitude of the under-funding dramatically. The amount of money expended by the Federal government in the Medicare program on tobacco-related health costs alone is roughly double that which is expended under the Medicaid program.

The alternative explanation, that those cases are precluded without compensation, raises issues of justice and Constitutional implications, which make this interpretation unlikely. If it is the intended result, it is an unconscionable result, and one that would call the moral basis of the settlement into question. The Attorneys General who negotiated the settlement would be claiming their share of the damages at the exclusion of parties who were not welcomed in to the negotiating process. Nevertheless, for the purposes of simplifying the economic calculations, it will be assumed that the remainder of the base payments after the civil liability and public health funds are removed, will go to offset the state burden of excess Medicaid expenditures.

This under-funding is magnified further when it is realized that the wrong inflation adjustment is used to fully account for the excess medical expenditures. Medical inflation rises at

a rate faster than the rate of inflation and is usually measured by a rate known as the medical CPI. If the medical cost inflation continues to grow at the annual rate of the last ten years, less than 80 per cent of the Medicaid costs and the stipulated Public Health Funds programs can be financed out of the annual payments over the first 25 years of the settlement.

The compensation numbers get worse with future decrease in consumption because the adjustment for volume is too generous. The volume adjustments are triggered by two things, the reduction in sales caused by the price increase (forced by the pass through clause), and the shift in demand caused by the anti-smoking programs. The programs funded in the settlement are not likely to trigger significant volume adjustments by themselves in the foreseeable future. However, if the settlement triggers more local and state funding, and increases anti-tobacco efforts generally, then the consequent volume adjustments may be significant with a commensurate drop in funding. The damages incurred by the states and individuals, however, are unlikely to drop in a similar fashion. Even if we assume the entire drop in consumption was due to cessation, the former smokers will still be incurring excess medical costs as a result of their previous smoking. For example, some forms of cancer do not appear for years after exposure. Therefore, the societal burden of the health care costs due to tobacco will be increased dramatically.

Similarly, if there is a significant market shift to a reduced risk or nicotine free product, which is determined to be not a tobacco product, there would be a decrease in the sale of tobacco products and therefore of funds available under the agreement. (The provision requiring a give-back for increased profitability can be avoided by marketing the new products through a separate corporation.) As identified above, however, there is a distinction between a reduced risk product and a safe product. As a result, the funds available under the deal could drop much more precipitously than the health risks and the costs to the states.

Furthermore, if there is a shortfall in funds, there is no risk sharing agreement or priority arrangement for the claimants which will guarantee compensation to one party or group over another. The absence of such an allocation mechanism may be problematic as different parties jockey for position for a limited resource.

If the assumption that the public health funds will be taken from the base amount prior to the allocation of the settled parties shares is incorrect, then the money will be insufficient to pay for both the damage allocations and the Public Health Fund. As is shown in Appendix A, the Medicaid payments alone would overwhelm the funding structure. When the additional costs of other governmental agencies, especially Medicare, and the other precluded lawsuits, it becomes apparent that the Public Health Funds would be quickly zeroed out.

The inadequacy of funds is problematic for two reasons. First, by not fully compensating those injured and preventing those parties from suing in the future, the deal is unjust. Although there is always a risk associated with litigation, and settlements rarely compensate plaintiffs at 100% the proportion of damages, the proportion of the damages for which the parties are actually receiving compensation is pennies on the dollar - greatly out of proportion to the litigation risks involved. Second, the failure to fully compensate the governmental agencies will necessitate a continued cost shifting of the costs associated with tobacco related diseases to the tax-payers. To allow the tobacco companies to continue externalizing the true costs of their products will

maintain the market failure and artificial price structure which guarantees tobacco company profitability. Effectively, the deal creates a subsidy in perpetuity for the true costs of tobacco products.

The funding inadequacy problem is also not necessary. Analyses have shown that because of the relatively inelastic demand for cigarettes, tobacco companies can elevate their profits perhaps to as much as \$30 billion domestically. If the funds from international sales and companies related to the tobacco companies are made available, the available funding is magnified. Therefore, the shortfalls negotiated in the deal, are not a result of industry inability to pay and maintain profitability, but would guarantee generous profits to the tobacco industry.

The Consent Decrees and the Protocol are to be interpreted and enforced as contracts. This provision requires that the funding of the programs continue in perpetuity. Although not true in all jurisdictions, in some jurisdiction contracts cannot be valid in perpetuity. Therefore, the requirements and the enforcement mechanisms are mutually inconsistent. Furthermore, the changes in modern society happen so rapidly it does not make sense to use a static economic model fixed in one point in time. Societal and economic realities change so drastically fixing the assumptions in time will prove to be dangerous limitation on the ability to adjust the payments to account for new economic realities.

Most individuals who have looked at the competitive nature of the tobacco industry have concluded that there exists a market failure. The oligopoly pricing structure is not reflective of the costs of the product and is the result of information inequity and perhaps uncompetitive behavior. The provision that requires all costs of the deal are to be passed through will simply memorialize this market failure. First, the passed through costs are sufficiently small, as shown in Appendix A that the effect on demand will be small. Second, the pass through results in eliminating the incentive to innovate, perhaps to a safer product, because the cost will be equally shared among all market participants. Third, it is unclear how closely the pass through will reflect the true costs of the deal. If on the one hand, the pass through results in a regulated pricing structure with annual increases, it will be possible to game the market and the result would be mandated price fixing. If on the other hand, the industry is responsible for calculating the pass through this could lead to conspiratorial price fixing. In either case, it will be difficult to determine the true price effect of the pass through due to market fluctuations, and the inherent market failure. As a result, the pass through provision will be difficult if not impossible to measure and will encourage anti-competitive behavior. The tobacco companies will be guaranteed excess profits and will have no incentive to modify their behavior or to innovate. Instead of requiring a pass through, the market failure should be repaired by eliminating anti-competitive behavior and the cost of the deal will more closely be reflected in the market price. Additionally, this would likely free up substantially more room to negotiate for more money under the deal. (Let's look at a hypothetical to see how this can happen, if the current costs to profit ratio of a pack of cigarettes is 1:2, and the same ratio would be 1:1.2 in a competitive market, then the price the market would bear would be reflected in the remaining .8. This would reduce industry profits, yet maintain them at a competitive level, and provide additional funding for the deal.)

5. Applicability

Subparagraph C to Title VI indicates that all sellers of domestic products will be responsible to contribute to the funds.

Advantages:

By requiring all sellers of tobacco products to contribute to the funds, it ensures that all economic incentives will be borne equally among market participants.

Disadvantages:

As raised in the analysis to Title III, there are significant issues raised in applying the provision to non-sellers. The deal is also silent as to how the market participants will contribute to the funds. This may be a minor point, but such issues of allocation should be fairly resolved and the absence of such clarifying language in this deal discloses its incompleteness. It is difficult to fairly analyze a deal which is incomplete.

6. Tax Treatment

Subparagraph D to Title VI deems that all of the moneys paid pursuant to the deal will be deemed ordinary and necessary business expenses for the purposes of tax treatment.

Advantages:

Other than as a necessary concession to the industry for the sake of getting its approval for the deal, there appears to be no public health or public health benefit to this provision.

Disadvantages:

This provision substantially changes the financial structure for the industry. As ordinary business expenses the payments will be tax deductible. This will reduce the impact of the deal to create incentives in the industry. Furthermore, it will result in United States taxpayers having to assume responsibility for a significant portion of the payments. Although there has been much rhetoric that the goal of the deal is to compensate victims and not to penalize the industry, this greatly oversimplifies the issue. There are many issues which directly related to the incentives created by higher costs to the industry.

The claim that the deal is not intended to penalize the industry is also contrary to the preamble which implies that a fraction of the moneys collected in the deal is to offset the prevention of punitive damages for cases involving past conduct. Yet under many circumstances punitive damages, as with fines and penalties, are not tax deductible. Thus, this makes clear the artifice of "resolving" past punitive damages.

The tax deductibility of the deal reduces the effectiveness of any of the economic incentives contained within the deal. For example, the lookback provisions are based upon a

disgorgement of the profits of the addicted youth smokers over the lifecourse. Because the payments would be tax deductible, this would allow the industry to, in effect, keep some of the profit it was supposed to disgorge.

In addition, the deal envisions benefits as a result of the "pass through" of industry costs to the consumer, reflected in a decrease demand. This demand decrease will be exaggerated because of the costs incurred by the industry will be reduced by the tax deductibility. Alternatively, the cost of the tobacco products will be increased and the tobacco companies will have a profit windfall.

Furthermore, this provision is sufficiently broad that an argument could be made that any fines resulting from the enforcement of any violation of the regulations or laws would also be deemed a payment under this deal and therefore tax deductible. This argument is even more persuasive when the deal establishes special treatment for the tobacco industry, such as the \$10 million fine accounted for under Title III.A. This would remove further enforcement authority away from the states and regulatory agencies.

This provision also gives rise to a large collateral effect. Because all of the money paid by the tobacco industry is accounted for in payouts, this deal could be internally revenue neutral. The industry will, however, be able to deduct the payments, so that there will be a net revenue loss in general tax revenues. This shortfall, which could rise to as much as 40% of the annual payments (i.e. between \$3.4 billion and \$6 billion annually) is approximately twice the amount of the Public Health Funds. This money will need to be made up by either reducing spending for other programs or by raising revenues on other taxpayers. This cost shifting is another way the industry will be able to externalize the costs related to its product to others.

Many of the difficulties raised within the broad exceptions is to treat all payments, fines and penalties under this deal as not tax deductible. This will remove hidden costs, and make all incentives under the deal more clear.

H. Title VII: Public Health Funds From Tobacco Settlement as Recommended by the Attorneys General for Consideration by the President and the Congress

Title VII describes the deal signatories' suggestions on the distribution of public health moneys according to two specified budgets for public health programs. One is the Public Health Trust Fund, which is to be administered by an appointed Presidential Commission and is devoted to tobacco related medical research. The second is the Public Health Funds, which consist of smoking education, smoking cessation programs, community anti-tobacco programs, and replacement funds for lost tobacco company arts and sports sponsorships. The projected budgets for the Title VII programs are as follows, before the figures are adjusted for inflation. As can be seen by the figures in the table, these totals are inconsistent with the descriptions of the totals contained within the preamble to this section which describes an initial amount of \$2 billion and escalating to \$3 billion.

Summary of Public Health Funds

Year	Public Health Trust Fund (Medical research)	Public Health Funds (Tobacco Control) Health Trust)
1	2.5	2.1
2	2.5	2.175
3	3.5	2.2
4	4.0	2.325
5	5.0	2.825
6	2.5	2.825
7	2.5	2.825
8	2.5	2.825
9	0.0	2.825
10	0.0	2.825
11+	0.0	2.825

Advantages:

The Public Health Funds and Public Health Trust Fund both contain good programs. The Public Health Funds contains tobacco education, smoking cessation programs, state and local enforcement programs, tobacco cessation research. The Public Health Trust Fund is devoted exclusively to tobacco related medical research.

Disadvantages:

The deal creates the impression that the funds under this document for public health monies necessitate granting immunity to the industry and otherwise restricting the public health controls. This is not true. As is shown by the NCI's ASSIST program and the large scale public education campaigns funded by higher tobacco taxes in California, Massachusetts, Arizona and Oregon, the public health money is simply a matter of political will. In addition, there is a ready mechanism for raising the funds by raising the national tobacco tax. The effect on the market would be the same as in the deal. The only separate opposition than would come in the form of this funding mechanism than would come through the deal would be from the tobacco companies.

Moreover, because of the pass through requirements of the deal, the cost of the programs would ultimately be borne by the tax payers and they would object equally under each proposal. Although because there would be no pass through under the tobacco tax funded program, and there would be no anti-trust protections, there is a strong possibility that the cost of the public health programs would impact tobacco industry profits.

Another way to look at this, is that as the deal is written, the general revenue shortfall due to the tax deductibility of the funds payable under the deal would be more than sufficient to cover both the Public Health Funds and the Public Health Trust Fund. Therefore, in some ways it is

possible to say that whether the deal is approved, or whether the Congress chooses to allocate funds to public health programs directly, money will need to be generated for these programs. If there is an absence of political will to pass such a program solely because of tobacco industry opposition, one must be skeptical about any legislation for which there exists political will. In short, efforts should be made to pass these public health programs because it is the right thing to do.

It is not specified where the public health funds are to come from. Because the Public Health Trust moneys are fully accounted for in Subsection E to Title VII, presumably the public health money would come from the Base Amounts described in Title VI. As discussed above, this would reduce the total amount available to pay damages and medical expenditures in those cases settled or precluded under this deal. Furthermore, as consumption rates decrease and the annual payments are decreased commensurately the public health funds will not be affected limiting the amount available for damages even more. The full funding of the public health programs should stay the highest priority, and efforts should be made to ensure that fixed and sufficient funding stays available to offset the health expenses incurred by the states so that the public health moneys will not be vulnerable to raid.

There are also limitations to the programs. First, the money is insufficient to greatly impact the public health. Although there are many confounding factors, we can look to the effectiveness of the anti-tobacco research and education campaign to determine the likely effectiveness of the public health education campaign of the deal. This analysis, contained within appendix A, shows money in the Public Health Funds programs are not sufficient to dramatically improve the public health. If they are as effective as the California anti-tobacco programs, they will result in only about a one percent reduction in tobacco consumption per year. Although valuable, and likely to be increased by the additional public health measures contained within the deal, it is valuable to understand that at these funding levels the immediate public health gains will only be modest. Therefore, they should carry less weight when comparing them against the negative parts of the deal.

Second, the programs are designed around specific goals such promoting cessation, de-glamorizing tobacco use and discouraging initiation by persons under 18 years of age. By doing so the programs may become self-limiting. For example, in some jurisdictions around the country, efforts to produce anti-tobacco education campaigns have been limited because of statutory language and regulatory restrictions, to advertisements targeted directly towards children. This is true despite evidence which indicates that tobacco education programs aimed at broad audiences and those highly critical of the tobacco industry are more effective. To prevent these limitations from occurring in any of the public health programs designed under the deal, extraordinary care should be taken to provide broad discretion to the program coordinators.

