UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

UNITED STATES OF AMERICA,	)	
Plaintiff,	)	
v.	)	Civil Action
	)	No. 99-CV-02496 (GK)
PHILIP MORRIS USA INC., f/k/a PHILIP MORRIS INC., et al.,	)	
Defendants.	)	

WRITTEN DIRECT EXAMINATION

OF

FRANK J. CHALOUPKA, Ph.D.

SUBMITTED BY THE UNITED STATES PURSUANT TO ORDER #471

Written Direct Testimony of Frank J. Chaloupka, Ph.D.

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1 *I.* ***EXPERT QUALIFICATIONS***

2 **Q: Please state your full name for the record.**

3 A: Frank Joseph Chaloupka IV.

4 **Q: Have you provided the Court a copy of your curriculum vitae?**

5 A: Yes, at U.S. Exhibit 78,527.

6 **Q: You are an economist, correct?**

7 A: Yes. I received a bachelor's degree in economics from John Carroll University in 1984. In
8 1988, I received a Ph.D. in economics from the City University of New York. For my
9 Ph.D., my fields of specialization were health economics, industrial organization, labor
10 economics, and applied econometrics.

11 **Q: What is your understanding of the expertise for which you are being offered here**
12 **today?**

13 A: I am testifying as an expert in the field of economics and applied econometrics, particularly
14 as these fields apply to Defendants' price-related cigarette marketing and the impact of price
15 on teenage smoking.

16 **Q. What are your current professional positions and responsibilities?**

17 A: I am a Professor in the College of Business Administration, Department of Economics, at
18 the University of Illinois at Chicago (UIC). I am also a Professor in the Health Policy and
19 Administration division of the UIC School of Public Health. I am the Director of the UIC
20 Health Policy Center, and an Affiliate Member of the University of Illinois' Institute for
21 Government and Public Affairs. I am also a Research Associate in the National Bureau of
22 Economic Research's Health Economics Program and its Children's Program. I am the Co-

1 Director of the Bridging the Gap Initiative and I am the Director of the ImpacTeen program.

2

3 **Q: What are your teaching responsibilities?**

4 A: My teaching activities include: supervising many undergraduate and graduate independent

5 studies on various topics in health economics; chairing or serving on many Master's thesis

6 and Ph.D. dissertation committees; and supervising numerous graduate student research

7 assistants. I have taught undergraduate courses on the principles of microeconomics,

8 principles of macroeconomics, microeconomic theory, macroeconomic theory, health

9 economics, industrial organization, government and business, and econometrics. I have

10 taught graduate level courses on macroeconomic theory, health economics and industrial

11 organization.

12 **Q: You also mentioned that you are an expert in the field of applied econometrics. What**

13 **does "econometrics" mean?**

14 A: The well-known econometrician G.S. Maddala nicely defines econometrics as: "The

15 application of statistical and mathematical methods to the analysis of economic data, with a

16 purpose of giving empirical content to economic theories and verifying them or refuting

17 them."

18 **Q: What is an econometrician?**

19 A: An econometrician is an economist who uses econometrics to study questions or issues of

20 interest, analyzes economic data, or develops statistical methods and theory for use in

21 econometric analysis.

22 **Q: What do you mean by applied econometrics?**

1 A: I mean the application of econometric methods to economic data to answer research
2 questions.
3 **Q: Dr. Chaloupka, as an economist and applied econometrician, what is your area of**
4 **specialization?**
5 A: I am a health economist. My research focuses on the impact of economic influences and
6 other factors on health behaviors and their consequences, including cigarette smoking,
7 alcohol and drug use, and diet and physical activity.
8 **Q: In order to testify about Defendants' price-related cigarette marketing and the impact**
9 **of price on teenage smoking, did you call upon your education and experience as an**
10 **economist and applied econometrician?**
11 A: Yes.
12 **Q: What compensation did you receive from the United States for your work in this**
13 **case?**
14 A: I have been paid $160 per hour for work on this case. I am paid $425 per hour for
15 providing testimony.
16 ***A. Research and Publications***
17 **Q: Dr. Chaloupka, what are the main areas in which you have published?**
18 A: I have written well over 100 articles, chapters or sections of books, and other publications
19 on the following topics: (1) the impact of prices and taxes on cigarette smoking and tobacco
20 use, including teenage smoking; (2) the effects of tobacco control policies and programs on
21 cigarette smoking and tobacco use; (3) the extent of and trends in tobacco marketing; (4)
22 the economics of tobacco and tobacco control generally; (5) the effects of price and control
23 policies on alcohol and drug use, and their consequences; and (6) the economics of

