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LIST OF THE POINTS DISCUSSED WITH ANDREW WHIST

- Work harder to get smokers to help the industry
- Fairness in taxation
- Going public
- Discredit the anti-smoking groups and zealots
- Kasten-type legislation
- Make greater use of the print media industry

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APPENDIX I

GENERAL COMMENTS ON SMOKING AND HEALTH

In thinking about smoking and health, the first thing that comes to comes to mind is product liability. Yet, internationally, this has not yet become the issue that is has here and, frankly, I don't see that there is much we can add to a discussion of this point. Clearly, it is of the gravest concern to all of us since it poses a potential throat to the entire industry in most places. As I see it, the best help we can offer is to make doubly certain that we do nothing overseas that jeopardizes what is going on here.

There are, though, other smokig and health issues that we can, and do, work on. Here I am referring to the impact that the smoking and health debate is having on taxation, on marketing freedoms, on public smoking, and more recently on passive smoking. We are working on all these issues somewhere in the world and our approaches depend on the specifics of each place.

Of all the concerns, there is one - taxation - that alarms us the most. While marketing restrictions and public and passive smoking do depress volume, in our experience taxation depresses it much more severely. Our concern for taxation is, therefore, central to our thinking about smoking and health. It has historically been the area to which we have devoted most resources and for the foreseeable future, I think things will stay that way almost everywhere.

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APPENDIX 2

THE ISSUES RAISED IN BM'S MEMO

INDEX

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THE ISSUES RAISED IN HAMISH'S MEMO

In looking at the points raised, "communication" is a thread common to many, so I will start by addressing this.

Most of PMI's efforts in communicating the industry's position and point of view to the public, has been directed towards the tax aspects of smoking and health rather than on the health aspects alone. As you know, the "Tell the Taxman" campaign in the UK a couple of years ago was an example, as was the new campaign which we and the T.A.C. mounted just before this recent budget. Both were reasonably successful. In Australia too, through FOREST, we have awakened the public in the tax area with carefully orchestrated campaigns.

Generally, though, outside the tax area, PMI's track record on communicating the industry's view on health matters has been poor. We have to do more. One problem has been that we have relied too heavily on local associations and on INFOTAB to do the job for us. We now realize that it is well nigh impossible to get an agreed "industry position" on smoking and health and that we will have to do much more alone. And we will.

In 1985, we are working on two fronts. We will be strengthening local associations so that they can play a

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better role in representing the industry on smoking and health. Holland is one market where we hope to beef up the association for example. We are also intending to "go it alone" in some markets such as Norway and in Iceland, where we are facing potentially quite serious difficulties in the smoking and health area.

Our record in communicating to legislators and regulatory agencies, as opposed to the public, is somewhat better. Over the years we have communicated not only about tax but also about other issues more directly related to the health question. These include health warning labels, marketing restrictions, public smoking and so on.

Central to our approach to the communications problem here has been the network of political contacts we have developed in many parts of the world. We have political outreach programs which help us on industry issues in most of our key markets. In the EEC for example they have helped resolve tax harmonization problems in Italy and Holland, and they are proving helpful in Germany. They have also been useful in France in getting the vignette withdrawn. Elsewhere in the world our political network has helped on tax issues in Canada and in Australia, and we are using it in Hong Kong to defend our marketing freedoms.

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We are working in 1985 to improve our performance still further in communicating to legislators. Our plan has three aspects.

First we are going to recruit more people and better people and pay them more if necessary. Bahrain, Stockholm, London, Montreal, the Philippines and Japan are all locations where we will be adding to our corporate affairs strength. Next, we are going to adopt a more systematic approach to cultivating the "right" people. To date we may have been a little haphazard. Third, we are going to pay more attention to cultivating the bureaucracy as opposed to just the top people.

The third point on the list is paid advertising. Communication about smoking and health issues through paid advertising is not something we are doing at the moment, though we have definite plans to do so in 1985. There are two areas which lend themselves to this approach - passive smoking and "Truth in Science".

As regards the former, we are working on developing a campaign with Burnett. Once we have it, step one of our plan is to launch it in International English Language newspapers and magazines such as the Herald Tribune, Time and Newsweek.

we will switch funds from our marketing budget to do this. Our second step will be to build on this campaign with inserts in local papers in important markets. We are thinking particularly of Germany, the UK, Australia, Hong Kong, and Switzerland as appropriate markets for this type of approach.

We are mounting a pilot project on "Truth in Science" in Australia this year. A leading film maker has been commissioned to produce a film on the subject with smoking and health as the theme. If this works well, we will use it elsewhere in 1986 and beyond.

We will also run paid advertising in selected markets as local conditions dictate on tax issues as we have done in the past.

I will not say any more about public relations and communications activities beyond adding that we will continue to make use of the New York Society and the AECA to develop our network of contacts here. Likewise, we will be scrutinizing more carefully than we have in the past the business benefit we can get from our corporate contributions internationally. Smoking and health will be one of the points we will be looking at.

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our efforts to enlist the help of our <u>natural allies</u> such as the trade and growers are still a long way from being as effective as we would like, but we are working at it. Here again, the successes we have had have been principally, though not exclusively, in the tax area rather than in health related matters.

We have got the unions to support industry issues in several countries. Prominent have been the efforts they have made on tax issues in the UK where they were very involved in a letterwriting campaign to Members of Parliament. They also helped in Australia to protect our marketing freedoms as they did more recently in Switzerland where they supported the industry in a national referendum on a similar issue.

We have also helped organize growers in a number of countries. With their assistance for example, the industry was instrumental in moving the Food and Agricultural Organization away from its anti-tobacco stance. Indeed, the FAO has made a 180 degree turn on this point. Countries where we worked closely with the growers, and which were especially important in getting this change of position, include Malawi, Zimbabwe, Thailand, and Argentina.

As regards our plans for using our natural allies more in the future, we intend to do more on tax and health issues with the growers in Europe where they can certainly help in big markets such as Italy, Spain, and Greece. We will concentrate on doing more with the unions and we have targeted Holland, Germany and the Scandinavian countries generally, as markets where they can be of immediate help on tax matters. Later, we will work with them on issues more directly related to smoking and health.

Another area we intend to exploit more fully is the ad agencies and media proprietors. We have already been helped a great deal by the agencies in Hong Kong for example, in our efforts to resist advertising restrictions. As regards the media, we plan to build similar relationships to those we now have with Murdoch's News Limited with other newspaper proprietors. Murdoch's papers rarely publish anti-smoking articles these days.

To sum up, then, on using our natural allies. We have made a start; we have proved that it can be done; we have found that they can be a very effective force; and we intend to do more in the future.

Turning now to <u>primary and passive smoking</u>, I think we should concentrate on passive smoking where the statistical evidence is more favorable to our cause. The (x) survey, for example

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showed (y), and the (a) report showed (b). We will make more use of this sort of material in the media in 1985. To get a more favorable press, we are contemplating organizing another journalists' conference similar to the one we put together in Madrid for Latin American journalist in 1984.

However, even though we will be focusing internationally on passive smoking, and even though we will continue to test the low sidestream concept, we will not launch any new sidestream products yet.

And this brings me to <u>innovation</u>. Frankly, this is probably the only real solution to the issues we are discussing this morning. Here are three possible avenues we should be exploring.

First, we should look for ways to identify and eliminate (or substitute) the top ten most controversial compounds in cigarettes. Second we should do more on producing an odorless cigarette. The research here could look into eliminating the direct odor caused by the smoke itself and into eliminating the odor left by cigarettes in ashtrays. Third, we should view sidestream products as an opportunity for real product innovation from a marketing stand point. We should, therefore, adopt a more aggressive stance and we

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should have a free standing product ready. We should also be clear about how to do a low stimulus Marlboro, even if we don't like the idea.

And this brings me to the last two points on the list - protecting our business and legal inhibitions.

As I said earlier, the smoking and health issue has not yet assumed the dimension it has here. Arguably, it might not do so since the legal systems are different - "Kings of Tort" having no kingdoms to rule over! All the while this is the case we will protect our international business by making it grow wherever and however we can. If we can make inroads into the We will switch funds from our marketing budget to do this. Our second step will be to build on this campaign with inserts in local papers in important markets. We are thinking particularly of Germany, the UK, Australia, Hong Kong, and Switzerland as appropriate markets for this type of approach.

We are mounting a pilot project on "Truth in Science" in Australia this year. A leading film maker has been commissioned to produce a film on the subject with smoking and health as the theme. If this works well, we will use it elsewhere in 1986 and beyond.

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CAMPAIGN for TOBACCO-FREE Kids

NATIONAL CENTER FOR TOBACCO-FREE KIDS

FACSIMILE TRANSMISSION
NUMBER OF PAGES: 23

TO: JERRY MANDE
456-6027

FROM: John Bloom
Manager, International Issues

DATE: May 21, 1998

SUBJECT: As discussed

There is plenty more where this came from. The first 6 pages are the two documents we discussed. The rest includes statements made yesterday by leading economists responding to the NYT piece, and other materials we have produced.

Please feel free to call Danny McGoldrick or me with any questions.

1707 L Street, NW Suite 800 Washington, DC 20036
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www.tobaccofreekids.org

CAMPAIGN for TOBACCO-FREE Kids

INCREASING TOBACCO PRICES REDUCES TEEN SMOKING (AND THE TOBACCO INDUSTRY KNOWS IT)

In study after study, increases in tobacco prices have been shown to decrease tobacco use, particularly among youth. While the tobacco companies deny this association publicly because they need to continue to recruit new smokers from the ranks of the young, their internal documents and analyses demonstrate that they believe what virtually every expert on the subject does.

> **"In any event, and for whatever reason, it is clear that price has a pronounced effect on the smoking prevalence of teenagers, and that the goals of reducing teenage smoking and balancing the budget would both be served by increasing the Federal excise tax on cigarettes"**
> 1981 Year Philip Morris internal document.
>
> **"We don't need to have that happen again."**
> *1987 Philip Morris internal document lamenting a decline in youth smoking caused by price increases.*

Despite their public rhetoric, the tobacco companies know that price increases drive down youth smoking. The above statement that, "We don't need to have that happen again," is a reaction to estimates that 420,000 teenagers who would have become their customers were prevented from becoming smokers because of price increases. Once again, the company's bottom line was more important than preventing kids from smoking. Nothing has changed since then.

The tobacco industry is almost completely reliant on teenagers to replace the thousands of adult smokers who either die or quit smoking each day. This is because nearly 90 percent of adults who have ever smoked cigarettes began smoking at or before age 18.

No wonder the industry is desperately conducting a multi-million dollar disinformation campaign, including the attached advertisement, in an attempt to persuade Congress and the public that price increases will not reduce teen smoking. They do this despite the fact that economic research, expert panels, experiences in countries that have had price increases -- **and the industry's own documents** -- demonstrate the effectiveness of price increases in reducing teen consumption.

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Economic Research

Numerous economic studies published in peer-reviewed journals have documented the impact of price increases on both adult and teen smoking. The most recent estimates are that every 10 percent increase in the real price of cigarettes will reduce the prevalence of teen smoking by 7 percent.

Expert Conclusions

- In its 1998 report, Taking Action to Reduce Tobacco Use, the Institute of Medicine of the National Academy of Sciences concluded that "the single most direct and reliable method for reducing consumption is to increase the price of tobacco products, thus encouraging the cessation and reducing the level of initiation of tobacco use."

- A National Cancer Institute Expert Panel reported in 1993 that "a substantial increase in tobacco excise taxes may be the single most effective measure for decreasing tobacco consumption," and that "an excise tax reduces consumption by children and teenagers at least as much as it reduces consumption by adults."

- The 1994 Surgeon General's Report, Preventing Tobacco Use Among Young People, reached the conclusion that increases in the real price of cigarettes significantly reduce cigarette smoking and that young people are at least as price sensitive as adults.

- The U.S. Department of the Treasury recently testified to Congress that the effect of increasing the price of cigarettes from $1.94 to $3.19 in real terms would reduce teenage smoking by 29 percent in five years. This does not include the effect of other efforts to reduce teen smoking.

The Canadian Experience

An attached charts shows what happened in Canada when cigarette prices in Canada increased dramatically. This chart stands in stark contrast to the tobacco industry's outright claim that the price increase did not affect youth smoking. As the table shows, between 1979 and 1991, when real prices in Canada increased from $2.09 to $5.42, the smoking prevalence among 15 to 19 year olds fell from 42 percent to 16 percent. Overall consumption of tobacco also decreased. However, when the government of Canada reduced taxes in reaction to a smuggling problem that the tobacco industry helped create, smoking increased after nearly fifteen years of continuous decline.