There is a separate category allocated in Title VI for a Public Health Trust Fund, which is funded at a level of \$25 billion over 8 years. Within Subsection E to Title VII a Presidential Commission is established to distribute this \$25 billion fund for "specific tobacco-related medical research." No one would deny that additional money for medical research is bad. But this provision is not without problems. First, it terminates after a period of eight years when it is highly unlikely that there will be no need for additional research after that time. Second, the

commission is to be comprised of public health officials, the Attorneys general and attorneys representing the Castano classes. (Interestingly enough the same parties at the negotiating table.) Yet the funds are to be used for medical research. This dichotomy should be resolved and the commission should be restricted to professionals in the field for which the funds are to be used. Third, the scope of the research should be expanded to include applied and policy research. Many of the reductions in morbidity and mortality due to tobacco has resulted from advances in policy and public health. Whereas, additional money spent on research into tertiary cancer treatment, for example, may not serve a significant public health purpose. Even though patients with advanced cancer are in desperate need of more efficacious treatments, the progress in this area has been very slow despite massive increases in funding since the 1970s. The research program should have a well thought out rationale.

I. Title VIII: Civil Liability

Title VIII establishes protection for the tobacco industry from various sources of litigation.

1. General

Subparagraph A to Title VIII eliminates all Attorney General actions, and similar actions brought on behalf of governmental entities, all class actions, all parens patriae actions, and all nicotine dependency actions. It would not allow these types of actions in the future. Third party payor suits that were filed prior to June 9, 1997 would not be settled, but would be subject to the limitations which govern civil liability for past conduct.

Advantages:

The forfeiture of the rights to certain forms of actions is the necessary quid pro quo to get the tobacco industry support for this deal. The lawsuits which are resolved are those for which compensation is obtained, while rights for other actions are reserved.

Disadvantages:

The negotiated settlement was primarily conducted by and for the states who had filed attorneys general actions and a collection of plaintiff attorneys who represent the class of nicotine addicted smokers. The settled lawsuits will theoretically compensate those groups, by providing funds for tobacco cessation programs and reimbursement to the states. (Although no allocation or provision directly awards money to the states, this use of the money is implicit throughout the document.) The deal settles far more than that, however, and does not account for the funds to be used for those purposes. For example, as a governmental entity the City and County of San Francisco will have its case resolved. In addition, any governmental agency who has not yet filed a lawsuit would be precluded from filing. Therefore, the settlement amounts would need to be divided among all possible claimants. The magnitude of these potential payments is quite large, especially considering that the federal government is responsible for Medicare.

Furthermore, the deal settles all "class actions." This is ambiguous. If it truly settles all of the actions, then the plaintiff classes would be entitled to some recompense. If it merely decertifies the classes and allows the class members to refile individually, then the class members may not be entitled to compensation. Taking the deal as it is written, it appears that the class actions would be settled.

Thus, the deal resolves and prevents many more cases than can be compensated under the funding scheme established. By eliminating the right to pursue damages, and by failing to fairly compensate those plaintiff classes, the deal may raise some Constitutional implications. Furthermore, the more cases that are resolved for a low price the worse this deal becomes from a public health or public policy point of view. The costs of tobacco usage will still be externalized from the tobacco companies with no opportunity for class members or governmental agencies to recover through the civil litigation system. Granting such a large measure of immunity to the tobacco companies for such a limited fund strikes many as a bad deal.

2. Provisions as to Civil Liability for Past Conduct

Subparagraph B to Title VIII provides a series of 11 restrictions on lawsuits for the recovery of damages due to the past conduct of the tobacco companies. These provisions are: 1) no punitive damages; 2) no class action lawsuits and allows for defendants to remove actions to federal court should a court certify a class; 3) memorializes the current state of legal decisions; 4) provides for the joint sharing of liability of the tobacco companies who entered into the Agreement; 5) restricts who can sue to a) individuals or their heirs, b) third-party payor suits not based upon subrogation theories filed prior to June 9, 1997, and c) third-party payor claims based upon subrogation theories, and restricts defendants to a) manufacturers and b) the manufacturers' agents; 6) prevents the removal of actions to federal court; 7) prohibits evidence of "reduced risk" products to be used at trial; 8) adopts the use of state statute of limitation provisions triggering on the injury, discovery, notice or contamination; 9) creates a Civil Liability Fund from the base payment in Title VI to be treated as an aggregate cap for damage exposure; 10) establishes a Presidential Commission to allocate the amount of the funds not used in any given year; and 11) requires that the manufacturers pay their own defense costs.

Advantages:

The tobacco industry desired complete protection from all lawsuits. Because this is an unacceptable policy outcome, this deal preserves the rights for plaintiffs to sue. In addition, by providing for a civil liability fund protected from bankruptcy, individuals who sue will avoid the risk of having the tobacco companies avoid litigation through the bankruptcy process. The size of the fund, beginning at \$2 billion in year one and rising to \$5 billion in year nine, should be sufficient to cover all verdicts against the industry.

Disadvantages:

Protecting an individual's right to sue was a non-negotiable requirement for many individuals to support any deal. This deal, therefore purports to go to great lengths to protect this right. Ultimately, however, these protections are in name only. The deal will increase the

barriers to bringing suit which will make it more difficult for an injured party to bring a suit against the tobacco companies. The deal also provides protections to the tobacco industry such that it will suffer little to no risks from the civil liability system. Finally, the deal does not provide adequate funding for just compensation.

The barriers to filing suit against the tobacco industry are extremely high. The industry uses extremely aggressive litigation practices which make suing the tobacco industry time consuming and expensive. As of the writing of this, except for the Liggett and Mississippi settlements the tobacco industry has never paid a money to a plaintiff as a result of a civil lawsuit. It has made tobacco lawsuits risky and unattractive prospects for lawyers. Therefore, even for good cases it is difficult for a plaintiff to find legal representation. This trend has changed in recent years for a variety of reasons. First, discovery of egregious behavior on the part of the tobacco companies could subject them to high damages. Second, new legal theories which appear to be more promising such as those which limit the tobacco industry's use of the assumption of risk defense have been developed. For example, by using statistical evidence regarding health risks over large populations it is easier to prove causation. Third, the development of class action lawsuits which for the spread of risk and increase the likelihood of higher damages.

Through this deal the barriers to litigation are raised again, which will make it more risky to prosecute a lawsuit against the tobacco companies discouraging both potential plaintiffs and their attorneys from prosecuting such actions. The discovery of egregious behavior on the part of the tobacco companies has made them vulnerable to punitive damages. This is appealing in an idealistic sense because it appeals to individual's sense of justice. It is also valuable from a practical point of view because it increases the likelihood of a large jury verdict, which helps offset the risks attendant with bringing such a lawsuit. By eliminating the right to seek punitive damages for past behavior, the motivation to file a lawsuit is decreased.

Similarly, by eliminating class action lawsuits, the likelihood that lawsuits will be filed will be reduced dramatically. Class action lawsuits can present a comforting situation for plaintiffs who otherwise be intimidated away from filing a lawsuit alone against the tobacco industry. It can also represent a cost savings for the individuals suing able to spread the costs over group of similarly situated people. Similarly, class action lawsuits also provide protections for attorneys. Often it is attorneys who take a case on a contingency fee basis, where they receive no fees except in the case of a recovery, who bear the costs of litigation. By being able to spread the risk over a class of individuals, and the prospects of a larger recovery make some lawyers more willing to accept complicated or risky cases if they are filed as class actions. Finally, in some cases it may be possible to use epidemiological evidence of large groups to prove causation. This minimizes the ability of the tobacco industry to "blame the smoker" and may prove to be a more effective legal strategy. By eliminating class action lawsuits, fewer plaintiffs are likely to sue and recover damages against the industry, and attorneys may be less likely to represent individuals.

One of the reasons the tobacco industry has not paid money damages in a personal injury lawsuit, is because of a concerted strategy to "blame the smoker." Through assumption of risks and comparative negligence defenses the industry argues that smokers were aware of the risks and therefore, bear responsibility for their own health consequences. They are aided in promoting these defenses by the warning labels the federal government requires be placed on each pack of

cigarettes and court decisions which preclude many legal theories as a result of those warnings. More recently discovered evidence of industry wrongdoing and obfuscation has resulted in an evolution of the legal theories which may prove to be an adequate response to those defenses. For example, if the industry created an advertising campaign and manipulated scientific results to give the impression that cigarettes were not harmful when they new otherwise could they not be held responsible for the harms caused to the plaintiff. This deal would memorialize the preemptive authority of the Federal labeling act and the case law interpreting it. It is not clear how this preemption would actively limit the prosecution of future cases, but the presence of the language in the deal will slow the evolution of the law.

Similarly, the restrictions placed on who can sue and who can be sued will stunt the evolution of the law and could preclude the development of new legal strategies against the tobacco companies. Suits are either third party payor claims or "claims of individuals." Although it is not clear at this point what other theories could be brought it is not appropriate to restrict avenues for future lawsuits.

Once a case is brought there are further procedural advantages that appear to be given to the tobacco industry. The first advantage, is the time by which a plaintiff must bring suit. The deal embraces the Statutes of Limitations of the respective states, yet begins the clock ticking on when a plaintiff must file a suit from the time of "injury, discovery, notice or contamination/violation." The use of the term "or" may result of the expansion of many Statutes of Limitation, modifying for example a the law of a jurisdiction which uses the discovery rule. As a result, the tobacco companies may gain more protection from lawsuits. The tobacco companies also gain an evidentiary advantage. Under the Agreement evidence of "reduced risk" products are excluded under the deal. While most evidence of subsequent remedial measures is excluded in trial, there are exceptions to this rule, one of which is particularly relevant to the tobacco industry: technological feasibility. If a person argues that she was injured by a defective product, the manufacturer can argue that the product was safe considering the use. The plaintiff in turn can argue that the product should have been safer, but cannot point to actions of the industry to make a product safer. (The theory being used is that such evidence would stunt the incentive for the industry to create a safer product, if its actions could be used against it.) But if the industry argues that it could not have made a safer product because it was not possible, the plaintiff can point to the industry's actions to show that such changes are possible. This deal would prevent plaintiffs from making that argument. Thus, providing the tobacco companies the ability to maintain as a matter of law that the product itself was reasonably safe. This evidentiary change provides the tobacco companies with additional protections from liability.

The amount of damages a plaintiff can receive in an action are capped on per suit/per year basis, and the tobacco companies will be shielded by an aggregate cap for all lawsuits. These financial barriers will make it less appealing to bring lawsuits against the tobacco companies and more difficult to find legal representation in those suits which are brought. A plaintiff could not guarantee full recovery of damages in a single year, and even though the damages will roll over to the following year (without interest) there is no guarantee that the moneys will be fully paid. Should there aggregate cap be exhausted in a given year, there is the possibility some plaintiffs may be shut out from recovery altogether. Although this risk may be small given the additional barriers to suit already in place, this is one additional risk that is being borne by the plaintiffs.

reducing the attractiveness of filing suit.

There is also a significant change to the medical reimbursement suits filed by medical insurers, pension plans and other third party payors. While these suits currently operate on epidemiological evidence of large groups, which benefits the plaintiffs, there is a provision in the deal which would require that these suits be filed under a subrogation theory. By filing suit under this theory it essentially places the payor in the shoes of the individual smoker. Thus, instead of using epidemiological evidence of the represented group, the plaintiffs would need to present the cases of each of the individuals for which the group wants to obtain recovery one at a time. This change makes these lawsuits much more costly to prosecute and allows the tobacco companies a new array of defenses to defeat these suits. It can extend the already exhaustive discovery process, try to blame individual smokers, and attempt to discover confounding factors in the illness of each smoker. This is true even if an epidemiological model would be able to calculate the excess medical costs of smoking over the whole group. This change clearly benefits the industry and provides a new barrier to payors seeking the recovery of health related expenditures.

The result of all of these restrictions is that fewer plaintiffs will seek to recover against the industry, potential plaintiffs will find it more difficult to find legal representation, fewer legal theories will be available to prosecute against the tobacco industry, and during trial certain procedural advantages will be given to the tobacco companies. Thus, while this deal technically maintains the rights of individuals to sue, it makes bringing such cases very difficult from an economic and legal perspective and grants the tobacco industry near complete immunity from future litigation. The right to sue is a right in name only.

The changes to the civil liability structure will also provide protections to the industry which will solidify its market and help guarantee future profitability. One of the primary reasons for having a civil liability system is to provide incentives for products manufacturers to behave honestly and produce safe products. The cost and risk attendant with litigation, makes many corporation risk averse such that they strive to create safe products. A large jury verdict in a civil liability case can create shock waves throughout an industry.

This deal removes essentially all of the incentives for the tobacco companies to act more responsibly.

First, it eliminates much of the liability exposure it currently faces: the governmental lawsuits, the nicotine dependency lawsuits, the class actions, punitive damages in all cases for past acts and third-party payor suits not based on subrogation theories. These cases were expensive for the tobacco industry to defend and exposed the industry to the risk of large damage awards (including in some cases treble damages, attorneys fees, and punitive damages). Furthermore, it increases the barriers to litigation for individuals who still wish to sue the industry, giving additional levels of protection.

Second, it limits the development of the law and the development of new legal theories to which the industry might be vulnerable.

Third, it shares the damage awards for all past costs, decreasing the incentive for any one

company to assist with the prosecution of lawsuits against other tobacco manufacturers, or otherwise act in a responsible manner.