1 addiction. Most of my publications are listed on my curriculum vitae at U.S. Exhibit
2 78,527.
3 **Q. Have your publications on these various topics been peer-reviewed?**
4 A. Yes. Most of my publications have been published in peer-reviewed journals and other
5 peer-reviewed publications.
6 **Q. Has your research had any particular focus?**
7 A. Much of my research that has been published in peer-reviewed journals and other
8 publications has focused on teenagers and young adults.
9 **Q: First, can you describe generally your peer-reviewed publications relating to the**
10 **impact of price and taxes on cigarette smoking and tobacco use, including teenage**
11 **smoking?**
12 A: I have published dozens of papers on the impact of taxes and prices on cigarette smoking
13 and tobacco use. Many of these papers have examined the effects of price on cigarette sales
14 including sales at the market or state level, including, for example, my peer reviewed paper,
15 "The Impact of Tobacco Control Program Expenditures on Aggregate Cigarette Sales,
16 1981-2000," published in the Journal of Health Economics in 2003. In other studies, I have
17 used survey data to look at the effects of price on smoking prevalence, the number of
18 cigarettes smoked, and frequency of smoking; for example, I covered these topics in a 2002
19 peer reviewed article I published in Nicotine & Tobacco Research on the "Differential
20 Effects of Price on Youth Smoking Intensity," and a 2003 peer reviewed Health Economics
21 article on "The Effects of Cigarette Prices on Youth Smoking." Many of my other studies
22 have looked specifically at the effect of price on teenagers, college students, young adults
23 and adults, such as my 2004 article on "The Effect of Public Policies and Prices on Youth

Smoking," published in the Southern Economic Journal, or my earlier peer reviewed publication in Contemporary Economic Policy on "The Impact of Prices and Control Policies on Cigarette Smoking Among College Students."

Some of my published work has focused on the effect of price on the uptake of cigarette smoking among teenagers, such as my 2001 ImpacTeen Research Paper on "Youth Smoking Uptake Progress: Price and Public Policy Effects." Still other publications have looked at the effect of price on smoking cessation, for example, "Determinants of Smoking Cessation: An Analysis of Young Adult Men and Women," peer reviewed and published in 2001 in The Economic Analysis of Substance Use and Abuse: The Experience of Developed Countries and Lessons for Developing Countries. In addition to my own research, I have published several reviews of the larger economic literature of the effects of price on smoking and other tobacco use, such as the 2000 peer reviewed chapter on "The Economics of Smoking" published in The Handbook of Health Economics.

Q: Second, you have also described peer-reviewed publications where you have addressed the effects of tobacco control policies and programs on cigarette smoking and tobacco use. Please describe briefly some of these publications.

A: I have published work that addresses the effects of tobacco control policies and funding for comprehensive tobacco control programs on state level cigarette sales, and the impact of tobacco control policies and programs on smoking prevalence among teenagers, college students, young adults and adults, including the following peer reviewed publications: "Effectiveness of Comprehensive Tobacco Control Programs in Reducing Teenage Smoking in the United States," in 2000 in Tobacco Control: An International Journal; "Effect of Restrictions on Smoking at Home, at School, and in Public Places on Teenage

1 Smoking: A Cross-Sectional Study," in the British Medical Journal, in 2000; the "Impact of
2 Tobacco Control Spending and Tobacco Control Policies on Adolescents' Attitudes and
3 Beliefs about Cigarette Smoking," in Evidence Based Preventive Medicine, in 2004; and
4 "State Tobacco Control Spending and Youth Smoking," which will be published in early
5 2005 in the American Journal of Public Health.

6 **Q: Do any of these publications discuss teenagers?**

7 A. Yes. Some of the research that I have published in articles covers policies and programs
8 that are aimed at teenagers, such as policies that limit youth access to tobacco, or penalize
9 underage purchase, possession or use of tobacco products including cigarettes. I have also
10 published research on other programs and policies that are aimed at smoking behavior
11 generally which are found to also affect teenage smoking. These programs and policies
12 include state-level comprehensive tobacco control programs, counter-marketing campaigns
13 that are aimed at discouraging people from smoking, and restrictions on smoking in public
14 places.

15 **Q. Third, please describe for the Court your peer-reviewed publications related to the**
16 **extent of and trends in tobacco marketing.**

17 A. I have published several articles on these issues. In some of these publications, I have
18 described the extent of tobacco marketing at the point of sale and variations in marketing by
19 store types such as convenience stores, gas stations, and supermarkets, as well as regional
20 variations. One example of this type of article is my peer reviewed article "Point-of-
21 Purchase Tobacco Environments and Variation by Store Type," published in 2002 in
22 Morbidity and Mortality Weekly Report. In other papers, I have considered changes in
23 tobacco marketing over time, for example, "After the Master Settlement Agreement: Trends