In the Industry's Own Words

Publicly, the industry decries price increases as ineffective and also disastrous for the tobacco industry and others. Privately, however, in their own documents, the industry admits exactly the opposite – that kids are especially sensitive to price and that large price increases are unlikely to cause immediate damage to the overall financial health of the industry. Consider the following quotes from a Philip Morris (1981) document based on the company's review of research by the National Bureau of Economic Research on the impact of price on tobacco use:

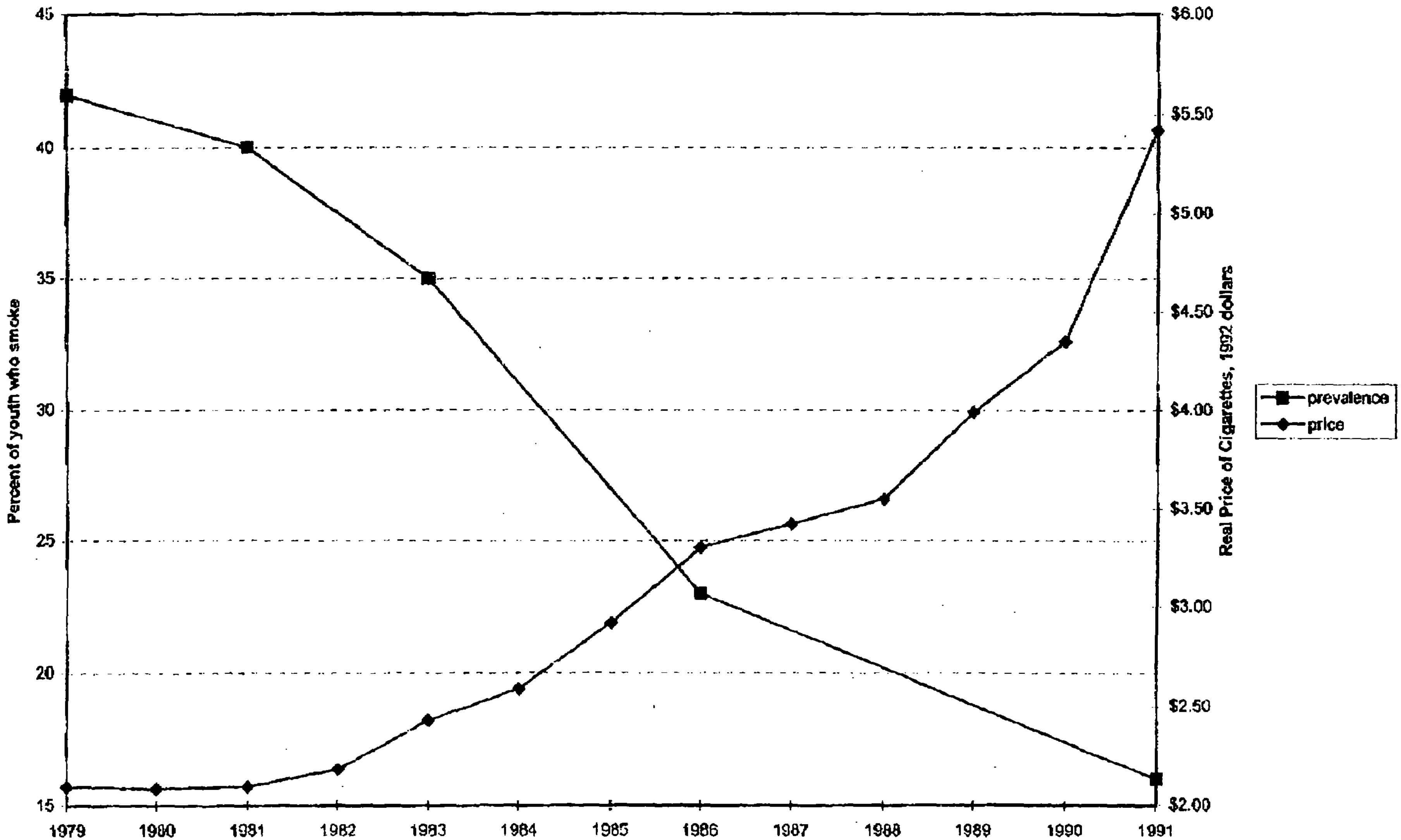
> *"Because of the quality of the work, the prestige (and objectivity of the NBER), and the fact that excise tax on cigarettes has not changed in 30 years, I think we need to take seriously their statement that, 'if future reductions in youth smoking are desired, an increase in the Federal excise tax is a potent policy to accomplish this goal.'*
>
> *In any event, and for whatever reason, it is clear that price has a pronounced effect on the smoking prevalence of teenagers, and that the goals of reducing teenage smoking and balancing the budget would both be served by increasing the Federal excise tax on cigarettes. It is worth quoting the authors somewhat extensively on one point: 'Such a policy may also be an effective way to curb the detrimental health effects of smoking in the long run without substantially harming the cigarette industry in the short run.* ***Since youth and young adult price elasticities are much larger than adult price elasticities while adult smokers account for the bulk of cigarette sales, a substantial excise tax increase would substantially reduce smoking participation by young new smokers but leave industry sales largely unchanged.****'* [Emphasis added.]

In another quote from a 1987 document, Philip Morris, as quoted above, laments the teen smokers that it lost due to price increases. The bottom line wins out over kids again.

> *You may recall from the article I sent you that Jeffrey Harris of MIT calculated, on the basis of the Lewit and Coate data, that the 1982-83 round of price increases caused two million adults to quit smoking and prevented 600,000 teenagers from starting to smoke. Those teenagers are now 18-21 year olds and 35 percent of older smokers smoke a PM brand, this means that 700,000 of those adult quitters had been PM smokers,* ***and 420,000 of the non-starters would have been PM smokers. Thus, if Harris is right, we were hit disproportionately hard. We don't need to have that happen again.*** [Emphasis added.]

A 1982 RJR document (attached) displays the company's analysis of the impact of price increases on youth smoking. This analysis actually calculates the number of "new smokers lost" among kids as young as 13 years old (and every other age between 13-18) if prices are increased.

Cigarette Prices and Daily Cigarette Smoking Among Canadians Age 15 to 19



Sources:
1991 smoking prevalence data: Statistics Canada, General Social Survey, 1991
1979-1986 smoking prevalence data: Government of Canada, Labour Force Survey supplements.

CAMPAIGN for TOBACCO-FREE Kids

EFFECTS OF INCREASES IN CIGARETTE PRICES (Per Pack)

Price Increase	Reductions in Youth Smoking Prevalence*	Reduction in # of Regular Smokers**	Lives Saved**
$1.10 over 5 years	32.0%	5.32 million	1.70 million
$1.50 over 3 years	48.5%	8.06 million	2.58 million
$ 2 immediately	65.5%	10.89 million	3.49 million

* Reductions in youth smoking prevalence are at the end of five years.

** Reductions in regular smokers and lives saved are among kids alive today under the age of 18. Additional reductions would be achieved among current adult smokers.

Source: Frank Chaloupka
Department of Economics
University of Illinois at Chicago

CAMPAIGN for TOBACCO-FREE Kids

PRICE INCREASES AND OTHER MEASURES WILL BE EFFECTIVE IN REDUCING YOUTH SMOKING – AND THERE IS EVIDENCE TO SHOW IT

Contrary to today's article in the New York Times, Politics of Youth Smoking Fueled by Unproven Data (5/20/98; page 1), there is substantial evidence that the anti-tobacco measures in the McCain bill will reduce tobacco use. In particular, the evidence on the effects of price increases is conclusive, and there is considerable evidence that other measures included in the bill will also be effective. Most importantly, a comprehensive approach that includes all of these provisions is necessary to achieve the desired reductions in youth prevalence.

The Evidence on Price is Conclusive

Aside from the basic law of economics that price affects demand, there is a body of literature that documents the effects of tobacco prices on adult and youth consumption, with a clear consensus that young people are more price sensitive. Virtually every expert economist, every expert panel, and the experience in other countries, particularly Canada, document this effect. In his article, Mr. Meier focuses on one recent unpublished study from Cornell University, Putting Out the Fires: Will Higher Taxes Reduce Youth Smoking, to try to make the case that the evidence that price will affect youth smoking is weak. Virtually no one agrees that this one study, which is seriously flawed as noted below, is any reason to doubt the body of evidence that price has a large effect on youth smoking.

Mr. Meier cites one recent study that purports to refute all the others. He devotes a substantial portion of his article talking about it and either did not consult other experts whose research the Cornell study purports to contradict or did not report his discussions with them. These researchers could have pointed out the obvious flaws in the study. Several points should be made about the Cornell study:

- When they conducted their analysis as others have done, the Cornell researchers virtually replicated the findings of other researchers, demonstrating the effect of price on youth smoking.

- The Cornell researchers then went on to conduct additional analyses, that while offering an interesting approach, suffer from severe limitations, and have been called into question by leading economists.

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- Bill Evans from the University of Maryland and Thomas Dee from Georgia Tech have analyzed the Cornell data and found that the substantive results are "primarily an artifact of the way they constructed their sample." When Evans and Dee reconstructed the Cornell sample, they achieved results showing the effects of price on youth initiation – virtually the same effects that the Treasury Department used in their analysis.

- Other researchers, such as Frank Chaloupka, have pointed to several other flaws in the Cornell study, including choice of the measure of smoking initiation, the elimination of all 8th grade smokers from their analysis, their focus on tax rather than price, and their choice of analytic method. The conclusions reached by these researchers is that this study is biased in a way that would lead one to find no effect of price on smoking initiation.

Several of these prominent researchers have issued statements reiterating the importance of price increases to reducing teen smoking and putting the Cornell study in its proper context.

<u>There is Research Showing That Other Measures Are Also Effective</u>

Largely because of the tobacco industry's influence, this country has never had a comprehensive national plan to reduce tobacco use. However, there are a number of studies showing the various components of these programs can be effective. These include counter advertising , school-based program, youth access provisions, tobacco advertising restrictions, and environmental tobacco smoke restrictions.

California and Massachusetts probably have the closest thing to comprehensive anti-tobacco campaigns, and both states have achieved significant results, despite substantial interference by the tobacco industry. California has the lowest adult and youth smoking rates in the country other than Utah, and Massachusetts has countered the national trend of increased smoking rates among kids and reduced rates among younger age groups.

What is clear from all of the research is that a comprehensive plan is needed that addresses the tobacco problem at every level – on price, access, advertising, public education, environmental tobacco smoke, and others.

Experts on the Effect of Price Increases on Youth Smoking

Frank Chaloupka	University of Illinois at Chicago Department of Economics	312-996-2683
William Evans	University of Maryland Department of Economics	301-405-3486
Thomas S. Dee	Georgia Institute of Technology School of Economics	404-894-0424
Kenneth E. Warner	University of Michigan Dept. of Health Management & Policy	313-936-0934
Lynne X. Huang	University of Chicago NORC	202-223-6040
Michael Grossman	Nat'l Bureau of Economic Research, Inc.	212-953-0200
Jeffrey Harris	Massachusetts School of Technology Department of Economics	617-253-2677

CAMPAIGN for TOBACCO-FREE Kids

PRICE INCREASES REDUCE YOUTH SMOKING

The following experts have concluded that price increases have a dramatic effect on youth smoking:

- **Institute of Medicine's National Academy of Sciences**
- **National Cancer Institute**
- **U.S. Department of Treasury**
- **U.S. Surgeons General**
- **Numerous Economists including:**

  Jeffrey Harris -- Massachusetts Institute of Technology
  Ken Warner -- University of Michigan
  Frank Chaloupka -- University of Illinois at Chicago
  Thomas S. Dee -- Georgia Tech
  William Evans -- University of Maryland
  Lynn X. Huang -- University of Chicago

and

The Tobacco Industry:

Since youth and young adult price elasticities are much larger than adult price elasticities while adult smokers account for the bulk of cigarette sales, a substantial excise tax increase would substantially reduce smoking participation by young new smokers but leave industry sales largely unchanged.'

Philip Morris (1981) document

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May 20, 1998

A Statement from Frank J. Chaloupka, Associate Professor of Economics, University of Illinois at Chicago, and Research Associate, Health Economics Program, National Bureau of Economic Research

I am writing to clarify some of the confusion that has been created in the debate over the impact of proposed cigarette tax and price increases on youth smoking. For more than ten years, my colleagues and I have been studying the impact of taxes, prices, and tobacco control policies on cigarette smoking and other tobacco use. For the past five years, much of this research has focused on youth. One very clear conclusion emerges from this research: **large increases in cigarette prices are the single most effective policy in reducing youth smoking**. Using data on youth smoking for a sample of well over 100,000 teens taken from the 1992, 1993, and 1994 Monitoring the Future Surveys of 8th, 10th, and 12th grade students, Michael Grossman and I conclude that a ten percent increase in cigarette prices would lead to an almost 7 percent reduction in the number of young smokers and to additional reductions in average cigarette consumption among youth who smoke. **Based on this research, I estimate that a $1.50 increase in the federal cigarette tax, implemented over three years and maintained in real, inflation adjusted terms, will cut the prevalence of youth smoking in half.** No other single policy measure would be as effective in producing significant reductions in youth smoking. When large price increases are combined with other comprehensive measures to reduce youth access to tobacco products, limits on smoking, restrictions on advertising, and more, even larger reductions can be achieved.

The findings from the research by my colleagues and I are consistent with the findings from a number of other recent studies of the impact of price on youth smoking conducted by researchers at the University of Maryland and the Roswell Park Cancer Institute. However, a recent study by economists from Cornell University concludes that smoking initiation among youth would not be affected by increases in cigarette prices. This study contains a number of methodological flaws and should not be used to refute the findings from the larger literature that concludes that youth smoking is very responsive to price. Indeed, a recent re-analysis of the data used by the Cornell researchers corrects for some of the methodological problems with their analysis. This analysis, by University of Maryland economists Thomas Dee and William Evans, produces estimates consistent with the findings from the research by my colleagues and I and other recent research on this issue. That is, **large increases in cigarette prices will lead to substantial reductions in the prevalence of youth smoking.**

This is an historic opportunity to significantly improve public health by significantly reducing youth smoking. Comprehensive legislation to achieve this goal must include large increases in cigarette prices.

UNIVERSITY OF MARYLAND AT COLLEGE PARK

DEPARTMENT OF ECONOMICS

Statement of William N. Evans
Associate Professor
Department of Economics
University of Maryland

In a few days, the Senate will vote on vote on a key component of comprehensive tobacco legislation. An important component of most proposals are large tax changes that are designed to reduce teen smoking. The economic evidence on this issue is by now clear and convincing: Youth smoking will fall when tobacco taxes are increased. My own work in this area demonstrates that smoking rates among high school seniors fell in states that raised their state excise tax on cigarettes compared to smoking rates in states that did not change their tax. My work with Lynn Huang of National Opinion Research Center predicts that a $1.10 per pack increase in the cigarette tax will reduce teen smoking rates by 27 percent.