Fourth, the damage awards are capped on an annual basis. There is a provision in the deal which holds that the judgement will run against the manufacturers, but that manufacturers will receive an 80 cent on the dollar credit against the annual payment. Presumably this means 80% per cent of a judgment comes from the civil liability fund and 20% from the company. What is unclear is whether the aggregate cap is based upon the 80% figure or on the 100%. If the former scenario is the case, then the potential amount of money that could be paid in civil judgments is 25 per cent greater than the civil liability fund itself. It is also unclear how the aggregate cap is to be allocated. If it is by market share, then will an individual company's which has 25% of the market, be subject to an annual cap of 25% of the total base payment, or will each company be responsible to satisfy judgements until the entire cap is satisfied? (For example, if our hypothetical company is the only company sued, could that company be responsible to fulfill the responsibility to fund the civil liability fund?) The answer to these ambiguities will determine the extent the civil liability system can be used to create incentives for proper corporate behavior. But in many ways the answers are irrelevant because the industry will be able to calculate a sum certain exposure and budget it accordingly. In the worst case scenario, assuming that each company will pay pro rata into the settlement fund, and that the fund represents 100% of the money available for civil judgements the companies will have no incentive to improve their behavior or their products. If the tobacco companies behave in a responsible manner and avoid all litigation, they will pay 1/3 of the base amount into a civil liability fund. If they behave irresponsibly and lose all litigation, they will pay 1/3 of the base amount into a civil liability fund. But even if these figures are adjusted upwards by 25%, or an individual company could be responsible for the full amount of the cap, the risk to litigation is small and easily accounted for.

Therefore, the deal would effectively remove the civil liability system as a check on industry behavior.

3. Provisions as to Civil Liability for Future Conduct

Subparagraph C to Title VIII provides that the same restrictions on the lawsuits for past conduct will also govern lawsuits relating to future conduct except for the restriction against punitive damages (1), and the joint liability of the defendant manufacturers who have signed on to the deal. It also prevents third-party payor lawsuits not based upon a subrogation theory.

Advantages:

The tobacco industry desired complete protection from all lawsuits. Because this is an unacceptable policy outcome, this deal preserves the rights for plaintiffs to sue for future bad acts of the tobacco companies. Furthermore, to preserve the tobacco industry incentives to behave in a proper manner the right to seek punitive damages for future tobacco company misbehavior is retained.

Disadvantages:

The restrictions on future lawsuits will create the same barriers to suit that exist as the restrictions on suits for past damages. The only difference are that punitive damages will be allowed and that the defendants will not share liability. The allowance of punitive damages will not dramatically decrease the barriers to suit because the remaining damages will be in place, and because of the existence of the annual \$1 million cap. It also will not provide significant incentives for the tobacco industry to improve its behavior, because the aggregate caps will still be in place and provide the predictability and protection necessary.

The elimination of joint liability will provide some incentive for the individual companies to avoid tortious behavior, because they can no longer be free riders. The damages caps will still be in place, as will the other procedures which protect the industry from the risks of civil litigation, and the increased barriers to suit. As a result, this minor change is unlikely to affect tobacco industry behavior.

As a result, the right to file claims for future damages is weak at best. The industry is well protected from lawsuits, and injured individuals are unlikely to recover damages.

The deal also fails to provide adequate funds so that injured persons can be adequately compensated. Full compensation of costs is clearly not a goal of the settlement. However it is interesting to determine the maximum amount of the direct medical costs that are reimbursable under the settlement. This raises issues of justice, to explicitly deny the ability for full recovery of all judicially appropriate damages. It may result in inadequate compensation for all injured persons, or it could deny recovery to different people who are otherwise similarly situated. As the calculations in Appendix A indicate, less than 10 to 11 per cent of total direct medical costs are reimbursable under the settlement in the first eleven years. This does not even take into account indirect costs which would be recoverable, punitive damages, secondary morbidity costs, property damage and many other sources of damages that one could recover.

J. Title IX: Board Approval

Title IX simply provides that the terms of the deal are subject to approval by the Boards of Directors of the tobacco companies.

Advantages:

As with any settlement, the lawyers can make recommendations within a set parameter of authority bestowed by the client, but ultimately the deal must be approved by the client. In this case, the clients are the tobacco companies, and for a business decision of this magnitude it is appropriate that the board of Directors ultimately accept the terms of the resolution. As evidenced by the fact that at least one tobacco company has approved the deal, and each of them has supported the deal publicly, there is little threat that this clause could in some way backfire on the public health community.

Disadvantages:

With a deal of this magnitude, it is unlikely that the decision-makers in the tobacco

companies were not well-informed during every step of the negotiating process. By allowing the tobacco companies a chance to reflect and reject a deal already negotiated exposes the plaintiffs to a risk that the deal could collapse. *There is no reason the plaintiffs should be subjected to any additional risk; those with the power to accept the deal should have been the ones negotiating.*

V. Discussion

In evaluating the deal one must keep the deal in its proper perspective. First, it is merely and Agreement in Principle. None of the terms are defined and significant documents such as the Protocol and the Consent Decrees will need to be reviewed before full understanding of the deal can be had. Furthermore, this document is only intended to guide legislation. It cannot do that effectively unless it clearly gives the intent of the parties and that does not come through. The desires voiced in the preamble are clearly not met within the terms of the deal.

Furthermore, it is a weakly written agreement filled with ambiguity and contradictions. A strong agreement in principle would clearly define all aspects responsibility, this one defines very few. Those that are strictly constructed are those that favor the industry. For example, the restrictions on FDA jurisdiction are clear, but there are no corresponding provisions for how the FDA will regulate in the future. (While the FDA could regulate nicotine in 12 years, there are no assurances it will.) Similarly, with civil liability, it is unclear how the settled class action plaintiffs will be compensated, but it is very clear what additional procedural hurdles future plaintiffs will have to vault prior to filing suit.

There are also recurrent themes throughout the document. First, the deal eliminates substantial risk for the tobacco industry and establishes a mechanism to fix its costs. With the relative inelasticity of demand and profitability of the market, this essentially guarantees future profitability of the industry. These guarantees are obtained in other ways as well. At various places throughout the deal, barriers to market entry are raised increasing the power of the current oligopoly. In addition, barriers are imposed on regulatory authorities which will at a minimum delay market reforms, and likely stunt them. With fixed predictable costs, guaranteed profitability, no threat from new market entrants, no threat of civil liability, and protections from regulatory controls, the industry is expected to thrive. Furthermore, with the growth of overseas markets in American cigarettes the industry will be able to reduce some profitability domestically and offset it with overseas sales which are also protected in this deal. As a result, one would expect that this deal will be a boon to the tobacco industry and eliminate any incentive to reform or produce a safer product.

The deal also impinges upon many public health efforts such as state and local tobacco control, FDA regulatory power, and the civil liability structure. It does this without obtaining fair compensation for those who suffered damages as a result of the tobacco industry, and without establishing strong public health measures as a replacement. As a result, the public health will not be substantially advanced as a result of the deal and will suffer serious setbacks.

VI. Analysis of the Proposed Deal Against Public Health Benchmarks

During the months preceding this deal there were a number of benchmark standards

written various members of the public health community which presented opinions as to the necessary public health elements to any deal with the tobacco companies. We have collected and summarized those standards and compare the terms of the proposed deal with the minimum standards suggested by the commentators. We have tried to include all of the standards: 1) written by individuals not a party to the litigation (although some of the commentators have served in a consulting role to the litigation), 2) written by individuals who are recognized as members of the "public health" community or the media, and 3) have received a wide distribution. The omission of any set of standards which satisfies these criteria was inadvertent and does not represent an editorial decision on the part of the authors. No consultation was done with the authors of the standards and all interpretations of the standards and measures of comparison is our own.

A. National Center for Tobacco Free Kids - Core Principles - Press Release

1) Regulatory authority: The FDA must have the authority to regulate the manufacture, sale, labeling, distribution, and marketing of tobacco products.

While the FDA maintains a certain amount of regulatory authority over tobacco products, it undeniably loses authority through increased regulatory burdens, a requirement that it cannot prohibit the cigarette in its "basic" form, and the inability to eliminate nicotine for more than twelve years. Does the deal meet this minimum standard: **NO**.

2) Minimum standard: The current FDA requirements governing youth access and tobacco marketing are essential minimum components of any public policy initiative. The agency's ability to augment these requirements should not be curtailed.

The deal seems to meet this standard. **YES**.

3) Victims' rights: The rights of victims of the tobacco industry to seek compensation for the injuries they have suffered should not be abridged and the tobacco industry should not be immunized from accountability for its wrongdoing.

The deal clearly limits the rights of individuals to sue by eliminating class actions lawsuits, eliminating punitive damages for past conduct, limiting the types of lawsuits that can be brought in the future, and placing annual caps on individual suits and annual caps aggregated over all tort suits. **NO**.

4) Public education and tobacco control: A well-funded, effective sustained public education and tobacco control campaign that is protected from political pressure is critical to reducing tobacco use.

Although the deal makes suggestions to Congress, there are no guarantees of funding, and the funding specifically targeted to tobacco control efforts appears to disappear after the eighth year. **MAYBE**.

5) Preemption: Congress should not preempt state or local laws that are stronger than

federal laws, nor should the FDA be preempted from revising the form, content, and placement of the warnings on cigarette packs.

Because of the supremacy clause and restrictions as a result of states inability to burden interstate commerce, the deal will result in preemption. **NO.**

6) Public disclosure: The tobacco industry must disclose its research and studies about the effects of its products, including nicotine, on the human body and the marketing of tobacco to children.

The requirements in the deal relating to the release of tobacco industry documents are clumsy and burdensome. It is not clear whether these provisions will produce the documents as well as continuing the discovery process of the litigation, and it appears likely that the industry will be able to maintain its claims of privilege for many documents. **NO.**

In addition to these six principles, it is vital to recognize that there are other issues which are key components of any overall comprehensive tobacco control plan, including items such as increased tobacco taxes, protection of nonsmokers from environmental tobacco smoke, and the role of the American tobacco industry in international tobacco sales.

The deal will have little economic impact on the cigarette companies, but it will have some, which will probably be passed on to consumers as price increases. As for ETS, the deal creates a hospitality exception which is significantly expansive such that non-smokers will not be adequately protected from ETS. Furthermore, the deal abdicates any international responsibility. Overall on the other issues, **NO.**

B. George Annas, *New England Journal of Medicine*, January 23, 1997.

1. . . . no rationale for blanket immunity. . . .

Although no blanket immunity is given, the limitations placed on future lawsuits are so high, that they amount to *de facto* immunity from the point of view of the tobacco companies. **NO.**

2. . . . reducing smoking. . . .

It is unclear what effect the deal will have on smoking rates, though there are no requirements or specific incentives to reduce overall smoking rates. **PROBABLY NOT.**

3. . . . making smoking itself less addictive and safer. . . .

Although there are allowances for the FDA to regulate the content of cigarettes, as identified above this will prove difficult, and the FDA can never prohibit the "basic" form of cigarette. There are also no requirements for the development of safer technologies. **NO.**

4. . . . restrict the access of children to cigarettes and ban advertising aimed at them.

The deal makes a good faith effort to meet the youth access goals. (Although many are skeptical about the likely success of the suggested programs.) **YES**. The advertising restrictions are modest, not a ban. **PARTIALLY**.

5. . . . *increasing taxes on cigarettes to fund anti-smoking advertising and smoking-cessation programs. . . .*

See above, money is raised, it is unclear where the money will go. **MAYBE**.

6. . . . *A truly global settlement must transcend U.S. boundaries, and a U.S. settlement should help set worldwide standards for tar and nicotine.*

See above. **NO**.

C. Kluger, New York Times Magazine, April 7, 1996 (as quoted in Annas)

1. *Congress would [grant blanket] . . . immunity to the tobacco companies against all pending and future product liability claims. . . .*

See above. **YES**.

2. *The FDA would be given regulatory oversight of the manufacture and packaging of cigarettes, including the power to set maximum levels for their hazardous ingredients.*

See above. **NO**.

3. *Health warning labels would be enlarged to occupy the entire back of all cigarette packs and would carry far more informative language.*

The labeling requirements in the deal are not as strict as these. **NO**.

4. . . . *OSHA [Occupational Safety and Health Administration] regulations restricting smoking at most work places . . . and FDA [regulations regarding advertising would be properly implemented]. . . .*

See above. **PARTIALLY**.

5. *The federal cigarette tax would be double to 48 cents to pay for enforcing these new regulations. An additional 2-cents-a-pack levy would pay for an anti-smoking advertising campaign. . . .*

The deal does increase taxes but would provide some money for enforcement and suggests some for an advertising campaign. See above. **MAYBE**.

D. David Burns, et al., in an editorial in *Tobacco Control*

1. *Acceptance by the tobacco manufacturers of the causal relationship between tobacco use and disease, and the addictive nature of nicotine;*

There is no requirement that the tobacco companies make a public statement similar to the one made by Bennet Lebow in the Liggett deal. **NO.**

2. *A total ban on tobacco advertising and promotion;*

The deal does not ban all advertisement. **NO.**

3. *FDA jurisdiction over tobacco products and their nicotine content, with the intent of removing nicotine as soon as acceptable nicotine substitution products are available;*

The deal preserves nicotine and weakens the FDA authority. **NO.**

4. *Reimbursement to the states for Medicaid and other state expenditure attributable to smoking, to the maximum extent feasible;*

Burns et al. calculate the maximum amount the tobacco industries could afford in a given year to be approximately \$38 billion. This deal would realize about \$14 billion/year, not factoring in the lost tax revenue because the industry would be able to deduct their payments as a business expense. **NO.**

5. *Funding for local, state and federal programmes and research in tobacco control;*

See above. **MAYBE.**

6. *Acceptance of legislation and regulations protecting the right of non-smokers to breathe air free of tobacco smoke;*

See above. **NO.**

7. *Funding for a large, national, media-led, anti-tobacco campaign; and*

See above. **MAYBE**

8. *Cessation assistance for addicted smokers.*

This is suggested as a part of the allocation of money. **YES.**

E. American Lung Association

1. *No immunity should be provided the tobacco industry or tobacco industry executives. This includes no criminal immunity, no preemption of class actions or an individual's rights to sue in state/federal court and no caps on award settlements.*

See above. **NO.**

2. *No conditions should be made relative to the authority of the Food and Drug Administration to regulate tobacco products.*

See above. **NO.**

F. An International Statement Circulated and Signed by Leading Tobacco Control Advocates Worldwide

1. *Apply regulatory controls adopted as part of a settlement to all cigarettes manufactured in the United States, including those destined for export.*

As stated above, the deal abdicates all international responsibility. **NO.**

2. *Require the tobacco companies to agree to a code of conduct embodying the regulatory provisions contained in a U.S. settlement in areas such as marketing to children, advertising and marketing, labeling and performance requirements for reduction of new children smokers. The industry must immediately agree to end practices such as cigarette giveaways, television advertising, sports, music and other similar sponsorships and clothing giveaways. This code should be developed in consultation with the World Health Organization, the International Union Against Cancer and other international tobacco control advocates.*

See above. **NO.**

3. *Require the tobacco companies not to oppose efforts in other countries to adopt regulatory measures (for example, workplace restrictions on smoking and ingredient regulation) which are in line with World Health Organization recommendations.*

See above. **NO.**

4. *Assure that any immunities or limits on liability granted to the tobacco companies not apply to the companies' exports or activities or investments abroad. There should be no immunities or limits on liability or annual caps covering potential litigation in either U.S. or non-U.S. courts relating to the tobacco companies' exports or activities and investments abroad. There should be no immunity or limits on liability applied to enforcement in U.S. courts of foreign*

judgments against the tobacco companies.