1 in the American Tobacco Retail Environment from 1999 to 2002," peer reviewed and
2 published in Health Promotion Practice in 2004. In another peer reviewed article, I looked
3 at the change in point of sale marketing after the elimination of billboard advertising:
4 "Tobacco Industry Marketing at Point of Purchase After the 1999 MSA Billboard
5 Advertising Ban," American Journal of Public Health, in 2002. In another study, "State
6 Variations in Retail Promotions and Advertising for Marlboro Cigarettes," published in
7 2001 in Tobacco Control, I researched the variation in tobacco marketing in relation to state
8 tobacco control activities. In another peer reviewed study, I looked at the impact of brand
9 specific point of sale marketing on teenage smokers' brand choices, namely the
10 "Association of Point of Purchase Tobacco Advertising and Promotions with Choice of
11 Usual Brand Among Teenage Smokers," published in the Journal of Health Communication
12 in 2002.
13 **Q. Fourth, what articles have you published in peer-reviewed journals or publications**
14 **that more generally cover the economics of tobacco and tobacco control world-wide?**
15 A. My research in this area has examined a variety of economic issues related to tobacco and
16 tobacco control, including the impact of trade liberalization on tobacco use, the smuggling
17 of cigarettes and other tobacco products, the cost-effectiveness of tobacco control policy
18 interventions, the economic costs of tobacco, the use of simulation models to predict the
19 impact of tobacco control policies on smoking, the economic rationale for tobacco control
20 policy, and much more.
21 **Q. Can you identify some of these publications from your curriculum vitae?**
22 A. Certainly. Some of those peer-reviewed publications include: "Global and Regional
23 Estimates of the Effectiveness and Cost Effectiveness of Price Increases and Other Tobacco

1 Control Policies," published in Nicotine & Tobacco Research, 2002; "Trade Policy and
2 Tobacco: Towards an Optimal Policy Mix," published in The Economics of Tobacco
3 Control: Towards an Optimal Policy Mix, 1989; and "The Impact of Trade Liberalization
4 on Tobacco Consumption," "How Big is the Worldwide Cigarette Smuggling Problem?"
5 and "The Economic Rationale for Intervening in the Tobacco Market," three chapters
6 published in 2000 in Tobacco Control in Developing Countries.

7 **Q. Have some of your peer-reviewed publications addressed more than one of the topics**
8 **above?**

9 A. Yes, dozens of my publications addressed several of these topics.

10 **Q. Can you give the Court some examples?**

11 A. For example, in numerous publications, including several cited above, I considered the
12 effects of prices, tobacco control policies and tobacco control programs on teenage
13 smoking. Others, such as the peer reviewed 1999 World Bank policy report on tobacco
14 Curbing the Epidemic: Governments and the Economics of Tobacco Control that I co-
15 authored, synthesize the findings from my research and the broader economic research on
16 tobacco.

17 **Q. Finally, have you published additional tobacco-related peer-reviewed research that**
18 **does not specifically fall into one of the six categories you have outlined above?**

19 A. Yes, I have authored dozens of tobacco-related publications including peer-reviewed
20 papers.

21 **Q. Can you provide some examples of these peer-reviewed publications?**

22 A. Yes, the topics of my other tobacco-related research varies from the effects of tobacco
23 control policies on the demand for nicotine replacement therapies to the relationship

1 between teenage smoking and marijuana use. For example, my recent study that is
2 forthcoming in a peer-reviewed journal looks at the impact of parental behavior on teenager
3 smoking, entitled "Parents, Public Policy, and Youth Smoking," Journal of Policy Analysis
4 & Management. Several of my other recent studies have looked at the demand for nicotine
5 replacement products and the impact of pricing and availability of these products on
6 cigarette sales, including a forthcoming peer reviewed publication on "The Impact of
7 Nicotine Replacement Therapies on Cigarette Demand" in The Journal of Economics and
8 Finance. In another recent peer reviewed study, I researched tobacco company documents
9 on issues relating to cigarette taxes, prices, and the tobacco companies' price-related
10 marketing: "Tax, Price and Cigarette Smoking: Evidence from the Tobacco Documents and
11 Implications for Tobacco Company Marketing Strategies," Tobacco Control: An
12 International Journal, 2002.
13 **Q. Your curriculum vitae also identifies working papers and presentations that you have**
14 **authored. Can you describe what these are?**
15 A. Economists have a long tradition of publishing earlier versions of their research in working
16 paper series which are widely circulated, providing opportunities for comments and input
17 from others in the field. The working papers I have authored are generally earlier or longer
18 versions of articles that were eventually published in peer-reviewed journals or other
19 publications. Others are working papers that are not intended for publication in peer-
20 reviewed outlets; instead, these are made publicly available to economists, public health
21 researchers, and others because they contain detailed background information that explains
22 how the data for a particular study were collected and processed. My curriculum vita also
23 lists presentations that I regularly make at professional conferences or seminars where I