A recent study by a team of Cornell researchers questions whether taxes will in fact reduce teen smoking. In a comment on that work that I coauthored with Thomas Dee of Georgia Tech, we demonstrate that the results of the Cornell work are solely an artifact of the way the authors constructed their data set. In short, the authors systematically deleted data for a group of students characterized by higher tax increases and subsequently lower rates of smoking. When we re-estimated the models from the Cornell study with these students back in the sample, we find that higher cigarette taxes will reduce teen smoking by a considerable amount. A copy of this comment is available on the web at: http://www.econ.gatech.edu/~tdee/research/comment0598.pdf

NORC
UNIVERSITY OF CHICAGO

Statement of Lynn X. Huang
Research Scientist
National Opinion Research Center
University of Chicago

May 20, 1998

A key component of the comprehensive tobacco legislation that is under consideration of the Senate is large tax changes that are designed to reduce teen smoking.

Most economic evidence on this issue clearly shows that teen smoking will fall when cigarette taxes are increased. My work with William Evans of the Department of Economics at the University of Maryland demonstrates that smoking rates among high school seniors fell in states that raised their state excise tax on cigarettes compared to smoking rates in states that did not change their tax. To put our results into the context of the current debate, we estimate that a $1.50 increase in the price of cigarettes would result in a 36 percent reduction in teen smoking rates.

Our study, as well as the bulk of the literature on this issue, yield a uniform conclusion that teens are very responsive to the price increase of cigarettes and in fact more responsive to tax changes than adults.

Home of the 1996 Olympic Village
Georgia Institute of Technology

Thomas S. Dee
Assistant Professor
School of Economics
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www.econ.gatech.edu/~tdee

May 20, 1998

Statement of Thomas S. Dee, Ph.D.
Assistant Professor
School of Economics
Georgia Institute of Technology
Atlanta, GA

Recently, some articles in the popular press have presented an inaccurate or misleading picture of the current scientific evidence on whether cigarette taxes influence teen smoking participation. An article in today's New York Times provides the most recent example of this unfortunate misrepresentation of the available evidence. Contrary to the impression left by such articles, the clear consensus among prior empirical research in this field is that teen smoking participation is tax-responsive. In fact, the current Treasury estimate of this responsiveness is quite close to the best estimates produced in this literature.

However, one recent study (i.e. the "Cornell Study") has suggested that teen smoking is unresponsive to tax changes. But, in a replication and comment on that study, William Evans and I demonstrate that those results are primarily an artifact of how their data were constructed. In particular, the authors of the "Cornell Study" deleted roughly 20% of survey respondents because they did not or were unable to answer certain questions (e.g. about family income). On average, these deleted respondents faced higher tax changes and had subsequently lower rates of smoking. We find that the results of the "Cornell Study" are highly sensitive to the deletion of this large and non-random group of respondents. In particular, empirical models that utilize all the available respondents demonstrate that teen smoking is responsive to tax changes. Furthermore, the magnitude of this responsiveness is quite close to the Treasury estimate. A full copy of this comment is currently available on my web site (http://www.econ.gatech.edu/~tdee).

THE UNIVERSITY OF MICHIGAN

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STATEMENT BY KENNETH E. WARNER
Richard D. Remington Collegiate
Professor of Public Health

There is a wealth of scientific evidence that indicates that children are definitely responsive to price increases and specifically that they are considerably more price responsive than adults. Independent economists who have studied this issue are virtually unanimous in concluding that price is a major determinant of changes in smoking patterns by children and adults. Internal tobacco industry documents clearly show that the tobacco industry is well aware of these facts, and is in agreement with this analysis, despite public statements to the contrary.

Kenneth E Warner

May 20, 1998

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Michael Grossman
Director, Health Economics

A considerable body of published research confirms that the law of the downward sloping demand function holds for cigarette consumption: as the price of cigarettes rises, the number of adults and teenagers who smoke falls and consumption by those who smoke also falls. The provocative new and as yet unpublished study by Donald Kenel, Alan Mathios, and Philip DeCicca questions this finding. Since this research is still in progress, it seems prudent to postpone an evaluation of it until it has been completed. Even if Kenkel and his colleagues conclude that teenage smoking is not responsive to price, this finding pertains to one sample and would have to be considered with findings for at least three other large nationally representative surveys in which negative price effects are uncovered.

PHILIP MORRIS U. S. A.

INTER-OFFICE CORRESPONDENCE

Richmond, Virginia

To: . Mr. Jon Zoler Date: September 3, 1987

From: . Myron Johnston

Subject: . Handling an excise tax increase

I have been asked for my views as to how we should pass on the price increase in the event of an increase in the excise tax. My choice is to do what I suggested to Wally McDowell in 1982: Pass on the increase in one fell swoop and make it clear to smokers that the government is solely responsible for the price increase, advertise to that effect, suggest that people stock up to avoid the price increase, and recommend that they refrigerate their cigarettes "to preserve their freshness." (It would be necessary to emphasize that point or we would get a lot of beetle complaints.) Then when people exhaust their supply and go to the store to buy more, they will be less likely to remember what they last paid and will be less likely to suffer from "sticker shock." As a result, they should be less likely to use the price increase as an incentive to stop smoking or reduce their consumption.

Last time, of course, we increased prices five times between February of 1982 and January of 1983. In less than a year the price went from $20.20 to $26.90 per thousand ($2.70 more than the tax), and this fact was not lost on consumers, who could legitimately blame the manufacturers for the price increases. While price increases of this magnitude might have been tolerated during the rapid escalation in the overall inflation rate between 1977 and 1981, the increase in the price of cigarettes in 1982-83 was made even more dramatic by the fact that the overall rate of inflation was slowing considerably. You may recall from the article I sent you that Jeffery Harris of MIT calculated, on the basis of the Lewin and Coate data, that the 1982-83 round of price increases caused two million adults to quit smoking and prevented 600,000 teenagers from starting to smoke. Those teenagers are now 18-21 years old, and since about 70 percent of 18-21 year-olds and 35 percent of older smokers smoke a PM brand, this means that 700,000 of those adult quitters had been PM smokers and 420,000 of the non-starters would have been PM smokers. Thus, if Harris is right, we were hit disproportionately hard. We don't need to have that happen again.

I think it is reasonable to assume that wholesalers and retailers will behave pretty much as they did in 1982. The wholesalers liquidated their inventories to avoid paying the floor tax, consumers did not stockpile to any great extent (probably in part because the price increase did not occur suddenly), and the retailers, who faced no floor tax, stocked up because of the profit potential. They stocked up on everything, that is, except Philip Morris brands. B&W loaded in November, Reynolds in December, and we did not load, with the result that, in Richmond at least, the shelves were virtually bare of PM brands. I remember one irate 7-Eleven manager, who knew that I worked at PM, holding up

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a pack of Marlboro Lights and telling me that that was his entire stock of Marlboro Lights, and that he was not due for another delivery for two days. He was losing sales, and we may very well have lost some smokers. We certainly incurred the wrath of retailers who lost sales because they were out of our brands. We don't need to have that happen again either.

Thus my recommendation is to take the increase all at once; advertise, blaming it on the feds and encouraging smokers to stockpile; increase prices only to the extent of the tax; and make sure that the cigarettes that the retailers stockpile are our brands this time. We might also take the opportunity to again point out the regressive nature of the tax and tell smokers what percent of the price of a pack of cigarettes in their state is due to taxes.

The only problem I can see with this approach is that we might not have enough production capacity to fill the orders if smokers do stockpile heavily.

MEJ:f

cc: Ed Gee
Art Goldfarb
Ken Houghton
Carolyn Levy
Leo Meyer
Karen Miller
John Tindall
Central File

September 20, 1982

TO: Mr. P. E. Calyan

FROM: D. S. Burrows

SUBJECT: ESTIMATED CHANGE IN INDUSTRY TREND FOLLOWING FEDERAL EXCISE TAX INCREASE

Background

In 1981 the National Bureau of Economic Research published two econometric models linking cigarette prices to incidence and rate among specific age/sex groups. One related to adults 20+, the other to teens 12-17.

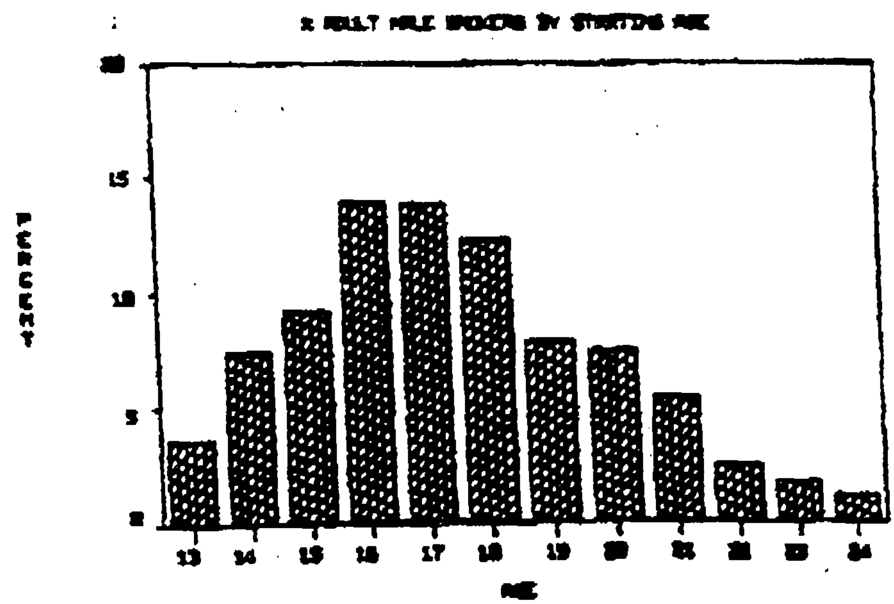
A major implication of these models was that young people are very price sensitive. The models indicate that:

- Incidence among 20-25 year old men has a price elasticity of -1.28. If prices were 10% higher, 20-25 male incidence would drop 12.8%.
- Incidence among 12-17 year olds (male and female) has a price elasticity of -1.19. If prices were 10% higher, 12-17 incidence would be 11.9% lower.

Analysis

While changes in incidence among other groups may "step down" the Industry trend, reduced incidence in this group implies that there will be fewer new smokers entering the market. Since the Industry growth rate depends on new smokers, losses in these groups can change the direction of the Industry trend.

Three HEW studies show that almost all male smokers start before age 25, following a consistent starting age pattern.



Mr. Galyan
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September 20, 1982

Analysis (Continued)

This pattern implies that if a male is to become an adult smoker, it is probable he will have started by a certain age.

Age	Cumulative % Starting By Age	Probability Of Starting After Age
12	8%	92%
13	12	88
14	19	81
15	29	71
16	42	58
17	56	44
18	68	32
19-20	83	17
21-24	94	6
25+	100	-

Median Starting Age = 16.7 (50:50 Probability)

If a man has never smoked by age 18, the odds are three-to-one he never will. By age 24, the odds are twenty-to-one.

This pattern also yields estimates of incidence and new smokers among young males, based on 18-24 male incidence.

Age	Cumulative % Starting	Index Versus 18-24	Estimated Incidence	New Smokers (% Of Population)
12	8%	9	2.6%	-
13	12	14	3.9	1.3%
14	19	22	6.2	2.3
15	29	33	9.4	3.2
16	42	48	13.6	4.2
17	56	64	18.2	4.6
18	68	78	22.0	3.8
19-20	83	95	26.8	2.4
21-24	94	108	30.5	.9
18-24	87	100	28.2*	1.7

*Tracker Industry Analysis, 1981:4

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Analysis (Continued)

On a trend basis, excluding price effects, we would expect these new smokers to start in 1983. However, based on the National Bureau of Economic Research elasticities and an estimated 15.1% increase in the real price of cigarettes during 1983*, the number will be lower.

Estimating the loss among teenagers of both sexes** and males 20-24 (per the National Bureau of Economic Research price model), we find:

Age	% New Smokers Trend	Price Model	Difference	Thousands Of New Smokers Lost
12	-			
13	1.3%	1.1%	.2%	7.1
14	2.3	1.9	.4	14.2
15	3.2	2.6	.6	21.1
16	4.2	3.4	.8	28.5
17	4.6	3.8	.8	29.4
18	3.8	3.1	.7	27.4
19-20	2.4	1.9	.5	31.4
21-24	.9	.7	.2	16.8
			TOTAL	175.9

*Eight cent Federal Excise Tax increase or equivalent manufacturer increases, average 2¢ per pack state tax increase, and a manufacturer increase of $1/M mid-1983.

**The male incidence/age patterns are reasonable for female teenagers since HEW indicates females 12-17 have slightly higher incidence, but also slightly higher starting ages (median = 17.1 years versus 16.7 for males).

Conclusion

If these new smokers had averaged only ten cigarettes a day, they would have accounted for 605 million cigarettes in 1983 or about .1% of Industry.

Some of these people may later choose to start smoking. However, for those 17-25, the odds are against it. If we estimate that only half of the new smokers 17-25 are permanently lost, the loss to Industry by 1987 would still amount to .1%.

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Mr. Galyan
Page 4
September 20, 1982

Conclusion (Continued)

Lost Smokers 17+	Age In 1987	Rate Per Day	Annual Volume	% Of Industry
52.5M	21-29	32.3	619MM	.1%

D. S. Burrows
Marketing Development Department

DSB/gsf

cc: MDIC

PHILIP MORRIS

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THE PERSPECTIVE OF PM INTERNATIONAL
ON SMOKING AND HEALTH ISSUES

(Text of the discussion document used
at the meeting of top management)

March 29, 1985

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SMOKING AND HEALTH INITIATIVES - P.M. INTERNATIONAL

I would like to start off by saying that there are two things which pose an immediate and very serious problem for our industry. These are product liability and taxation. They threaten the very existence of the cigarette industry and they should therefore assume the highest priority for action and resource allocation.

Regarding product liability, I am aware that we are applying an enormous amount of legal talent and time to the problem. I am also aware that we have the best legal people in the U.S. working on this problem and my purpose this afternoon is not to comment on the legal aspects of how product liability is being handled. I do think we could do more in the public relations area on the problem, however, and I plan to make a specific suggestion on this later.