See above. **NO.**

5. *Ensure full public disclosure of the tobacco company documents now obtained by tobacco litigants and those sought by litigants but currently held by the tobacco companies under claim of attorney-client privilege.*

See above. **NO.**

6. *Require full public disclosure by the tobacco companies in every country of all political donations and political lobbying efforts.*

See above. **NO.**

7. *Entitle non-American victims to the same levels of compensation in U.S. courts as American victims, and ensure they maintain comparable legal remedies.*

See above. **NO.**

8. *Require the U.S. tobacco companies to offer to compensate foreign government health agencies, proportional to their market share (taking into account smuggled cigarettes) and reflecting the formula used to determine their payment to the states for Medicaid reimbursement.*

See above. **NO.**

9. *Require the tobacco companies to contribute \$10 billion annually to the World Health Organization or other agreed upon international agencies for tobacco-control programs. This contribution would not preclude non-American demands for compensation for injuries caused by tobacco.*

See above. **NO.**

10. *Contain an explicit stipulation by the tobacco companies that they will not claim in any context that settlement terms concerning their overseas sales or operations preclude other governments in any way from adopting laws and regulations more restrictive than those adopted in the United States.*

See above. **NO.**

11. *Contain an explicit stipulation by the tobacco companies that they will not seek assistance from the U.S. Trade Representative, the U.S. Department of Commerce, U.S. embassies or other U.S. government agencies to resist or repeal other countries' tobacco control regulations and laws.*

See above. NO.

12. *Penalize companies shown to participate in or support international tobacco smuggling.*

See above. NO.

13. *Ensure that international tobacco control advocates be represented on a independent panel to determine the public health consequences of any final settlement. Apply regulatory controls adopted as part of a settlement*

See above. NO.

As can be seen from this quick analysis, the deal does not meet the weakest of the proposals outlined above. Also significant is how much the proposals differ from each other. One lesson is that is not a consensus as to the appropriate public health response to a tobacco deal. That is, it is clear that this deal is inadequate, but it is nevertheless premature to consider any deal.

VII. Conclusion

The deal making process was heavily criticized prior to the release of the deal. And a close inspection of the terms of the deal reveal that it many of the concerns voiced prior to the release of the deal were justified. In addition, the deal fails to satisfy many of the public health priorities it establishes for itself in the Preamble. The deal also fails on its own terms. It is incomplete, ambiguous and internally inconsistent. The only provisions which are written clearly and unambiguously are those which will help preserve the profitability of the tobacco industry. Finally, it fails to measure up to the standards established by public health groups for the evaluation of any settlement. As a result, we are left to conclude that this deal fails as public health tool.

The questions left unresolved are whether this deal can effectively act as a springboard to a discussion which will lead to an effective national tobacco control policy, or whether continuing the process with a poor will result in equally poor legislation. And whether it is possible to negotiate a settlement which will prove to be beneficial for the public health. There are four options: 1) rejecting this deal and rejecting the national resolution process; 2) rejecting this deal and returning to the negotiating table; 3) rejecting this deal but using it as a springboard for other national tobacco legislation; and 4) accepting the terms of the deal as written.

The weaknesses of this deal are so apparent we are left to believe a stronger deal is not possible, and that past experience with national tobacco control legislation argues against pursuing the deal in the Congress. Furthermore, the experience of Mississippi's recent settlement shows that the individual plaintiffs are more likely to be obtain full recovery of damages through a private settlement than they will under the deal. The value of Mississippi's settlement is estimated to be 1.7% of the value of the base amount accounted for in Title VI after the civil

liability portion is deducted from it. If Mississippi were to recover under the deal it would likely have to share that portion of the base amount with the public health funds, the other states, the other governmental agencies who would be precluded from filing actions (including the Federal government seeking Medicare funds) and the settled class action classes. This will likely be far less than 1.7% of the total amount, because this will mean that other parties would be deprived their pro rata share. As other state Attorney Generals settle their lawsuits and seek to include public health benefits as well, the value of the private settlements will increase even more. Therefore, we support the rejection of this deal and the temporary repudiation of the quest for a national resolution.

For those who would nevertheless support the continued immediate exploration of a national resolution, option 2 presents the most acceptable alternative. By reopening the negotiations it will open the process for new scrutiny, utilize the information gained by developing this deal, and preclude supporters of the negative aspects of the current deal (such as the tobacco industry) from using it to leverage for bad policy changes in Congress. By reopening the process, it will also provide a new opportunity to discover whether it is possible to negotiate a deal with the tobacco industry which will preserve the public health.

Option 3 is a dangerous course of action considering the past results of national tobacco legislation and the continued influence of the tobacco lobby. Presenting such a bad proposal to Congress as a starting point will advance the interests of those opposed to the public health's interests. It is difficult enough to defeat the tobacco industry when the drafted proposals are written in a manner that will protect the public interest. It will be more difficult when starting from a negative position.

Option 4 presents extraordinary threats to the public health and should be rejected.

APPENDIX A: PRELIMINARY ANALYSIS OF THE ECONOMIC IMPACTS OF THE TOBACCO PAYMENTS

A. ANALYSIS OF AGREEMENT FUNDS AND BUDGETS, BASE CASE

The agreement funds and budgets are described in Titles VI, VII and VIII. Title VI describes the funding of the settlement, Title VII describes the funding of the Public Health Funds, and Title VIII the Civil Liability Fund.

The Title VI funding of the agreement consists of three components: an initial Lump Sum Payment, an annual Base Payment which extends into perpetuity, and an eight year Public Health Trust Fund. An adjustment for inflation is applied to all annual payments. The annual payments will be increased proportional to the growth of the consumer price index (presumably the CPI-All Urban Consumers), or 3 per cent, whichever is greater. This section assumes that the inflation adjustment is perfect for general economy-wide inflation as measured by the CPI-U, or CPI-W; and all dollar amounts presented here are in current dollars. Title VI also includes clauses for payment protection in case of bankruptcy, annual payment adjustments for changes in sales volumes, and a pass through clause. The sales volume adjustment and bankruptcy are discussed in other sections.

Title VII describes two specified budgets for public health programs. One is the Public Health Trust Fund, which is to be administered by an appointed Presidential Commission and is devoted to tobacco related medical research. The second is the Public Health Funds, which consist of smoking education, smoking cessation programs, community anti-tobacco programs, and replacement funds for lost tobacco company arts and sports sponsorships.

Title VIII describes the Civil Liability Fund. This Fund is one third of the Annual Base Payments to be reserved for any individual civil judgments against the tobacco industry. If judgments against the industry exceed the annual fund allotment, then the remainder is paid out of the next annual fund allotment. If the fund is not exhausted each year, a Presidential Commission will determine the use of the funds, which can include public health expenditures, compensation to claimants not otherwise entitled to compensation, or other purposes.

This section presents an analysis of the payments, assuming stationary tobacco sales and ignores the volume adjustment clause, which will be discussed further below. The assumption of stationary sales may not be too unrealistic, since the 20 year decline in annual tobacco sales stopped in 1993 and has been approximately 23.5 billion packs per year since then. However, this assumes that the tobacco reduction programs funded in Title VII have little effect on sales.

The settlement specifies no separate budget for the compensation related to the original purpose of the Attorneys General lawsuits, which was to recover Medicaid expenditures due to smoking. However, any realistic analysis of the settlement must include this claim on the funds. The recent Mississippi state settlement, which is supposed to be roughly consistent with the national settlement, provides full reimbursement for Mississippi's Medicaid claims. Therefore this analysis includes Medicaid reimbursement as a budgeted item. It assumes the relevant amount is

the total national vendor payments, which were approximately \$120 billion in 1996 (HCFA Web site). It assumes that .0477 of Medicaid costs are due to smoking. This estimate is derived from data in the MMWR 23(26) July 8, 1994 pp 469-472.

Two cases are analyzed. The low cost case assumes that Medicaid enrollment increases at 1.18 per cent per year. This is the average increase for the last 10 representative years. The years 1990 to 1993 are excluded because of large, and probably one time, program changes that lead to large increases in the enrollment of women and children. The annual growth rate used here is based on the annual growth rates from 1982 to 1989, and 1994-1996. This annual adjustment to Medicaid assumes that future enrollees are similar to those in the past and the fraction of Medicaid costs due to smoking remains the same. This case also assumes that the medical inflation rate is the same as the general inflation rate.

The high cost case assumes that all the medical inflation rate continues to be about what it has been for the last ten years. The medical inflation as measured by the MCPI (The Medical Consumer Price Index) has exceeded the general CPI regularly for the last 50 years, despite massive changes in the health care system such as the dramatic growth of private comprehensive health insurance, social health insurance programs, and capitated managed care. A reasonable high cost case must assume that this trend will continue. The high cost case assumes that the last ten year average difference between the growth of the general CPI and the MCPI will continue into the indefinite future. The average difference is 3.15 percentage points per year.

Table A.1 presents a summary of the settlement funds and budgets for the first ten years. The last line labeled year 11+ represents the perpetual annual payments that begin in year eleven. The Public Health Trust Fund is specified on a separate line in Title VII, and the language describing its administration in Title VII specifies that the total face value of the fund payments must be used for medical research. Therefore it is assumed that this item in the budget has its own reserved fund. The other budgeted items (Public Health Funds, Civil Liability, and Medicaid Smoking Costs) must be funded out of the annual Base Payment. The language of the settlement is somewhat ambiguous as to whether the term "Public Health Funds" includes the Public Health Trust Fund. In text below, the term "Public Health Funds" will refer to programs specified under Title VII, exclusive of the Public Health Trust Fund medical research program. The term "Public Health Trust" or "Public Health Trust Fund" will refer to the eight year payments for the Public Health Trust research funds administered by a Presidential Commission. The use of the initial lump sum payment is not specified in the settlement, so it is not included in the analysis of the annual funding, unless it is explicitly mentioned in a discussion of alternative scenarios.

Table A.2 shows the total funds and budgets under the low and high Medicaid cost cases. This shows that the annual payments are less than the budgeted items in most years. The shortfall is particularly severe in the initial five years, when less than 90 of the total budget is funded under both low and high cost cases. Under the low cost case, the budgets are not fully funded until year nine, and under the high cost case, the budgets are never fully funded. The lump sum payment cannot eliminate this shortfall. Assuming that the initial lump sum is invested at 5 per cent real interest per year, the undiscounted difference between the shortfall and the value of the lump sum will be about 3 billion dollars for the low, and 12 billion for the high cost case over the first ten years.

Table A.1.--Summary of Funds, Budgets and Medicaid Smoking Costs (in billion current dollars)

Year	Base Payment	Public Health Trust Fund	Public Health Funds	Civil Liability	Remainder Left for	Medicaid Smoking		
Costs			(net Public Health Trust)		Medicaid and other claims	low	high	
1	6.0	2.5	2.1	2.00	1.9	5.802	5.985	
2	7.0	2.5	2.175	2.33	2.5	5.871	6.246	
3	8.0	3.5	2.2	2.67	3.13	5.640	6.519	
4	10.0	4.0	2.325	3.33	4.345	6.010	6.804	
5	10.0	5.0	2.825	3.33	3.875	6.081	7.107	
6	12.5	2.5	2.825	4.167	5.508	6.152	7.411	
7	12.5	2.5	2.825	4.167	5.508	6.225	7.734	
8	12.5	2.5	2.825	4.167	5.508	6.298	8.072	
9	15.0	0.0	2.825	5.00	7.825	6.372	8.424	
10	15.0	0.0	2.825	5.00	7.825	6.447	8.792	
11+	15.0	0.0	2.825	5.00	7.825	6.523	9.175	

NOTE: Additional Lump Sum Cash Payment of \$10 billion due at signing of legislation authorizing the agreement, and is not included in this table.

The problem of fully funding Medicaid costs increases after the first ten years if the medical inflation rate exceeds the CPI regardless of the priority of those claims. This is because the real value of the payments are fixed, but Medicaid costs will increase dramatically.

Assuming that the level of smoking and the fraction of costs due to tobacco does not change, funds will be adequate if medical inflation matches the CPI. For the low cost case, the undiscounted sum of the budgets for years 11 to 25 is \$223 billion dollars, for high cost it is \$306 billion. With annual real funding at \$15 billion, this totals \$225 billion over the same period. So 100 per cent of the budgets can be funded in the low cost case but only 74 per cent in the high cost case. *Medicaid costs are by far the largest budgeted items after year ten, and these costs alone exhaust the Base Payments starting around year 22 of the agreement in the high cost case.* The adequacy of the compensation for Medicaid smoking costs during this period is questionable. The answer will depend crucially on projected smoking levels, and the rate at which tobacco related Medicaid cost respond to changes in consumption, and the rate of medical inflation.