1 address researchers, policy makers or public health officials working in the area of tobacco
2 control.
3 **Q. How many of these working papers and presentations have you authored?**
4 A. Literally hundreds.
5 **Q: How frequently have you served as a reviewer for peer-reviewed publications?**
6 A: I have served as an article reviewer for numerous articles considered for publication in
7 economics, public policy, public health, medical, social science, and other journals.
8 **Q. Can you name some of these journals and other publications?**
9 A. Among the more notable journals for which I frequently act as a reviewer are: American
10 Economic Review, American Journal of Public Health, Health Economics, Journal of the
11 American Medical Association, Journal of Health Economics, Journal of Legal Studies,
12 Journal of Policy Analysis & Management, Journal of Political Economy, Journal of Public
13 Policy & Marketing, Nicotine & Tobacco Research, and Tobacco Control: An International
14 Journal.
15 **Q. Are these journals highly regarded and relied upon by economists and public health**
16 **researchers and practitioners?**
17 A. Yes, they are.
18 **Q. Have you been invited to review grant applications for organizations that award**
19 **grants for work on tobacco-related projects?**
20 A. Yes, at the request of many grant-making organizations, I have served as a reviewer in the
21 grant review process for tobacco-related work. I have also served as a reviewer for
22 organizations that award grants for non-tobacco related work such as research on alcohol
23 control policy, drug control policy, and the cost-effectiveness of health care interventions.

1 **Q. Are these grant-making organizations prestigious governmental and public health**
2 **organizations that are well regarded by economists and public health researchers?**
3 A. Yes, among others, these include the National Cancer Institute, the National Institute on
4 Alcohol Abuse and Alcoholism, the National Institute on Drug Abuse, the National
5 Institutes of Health, the National Science Foundation, the Agency for Health Care Policy
6 and Research, the American Cancer Society, the American Lung Association, the Robert
7 Wood Johnson Foundation and its Tobacco Policy Research and Substance Abuse Policy
8 Research Programs, the Rockefeller Foundation, tobacco policy research programs in
9 California, Colorado, and Minnesota, the Australian Research Council, the Hong Kong
10 Research Grants Council, and others.
11 **Q: Have you received funding to support the research on tobacco use you have**
12 **performed over the years?**
13 A: Yes. Over the past nearly two decades, I have received more than twenty-five million
14 dollars in research grant and contract funding from various organizations including the
15 American Cancer Society, the Centers for Disease Control and Prevention, National
16 Institute on Alcohol Abuse and Alcoholism, National Institute on Drug Abuse, National
17 Institutes of Health, National Cancer Institute, The Robert Wood Johnson Foundation, the
18 Rockefeller Foundation, the Open Society Institute, the World Health Organization, the
19 Illinois Department of Public Health, and others. Much of this funding has supported my
20 research projects either focused on tobacco or having a major tobacco-related component.
21 **Q. Have you been invited to review research reports of influential publications other**
22 **than those you have already testified about?**

1 A. Yes, I frequently review research reports for governmental and public health organizations
2 including the Office of the Surgeon General, the Institute of Medicine, the Centers for
3 Disease Control and Prevention, the Congressional Budget Office, the World Bank, the
4 World Health Organization, and others.

5 **Q. Have you been invited to review textbooks and other books for publishers?**

6 A. Yes. I have reviewed textbooks and other books for several publishers, including Dryden
7 Press, MIT Press, Oxford University Press, Princeton University Press, Simon and Schuster
8 Company, and University of Michigan Press.

9 **Q. Have you been invited by universities and colleges in the United States to consider**
10 **and recommend candidates for promotion and tenure?**

11 A. Yes. I have reviewed numerous candidates being considered for promotion and/or tenure at
12 various colleges and universities, including Yale University; Swarthmore College; Andrews
13 University; the University of Illinois at Chicago; Oakland University; the University of
14 California San Diego; University of Kentucky; University of Melbourne; University of
15 North Carolina; University of South Florida; and the University of Southern California.

16 ***B. Work on Reports of the Surgeon General***

17 **Q: You have been asked to review, comment upon or draft portions of several Reports of**
18 **the United States Surgeon General, correct?**

19 A: Yes. I substantially contributed in various ways to the Reports of the Surgeon General of
20 1989 (Reducing the Health Consequences of Smoking - 25 Years of Progress: A Report of
21 the Surgeon General), 1994 (Preventing Tobacco Use Among Young People: A Report of
22 the Surgeon General), and 2000 (Reducing Tobacco Use: A Report of the Surgeon
23 General).

1 **Q. Please describe for the Court your work on the 1989 Report of the Surgeon General.**

2 A: I reviewed and commented upon the lengthy chapter in that report on "Smoking Control
3 Policies." The chapter included reviews of the empirical evidence on the effects of a wide
4 range of tobacco control policies, including excise taxation, restrictions on smoking in
5 public places and workplaces, restrictions on cigarette brand advertising and promotion, and
6 the dissemination of information on the health consequences of smoking, as well as other
7 topics.