With regard to taxation, it is clear that in the U.S., and in most countries in which we operate, tax is becoming a major threat to our existence. Speaking for International I have to tell you that we have not done enough in the tax area. Our efforts have been sporadic, reactive and, though we have had some successes, our effectiveness in the tax area has been questionable to say the least. Again, I am going to make a specific proposal later as to how the industry can become more effective in dealing with the tax problem.

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Thirdly, I want to say to you that in order to achieve lower taxation on our products, or achieve any of our objectives in the smoking and health area, it is crucial that we change the public's point of view towards our products. The current feeling of antagonism toward our products and our industry creates a climate which makes it easy for governments to increase taxes or take other measures against us.

This leads to the one key overall objective that Hamish raised in his memo of March 27, 1985 - how can we change the public's view towards smoking?

<u>Firstly, I believe we must work harder to get smokers to help the industry.</u> I would like to illustrate the points I want to make here by using the U.S. as an example - simply because most people around this table are very familiar with this market.

There are some 50 million smokers today in the U.S. I realize that research tells us that the majority of smokers wished they did not smoke and are, therefore, unlikely to be of much help to the industry. There are probably 5% or so of smokers who are ready to stand up for their habit and this would give us a body of some 2.5 million people. This is a large block of voters, even in a country as large as the U.S.

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On taxation I believe that a greater proportion of our smokers would side with the industry. My guess is that a large number of our smokers must take the view that, though they may try to quit, they will probably not be successful. Having faced up to the fact that they will probably continue to smoke, I cannot believe that they will willingly accept higher taxes on cigarettes. On the tax issue, therefore, we can probably mobilize a fairly large proportion of the 50 million smokers in the U.S. and this is a formidable number of voters.

Other groups such as the National Rifle Association have been highly successful at protecting a seemingly impossible cause. They have found a way to motivate and use their members and the politicians have responded.

It seems to me that homosexuals have made enormous progress in changing their image in this country in the last couple of decades. A few years back they were considered damaging, bad and immoral, but today they have become acceptable members of society. There must be a considerable body of social science in existence which could tell us how a group such as the homosexual movement has been able to change its public image so dramatically. We should research this material and perhaps learn from it.

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One of the most obvious areas where we could use our large smoker base in on the taxation issue; as I said earlier, I firmly believe many smokers would support us here. We could, for example, use pack inserts prior to a tax change. We would advise smokers of the likelihood of a tax increase, point out the unfairness of the action contemplated and request that they write to their elected representatives in government protesting the increase. Similar action could be taken on proposed legislation to restrict public smoking or smoking in the workplace.

In International we are planning to enlist the support of our smokers and try out some of the ideas I have just talked about. We will start with West Germany where a large tax increase is expected in 1987.

The second subject I wish to raise is fairness in taxation. It seems to me that we can exploit the window of opportunity offered by President Reagan's "fairness in taxation" campaign.

This is related to my first point but it is a marvelous opportunity to mobilize our smokers to protest the unfairness of cigarette taxes.

The third I thing I want to talk about is going public. I believe the industry should do more of this and we have a proposal this afternoon to go public in a different way.

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Andrew will now present an idea which he has developed which is aimed squarely at putting cigarettes into the same perspective that applies to other controversial products and issues.

Fourth, we must attack the anti-smoking groups and zealots more confidently than we have in the past. If we can cool their zeal just a bit, not only might smoking as a subject become less of an issue, but also smokers might begin to feel less embattled.

Here perhaps we could commission a book on the "anti-industry industry" and show that our attackers actually make money out of their activities, a situation quite at variance with their image today.

Possibly too, we can discredit our critics. John Banzhaf for example, is alleged to be involved in the porno industry. Can't we use this somehow? If we start to dig around, we will certainly find anomalies which we can exploit. Internationally, we will start looking in countries where we are under severe pressure.

Fifth, we need to work to protect the industry by doing everything possible to ensure that the Kasten legislation is passed. This will provide some protection against exorbitant liability claims.

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Now, I am not a lawyer and don't profess to understand the issues. Maybe though, one possible way in which we could help with this legislation is to enlist third party support since product liability is presumably a wider issue than just tobacco. The pharmaceutical industry, the chemical industry, the nuclear power industry, and the food industry are all examples of threatened industries and there are probably others. Shouldn't we be able to weave a coalition of threatened industries? Andrew's Libertad idea could help here.

We should also begin to work to establish a mind set in the public at large that bankrupting huge industries such as tobacco is unthinkable.

We have to make better use of the fact that tobacco is not like asbestos for example. At stake in our industry, and in others which are threatened, is employment for millions, and government revenues of billions. Why can't we begin to get articles placed and books written which develop scenarios for when the unthinkable happens? These could show what will happen to individuals, whole communities, and national economies for example. It just has to be possible to demonstrate that large industries cannot be made to disappear without extremely grave consequences.

Let's begin now to work to establish this mind set.

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The sixth point I want to make is that we are not <u>using our very considerable clout with the media</u>. A number of media proprietors that I have spoken to are sympathetic to our position - Rupert Murdoch and Malcolm Forbes are two good examples. The media like the money they make from our advertisements and they are an ally that we can and should exploit.

In most societies in the world today public opinion is formed, to a significant extent, by the news media and I believe we should make a concerted effort in our principal markets to influence the media to write articles or editorials positive to the industry position on the various aspects of the smoking controversy. I can't speak for the U.S. but I can tell you all that we are not doing enough in this area in International.

There is one further point which I would like to make. I made this point at our February planning meeting but I want to repeat it because it is important. The degree of success we have in influencing public opinion on smoking will depend, to a large extent, on the human resources we apply to the problem. In International we have not had enough people, or the right people, working on smoking issues. We are in the process of correcting this but a lot more needs to be done.

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As with any other aspect of our business, it all gets back to people and I firmly believe that this is one of the first things that we should all address.

Here is a list of the points that Andrew and I have discussed (pass it around). I am not suggesting these are the only things we should be doing and, of course, there are a number of other initatives which we are either taking or plan to take. We are suggesting these six items because we believe they are practical and reasonable initiatives we can take to protect our industry and to change the public's perception of smoking.

Thank you.

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PHILIP MORRIS

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LIST OF THE POINTS DISCUSSED WITH ANDREW WHIST

- Work harder to get smokers to help the industry
- Fairness in taxation
- Going public
- Discredit the anti-smoking groups and zealots
- Kasten-type legislation
- Make greater use of the print media industry

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PHILIP MORRIS

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APPENDIX F

GENERAL COMMENTS ON SMOKING AND HEALTH

In thinking about smoking and health, the first thing that comes to comes to mind is product liability. Yet, internationally, this has not yet become the issue that is has here and, frankly, I don't see that there is much we can add to a discussion of this point. Clearly, it is of the gravest concern to all of us since it poses a potential threat to the entire industry in most places. As I see it, the best help we can offer is to make doubly certain that we do nothing overseas that jeopardizes what is going on here.

There are, though, other smokiq and health issues that we can, and do, work on. Here I am referring to the impact that the smoking and health debate is having on taxation, on marketing freedoms, on public smoking, and more recently on passive smoking. We are working on all these issues somewhere in the world and our approaches depend on the specifics of each place.

Of all the concerns, there is one - taxation - that alarms us the most. While marketing restrictions and public and passive smoking do depress volume, in our experience taxation depresses it much more severely. Our concern for taxation is, therefore, central to our thinking about smoking and health. It has historically been the area to which we have devoted most resources and for the foreseeable future, I think things will stay that way almost everywhere.

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PHILIP MORRIS U. S. A.

INTER-OFFICE CORRESPONDENCE

RICHMOND, VIRGINIA

To: Mr. Harry G. Daniel   Date: September 17, 1981

From: Myron Johnston

Subject: Teenage Smoking and the Federal Excise Tax on Cigarettes

I have just finished studying a National Bureau of Economic Research (NBER) working paper entitled "The Effect of Government Regulation on Teenage Smoking."* In the paper the authors examine the impact on teenage smoking of (1) the excise tax on cigarettes, (2) the FCC Fairness Doctrine (i.e. the anti-smoking commercials), and (3) the cigarette advertising ban. This is by far the best study I have read concerning the effects of the anti-smoking commercials, and the only study I know of that attempts to determine the price elasticity of cigarettes among different groups.

Because of the quality of the work, the prestige (and objectivity) of the NBER, and the fact that the excise tax on cigarettes has not changed in nearly 30 years, I think we need to take seriously their statement that "...if future reductions in youth smoking are desired, an increase in the Federal excise tax is a potent policy to accomplish this goal." Given that a further reduction in youth smoking IS the goal of many pressure groups and Federal agencies, and that the goal of balancing the Federal budget through budget cuts seems increasing elusive, I think we can expect an increase in the excise tax on cigarettes, probably within a year.

There are other things that lead me to believe that there will be increases in the Federal excise taxes on both cigarettes and alcoholic beverages: (1) It can be argued that excise taxes are "voluntary" taxes in that payment of them can be avoided by refraining from purchasing the product, and that therefore increasing excise taxes does not reduce discretionary incomes. (2) Both cigarettes and alcoholic beverages have low price elasticities, so the additional taxes can be passed on to the consumer with little adverse effect on the industries. (3) Prices of cigarettes and alcoholic beverages (as measured by the Consumer Price Index) have increased more slowly than prices generally. (4) Excise taxes contributed only 5.0 percent to total Federal revenues in 1980, down from 8.1 percent in 1970 and 12.5 percent in 1960. (5) A 25 percent increase in the excise taxes on cigarettes and alcoholic beverages would reduce the Federal deficit by over two billion dollars, yet have a minimal effect on the Consumer Price Index. Given the current price of gasoline and the state of the automobile industry, I do not think it would be politically feasible to raise excise taxes on cars or gasoline, but I think cigarettes and alcoholic beverages are fair game for increased taxes.

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*The paper is a part of the NBER's research program in Health Economics and was supported by grants from the National Science Foundation to the NBER and from the National Center for Health Services to the New Jersey Medical School. The authors are Eugene M. Lewit, Office of Primary Health Care Education, New Jersey Medical School; Douglas Coate, Department of Economics, Newark College of Arts and Sciences, Rutgers University; and Michael Grossman, Department of Economics, City University of New York Graduate School.

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Some of the findings reported in the paper are as follows:

Most researchers, myself included, have calculated that the best estimate of the price elasticity of cigarettes is about -0.4, i.e. that a ten percent increase in the retail price of cigarettes will cause a decline of about four percent in cigarette sales. Many of us have hypothesized that price elasticities are different for different demographic or socio-economic groups, e.g., that price increases would have less effect on the higher income groups and on the older and therefore more habituated smokers, than on other smokers. Because of the lack of any reliable data, this has remained until now strictly a hypothesis. The authors of this paper, however, have used the results of the 1966-1970 Health Examination Survey of the National Center for Health Statistics, and have constructed an elegant longitudinal and cross-sectional model of teenage smoking behavior. This has made it possible for them to calculate the price elasticity for teenagers and compare it with the generally accepted price elasticity of cigarettes for the total smoking population.

The authors conclude that the anti-smoking commercials represented a shock to the underlying upward trend in teenage smoking in the mid-1960's and early 1970's, particularly in the first year in which they were aired, but that the trend reasserted itself the following year, although teenage smoking remained at a lower level than would have been the case in the absence of the anti-smoking commercials. This is consistent with my findings that random shocks, such as the report of the Royal College of Physicians and Surgeons, the Readers Digest articles, and the reports of the Surgeon General, have brief effects, and that sales subsequently resume the upward trend, but more slowly and from a lower base. The authors also conclude that the cigarette advertising ban had a relatively minor effect in discouraging teenage smoking.

The most important finding, and the one of greatest significance to the company, is their calculation of the price elasticity of cigarettes among teenagers. They calculate that the smoking participation elasticity is -1.2, which means that a ten percent increase in the price of cigarettes would lead to a decline of 12 percent in the number of teenagers who would otherwise begin to smoke. Their calculation of the quantity smoked elasticity for teenagers is -1.4, which means that a ten percent increase in price would lead to a 14 percent decline in cigarette consumption by teenagers. This is in contrast to the aforementioned -0.4 elasticity for the total smoking population. In another paper, two of these authors, Lewit and Coate, found that smoking by young adults 20 to 24 is much more responsive to price than smoking by older adults, which again is consistent with the hypothesis mentioned above.

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The authors concede that one reason for the large price elasticities they found among teenagers is that the elasticities incorporate income effects and substitution effects, i.e., cross-elasticities. This, of course, is true of virtually all calculations of price elasticities. As a result of some of the relationships I discovered while working on my report on teenage smoking,* I am inclined to believe that cross-elasticities are particularly important in the case of teenagers. Among teenagers the prevalence of cigarette smoking is highly correlated with income (from either allowances or working) while there is no similar correlation between smoking prevalence and income among adults. Teenage smoking prevalence appears to have begun to decline among boys at about the time of the high teenage unemployment rates of the early 1970's, at which time the smoking prevalence among girls was still increasing, and it is the males who would be most likely to feel the impact of unemployment. Furthermore, it was among the older boys that the decline was greatest, and, again, one would expect that the older boys would feel the impact of unemployment more than the younger ones.

With regard to the substitution effects, or cross-elasticities, I think the most important substitution effect is with gasoline. In my study, I found that the cumulative smoking incidence among boys in 1976 was about the same as in 1979 up to the age of 16, but past the age of 16 (the age at which many of them would have access to a car), the 1979 incidence was substantially below that of 1976. Consider also that in 1967, for one dollar, a teenager could buy two gallons of gasoline and a pack of cigarettes. As recently as 1978, if teenage incomes kept pace with inflation, the same purchasing power would still buy a pack of cigarettes and two gallons of gasoline. With income continuing to increase with inflation, this was no longer possible for the 1979 teenager, and the 1980 teenager could not even afford the two gallons of gasoline. I think it is more than coincidental that the sharpest declines in smoking prevalence among teenage males occurred in 1979 and 1980, the years in which the price of gasoline rose most sharply. When it comes to a choice between smoking cigarettes or cruising around in his car, the average teenage male would probably choose the latter. If this cross-elasticity between cigarettes and gasoline is, indeed, related to the decline in smoking prevalence among teenagers, we would expect to see some moderation in the rate of decline in smoking among boys when the 1981 data become available.