The ratio of the total funding to the total budgets can be used to determine the percentage funding received by each program if they all share risk of a shortfall equally. However the settlement does not discuss any risk sharing mechanism, and does discuss the priority of claims in the event of a shortfall. The Mississippi State Settlement apparently contains a reduction in award if the total state settlements exceed a certain limit. However, this may be a mechanism to share risk only among the Medicaid claimants, rather than among all the budgets in the settlement. So risk sharing between, and priorities of, the claimants if the budgeted items exceed the funds is unknown at this time.

Table A.2.--Funds and Budget Summary

Year	Total Funds \$billion	Available for Medicaid \$ billion	Total Budgeted \$ billion	% Funded	Total Budgeted \$ billion	% Funded
			-----low cost case-----		-----high cost case-----	
1	8.5	1.9	12.402	69	12.585	67
2	9.5	2.5	12.879	74	13.255	72
3	11.5	3.13	14.307	80	14.886	77
4	14.0	4.345	15.668	89	16.462	85
5	15.0	3.875	17.239	87	18.259	82
6	15.0	5.508	15.644	96	16.902	89
7	15.0	5.508	15.716	95	17.229	87
8	15.0	5.508	15.790	95	17.563	85
9	15.0	7.825	14.197	106	16.249	92
10	15.0	7.825	14.272	105	16.617	90
11	15.0	7.825	14.348	105	17.000	88

The Settlement language in Titles VI to VII seems to imply that the Public Health Trust Fund and the Civil Liability Fund do have priority to the funding. Both has its own governing commission, and the amounts of funding devoted to these budgeted items are explicitly stipulated. Therefore it will be assumed that the these two budgets have priority to the funds. The analysis will focus on the implications of different priorities for Medicaid reimbursement and the Public Health Funds. The Civil Liability Fund may be used for other purposes if it is not exhausted by litigation awards. Therefore the significance of the shortfall may depend on the disposition of the Civil Liability Fund. If the Fund is not exhausted each year, the relevant Commission may decide to fund the Public Health Funds programs or Medicaid reimbursement. However language in Title VIII explicitly allows this fund to be used for other purposes. Even if all the Civil Liability Fund was used for the Public Health Funds, this will not permit full funding of the Public Health Funds programs, and Medicaid reimbursement until year four under both the high and low cost cases. Use of the Civil Liability Fund for Medicaid reimbursement will exhaust the Base Payments starting around year 16 of the agreement under the high cost case.

The priority of the claims on the funds by the various budgets will have a dramatic effect on the level of funding. This is because the absolute size of the budgets differs substantially. Table A.3 shows the effect on funding for two different priorities. Table A.3 assumes that the Civil Liability budget is always fully funded. This is because that fund is explicitly devoted to legal settlements, and because the governing Commission has such wide latitude in the disposition of the funds. The first part of Table A.3 shows the funding of the Medicaid reimbursement, assuming that the Public Health Funds are fully funded. In this case the about one third of the Medicaid costs are paid in the first year. This rises gradually to over 100 per cent of the claims in the low cost case, and around 80 per cent in the high cost case by year ten. The second part shows the effect of Medicaid reimbursement having priority. Here the Medicaid reimbursement is initially funded at about 70 per cent in the first year. This gradually rises to full funding in year four in the low cost case, and year six in the high cost. Then the Public Health Funds

programs have no funding in the initial years of the agreement. In the low cost case, the about a third or fourth are funded starting in year 4, and this steadily increases to full funding in year 9. In the high cost case, there are no available funds until year 6. In the high cost case, the funding of the Public Health Fund programs is erratic and never rises much above 50 per cent. This is because the annual changes in the Base Payments and the Medicare costs are large compared to these programs. Allocation of a portion of the initial 10 billion dollar lump sum payment would alleviate most of this problem in the low cost case, but not in the high cost.

The adequacy of the funding of the settlement, assuming stationary cigarette sales is questionable. The sales volume adjustment would make this analysis unrealistic if cigarette sales had been increasing with the population, as has Medicaid enrollment. However, cigarette sales have been declining or stationary in the last twenty years, and this represents approximately 85 per cent of tobacco consumption. Therefore using the Base Payments with no sales volume adjustment is possible an optimistic analysis.

The funding of the settlement seems inadequate for the budgeted items in the initial years in both the low and high cost cases. The adequacy of funding in the later years depends crucially on projected Medical inflation and the growth rate of Medicare costs due to smoking. The enrollment growth projections seem reasonable as indices of the number of people who will use public funds for smoking related illnesses in the short to mid run future. Most illnesses due to smoking do not resolve quickly. Cancers caused by smoking often take ten years or more to cause symptoms leading to medical treatment. The length of time needed after smoking cessation for cancer, obstructive respiratory disease, and some cardiovascular conditions caused by smoking to decrease is usually quite long. Therefore the use of historical Medicaid enrollment growth rates is probably a reasonable way to forecast the level of tobacco related Medicaid expenditures, assuming no excess medical inflation exists, at least for the next five to ten years. In this case, the settlement has approximately adequate funding except in the initial years. If medical inflation continues at or close to the level of the last ten years, then the settlement funding seems inadequate. Further analysis is needed for the effect of sales volume adjustments.

An additional issue is the fraction of direct medical costs due to smoking that are reimbursable under the settlement. This is not a matter of adequate funding of the budgets that constitute the benefits of the settlement. The agreement explicitly disallows several types of civil suits, and puts a cap on total awards. Full compensation of costs is clearly not a goal of the settlement. However it is interesting to determine the maximum amount of the direct medical costs that are reimbursable under the settlement. These are shown in Table A.4. This assumes that the current direct medical costs due to smoking are 50 billion dollars. Tobacco related Medicaid costs are deducted to avoid double counting. The low cost case assumes that these costs grow annually at the same rate as the population with medical cost inflation being equal to the growth of the general CPI. The US Census midlevel population projections are used to calculate growth rates, as they appear in the 1996 US Statistical Abstract. The average annual growth rate is assumed to be 0.84 per cent for the first ten years of the agreement, and 1.3 per cent for years 11 to 25. The high cost case increases the annual growth rate by an additional 3.15 per cent to for

Table A.3.--Funding of Budgets Under Different Cases (in per cent funded)

Year	Medicaid Reimbursement	Public Health Funds (Title VII net of Public Health Trust)
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--priority to Public Health Funds--

	medical cost inflation		medical cost inflation	
	low	high	low	high
1	32.7	31.7	100	100
2	42.4	39.9	100	100
3	52.8	48.1	100	100
4	72.2	63.8	100	100
5	63.2	54.1	100	100
6	89.5	74.3	100	100
7	88.5	71.2	100	100
8	87.5	68.2	100	100
9	112.6	85.2	100	100
10	111.3	81.6	100	100
11	110.0	78.2	100	100

Year	Medicaid Reimbursement	Public Health Funds (Title VII net of Public Health Trust)
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--priority to Medicaid reimbursement--

	medical cost inflation		medical cost inflation	
	low	high	low	high
1	68.9	66.8	0	0
2	79.5	74.7	0	0
3	89.8	81.8	0	0
4	100	98.0	28.3	0
5	100	93.9	20.7	0
6	100	100	77.2	32.7
7	100	100	74.6	21.2
8	100	100	72.0	9.3
9	100	100	128.4	55.8
10	100	100	125.8	42.8
11	100	100	123.1	29.2

NOTE: Assumes civil liability fund is exhausted each year
and Public Health Trust is fully funded.

medical care inflation. *Table A.4 shows that less than 10 to 11 per cent of total direct medical costs are reimbursable under the settlement in the first eleven years. This is also true for years 12 through 25. The fraction payable in later years probably declines for the same reason that the level of Medicaid declines. The direct medical costs due to smoking during that period that should be reimbursed is also harder to determine for the same reasons as for Medicaid.*

Title VIII.B.9 contains language that suggests that the total amount available for civil settlements is more than the Civil Liability Fund itself. This section describes a cost sharing system where money paid for a civil judgment comes both from the Civil Liability Fund and the individual company that must pay the judgment. Eighty per cent of the judgment comes from the Civil Liability Fund and 20 per cent from the company. *The language is vague, but seems to say that the 20 per cent company risk share is in effect until the company's share of the annual contributions to the Civil Liability fund is exhausted in settlements. If this is the case, then the potential amount of money that could be paid in civil judgments is 25 per cent greater than the Civil Liability Fund itself. Then the fraction of annual direct medical costs that are reimbursable range from 5.5 to 11.3 per cent in the first eleven years of the agreement. Another effect of this cost sharing provision is that it gives individual companies some limited incentive to avoid civil litigation and settlements. There is no incentive to avoid settlements out of the Civil Liability Fund without this provision.*

Table A.4.--Total Reimbursable Tobacco related Direct Medical Costs (per cent)

Year	low cost case	high cost case
1	4.5	4.3
2	5.2	4.9
3	5.9	5.4
4	7.3	7.1
5	7.2	6.8
6	9.0	8.2
7	8.9	7.9
8	8.8	7.6
9	10.5	8.8
10	10.4	8.4
11	10.4	8.1

NOTE: Tobacco related Medicaid costs are excluded from direct medical costs

B. AFTER TAX COST OF THE SETTLEMENT

Title VI.D specifies that all payments made under the settlement are ordinary business expenses that are tax deductible. Table B.1 shows how this effects the net cost of the agreement, along with the effects of projected savings because of the advertising restrictions. This analysis assumes an effect tax rate of 35 per cent on corporate income. It is mid way between a low estimate of 30 and a high estimate of 40 per cent. The projected advertising savings are 1.4 billion dollars a year, a figure used in the California Medical Association analysis. Calculating the cost per pack of the initial lump sum payment for the initial year is probably unrealistic. This would result in a large increase due to the initial 10 billion dollar payment, followed a price drop and

subsequent smaller increases. This introduces significant price variability that the industry would probably rather avoid. It is assumed here that the initial lump sum payment is amortized over a ten year period at a 5 per cent real rate of interest per annum. These assumptions will put an upper bound on the cost per pack and the after tax cost of the settlement.

The cost per year to the industry shown in table B.1 also assumes the initial lump sum payment is amortized. Table B.1 shows that the after tax cost of the industry varies from between \$6 and \$7 billion dollars in the first year, to around \$10 to \$11 in the following years. If the projected advertising savings occur, then the initial years cost is under \$5 billion, and the annual net cost of the settlement is always well under \$10 billion per year. This analysis does not consider any volume adjustments, price effects, or the existence of excise taxes, some of which will be discussed below. Therefore it overstates the cost per pack, and should only be used as a rough measure of the order of magnitude of the cost. The value of the tax deduction is between \$3 and \$4 billion in the initial years, increasing to between five and six billion dollars per year later. The present discounted value of the tax deduction over the first 25 years of the settlement is \$97.6 billion dollars at a 2.5 per cent real discount rate, and \$75.9 billion at 5 per cent.

Table B.1.--Before and after tax costs of settlement (in billion dollars)

Year	Total Payments	After Tax Payments	Value of Tax Deduction	Net After Tax Payments with Advertising Savings
1	9.800	6.37	3.430	4.97
2	10.800	7.02	3.780	5.62
3	12.800	8.32	4.480	6.92
4	15.300	9.945	5.355	8.545
5	16.300	10.595	5.705	9.195
6	16.300	10.595	5.705	9.195
7	16.300	10.595	5.705	9.195
8	16.300	10.595	5.705	9.195
9	16.300	10.595	5.705	9.195
10	16.300	10.595	5.705	9.195
11+	15.000	9.75	5.250	8.35

NOTE: Assumes 35 per cent effective tax bracket, and advertising savings of 1.4 billion.

Table B.2 shows the cost per pack under the cases described above. The before tax cost per pack is between 36 and 59 cents, the tax deduction reduces this to between 23 and 39 cents, and the projected advertising savings reduces it further to between 18 and 33 cents. The annual value of the tax deduction is comparable to the tobacco control expenditures described in the Public Health Funds programs. This could cause a problem if the legislation implementing the settlement must be revenue neutral.

Table B.2--Settlement cost per pack sold (in dollars per pack, and per cent of price per pack).

Year	Before Tax Payments		After Tax Payments		Net After Tax Payments with Advertising Savings	
	dollars	per cent	dollars	per cent	dollars	per cent
1	0.36	18	0.23	11.5	0.18	9
2	0.39	18.5	0.26	13	0.20	10
3	0.47	23.5	0.30	15	0.25	12.5
4	0.56	28	0.36	18	0.31	15.5
5	0.59	29.5	0.39	18.5	0.33	16.5
6	0.59	29.5	0.39	18.5	0.33	16.5
7	0.59	29.5	0.39	18.5	0.33	16.5
8	0.59	29.5	0.39	18.5	0.33	16.5
9	0.59	29.5	0.39	18.5	0.33	16.5
10	0.59	29.5	0.39	18.5	0.33	16.5
11+	0.55	27.5	0.35	17.5	0.30	15

NOTE: Assumes stationary sales of 23.66 billion packs per year (1996 sales) and costs allocated in proportion to cigarette to industry sales (86 per cent of tobacco sales in form of cigarettes). Assumes initial lump sum payment amortized over ten years at 5 per cent real rate per annum. Average price per pack assumed to be 2 dollars.

The average cost of a pack of cigarettes has ranged between \$1.95 and \$2.00 in recent years. The average price is assumed to be \$2 here to simplify calculations. Cigarettes are about 86 per cent of the tobacco sold in the US, and it assumed that tobacco companies will allocate costs roughly according to sales. Title VI.B.7 requires manufacturers to pass through all cost increases. Table B.2 shows that this implies that the before tax cost per pack will result in a 18 to 30 per cent increase in the price. The more relevant figure is the after tax increase, since this represents the net cost to the industry. The after tax price increase ranges from 11 to 19 per cent. Assuming the projected advertising savings are achieved, the price increase per pack may be as low as 9 to 17 per cent.