8 **Q: What was your involvement with the 1994 Report of the Surgeon General?**

9 A: For the 1994 Report of the Surgeon General, I authored a section entitled the "Effect of
10 Tobacco Taxation" that was contained in the Report's chapter on "Prevention." This
11 section provided some background on the history of tobacco taxation in the United States, a
12 discussion of the impact of cigarette taxes on cigarette prices, a review of the evidence on
13 the effects of cigarette taxes and prices on cigarette smoking, and a general discussion of
14 tobacco tax policies. Given the focus of the 1994 Report on teenagers and young adults, my
15 review of the studies on the effects of taxes and prices on smoking behavior included a
16 lengthy discussion of the existing evidence on the effects of price on teenage smoking.

17 **Q: What was your role with the 2000 Report of the Surgeon General?**

18 A: I was a consulting scientific editor on the 2000 Report of the Surgeon General entitled
19 Reducing Tobacco Use: A Report of the United States Surgeon General. I also authored a
20 chapter in the 2000 Report entitled "Economic Approaches." This chapter contained
21 extensive reviews of existing data and research on several topics related to the economics of
22 tobacco, including the supply of tobacco and tobacco products, the effects of price on the
23 demand for tobacco products, and the taxation of tobacco products. The section on supply

1 included discussions of tobacco farming in the United States, the tobacco price support
2 program, the evolution of the United States cigarette industry, research on how industry
3 concentration affects cigarette prices and the incidence of cigarette excise taxes, trade in
4 tobacco and tobacco products, and the impact of trade policy on tobacco use. The section
5 on the effects of price on the demand for tobacco products contained a comprehensive
6 review of the econometric literature and other studies of the impact of taxes and prices on
7 cigarette smoking and other tobacco use based on aggregate and survey data, including a
8 thorough review of the studies focused on teenagers and young adults. The section on
9 tobacco taxation included a discussion of alternative rationales for tobacco taxation based
10 on historical or comparative standards and fairness considerations, and described the
11 studies on the economic costs of tobacco use. As a consulting scientific editor, I also
12 reviewed the remaining chapters in the Report, paying particular attention to the issues that
13 were covered in Tobacco Control in Developing Countries, the volume I co-edited
14 containing the background papers for the World Bank's tobacco policy report, and Curbing
15 the Epidemic: Governments and the Economics of Tobacco Control that I co-authored, both
16 of which are listed on my curriculum vitae at U.S. Exhibit 78,527.
17 **Q: How has your work on these Reports of the Surgeon General contributed to your**
18 **understanding of and expertise in tobacco use and prevention issues and particularly**
19 **teenage smoking?**
20 A: The Reports of the Surgeon General are widely considered the most authoritative reviews of
21 the existing evidence on the issues covered by the Reports. Reports of the Surgeon General
22 are developed by leading experts in their fields and undergo extensive peer review. The
23 three Reports that I have been actively involved in reviewing, editing, and drafting have

1 dealt with the effectiveness of tobacco control policies in preventing adolescent tobacco use
2 and in reducing adult tobacco use. Given this, my involvement in these three Reports has
3 led me to conduct careful reviews of the extensive bodies of literature on issues relevant to
4 the economics of tobacco and tobacco control, particularly with respect to issues concerning
5 tobacco product pricing, taxation, and the impact of price on teenage, young adult, and adult
6 tobacco use. Moreover, my involvement in the review process for the Reports of the
7 Surgeon General has exposed me to similarly comprehensive reviews of the bodies of
8 literature on a variety of other tobacco control policy issues. This experience has
9 contributed greatly to my knowledge, understanding, and expertise concerning effective
10 approaches to reducing tobacco use, particularly with respect to the prevention of adolescent
11 tobacco use.

12 *C.* ***Policy Work***

13 **Q: Does your research have any implications for policy?**

14 A: Yes. Nearly all of the research I have conducted over the years has implications for
15 tobacco, alcohol, and drug control policies. My research on youth smoking, for example,
16 clearly demonstrates that policies that increase the price of tobacco products, most notably
17 increases in state and national tobacco excise taxes, will lead to significant reductions in
18 adolescent smoking. Similarly, my research demonstrates that other tobacco control
19 activities are highly effective in reducing youth smoking. The findings from this research
20 have attracted the interest of policymakers and organizations working to change their
21 policies, as well as the media and various public health authorities interested in these issues.
22 This interest in my research has resulted in me receiving requests for information,
23 invitations to testify before governmental and non-governmental bodies and to participate

1 on various policy-related committees, and requests for input from individuals who are
2 drafting state and National legislation on tobacco-related matters.