In any event, and for whatever reason, it is clear that price has a pronounced effect on the smoking prevalence of teenagers, and that the goals of reducing teenage smoking and balancing the budget would both be served by increasing the Federal excise tax on cigarettes. It is worth quoting the authors somewhat extensively on one point: "Such a policy [increasing the Federal excise tax] may also be an effective way to curb the deterimental (sic) health effects of smoking in the long run without substantially harming the cigarette industry in the short run. Since youth and young adult price elasticities are much larger than adult price elasticities while adult smokers account for the bulk of cigarette sales, a substantial excise tax increase would substantially

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*"Young Smokers: Prevalence, Trends, Implications, and Related Demographics," March 31, 1981

reduce smoking participation by young new smokers but leave industry sales largely unchanged. Given the evidence that individuals are considerably less likely to initiate smoking after age 25, it is quite possible that the cohort of young smokers who never begin to smoke as a result of the tax increase would never become regular smokers. As a consequence, over a period of several decades, aggregate smoking and its associated detrimental health effects would decline substantially."

It is worth noting that government actions designed to reduce smoking in the late 1960's and early 1970's served to moderate an underlying upward trend in teenage smoking, while any government action taken now will accelerate its present downward trend. Given a price elasticity of -0.4 for total cigarette sales and -1.2 for teenage smoking participation, a 25 percent increase in the excise tax could be expected to reduce industry sales to about 1.2 percent below what would be expected in the absence of such an increase, and to reduce the number of teenage smokers to 3.5 to 4.0 percent below the number that would otherwise be expected. The almost certainty of improved economic conditions, lower inflation rates, and increasing discretionary incomes over the next few years, however, should serve to moderate the adverse effect on sales of an excise tax increase. We can never look with equanimity on increases in the excise tax, but because of demographic trends and the improved economic outlook an increase at this time would probably be less harmful than it would have been at any other time in the past decade.

MEJ:f

cc: R. N. Thomson
✓ J. M. Zoler
T. T. Goodale
C. H. Rowe
L. F. Meyer

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APPENDIX 2

THE ISSUES RAISED IN HM'S MEMO

INDEX

2023268340

THE ISSUES RAISED IN HAMISH'S MEMO

In looking at the points raised, "communication" is a thread common to many, so I will start by addressing this.

Most of PMI's efforts in communicating the industry's position and point of view to the public, has been directed towards the tax aspects of smoking and health rather than on the health aspects alone. As you know, the "Tell the Taxman" campaign in the UK a couple of years ago was an example, as was the new campaign which we and the T.A.C. mounted just before this recent budget. Both were reasonably successful. In Australia too, through FOREST, we have awakened the public in the tax area with carefully orchestrated campaigns.

Generally, though, outside the tax area, PMI's track record on communicating the industry's view on health matters has been poor. We have to do more. One problem has been that we have relied too heavily on local associations and on INFOTAB to do the job for us. We now realize that it is well nigh impossible to get an agreed "industry position" on smoking and health and that we will have to do much more alone. And we will.

In 1985, we are working on two fronts. We will be strengthening local associations so that they can play a

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better role in representing the industry on smoking and health. Holland is one market where we hope to beef up the association for example. We are also intending to "go it alone" in some markets such as Norway and in Iceland, where we are facing potentially quite serious difficulties in the smoking and health area.

Our record in communicating to legislators and regulatory agencies, as opposed to the public, is somewhat better. Over the years we have communicated not only about tax but also about other issues more directly related to the health question. These include health warning labels, marketing restrictions, public smoking and so on.

Central to our approach to the communications problem here has been the network of political contacts we have developed in many parts of the world. We have political outreach programs which help us on industry issues in most of our key markets. In the EEC for example they have helped resolve tax harmonization problems in Italy and Holland, and they are proving helpful in Germany. They have also been useful in France in getting the vignette withdrawn. Elsewhere in the world our political network has helped on tax issues in Canada and in Australia, and we are using it in Hong Kong to defend our marketing freedoms.

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We are working in 1985 to improve our performance still further in communicating to legislators. Our plan has three aspects.

First we are going to recruit more people and better people and pay them more if necessary. Bahrain, Stockholm, London, Montreal, the Philippines and Japan are all locations where we will be adding to our corporate affairs strength. Next, we are going to adopt a more systematic approach to cultivating the "right" people. To date we may have been a little haphazard. Third, we are going to pay more attention to cultivating the bureaucracy as opposed to just the top people.

The third point on the list is paid advertising. Communication about smoking and health issues through paid advertising is not something we are doing at the moment, though we have definite plans to do so in 1985. There are two areas which lend themselves to this approach - passive smoking and "Truth in Science".

As regards the former, we are working on developing a campaign with Burnett. Once we have it, step one of our plan is to launch it in International English Language newspapers and magazines such as the Herald Tribune, Time and Newsweek. 2023268343

We will switch funds from our marketing budget to do this. Our second step will be to build on this campaign with inserts in local papers in important markets. We are thinking particularly of Germany, the UK, Australia, Hong Kong, and Switzerland as appropriate markets for this type of approach.

We are mounting a pilot project on "Truth in Science" in Australia this year. A leading film maker has been commissioned to produce a film on the subject with smoking and health as the theme. If this works well, we will use it elsewhere in 1986 and beyond.

We will also run paid advertising in selected markets as local conditions dictate on tax issues as we have done in the past.

I will not say any more about public relations and communications activities beyond adding that we will continue to make use of the New York Society and the AECA to develop our network of contacts here. Likewise, we will be scrutinizing more carefully than we have in the past the business benefit we can get from our corporate contributions internationally. Smoking and health will be one of the points we will be looking at.

Our efforts to enlist the help of our natural allies such as the trade and growers are still a long way from being as effective as we would like, but we are working at it. Here again, the successes we have had have been principally, though not exclusively, in the tax area rather than in health related matters.

We have got the unions to support industry issues in several countries. Prominent have been the efforts they have made on tax issues in the UK where they were very involved in a letterwriting campaign to Members of Parliament. They also helped in Australia to protect our marketing freedoms as they did more recently in Switzerland where they supported the industry in a national referendum on a similar issue.

We have also helped organize growers in a number of countries. With their assistance for example, the industry was instrumental in moving the Food and Agricultural Organization away from its anti-tobacco stance. Indeed, the FAO has made a 180 degree turn on this point. Countries where we worked closely with the growers, and which were especially important in getting this change of position, include Malawi, Zimbabwe, Thailand, and Argentina.

As regards our plans for using our natural allies more in the future, we intend to do more on tax and health issues with

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the growers in Europe where they can certainly help in big markets such as Italy, Spain, and Greece. We will concentrate on doing more with the unions and we have targeted Holland, Germany and the Scandinavian countries generally, as markets where they can be of immediate help on tax matters. Later, we will work with them on issues more directly related to smoking and health.

Another area we intend to exploit more fully is the ad agencies and media proprietors. We have already been helped a great deal by the agencies in Hong Kong for example, in our efforts to resist advertising restrictions. As regards the media, we plan to build similar relationships to those we now have with Murdoch's News Limited with other newspaper proprietors. Murdoch's papers rarely publish anti-smoking articles these days.

To sum up, then, on using our natural allies. We have made a start; we have proved that it can be done; we have found that they can be a very effective force; and we intend to do more in the future.

Turning now to primary and passive smoking, I think we should concentrate on passive smoking where the statistical evidence is more favorable to our cause. The (x) survey, for example

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showed (y), and the (a) report showed (b). We will make more use of this sort of material in the media in 1985. To get a more favorable press, we are contemplating organizing another journalists' conference similar to the one we put together in Madrid for Latin American journalist in 1984.

However, even though we will be focusing internationally on passive smoking, and even though we will continue to test the low sidestream concept, we will not launch any new sidestream products yet.

And this brings me to <u>innovation</u>. Frankly, this is probably the only real solution to the issues we are discussing this morning. Here are three possible avenues we should be exploring.

First, we should look for ways to identify and eliminate (or substitute) the top ten most controversial compounds in cigarettes. Second we should do more on producing an odorless cigarette. The research here could look into eliminating the direct odor caused by the smoke itself and into eliminating the odor left by cigarettes in ashtrays. Third, we should view sidestream products as an opportunity for real product innovation from a marketing stand point. We should, therefore, adopt a more aggressive stance and we should have a free standing product ready. We should also be clear about how to do a low sidestream Marlboro, even if we don't like the idea.

And this brings me to the last two points on the list - protecting our business and legal inhibitions.

As I said earlier, the smoking and health issue has not yet assumed the dimension it has here. Arguably, it might not do so since the legal systems are different - "Kings of Tort" having no kingdoms to rule over! All the while this is the case we will protect our international business by making it grow wherever and however we can. If we can make inroads into the We will switch funds from our marketing budget to do this. Our second step will be to build on this campaign with inserts in local papers in important markets. We are thinking particularly of Germany, the UK, Australia, Hong Kong, and Switzerland as appropriate markets for this type of approach.

We are mounting a pilot project on "Truth in Science" in Australia this year. A leading film maker has been commissioned to produce a film on the subject with smoking and health as the theme. If this works well, we will use it elsewhere in 1986 and beyond.

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PHILIP MORRIS U. S. A.
INTER-OFFICE CORRESPONDENCE
RICHMOND, VIRGINIA

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To: Mr. H. G. Daniel   Date: March 25, 1982

From: M. E. Johnston

Subject: Still More on the Price Elasticity of Cigarettes

In two previous memos on this subject,[1] I summarized two papers dealing with the price elasticity of cigarettes, the conclusions of which were that price has its greatest effect on the young, particularly young males, and that price acts through its effect on reducing the proportion who smoke to a much greater extent than in reducing the cigarette consumption of committed smokers. The authors of these two papers concluded that the price elasticity of cigarettes was -0.42, i.e., that a ten percent increase in price would cause a 4.2 percent decline in sales. This is within the range (-0.1 to -1.5) found by most investigators.

In this memo I report on the results of a state-by-state analysis of the effect of price increases on cigarette sales and conclude that price elasticities have been declining over time and are probably now about -0.2.

I have continued to pursue the subject of the price elasticity of cigarettes for a variety of reasons: (1) I am convinced that the issue of an increase in the federal excise tax on cigarettes is not dead. There is still considerable support for it in Congress, in spite of the President's disavowal of it. (2) States will be feeling an increasing financial pinch as a result of the "New Federalism," and will undoubtedly raise excise taxes. Indeed, this has already begun. After a rash of increases between 1955 and 1971 there came a period of very few increases (Chart 1), but in 1981 six states raised their excise taxes, the greatest number since 1971. In addition, about 21 other states have tax bills pending.[2] (3) I discovered that, in general, the newer studies of cigarette price elasticities show elasticities that are lower than the older studies. (4) Most important, people keep saying to me, in effect: "You economists keep talking about price elasticities, but sales continue to increase even though the prices also increase. What gives ?"

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1. "Teenage Smoking and the Federal Excise Tax on Cigarettes," September 17, 1981, and "Cigarette Price Elasticities and the Implications for Philip Morris," January 5, 1982.

2. The reason for the consistent peaks in odd years is that many state legislatures meet only in odd years, and others have longer sessions in odd than in even years, while but one legislature (Kentucky) meets only in even years. This pattern should moderate in the future, as now only 14 state legislatures meet biennially. In the 1960's, 30 did so.

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Just What is Price Elasticity?

A couple of definitions are in order. (1) Price elasticity is the change in the demand for a product that results from a change in the price of that product. It is almost always negative, indicating that increasing prices reduces demand. An elasticity of 0.0 would indicate perfect inelasticity, i.e. that an increase in price would have no effect on demand, while an elasticity of -1.0 would indicate that a ten percent increase in price would reduce demand by ten percent. (2) Cross elasticity is the change in the sales of one product that results from a change in the price of some other product, e.g. when the price of beef goes up, people buy less beef so sales of chicken go up.

Price elasticity works in two ways: (1) A change in price can cause a change in the number of people who use the product, or (2) A change in price can cause a change in the quantity of a product that its users consume. Usually, however, it works both ways.

What is the Effect on Cigarette Sales?

The reason sales continue to increase in spite of price increases is that price is but one factor in the demand for cigarettes, or anything else, for that matter. One thing that has caused cigarette sales to increase is that there has been an increase in the smoking-age population. Between 1970 and 1980 the population aged 18 to 64 increased at an average annual rate of 1.83 percent. This increase is slowing, however, and will average 0.97 percent between 1980 and 1990. Another thing is that there appears to be a strong secular trend. Nontheless, price is also an important factor influencing cigarette sales, as will be shown below.

In attempting to determine which variables are important in determining cigarette sales, I went back to my old sales forecasting model and ran repeated step-wise multiple regressions, using various combinations of all of the variables that I could think of that could be remotely related to cigarette sales.[3] Three variables proved to be most highly correlated with sales, both singly and in combination. They were the secular trend, population, and price per pack, and the addition of other variables decreased the significance of the correlation. Chart 2 shows the relationship between actual sales and (1) the secular trend alone, (2) the secular trend and population, and (3) the trend, population, and price per pack. As can be seen, the addition of the population variable improved the fit considerably over the simple trend variable, and the addition of price further improves the correspondence between actual and calculated sales. The three variables explain 99.8 percent of the variance ($p<.00001$). When taken together the significance levels of the three variables are: population $p<.005$, trend $p<.002$, and price $p<.00005$. Thus, price clearly _is_ important.

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3. Many of the variables were so highly intercorrelated that factor analysis could not be used to reduce the variables to a few simple factors, hence this more cumbersome method.

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The effect of a price increase is to cause sales to increase more slowly than would have been the case without a price increase. This means that if the elasticity is -0.42, a ten percent increase in price would cause sales to be 4.2 percent lower than would have been the case if there had not been a price increase.