Any profits lost to the industry because of a price increase will have to be counted as a cost. However, there is insufficient data for this calculation. As shown below the revenue changes are on the order of 5 to 15 per cent increases in revenue. Assuming constant Average cost, this would imply an increase in current revenues over costs. By that definition of profit, the cost per pack here are over stated. Standard economic assumptions require that the prices are set to maximize economic profit, properly defined. That implies the cost per pack is understated, but any adjustment would be speculative.

C. ANALYSIS OF DEMAND EFFECTS OF SETTLEMENT

This section discusses the effect of tobacco price changes on the settlement payments, expanding the analysis of payments in section A to include the effects of the pass through provision in Title VI.B.7 and the effect of the sales volume adjustments in Title VI.B.5. This analysis only considers the systematic effects of price changes implied by the settlement payments themselves. Potential program effects of the settlement (such as advertising and anti-tobacco education), changing industry and market conditions, and secular trends in demand will be

ignored. So the sales volume of 23.66 billion packs per year will assumed to be stationary, except for changes induced by the payments and sales volume adjustment provisions of the settlement. The potential programs effects will be discussed further below.

The initial analysis will focus on the price effects of the pass through provision Title VI.B.7. This provision is rather vague. It merely states that legislation will specify that the annual payments will be "reflected" in the price charged for tobacco products. It does not say how they should be reflected. It does not say to what extent are manufacturers are free to consider other cost conditions in determining price. In particular, it does not say whether costs imposed by other provisions of the settlement can be included in pass through, or whether future price changes are going to be tightly linked to the annual total payments. This section analyzes two possibilities. The first is that the net cost of the settlement is passed through, and therefore the net costs of the settlement include the effect of tax deductions, advertising savings, etc. The second is that price changes must be directly linked to changes in the annual pre tax total payments specified in Title VI.B.

It is probably unrealistic to assume that demand will respond, or effects of price changes can be measured precisely, on a yearly basis. Therefore the demand changes will be applied to the average change in price over the first eleven years of the settlement. This will simplify analysis, and permit clearer analysis of the likely range of the price effect on settlement funding. This change in demand will be applied to the annual cash flows to give some idea of a reasonable range of price effects. It will be assumed that elasticities of demand for all tobacco products are constant over the relative price changes. Since cigarettes are 86 per cent of the tobacco market, it is assumed that any average proportional product price increase for all tobacco products is approximated by that for cigarettes.

The case where the pass through is for net costs of the settlement is considered first. The two most relevant cases will be the after tax price increase, and the after tax with advertising savings cases from table C.0 below, which is essentially the same as table B.2. The distinction between adult and youth sales will be ignored, since it is of secondary importance in calculating relatively small changes in quantity demanded and revenue. We could not locate any direct estimates of youth sales volume. If the per cent of high school seniors who smoke daily (about 20 per cent over the last ten years) is used as an index of consumption, this consumption index rises linearly from zero at age 10, daily youth smokers have the same distribution of consumption of adults, and youths buy about half the cigarettes they consume, then youth sales is only about two to three per cent of the total. So this adjustment is ignored in the following analysis.

Table C.0--Passthrough costs per pack, net cost of settlement case
(in dollars per pack, and per cent of price per pack).

Year	Before Tax Payments dollars per cent		After Tax Payments dollars per cent		Net After Tax Payments with Advertising Savings dollars per cent	
1	0.36	18	0.23	11.5	0.18	9
2	0.39	18.5	0.26	13	0.20	10
3	0.47	23.5	0.30	15	0.25	12.5
4	0.56	28	0.36	18	0.31	15.5
5	0.59	29.5	0.39	18.5	0.33	16.5
6	0.59	29.5	0.39	18.5	0.33	16.5
7	0.59	29.5	0.39	18.5	0.33	16.5
8	0.59	29.5	0.39	18.5	0.33	16.5
9	0.59	29.5	0.39	18.5	0.33	16.5
10	0.59	29.5	0.39	18.5	0.33	16.5
11+	0.55	27.5	0.35	17.5	0.30	15

NOTE: Assumes stationary sales of 23.66 billion packs per year (1996 sales) and costs allocated in proportion to cigarette to industry sales (86 per cent of tobacco sales in form of cigarettes). Assumes initial lump sum payment amortized over ten years at 5 per cent real rate per annum. Average price per pack assumed to be 2 dollars.

The assumptions of the two cases, and values characterizing the initial quantity demanded are summarized below:

Initial price per pack:	2 dollars
Initial sales:	23.66 billion packs per year
Initial revenue:	47.32 billion dollars per year

low price increase case:
after tax cost pass through and 1.4 billion dollars advertising savings per year
average price increase years 1 - 11: 14.63 per cent

hi price increase case:
after tax cost pass through, no advertising savings
average price increase years 1 - 11: 16.91 per cent

This analysis takes the average price increase over the first ten years of the program and applies that to the initial sales price in the first year of the program, and then assumes the price of cigarettes remains constant. So in the low price increase case, the price is assumed to increase 14.63 per cent from \$2 to around \$2.29 in the first year and remains constant thereafter. All the analysis is done in terms of payments and prices which are perfectly adjusted to the general rate of inflation, so we are assuming that the real price per pack remains at \$2.29 over ten years. We are not assuming that the nominal price remains constant.

The price effect will be calculated for a range of demand price elasticities: from 0.2 to 0.6.

for adult smoking. Usually an average of base and increased price is used for a continuity correction in calculating the change in volume. The effect of the continuity correction is small compared to the differing size of the price increases of the various cases. Here the base price will be used to calculate change in quantity for simplicity and to get an upper bound for the price effect. The resulting changes in quantities demanded and revenues are shown in table C.1. The changes in sales volume are relatively small for these elasticities, and they range from a three to ten per cent decline in volume. The columns that show the effect of the price change in revenue are needed to calculate the effect of sales volume on settlement payments. Title VI.B.5 describes the algorithm. Basically payments will be adjusted upward or downward in proportion to sales volume changes. Adult sales figures will be used for decreases in volume, total sales will be used for increases in volume. Any reduction in payments will be reduced (that is, the reduction will be made smaller) by 25 per cent of any increase in net profits. This is apparently intended to capture some of the increase in current profits that may occur in an industry with an inelastic demand.

Tables C.1 shows the calculations for changes in sales volume and revenues for difference elasticities. A demand elasticity of 0.4 is considered the most realistic case. The decline in quantity demanded is relatively small. The increase in revenue ranges from around four to twelve per cent the last column calculates 25 per cent of the change in revenue and will be used to calculate the change in annual payments below.

Table C.1--Volume and revenue changes from pass through price effects.

low price increase case: after tax cost pass through and 1.4 billion dollars advertising savings

average 14.62 per cent increase results in new price of 2.29 dollars

demand elasticity	per cent change volume	post increase quantity demanded	post increase revenue	change in revenue	25 per cent change in revenue
0.6	-8.78	21.58	49.48	2.16	0.54
0.4	-5.85	22.27	51.07	3.75	0.74
0.2	-2.93	22.97	52.66	5.34	1.33

high price increase case: after tax cost pass through, no advertising savings

average 16.90 per cent increase results in new price of 2.34 dollars

demand elasticity	per cent change volume	post increase quantity demanded	post increase revenue	change in revenue	25 per cent change in revenue
0.6	-10.15	21.26	49.71	2.39	0.60
0.4	-6.76	22.06	51.58	4.26	1.06
0.2	-3.38	22.86	53.45	6.13	1.53

Tables C.2 through C.4 show the expected yearly change in expected payments caused by the pass through and volume adjustment provisions. These are estimates of what would be expected to occur other factors held constant. Clearly, if the pass through provisions is interpreted to only mean that the cost of the annual payments must be included in the other costs of doing business, many factors may also produce price changes that are not modeled here. This analysis

only considers the systematic price effect and associated volume adjustments that can be expected to hold on average. Program effects, secular trend in demand, individual company financial transactions, random fluctuations are not considered.

Table C.2 takes the high price increase case (after tax, no advertising savings) at a high demand elasticity of 0.6. The profit increase penalty is calculated under two polar assumptions. The first is that average costs change proportionally with revenues, so there is no change in profits and the penalty is always zero. This is the proportional Average cost case. the second is that average costs are approximately constant over the relevant range, so change in profitability is measured by changes in revenue. This is the constant Average cost case.

Note that the annual changes in the payments themselves must be included in the calculation of profit, though this is a minor consideration. Under proportional Average cost, the price effect will produce a reduction in total payments of 10 per cent on average, so annual payments will average 90 per cent of the base case. Under constant Average cost, the profitability penalty offsets the volume reduction so that annual payments range from 91 to 97 per cent of the base case.

Table C.2.--Payment adjustments for pass through price effects, high price case, .6 demand elasticity.

Year	Annual Payment before Volume Adjustment \$B	Change Payments due to Volume Adjustment \$B	Annual Payments After Volume Adjustment no profit penalty \$B per cent	Profit Penalty \$B	Annual Payments After Volume Adjustment with profit penalty \$B per cent
1	8.5	0.86	7.64 90	0.60	8.24 97
2	9.5	0.96	8.54 90	0.44	8.98 94
3	11.5	1.17	10.33 90	0.30	10.63 92
4	14	1.42	12.58 90	0.20	12.78 91
5	15	1.52	13.48 90	0.44	13.92 93
6	15	1.52	13.48 90	0.60	14.08 94
7-11	15	1.52	13.48 90	0.60	14.08 94

Note: per cent columns refers to per cent of adjusted annual payment of initial annual payment

Table C.3 shows the price effect for the low price increase case (after tax, advertising savings) with a low demand elasticity of 0.2. Under proportional Average cost, the price effect results in a decline in annual payments of approximately 3 per cent. The increase in profits are large enough so that the profit penalty exceeds or approximately equals the volume adjustment. Then there would be no decline in annual payments at all.

Table C.4 shows the most the high price increase case with a moderate (and probably

most likely) demand elasticity of 0.4. The proportional Average cost case results in a decline of 7 per cent in annual payments. The constant Average cost case results in no decrease, because the profit penalty is again large enough to exceed or approximately offset the volume adjustment. The cost per pack and associated price increases are shown in the first column of table C.4.a.

Table C.3.--Payment adjustments for pass through price effects, low price case, .2 demand elasticity.

Year	Annual Payment before Volume Adjustment \$B	Change Payments due to Volume Adjustment \$B	Annual Payments After Volume Adjustment no profit penalty \$B per cent	Profit Penalty \$B	Annual Payments After Volume Adjustment with profit penalty \$B per cent
1	8.5	0.25	8.25 97	*	8.5 100
2	9.5	0.28	9.22 97	*	9.5 100
3	11.5	0.34	11.16 97	*	11.5 100
4	14	0.41	13.59 97	*	14 100
5	15	0.44	14.56 97	*	15 100
6-11	15	0.44	14.56 97	*	15 100

*Profit penalty would be greater than or approximately equal to reduction

Table C.4.--Payment adjustments for pass through price effects, hi price case, .4 demand elasticity.

Year	Annual Payment before Volume Adjustment \$B	Change Payments due to Volume Adjustment \$B	Annual Payments After Volume Adjustment no profit penalty \$B per cent	Profit Penalty \$B	Annual Payments After Volume Adjustment with profit penalty \$B per cent
1	8.5	0.57	7.93 93	*	8.5 100
2	9.5	0.64	8.86 93	*	9.5 100
3	11.5	0.78	10.72 93	*	11.5 100
4	14	0.95	13.05 93	*	14 100
5	15	1.01	13.99 93	*	15 100
6-11	15	1.01	13.99 93	*	15 100

*Profit penalty would be greater than or approximately equal to reduction

Table C.4a--Before tax pass through amounts
(in dollars per pack, and per cent of price per pack).

Year	Before Tax Payments	
	dollars	per cent
1	0.309	15.5
2	0.345	17.3
3	0.418	20.9
4	0.509	25.5
5	0.545	27.3
6	0.545	27.3
7	0.545	27.3
8	0.545	27.3
9	0.545	27.3
10	0.545	27.3
11+	0.545	27.3

In the second case, any changes in the price of cigarettes in directly connected to the increase in annual before tax payments without any adjustment for any costs associated with the settlement. Then cost per pack and associated price increases are shown in the first column of table B.2. The base price, sales and revenue are the same as above. The average per cent price increase is shown below.

before tax price increase case:

pass through cost is before tax annual payments

average price increase years 1 - 11: 25.44 per cent

The average price increase in the first eleven years would be 25.4 per cent (22.3 with a continuity correction). This would rise from 15 per cent in the first year to 27 per cent in the fourth year. The resulting sales volume declines are shown for each elasticity in table C.5.

The effects on annual payments for different elasticities is shown in tables C.6 through C.8. Table C.6 shows the effect for a high elasticity. Assuming proportional Average cost, the annual payments are reduced the full amount of the sales decline, about 15 per cent. The case of constant Average cost triggers the profit penalty, which brings the payments close to or slightly above 90 per cent. Table C.7 shows the middle elasticity of 0.4. Proportional Average cost reduces payments to 90 per cent. Constant Average cost is very close to full payment, because the profit penalty is larger. Table C.8 shows the low elasticity case. The proportional Average cost case reduces payments to 95 per cent. The constant Average cost case produces a full payment. The profit penalty is so large that it compensates for any reduction in payments that would occur because of a decline in sales volume.

Table C.5.--Volume and revenue changes from pass through before tax price effects.
average 16.90 per cent increase results in new price of 2.34 dollars

demand elasticity	per cent change volume	post increase quantity demanded	post increase revenue	change in revenue	25 per cent change in revenue
0.6	-15.27	20.05	50.30	2.98	0.74
0.4	-10.18	21.25	53.32	6.00	1.50
0.2	-5.09	22.46	56.34	9.02	2.25

Table C.6.--Payment adjustments for pass through price effects, before tax, .6 demand elasticity.