3 **Q: How have you responded to such requests and invitations?**

4 A: Given the relevance of my research to tobacco-related policies and given the importance of
5 the issues relating to tobacco use and smoking and health in the United States and world
6 wide, I have become increasingly involved in helping others to translate my research into
7 new policies and to disseminate information. I have engaged in a variety of activities to
8 disseminate the finding from my research in ways that can better inform professionals who
9 work on tobacco, alcohol, and illicit drug control policies and programs, including those
10 aimed at adolescents. These efforts include publishing extensively in peer-reviewed
11 academic journals and other outlets, including some that are widely distributed to policy
12 makers, presenting the findings of my research at a variety of conferences where
13 policymakers and practitioners are present, testifying before local, state, and national
14 governmental bodies and policymakers in the United States and many other countries,
15 conducting briefings for policymakers, providing informal input to policymakers,
16 participating in various local, state, national and international policy-related meetings,
17 serving on state and national advisory committees, providing research-based evidence on
18 the impact of policies to local, state, national and international organizations working to
19 strengthen tobacco control policies, and much more.

20 **Q. Have policy makers relied upon and used your research to implement tobacco-related**
21 **policies?**

22 A. Yes. Findings from my research have been used by numerous policymakers at all levels of
23 government. For example, I have consulted extensively with policymakers in local city

governments, state and local public health departments, state legislatures, United States representatives and senators, the Department of Health and Human Services, the Centers for Disease Control and Prevention, and other national agencies. I have also consulted with international organizations such as the World Bank, the World Health Organization, and government officials in a variety of countries.

D. Testimony Before the United States Congress and Other Bodies

Q. Dr. Chaloupka, have you testified on tobacco-related matters before the United States Congress and other State and Federal Governmental Bodies?

A. Yes, I have provided invited testimony on tobacco-related matters before: (1) the United States Senate Judiciary Committee; (2) the United States House Committee on Ways and Means; (3) the United States Interagency Committee on Smoking and Health; (4) the Rhode Island Senate Finance Committee; (5) the Massachusetts legislature; and (6) various foreign international bodies.

Q: Please describe to the Court your invited testimony before the United States Senate Judiciary Committee.

A: In November 1997, I testified at the United States Senate Judiciary Committee's Subcommittee on Antitrust, Business Rights, and Competition hearings on the proposed antitrust exemption that was included in at least some of the proposals for national tobacco legislation resulting from the "global settlement" discussions. My testimony focused on my past and ongoing research on the effects of prices and tobacco control policies on adolescent smoking.

Q: Please describe to the Court your invited testimony before the United States House Committee on Ways and Means.

1 A: In November 1993, I testified at the United States House Committee's hearings on the
2 financing provisions of the Clinton Administration's Health Security Act and of other health
3 care reform proposals. My testimony focused on the public health impact of proposed
4 increases in the federal cigarette excise tax on the prevalence of smoking including teenage
5 smoking.

6 **Q: Please explain to the Court the invited testimony you gave before the Rhode Island**
7 **Senate Finance Committee.**

8 A: In April 2001, I testified on the impact of proposed increases in the Rhode Island cigarette
9 excise tax on cigarette sales, adult and youth smoking prevalence, premature deaths from
10 smoking and cigarette excise tax revenues in the state. I also testified about the additional
11 reductions in smoking and improvements in public health that would result from
12 earmarking a portion of these new revenues for comprehensive tobacco control efforts.

13 **Q: Please describe your invited testimony before the Massachusetts legislature.**

14 A: In May 2001, I submitted written testimony to the Massachusetts legislature describing the
15 effects of a proposed 50-cent increase in the state cigarette excise tax on youth and adult
16 smoking, cigarette sales, premature deaths caused by smoking, and cigarette excise tax
17 revenues, as well as on the effects of proposed increases in the taxes on other tobacco
18 products. In addition, I briefly discussed the evidence concerning some of the economic
19 arguments against higher tobacco taxes.

20 **Q. You have given invited testimony before the United States Interagency Committee on**
21 **Smoking and Health and its Subcommittee on Cessation. What is the role of that**
22 **Committee and Subcommittee?**

1 A. My understanding is that the Interagency Committee was formed to coordinate the activities
2 of various federal agencies dealing with different aspects of tobacco and tobacco control,
3 ranging from the Department of Agriculture to the CDC's Office on Smoking and Health,
4 and to coordinate their activities with those of state and local agencies and private
5 organizations working on these issues.

6 **Q. Please describe the invited testimony you have given before that Committee and its**
7 **Subcommittees.**

8 A. I have provided testimony on the impact of advertising and promotion on tobacco use
9 before the full Interagency Committee. I have also provided testimony on the impact of
10 cigarette price increases on youth and adult smoking, tax revenues, and public health before
11 the Committee's Subcommittee on Cessation.