In a period of relative price stability, a price increase would be followed by an absolute decline in sales, but in a period of sustained inflation, when price increases of one good are masked by the general increase in prices, the effect of a price increase should, theoretically, be relatively transitory. This should be particularly true of products (like cigarettes) the prices of which are increasing more slowly than the consumer price index for all commodities. (Curiously, neither the consumer price index nor the ratio between cigarette price increases and overall price increases proved significant when entered into the sales forecasting equation.)

A State-by-State Analysis

Another way of looking at the effect on sales of price changes is to observe what happens to sales in individual states when the excise taxes are changed. Obviously, not all states can be studied in this manner: The only states that can be used are those in which there are no major population concentrations near the borders, or contiguous states in which the cigarette price differentials have remained about the same over the period of time being studied. States that are heavily dependent on tourism (such as Florida and Nevada) must also be excluded, because of fluctuations in tourist trade.

A good illustration of why we must impose this restriction, and also an illustration of a form of cross elasticity, is shown in Chart 3, which shows cigarette prices and per capita sales in Massachusetts and New Hampshire from 1961 to 1981. Massachusetts has a sufficiently large population that price differentials between the two states would be expected to have little impact on per capita cigarette sales there, while New Hampshire, being much smaller, would show greater sensitivity in per capita sales. In the early 1960's cigarettes were about 15 percent more expensive in Massachusetts than in New Hampshire, enough of a difference to make it worthwhile for people in the Boston area to drive to New Hampshire to buy cigarettes. In 1965 both states raised taxes and Massachusetts followed with another increase in 1966, and in the two following years per capita sales in New Hampshire increased sharply. A 1967 increase by New Hampshire returned the relative prices in the two states to about what it was in the 1960-65 period, and over a two year period per capita sales in New Hampshire dropped to about the 1960-65 level. A 1969 increase by Massachusetts caused per capita sales in New Hampshire to begin to rise, and this continued even after a small 1970 increase in taxes in New Hampshire. In 1971 both states increased taxes but the Massachusetts increase was larger, so the upward trend in per capita sales in New Hampshire continued until the gasoline shortage in the winter of 1973-74 made driving to Massachusetts to buy cigarettes less attractive. In July of 1975 both states raised their taxes, New Hampshire by one cent and Massachusetts by five. Again per capita sales in New Hampshire rose, but after that the price differential remained constant and gasoline prices continued to rise, and per capita sales in New Hampshire went into a decline.

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The remaining charts show the effect tax increases have had on per capita sales in several of the states selected for analysis. (The use of per capita sales instead of total sales corrects for the different rates of population growth in the various states.) Per capita sales are for fiscal years.

In California, the 1967 tax increases caused an 8.5 percent drop in sales, and per capita sales never regained their former level. In Minnesota, the 1969 price increase depressed sales for one year, after which they rebounded to the earlier level, and the 1971 increase caused a sharper drop in per capita sales and resulted in a slower increase to previous levels.

Colorado is an interesting case, because at one point it decreased taxes, thus making it possible to compute the price elasticity of cigarettes under conditions of price decreases as well as price increases. Both the 1973 and 1977 tax increases caused declines in sales that yield price elasticities of -.22, and the tax decrease in 1978 resulted in increased sales, and again show a -0.22 price elasticity.

Many states showed declining price elasticities over time: In New Mexico, the 1968 price increase yields an implied elasticity of -0.56, but the 1961 price increase (not shown) yielded an elasticity of -0.83. In Texas, the elasticity in 1969 was -0.25, and the price increase in 1971 only slightly slowed the underlying upward trend. In contrast, the elasticities were -0.39 in 1959 and -0.68 in 1955. In South Dakota the elasticity in 1969 was -0.51 and in 1979 it was -0.26, but in 1963 it was -0.07.

This pattern of declining elasticities over time is apparent in other states as well. In Wisconsin, for example, the implied elasticities in years of price increases were as follows:

1961	-0.63
1963	-0.55
1965	-0.37
1969	-0.31
1971	nil

In Oklahoma the elasticity was -0.57 in 1961 and -0.21 in 1968. In Nebraska it was -0.96 in 1963 and -0.20 in 1971. In Utah: -0.74 in 1963 and -0.11 in 1979. In Idaho: -0.80 in 1961 and -0.44 in 1972.

Conclusion

As noted above, price is but one factor influencing cigarette sales. On the basis of the evidence of this state-by-state analysis, it appears that price elasticities are declining over time, and that the price elasticity of cigarettes now is about -0.2. Thus a ten percent increase in price would cause sales to be about two percent lower than they would have been without a price increase. Inasmuch as the increase in profits occasioned by an industry price

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increase would more than offset any loss due to a slower increase in unit sales, there is clearly no reason to lose any sleep when we raise prices. We are all, however, entitled to our nights of insomnia if the federal government decides to increase the excise tax by any significant amount. You may recall that I reported last fall that a member of the staff of the House Budget Committee told me that the increase being considered was 25 percent, or two cents a pack. A two cent price increase would, theoretically, depress sales by six tenths of one percent. In practice, it would probably go unnoticed, except for all the publicity that would surround it in the congressional debates. If there is a proposed increase, and if it is indeed one dollar per thousand, it would probably be less harmful to the industry to accept it without comment than to fight it and give the anti-smoking fanatics another forum in which to vent their spleen.

MEJ:f

cc: H. Hausermann
L. Meyer
R. Thomson
J. Zoler
T. Goodale
A. Udow
D. Nelson
C. Rowe

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Chart 1 -- Number of States Imposing or Increasing Excise Taxes, by Year, 1950-1981

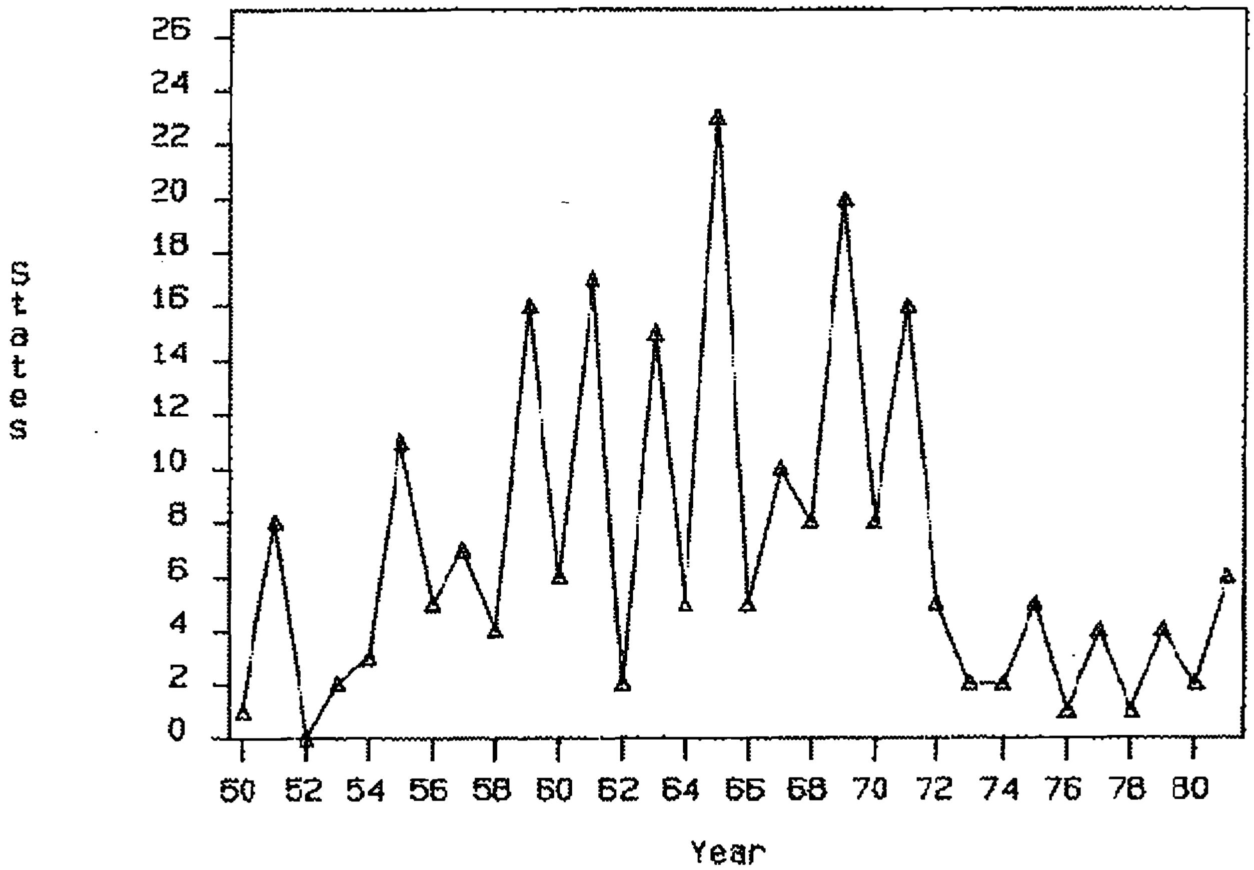


Chart 2 - Actual Sales and Calculated Sales Based on Various Variables

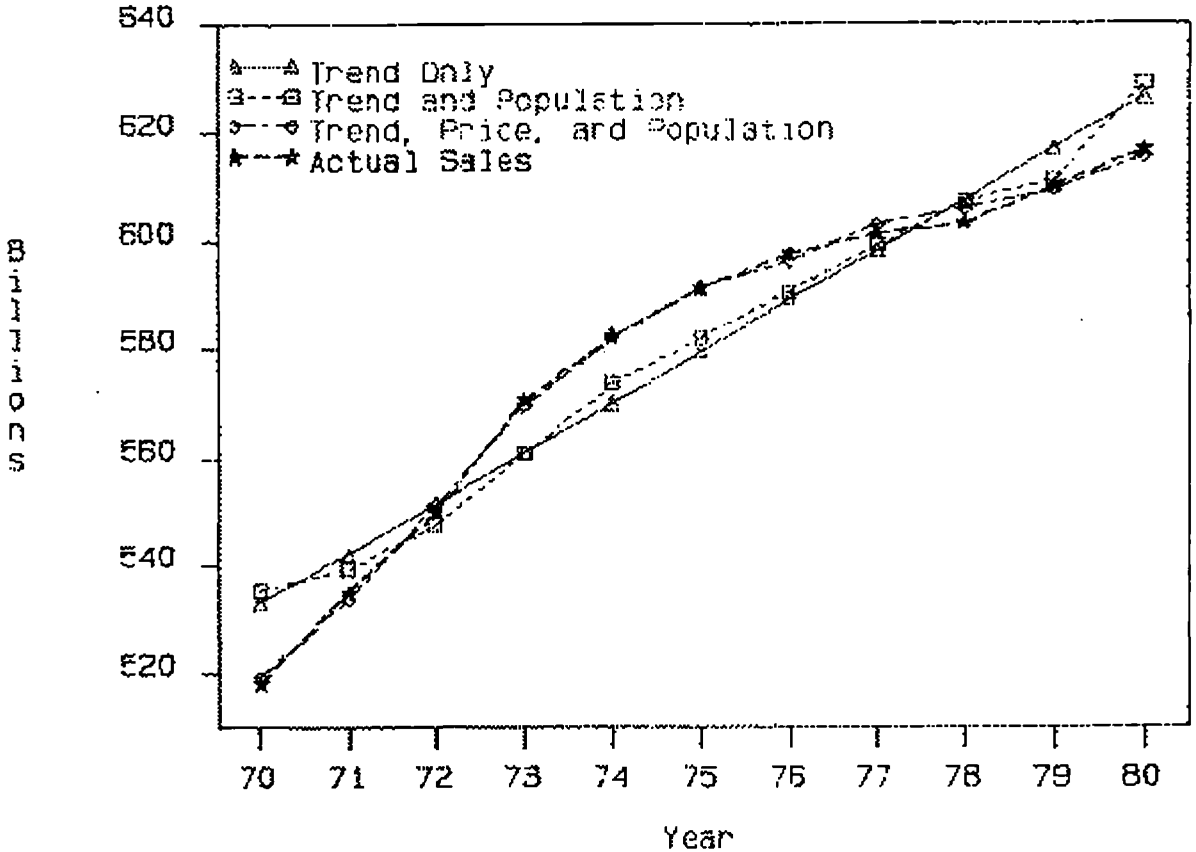
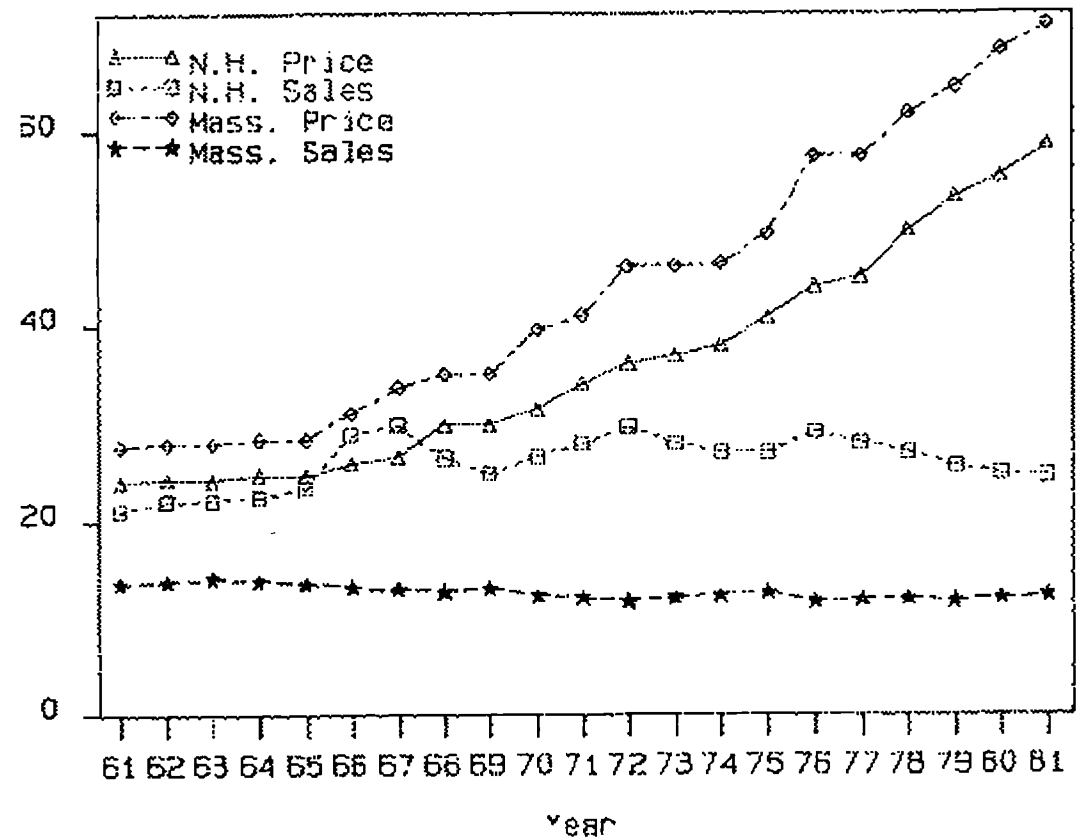