Year	Annual Payment before Volume Adjustment \$B	Change Payments due to Volume Adjustment \$B	Annual Payments After Volume Adjustment no profit penalty \$B per cent	Profit Penalty \$B	Annual Payments After Volume Adjustment with profit penalty \$B per cent
1	8.5	1.30	7.20 85	0.74	7.94 0.93
2	9.5	1.45	8.05 85	0.58	8.63 0.91
3	11.5	1.76	9.74 85	0.42	10.16 0.88
4	14	2.14	11.86 85	0.34	12.20 0.87
5	15	2.29	12.71 85	0.58	13.29 0.89
6-11	15	2.29	12.71 85	0.74	13.45 0.90

Table C.7.--Payment adjustments for pass through price effects, before tax, .4 demand elasticity.

Year	Annual Payment before Volume Adjustment \$B	Change Payments due to Volume Adjustment \$B	Annual Payments After Volume Adjustment no profit penalty \$B per cent	Profit Penalty \$B	Annual Payments After Volume Adjustment with profit penalty \$B per cent
1	8.5	0.87	7.63 90	*	8.5 100
2	9.5	0.97	8.53 90	*	9.5 100
3	11.5	1.17	10.33 90	*	11.5 100
4	14	1.43	12.57 90	1.10	13.67 98
5	15	1.53	13.47 90	1.34	14.81 99
6-11	15	1.53	13.47 90	*	15 100

*Profit penalty would be greater than or approximately equal to reduction

Table C.8.--Payment adjustments for pass through price effects, before tax, .2 demand elasticity.

Year	Annual Payment before Volume Adjustment \$B	Change Payments due to Volume Adjustment \$B	Annual Payments After Volume Adjustment no profit penalty \$B per cent	Profit Penalty \$B	Annual Payments After Volume Adjustment with profit penalty \$B per cent
1	8.5	0.43	8.07 95	*	8.5 100
2	9.5	0.48	9.02 95	*	9.5 100
3	11.5	0.59	10.91 95	*	11.5 100
4	14	0.71	13.29 95	*	14 100
5	15	0.76	14.24 95	*	15 100
6-11	15	0.76	14.24 95	*	15 100

*Profit penalty would be greater than or approximately equal to reduction

In conclusion, the sales volume penalty will not reduce payments below 85 per cent of the base case value for reasonable elasticities, and interpretations of Title VI.B.5. If the pass through is interpreted to apply to the net cost of all provisions of the settlement, then the associated price effect will produce a decrease in annual payments of from zero to ten per cent. If the pass through results in increases in the before tax costs, and the elasticity is 0.4 or higher, then annual payments will be reduced from between ten to fifteen per cent on average. At elasticities below 0.4, the small reduction in sales will result in reductions of ten per cent or less. If profits change in direct proportion to revenues, then the profit penalty will reduce most of the sales adjustments. The distinction between adult and youth (under 18) smoking is ignored here. Since measured adult sales is 97 to 98 per cent of the market, using total sales as we do here will slightly overstate the sales volume reduction, but only very slightly.

Finally, these price effects estimates should be interpreted to indicate the rough magnitude of the price effect of settlement provisions, on average, over the first eleven years of the agreement. This analysis does not attempt to model other factors such as changes in industry structure, or other possible consumer and distributor responses to the effect of settlement provisions. It only models the price effect of the annual payments specified in Title VI. Many factors could result in unpredictable sales increases or decreases. For example, this analysis predicts larger losses when Title VI.B.5 results in regulated prices with a strict relationship between annual before tax payments and price increases for tobacco products. However in this case, price increases of the products will be perfectly predictable. Consumers and wholesale distributors will then have an incentive to increase purchases just before a scheduled price increase. This will tend to reduce the observed price elasticity of demand, and make the payment forecasts made here too low. Other unpredictable factors may make the analysis here misleading. For example, manufacturers may be able to manipulate their reported net operating profits, depending on the definitions used in the actual legislation. This will tend to reduce any profit penalty and make some of the forecasts too high under some industry cost structures. If price increases are not strictly tied to the before tax payments, then changes in the tax codes, industry pricing decisions, and other factors may produce annual fluctuations in sales and profits that are larger than the effects of settlement.

D. PROGRAM EFFECTS ON SETTLEMENT PAYMENTS

This section analyzes the program effects. Secular trend is ignored since any analysis would be speculative. Given the recent end to the 20 year decline in sales volume, it is probably best to assume sales will remain stationary, other things held constant. The analysis will be done separately from that for the price effect in section C. In the simple model of demand used here, price effects (which move along the demand curve) and program effects (which shift the demand curve) are assumed to be completely independent. The only complication is the interaction between price and program effects in calculating the profit penalty for the sales volume adjustment. That kind of analysis is too involved for this simple analysis. The profit penalty is not relevant for calculating program effects, since a shift downward in the demand curve cannot increase revenue or profits except in unrealistic cases. Therefore the price effect will be summarized by a range of adjustment factors here, and it will be assumed to be completely independent of any program effect.

The analysis of the program effect here is very simple. The analysis will assume the settlement program effects can be modeled after the effect of the Proposition 99 anti-tobacco programs in California. The Proposition 99 program resulted in an addition drop in smoking prevalence of about one percentage point per year. Given the limited data available so far, the Massachusetts Question 1 program appears to be somewhat less effective, and will assume it results in a drop in consumption of about one half of one percentage point per year. The national per capita spending specified in the settlement seems to be about the same as in the California Proposition 99 or Massachusetts Question 1 programs. We will assume the settlement programs reduce consumption linearly at a rate of between one half and one percentage points per year.

The program effects can be calculated easily, but they are listed for reference in Table D.1. The effect of the volume adjustments are listed at five year intervals. *If the effects of the education and other anti-tobacco programs are proportional to per capita funding, then they will have an appreciable effect on demand in the first ten years, resulting in a reduction in the total annual payments specified in Title VI of between 5 and 10 per cent from the total payments. After 15 years the reduction would be from 8.5 to 15 per cent in the total annual payments.*

Proposition 99 has been passed 8 years ago, so whether it will continue to produce the historical levels of annual reductions 20 years or more into the future is unknown. *However, if the settlement programs were actually as effective as Proposition 99 over the first ten years, then the volume adjustment clause will produce shortfalls in funding by the end of that period, even in the low medical care inflation case. In the high medical inflation case, it would worsen the rather large shortfall.*

Table D. 1--Potential program effects on sales volume and funding

Year	one point/year		half point/year	
	sales (\$B)	per cent of base	sales (\$B)	per cent of base
Base	23.66	100	23.66	100
5	22.48	95	23.07	97.5
10	21.30	90	22.48	95
15	20.11	85	21.89	92.5
20	18.93	80	21.30	87.5
25	17.75	75	20.11	85

NOTE: Effectiveness measured in absolute percentage point reduction in tobacco consumption per annum

E. CONCLUSION

This preliminary analysis of the funding provisions has identified several aspects of the settlement funding. One result of the analysis is that the agreement does not seem to be fully funded in the initial three or four years. The term "budget" in this analysis is only a convenient term or all the claims on funds paid by the tobacco industry under this agreement. The settlement does not discuss Medicaid reimbursement in any detail at all. However, the funding does seem inadequate to cover the Public Health Funds programs, full Medicaid reimbursement for the nation, and fully fund all of the potential civil liability claims. The Public Health Trust is separate self funded program that is exclusively devoted to tobacco related medical research, so we do not include it in the shortfall.

One factor stands out as the most important in determining whether all the budgeted items in the agreement are fully funded in the long run. That is the future level of medical inflation. If future medical cost inflation is approximately equal to growth in the CPI then the settlement comes within 85 to 90 per cent of full funding, given the price effects the probably program effects, and assuming stationary sales volume. However, if medical care inflation continues at about three percentage points above the general inflation level into the indefinite future, then the Medicaid costs cannot be fully reimbursed in the short or the long run. Any level of medical inflation which is significantly above general inflation as measured by the CPI will produce a shortfall. This is the case even if the rate of medical inflation continues at its recent very low rate of 4.5 to 6 per cent per year, which would result in a gap between the medical and general inflation of slightly over 2 percentage points per year.

The relative sensitivity of the funding to different settlement provisions depends on assumptions about certain economic and program parameters. For this analysis it will be assumed that

- *medical inflation will continue to be significantly greater than the general level of inflation,*
- *the price elasticity of demand for tobacco products is around 0.4,*

- *the average costs of production are constant over the foreseeable levels of sales volume,*
- *tobacco education and cessation program effectiveness are proportional to per capital spending.*

Then the adequacy of settlement funding will depend on the following, which are listed in order of importance:

- 1. future level of medical inflation (most important factor under any reasonable scenario)*
- 2. disposition of the Civil Liability Fund moneys not paid for civil awards*
- 3. reduction in sales volume achieved through tobacco control programs*
- 4. interpretation and implementation of the price pass through provision*
- 5. interpretation and implementation of the volume adjustment profit penalty*

So far the analysis has confined itself to the provisions of the settlement. However, the interaction of the volume adjustment with all existing anti-tobacco programs should be noted. The sales volume adjustment applies to all decreases in sales, whether or not they are caused by a provision of the settlement. If the settlement's anti-tobacco programs supplement existing programs. If every state develops programs as effective as those in California or Massachusetts, then an annual 1 percentage point or more reduction in prevalence for ten years is not unreasonable to expect for five to ten consecutive years. In that case, the volume reduction clause could have a substantial impact on settlement funding.

In the high medical inflation case, effective anti-tobacco programs that produced annual one percentage point reductions, coupled with the volume adjustments, would reduce over all funding to around 80 percent of the total budget in year ten. If the price pass through is on a before tax cost basis, and price elasticity of demand is 0.4, then funding could be reduced to around 72 per cent of the budgeted items. This is a reasonable scenario, since the program induced demand shifts will probably reduce any profit penalties to a small amount which would not offset the volume adjustment. Therefore high medical inflation coupled with effective anti-tobacco programs will produce severe funding problems in the settlement that will affect both the Public Health Funds and Medicaid reimbursement.

APPENDIX B: EXAMPLES OF INTERNATIONAL TOBACCO ADVERTISEMENTS

APPENDIX C: PRELIMINARY ECONOMIC ANALYSIS OF THE LOOKBACK PROVISION

A. INTRODUCTION

This appendix provides some sample calculations illustrating how the provisions would work, using the cigarette market as an illustration. Data are not available to model the provision with other forms of tobacco products. A few simple variations are presented to show the sensitivity of the calculations to differing assumptions. Some comments are then made on the approach taken by the provision to calculating youth smoking prevalence. The discussion makes some suggestions for changes and important issues for further research.

B. IDEA OF LOOKBACK PROVISION AND ASSUMPTIONS OF ANALYSIS

The idea of the look back provision is to deny tobacco companies any incentive to sell to underage youth (simply called youth hereafter) by capturing all the present discounted profits of any sales to youth over the target level. This means that the manufacturer is denied not only the profits from the current sale, but any that will occur on average over that smokers' lifetimes. Current sales to youth are indexed by the prevalence of daily youth smoking. The idea is to use a weighted average of age specific daily smoking prevalence for ages 13 to 17 as an index of the aggregate proportion of youths who will smoke as adults. It is apparently assumed that there will be direct one for one relationship between changes in this index of daily smoking prevalence and the prevalence of all youth who will smoke as adults. If the penalty (called the surcharge) is levied on the number of percentage points missed, and the amount of the penalty for each percentage point by which the target is missed is set at the correct level, then the industry will lose all the future profits from sales to more youths than the target allows. The lookback provision targets and penalty become effective five years after the agreement is enacted.

This explains the "one time only" provision of the lookback in section B.1.b(1) of Appendix V. This provision means the tobacco industry is penalized only once for missing the target for a cohort of youth. The idea behind this is to prevent double counting. If the industry is permanently denied all expected future profit from sales to Dick and Jane because they purchased cigarettes in 1998, it would be double counting to levy that penalty if Dick and Jane were observed buying cigarettes in 1999. The lifetime profits of a given customer can be taken away only once.

A cap on the damages is set at \$2 billion. If cigarettes account for 86 per cent of the market and all segments of the tobacco industry exceed the limits, this means a \$1.72 billion cap for penalties imposed on the cigarette industry. Current youth smoking prevalence as measured in the lookback will be around 14 or 15 per cent. With a fine of \$80 million per percentage point, the cap will not become effective until the target is missed by about 20 points. This is set so high that it is doubtful that it would ever become effective. It may be a safeguard against an unforeseen explosion in youth smoking. Inflation and demographic adjustments are made to keep the formula a rough approximation to the lifetime profit of an average smoker in future years.

There is also a rebate provision. The industry can recover 75 per cent of the surcharge if

they can show they acted in compliance with the settlement, had taken "all reasonable" measures to reach the target, or deserved a rebate because of "other relevant evidence". The terms of this provision very vague cannot be modeled. The surcharge is paid according to market share of the firms in the industry, but the rebates are applied for individually, so it is reasonable to suppose that the individual companies will have more incentive to attempt to get a rebate than reduce youth smoking.

Some assumptions must be made about average lifetime smoking behavior and the market environment first. The following assumptions will be maintained throughout the analysis.

Current price of a pack of cigarettes:	2 dollars
Current profit margin on pack of cigarettes:	35 per cent
Demand price elasticity of youth smoking:	one
Demand price elasticity of adult smoking:	zero
Average cost of production of pack of cigarettes over variations around mean level :	constant
Average age of onset of daily smoking:	16
Average length of adult smoking after beginning daily smoking as youth:	25
Average pack per day smoked:	1.4
New youth smokers per year:	1.2 million

The average price increase is assumed to be 20 per cent in the base case.

The following assumption will be maintained for all cases except the last.