12 **Q: Have you given invited testimony before other governmental bodies and international**
13 **organizations?**

14 A: Yes. I have provided testimony on the economics of tobacco and tobacco control to
15 policymakers in many countries, including Cambodia, Ireland, Malaysia, Mexico, Thailand,
16 Venezuela, and Vietnam, usually as part of an Inter-Ministerial meeting of government
17 officials from Ministries with interests in tobacco farming, production, trade or health. I
18 have also conducted briefings on tobacco tax and price issues for federal and state
19 legislators and their staffs.

20 ***E. <u>Bridging the Gap Initiative and Monitoring the Future</u>***

21 **Q: You testified that you are currently the Co-Director of the Bridging the Gap Initiative**
22 **and the Director of the ImpacTeen Program. Could you briefly describe the Bridging**
23 **the Gap Initiative and ImpacTeen research program?**

1 A: The "Bridging the Gap: Research Informing Practice for Healthy Youth Behavior" Initiative
2 is a research program primarily funded by the Robert Wood Johnson to examine the impact
3 of policies, programs, and practices on youth tobacco, alcohol, and drug use and their
4 consequences. More recently, the initiative has also examined diet, physical activity, and
5 obesity among youth. The Bridging the Gap Initiative has two major components:
6 "ImpacTeen: A Policy Research Partnership to Reduce Youth Substance Use" and "Youth,
7 Education and Society" (YES).
8 (1) ImpacTeen, based at the University of Illinois at Chicago's Health Policy Center,
9 is a partnership of nationally recognized substance abuse experts with specialties in such
10 areas as economics, etiology, epidemiology, law, political science, public health, public
11 policy, psychology, and sociology. The goal of ImpacTeen is to understand the impact of
12 policy and environmental factors on youth tobacco, alcohol, and illicit drug use. One major
13 focus of ImpacTeen is on original data collection, which I discuss in more detail below.
14 These data are combined with data from the Monitoring the Future surveys to assess the
15 impact of policies, programs, environmental influences, and other factors on health
16 behaviors among teenagers, including cigarette smoking.
17 (2) The other component of the Bridging the Gap Initiative, the "Youth, Education,
18 and Society" project, is based at the University of Michigan's Institute for Social Research.
19
20 **Q. What are your responsibilities as the Co-Director of the Bridging the Gap Initiative?**
21 A. As Co-Director of Bridging the Gap, I oversee the Initiative's overall activities, establish
22 priorities for all of its data collection, research, dissemination and administrative activities,

1 and establish and maintain communications with organizations that provide funding for the
2 initiative.

3 **Q. Could you describe in more detail your work that relates to ImpacTeen data**
4 **collections?**

5 A. As Director of ImpacTeen, I oversee all data collection, research, and dissemination
6 activities that are supported by the program. With respect to data collection, I oversee and
7 coordinate a variety of original data collection efforts at the state and community level. One
8 major component of ImpacTeen project is the on-site collection of data on tobacco
9 marketing in retail outlets that sell tobacco products. These data include information on:
10 cigarette and other tobacco product prices; a variety of promotions that can influence prices,
11 such as multi-pack discounts, on-package coupons, special sales prices, and free items with
12 the purchase of cigarettes; store interior, exterior, and parking lot advertising for cigarettes;
13 the presence and amount of cigarette or other tobacco product branded functional items
14 such as clocks, counter mats, change trays, branded shelving in retail stores; cigarette and
15 other tobacco product placement; signage related to youth access to tobacco products or the
16 health consequences of these products; and more. Similarly, as part of the on-site
17 observational data collection, we assess other outdoor advertising and counter advertising
18 related to tobacco and collect local tobacco-related ordinances and regulations.

19 **Q. Does ImpacTeen collect other data for which you are responsible?**

20 A. Yes. Another major component of the ImpacTeen project involves telephone interviews
21 with community key informants, including local police chiefs and officers, health
22 department officials, coalition leaders, and others working on issues related to youth
23 substance use and abuse. We collect a variety of tobacco related information, including

1 information on: the enforcement of state and local tobacco control policies targeting youth,
2 such as policies prohibiting youth tobacco possession; the enforcement of state and local
3 policies limiting youth access to tobacco products; the availability of local programs
4 offering smoking cessation services that are targeted to young smokers; and more.

5 **Q. Are you involved with other data collection?**

6 A. Yes, as part of the ImpacTeen project and related projects, we collect detailed state-level
7 data on a variety of issues. I have been actively involved in developing the ImpacTeen state-
8 level tobacco policy database, containing detailed data on major state tobacco control
9 policies and related proposed legislation, including tobacco product taxes, smoke-free air
10 policies, limits on youth access to tobacco, bans on youth purchase, use, and/or possession
11 of tobacco products, and more. Similarly, as part of a spin-off project evaluating the Robert
12 Wood Johnson Foundation's SmokeLess State program, I've overseen the development and
13 implementation of other state-level data collection efforts, including a state-level "strength
14 of tobacco control" survey that assesses the state of tobacco control programs in a variety of
15 areas, a comprehensive database of all state legislative activity related to tobacco, and a
16 comprehensive database of newspaper coverage of tobacco-related issues in all daily
17 circulating newspapers in the United States.