Chart 3 - Per Capita Sales (Packs X 10)
and Price, New Hampshire and Massachusetts



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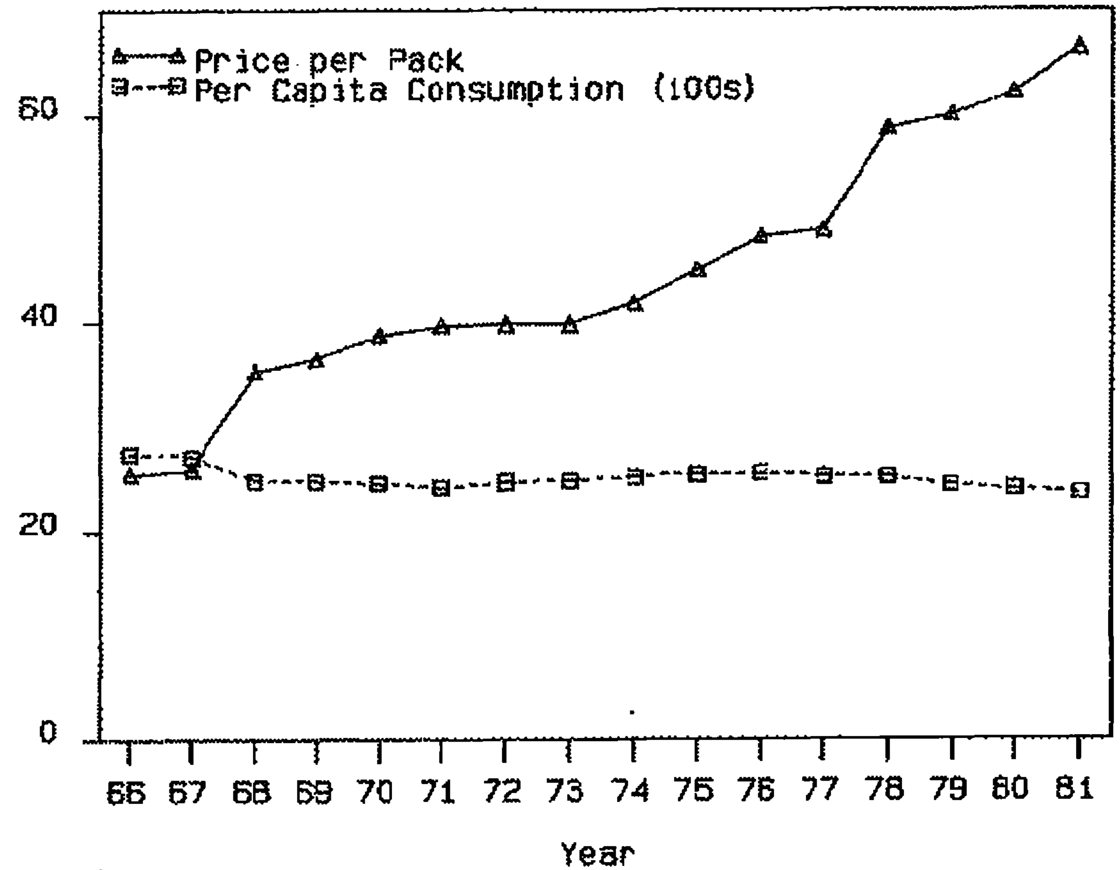
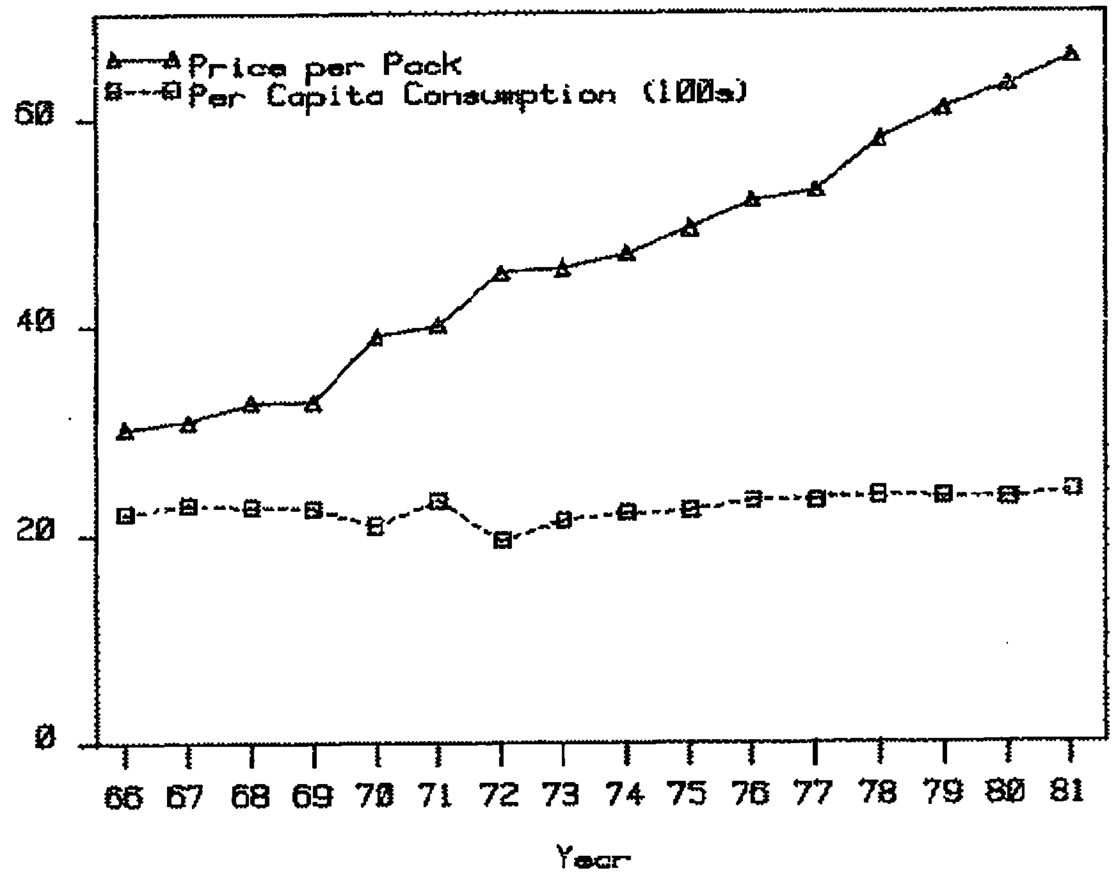
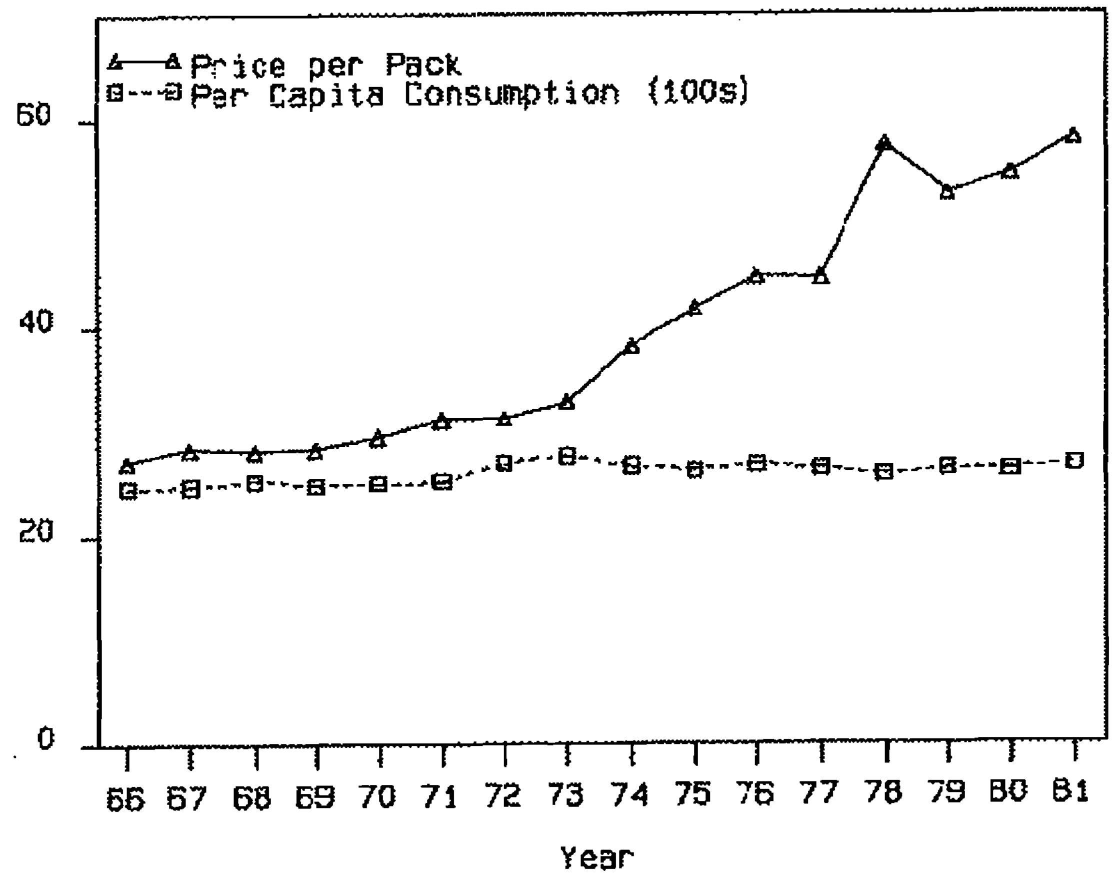
CALIFORNIA
(Tax Increased 8/1/67, 10/1/67)



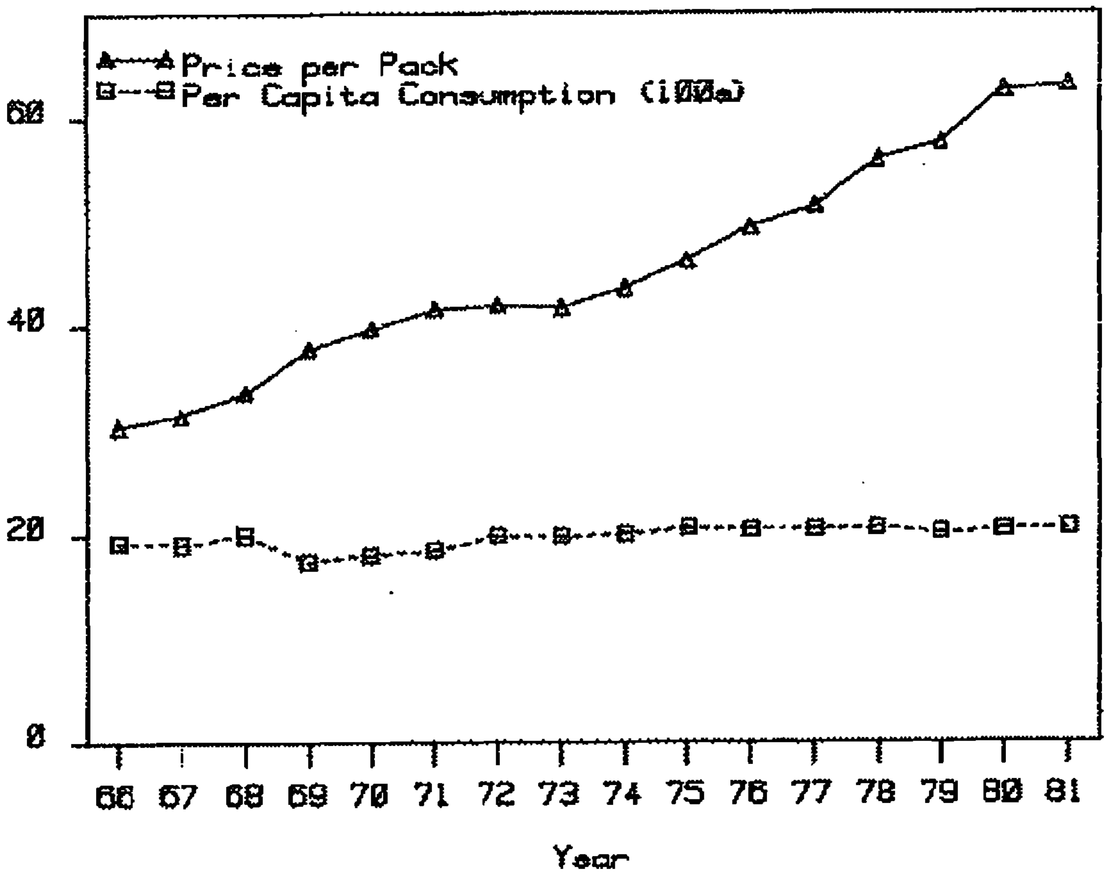
MINNESOTA
(Tax Increased 5/30/69, 10/31/71)