Annual real discount rate: 5 per cent

The average pack per day smoked is derived from annual US cigarette consumption divided and the proportion of current smokers using the following formula:

$$\text{average cigarettes per capita per day} = \frac{\text{US consumption}}{(365 * (\# \text{current smokers} / \text{US population}))}$$

This is essentially the Dept. of Agriculture method, and it is probably a better estimate of average consumption over the lifetime of a smoker than self reported averages.

The price elasticity of demand of youth for cigarettes is controversial. Some think it is one or even higher, others think it is close to zero. The measurement is difficult because youth smoking is illegal, youth themselves purchase only one half to two-thirds of the tobacco they consume, and new smokers often consume sporadically. We will look at the cases of an elasticity of one and zero for youth smoking. The analysis assumes that tobacco is addictive, and that the addiction process occurs over a period of one to three years from the time experimentation with tobacco begins. Therefore it is assumed that reduced consumption among youth not only reduces current consumption, but also reduces the percentage of youth who experiment with tobacco and then go on to become addicted adults. Therefore a demand elasticity of one will mainly effect sales by reducing the number of eventual addicted adult consumers. So the principle effect of

youth demand elasticity is to reduce the number of new smokers per year.

This analysis ignores tax effects. That analysis will be complicated. Both the penalty and the profits are liable to taxation, but there could be differential effects. This analysis is in terms of before tax profits and penalties.

C. BASE CASE

This paragraph steps through the calculations for the present value of a new smoker assuming a pack costs \$2, it is the value of a smoker without the settlement. It is presented only so that readers can follow the logic of the computations. It can be skipped without loss of continuity. An average smoker will generate \$1023 per year in sales and \$358 in profits. This produces an undiscounted sum of \$25578 in revenue and \$8952 in profit. Discounted at 5 per cent per year the present value of the revenue is \$15141 and expected profit is \$5300. Assuming that there are 1.2 million new youth smokers per year, this results in an undiscounted revenue stream of \$30.694 billion, and profits of \$10.743 billion. This translates into \$307 million revenue, and \$107 million profit for each percentage point of the new annual cohort of smokers. The discounted revenue is \$18.169 billion, and the discounted profit is \$6.359 billion. This implies \$182 million revenue, and \$64 million profit for each percentage point of the annual cohort of new youth smokers. It is the last figure, the \$64 million profit for each percentage point of annual new smokers, which corresponds to the value of the penalty per percentage point by which the target level is missed. Note that \$64 million is just \$6.4 billion divided by 100 percentage points.

By expressing the target at a percentage of the total base year smoking prevalence, and imposing the \$80 million penalty per percentage point missed, the lookback confiscates all the expected future profit associated with that year's sales in excess of the target. The penalty seems to be somewhat too high at the current price of cigarettes. However, reasonable assumptions about changes in market conditions after the settlement is implemented result in an estimate of a discounted profit of all new smokers per year that is consistent with the \$80 million per point penalty.

Assuming that the pass through provisions apply to the pre-tax annual payments, the price per pack will increase by from 20 to 25 per cent. Assume the average price increase over the life of the settlement is 20 per cent. Then the price per pack increases to \$2.4. Assuming constant average costs, then the profit margin increases from 0.35 to 0.45. The annual cohort of new youth smokers falls to 0.96 million because of the unit price elasticity for youth purchases. The discounted present value of the lifetime revenue is now \$17.442 billion, and the corresponding present value of profits is \$7.994 billion. *This results in a penalty of \$80 million per percentage point of the target missed. If the price increase were 25 per cent, then the penalty would be \$82 million per point missed.*

D. SENSITIVITY ANALYSIS.

This section presents some simple sensitivity analyses for some realistic scenarios. The discounted lifetime value of purchases is not very sensitive to price, at least around the expected range of price increases. After a 15 per cent increase it will be \$77 million, and after a 25 per cent

increase it will be \$82 million. The value is not very sensitive to small variations around the 25 year expected number of smoking years, since discounting reduces the present value of those future dollars to about 30 cents. The value should not be that sensitive to the elasticity of demand. It is assumed here that the price elasticity of demand for youth mainly reduces percentage of youth recruited into habitual smoking and addiction. The adult demand elasticity of those who do still go on to smoke is assumed to be around .35 to .45, so this will produce a small reduction (Note: adult elasticity assumed zero in base case, so this is not currently modeled). However, adult elasticity may decline somewhat if youth with lower potential for addiction are selected out by higher costs of initiation to smoking. The results are not particularly sensitive to elasticity of demand for youth smoking and number of new youthful smokers per year. An elasticity of zero results in a fine value of \$88 million per point.

The model is fairly sensitive to the base profit margin. A current profit margin of 0.4 would produce a value of \$87 million after a 20 per cent price increase. A profit margin of 0.3 would result in a value of \$72. The value is sensitive to the real rate of discount, because of the relatively long time horizon of the expected sales to addicted, habitual smokers. If the industry's discount rate was 0.025 rather than 0.05, then the value would be \$93 million. If the discount rate were 0.02, the value would be \$98 million. If the effective discount rate were increased to .075 then the value would only be \$59 million. *Reasonable variations in the profit rate and rate of discount could produce substantial variations in the lifetime value of a smoker that may be 30 per cent above or below the penalty of \$80.*

E. DISCUSSION

The lookback provision is somewhat out of step with the rest of the funding and compensation provisions. The other funds are amortized. That is, the compensation is paid out as the costs are accrued. To some extent the different treatments of the lookback provision is because it is compensation for an revenue stream with a finite life, while other parts of the settlement are intended to be perpetual. It is difficult and risky to accept an present value of a perpetual revenue estimated with current information. Accepting a present value for a 25 to 35 year stream is less chancy. However the present value calculation does not seem to be sensitive enough over the relevant range of parameters to make a noticeable difference in the severity of the penalty. Under all reasonable scenarios, the profit from selling to youth in excess of the target is reduced by an amount somewhere from 70 to over 100 per cent. The use of a present value approach does not seem to present any obvious pitfalls.

Three aspects of the provision do present problems. The first is that the total incentives of the penalty have not been analyzed. The second is that the lookback provisions do not take effect until five years into the settlement. The third is the measure used to index the prevalence of youth smoking, which is the average of daily smoking from 13 to 17 years of age.

The incentives of the lookback provision penalty have not been thoroughly analyzed. There are two issues. One is the appropriate level of penalty from a public policy perspective (e.g., should there be a punitive component to the penalty). That issue will not be considered here. The second is whether confiscation of lifetime profit from a portion of the youth market provides enough incentive to change industry behavior. *The industry will retain the profits from the*

portion of sales allowed under the targets. Changing marketing and retail merchandizing strategies to prevent youth sales presents risks for the industry as a whole and for individual firms that may lose market share. The issue of whether the penalties provide enough incentive for the industry to meet the youth consumption targets has not been analyzed. The issue is especially important because of the likelihood that individual firms will be able to get some rebates for good faith effort, even if it may not be the full 75 per cent each year. Because of time constraints this issue has not been analyzed here.

The delay of the lookback presents a problem because this allows five years of youth smoking without any penalty. A delay would be reasonable if youth smoking can only be reduced incrementally each year, and the effects of an anti-youth program are cumulative. Then it would be reasonable to delay implementation so that the settlement provisions and tobacco industry programs would have the time needed to meet the goals. There is evidence that the prevalence of youth smoking can be changed quickly, perhaps within one year and certainly within two years. In this case the delay seems too long.

The use of the average level of daily use among 13 to 17 year olds is much more troublesome. The rationale for this measure is not explained, and may be liable to substantial manipulation. The rationale will be discussed first. If the point of the lookback is to capture all the lifetime profits of each cohort youth smokers, there are more direct indices than average daily smoking of all minor teenagers. A simple alternative would be to simply measure all individuals who are daily smokers, or regular user, or addicted by the time they reach their eighteenth birthday. It would be easier to define a measure that was a better measure of probable lifetime smoking behavior. The measure chosen would be easier to measure precisely because it would be focused on a population with a larger percentage of daily users. It would eliminate the need for a double counting adjustment.

In fact, the use of an average of daily smokers over 13 to 17 year olds, when used with the double counting adjustment, may seriously underestimate the number of youth smokers who will eventually become addicted as adults. To show why, we will first argue that taking an average prevalence of daily smoking over age groups is conceptually mistaken. Taking an average assumes that the behavior of each age group is independent of the other groups. But it is known that addiction is a cumulative process that usually takes one to three years. Therefore the number of eighteen year old daily smokers is not independent of the number younger smokers. The number of seventeen year old smokers already contains most of the information needed to measure daily smokers in that cohort who started daily smoking at younger ages and at an earlier date. Taking an average merely takes the number that is really needed to measure the tobacco consumption of a well defined age group, and divides it by five. Then smaller numbers, also divided by five, are added to it, but they do not make up for the underestimate.

It may be argued that the purpose of the lookback is to discourage youth consumption generally, and too much focus should not be placed on the tobacco companies' recruitment of youths into the ranks of adult addicts. But if that is the case, then penalties should be levied on the total amount of youth tobacco consumption, rather than daily smokers. To focus on daily smokers implies you are attempting to measure advanced addiction which causes the youth smoker to continue smoking for the next 25 years even though he or she does not intend to do so. The

development of an advanced addiction is not independent over time. If advanced addiction is to be measured, looking at daily addicts at seventeen will provide most of the information about advanced addiction at earlier ages. If the purpose of the measure is to identify a proportion of a unique and well defined cohort of the population that passes from youth to adulthood, then measuring addiction among seventeen year olds is the natural approach. During each calendar period, a unique and well defined group of people pass from being less than 17 to being 18 or over, and everyone who was addicted at a younger age will be almost certainly addicted at seventeen.

Another flaw is that changes in the percentage of youth who smoke daily is not a perfect index of the percentage of all youth who smoke and will go on to become adult addicts. To see this, note that symptoms of addiction begin at less than daily consumption. The following data in table D.1 from MMWR 43(41) Oct. 21 1994 illustrates this

Table D.1.--Per cent of underage ever smokers experiencing withdrawal symptoms by frequency of smoking.

Days smoked in last month	Any symptoms	Urge to smoke
0 days	44	22
1-14 days	66	37
15-29 days	88	71
30 days	93	82

Table D.1 shows that 71 per cent of those not counted in the lookback measure (daily smoking) have an urge to smoke, and 88 per cent have experience some type of withdrawal symptom.

Table D.2 is adapted from a graph on the CDC Office of Smoking and Health Web page (<http://www.cdc.gov/nccdphp/osh>). It shows the cumulative distribution of adult smokers by age of first use and age when daily smoking started.

Table D.2.--Distribution of age of first use and age at daily smoking for adult smokers.

Age	First Use	Daily Smoking
13	0.30	0.075
14	0.50	0.125
15	0.70	0.25
16	0.80	0.40
17	0.85	0.60
18	0.90	0.75

Table D.2 shows a well defined relationship between age of first use and age when daily smoking began. If daily smoking is an advanced addiction, it is preceded by a period of experimentation and habituation. Table D.3 from MMWR 45(20) May 24, 1996 shows another picture of the same phenomena. This is the prevalence of current and frequent smokers in high school. Current smoking means at least one cigarette a month, and frequent means 20 days or more a month.

Table D.3.--Prevalence of adolescent smoking behavior.

Grade in school	current ($\geq 1/\text{month}$)	frequent ($\geq 20/\text{month}$)
9	31.2	9.6
10	33.1	13.3
11	35.8	19.2
12	38.2	20.9

Note here that by ninth grade, over 30 per cent smoke a cigarette once a month or more. This is already higher than the proportion of adult current smokers. As more adolescents first use cigarettes, a certain proportion discover a susceptibility to nicotine addiction, and escalate to daily smoking. However the percentage of frequent user increase rapidly with age, while the percent of experimenters and sporadic smokers remains much more slowly. This is more evidence that addiction develops over time from a group of people who are infrequent users. As time since exposure to the first cigarette lengthen, those people susceptible to addiction are selected out at begin to use cigarettes more frequently.

The implication is that the lookback index of youth consumption flawed and susceptible to manipulation. A good way to evade the effect of the lookback penalty is to keep the number of daily smokers low, but keep the number of current (but infrequent) smokers high enough so that most of them will become daily smokers, but not until they are at least eighteen years old. Table D.2 shows that this can be done by shifting the age at first use curve toward slightly older ages. If this happens then the one to one relationship between changes in prevalence of daily smoking and prevalence of addiction no longer holds. Then a critical assumption behind the penalty is invalid, and the number of youth smokers who go on to develop an adult addiction may be seriously underestimated.

E. CONCLUSION

The lookback provision is does not seem to have any major flaws in principal. As currently designed it removes the lifetime profit associated with any youth sales in a given year above a certain target. It could be easily adjusted to remove revenue, or the profit of two smokers for every youth smoker, etc. The provision as written requires the transfer of lump sums which are essentially estimates of the net present value of future revenue streams

Unfortunately the measure of youth smoking prevalence (average daily smoking across age groups) may be seriously flawed. It may be a serious underestimate of the appropriate measure. That depends on the rationale of the particular form of the penalty, and that is not discussed in detail in the settlement. The measure is also probably subject to manipulation that would undercount the number of youth smokers. If the proportion of a population that becomes addicted in adulthood is a function of the prevalence of occasional smokers in a population, then the rate of ever use (more than 100 cigarettes in a lifetime), or current use (more than 100 cigarettes in a lifetime and one or more cigarettes per month currently) would be a more appropriate measure to use to determine the penalty.

Changes to the lookback provision that should be considered and issues that should be studied further are:

1—express penalties as a proportion of revenue, based on long run historical financial ratios,

2—if lifetime profit or revenue from each age group of youths is to be confiscated, measure individual group directly from the 17 year old population rather than a series of averages over several age groups,

3--pursuant to 3, eliminate "double counting" adjustment,

4—use better index of youth smoking prevalence than daily smoking, such as ever smokers,

5--complete financial analysis which includes total costs and risks to changes in youth marketing strategies.