COLORADO
(Tax Increased 7/1/73, 7/1/77, Decreased 7/1/78)



NEW MEXICO
(Tax Increased 7/1/68)



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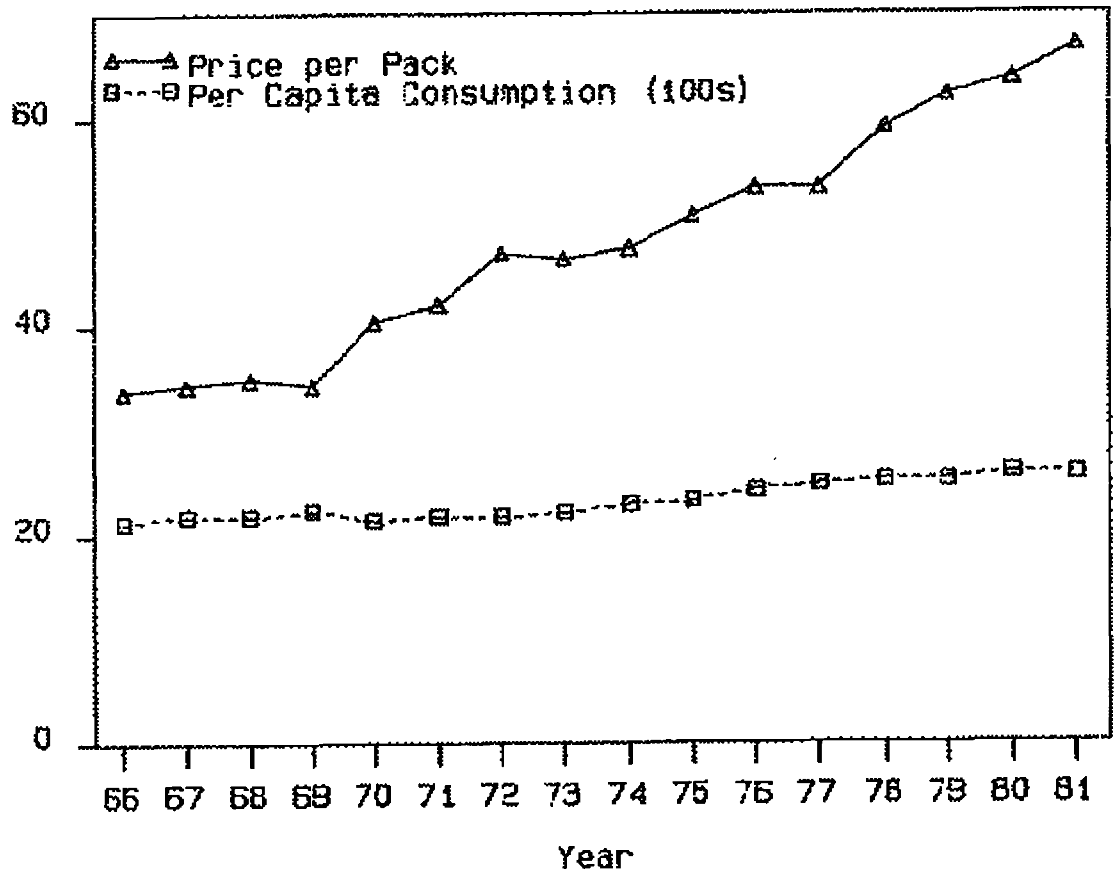
TEXAS
(Tax Increased 10/1/69, 7/1/71)



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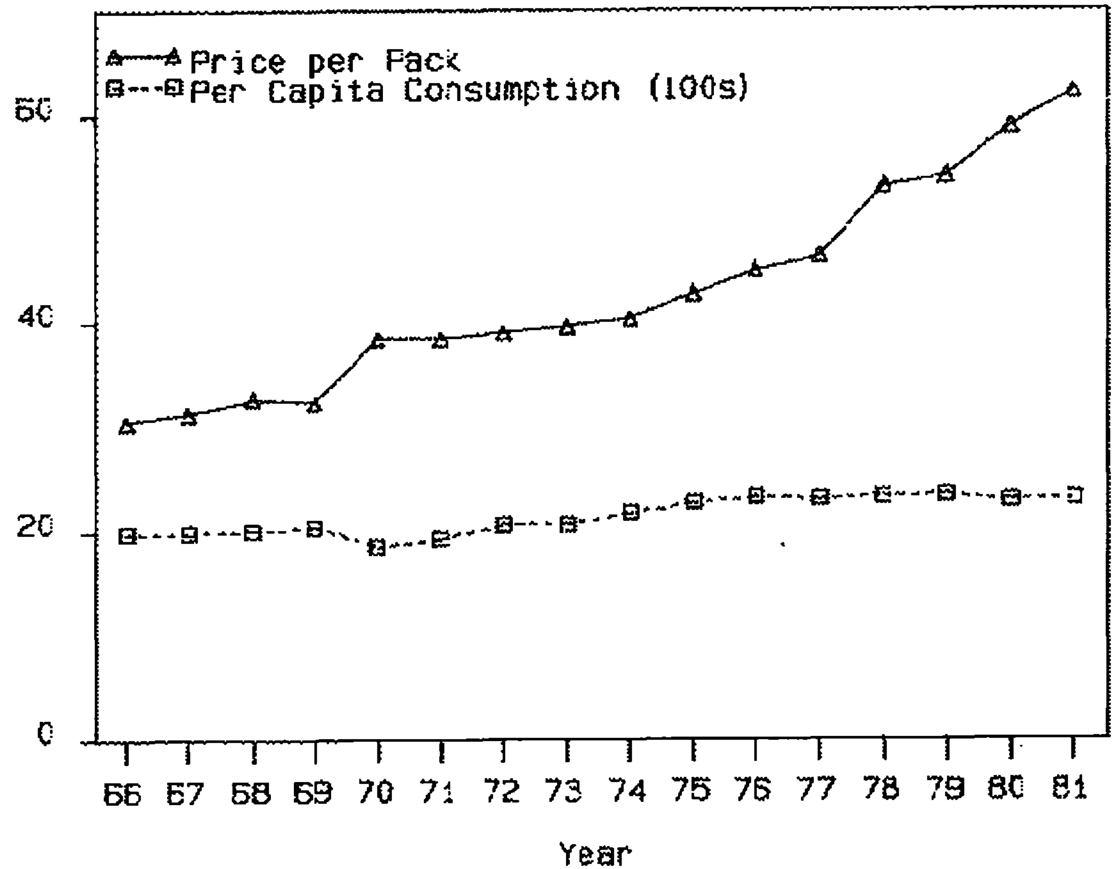
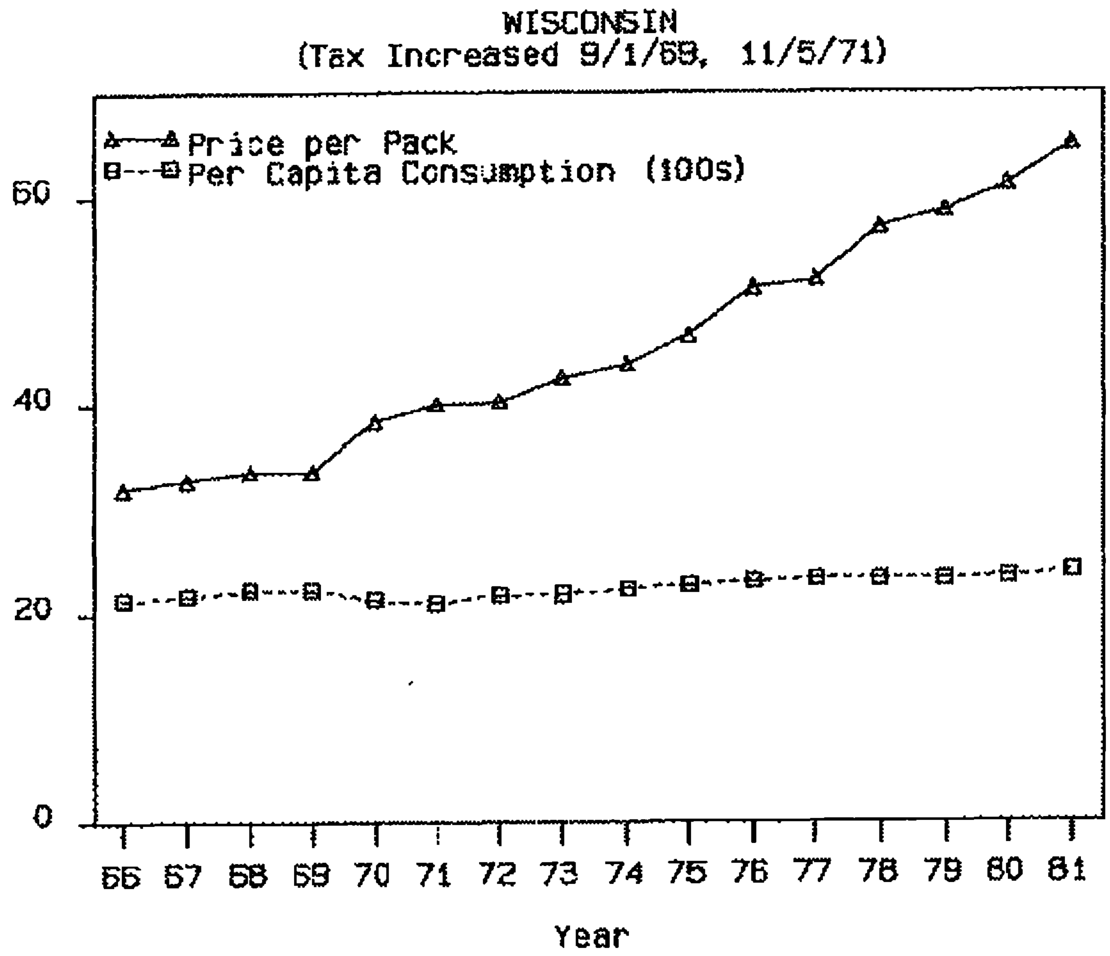
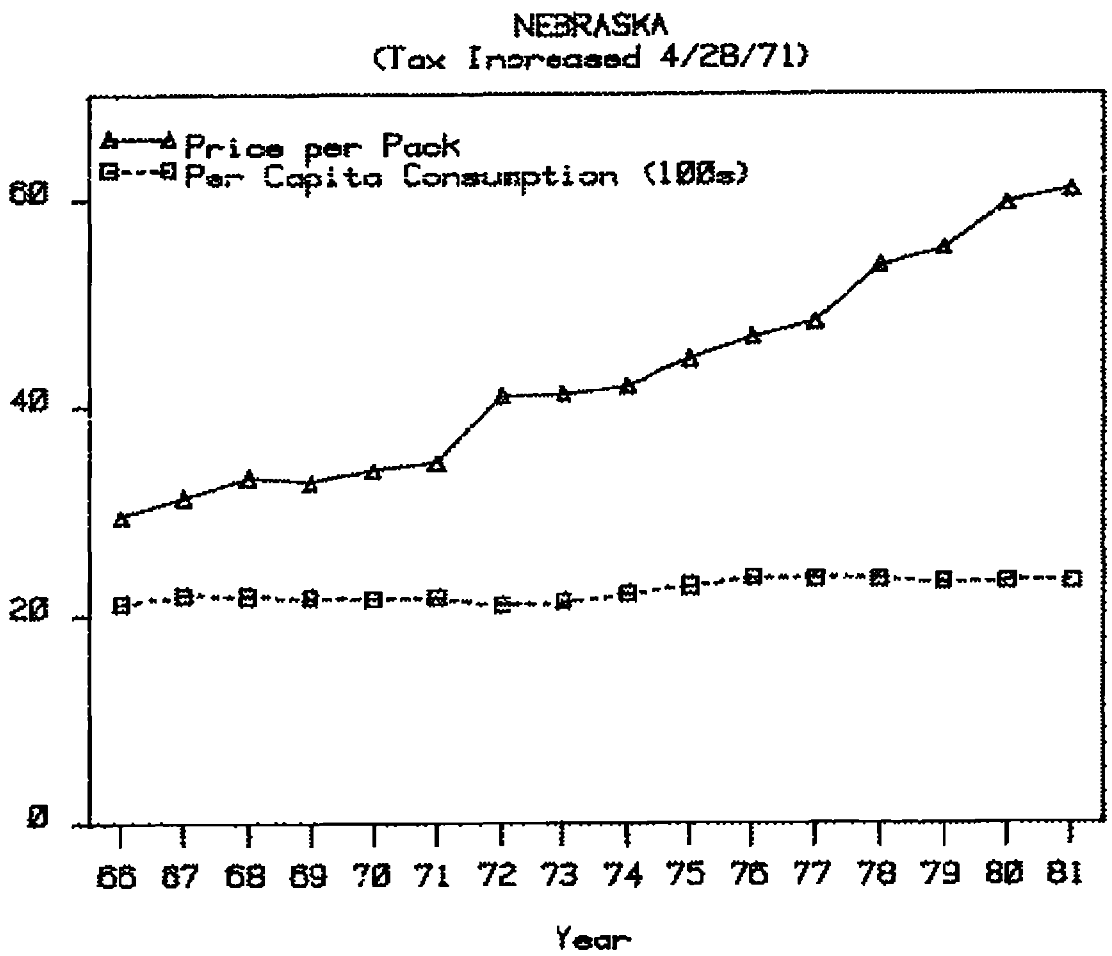
SOUTH DAKOTA
(Tax Increased 7/1/69, 7/1/79)




WISCONSIN
(Tax Increased 9/1/69, 11/5/71)
Price per Pack
Per Capita Consumption (100s)
60
40
20
0
66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81
Year


NEBRASKA
(Tax Increased 4/28/71)
Price per Pack
Per Capita Consumption (100s)
60
40
20
0
66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81
Year

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