18 **Q: How has your work collecting data contributed to your knowledge of and expertise in**
19 **tobacco use and prevention issues and particularly youth smoking?**

20 A: The original data collections conducted under ImpacTeen and related projects have
21 provided me with distinctive information that is unavailable elsewhere. As a result, my
22 research can uniquely address questions on the impact of policies, prevention programs,
23 tobacco marketing, and other environmental influences on youth tobacco use.

1 **Q. In addition to data collection, what other work do you perform as Director of**
2 **ImpacTeen?**
3 A. I oversee and coordinate the analysis of these data and the analyses that link these data to
4 the Monitoring the Future data on youth tobacco, alcohol, and drug use; author or coauthor
5 research papers containing the results of these analyses; and oversee and coordinate all
6 efforts to disseminate the findings from this research. As Director, I also oversee a number
7 of subcontracts to different organizations involved in the project, supervise the staff
8 working on the project, and administer and coordinate the overall project.
9 **Q: You referred to Monitoring the Future data project. What is the Monitoring the**
10 **Future project?**
11 A: Monitoring the Future is a research project that is directed by Dr. Lloyd Johnston at the
12 University of Michigan's Institute for Social Research. The project has been funded by the
13 National Institute on Drug Abuse for the past three decades. This project conducts cross-
14 sectional annual school-based surveys that collect a wide variety of information on students
15 and their behavior, including their tobacco, alcohol, and other drug use. Monitoring the
16 Future has conducted annual surveys of high school seniors since 1975; and it added
17 comparable surveys of 8th and 10th grade students in 1991. Approximately 50,000 youth are
18 included each year in these Monitoring the Future surveys. In addition to the annual cross-
19 sectional surveys, Monitoring the Future has followed a sub-sample from each high school
20 senior class longitudinally each year since 1976.
21 **Q: You testified that ImpacTeen data are combined with Monitoring the Future data.**
22 **Can you explain further?**

1 A: Yes. The ImpacTeen data collection activities at the community level are built around the
2 schools that are surveyed in the Monitoring the Future project. Additionally, as part of the
3 Youth, Education and Society component of Bridging the Gap, detailed information is
4 collected on each school's policies and their enforcement, prevention curriculum, cessation
5 and treatment programs, and other efforts targeting youth substance use. The Monitoring
6 the Future survey data provide the key outcome data for our ImpacTeen and Bridging the
7 Gap analyses on the impact of price, policies, and other environmental influences on youth
8 tobacco, alcohol, and other drug use.

9 ***F. <u>Consulting Work</u>***

10 **Q: Have you consulted with public health or governmental bodies?**

11 A: Yes, I have consulted on matters involving tobacco use and prevention, especially on
12 matters relating to the economics of tobacco use.

13 **Q: Please tell the Court further about your consulting work related to tobacco use and**
14 **prevention.**

15 A: I have served as consultant to, among others, the following organizations: American Cancer
16 Society; Office of Tobacco Control, Ireland; Centers for Disease Control and Prevention;
17 National Association of Attorneys General; National Cancer Institute; Robert Wood
18 Johnson Foundation; Centers for Disease Control and Prevention; and a variety of other
19 organizations, including the World Bank and the World Health Organization. In general,
20 my consulting work has focused on economic issues concerning tobacco use and tobacco
21 control and was based on my own research in this area, as well as other relevant research.

22 Q: **Please describe the consulting work you performed for the American Cancer Society.**

1 A: Recently, I provided the American Cancer Society with projections on the impact of
2 increases in the federal excise taxes on cigarettes and other tobacco products, including the
3 impact of these taxes on adult and youth smoking prevalence, overall cigarette sales,
4 revenues from cigarette taxes, premature deaths caused by smoking, and the impact of
5 federal tax increases on state revenues from tobacco taxation and settlement payments.
6 **Q: Please describe the consulting work you performed for the Office of Tobacco Control,**
7 **Ireland.**
8 A: I was the keynote speaker for the Office's "Economics of Tobacco Control and Irish Fiscal
9 Policy" meeting, describing the economics of tobacco and tobacco control and discussing
10 implications for Ireland. In addition, I met with a variety of agencies and other
11 organizations involved in or affected by tobacco control activities in Ireland, including
12 representatives from various government ministries (including the Ministry of Finance and
13 the Ministry of Health), labor unions, church groups, and others, and gave several
14 interviews to Irish newspapers and radio and television stations.
15 **Q: Please describe the consulting work you performed for the Centers for Disease**
16 **Control and Prevention (CDC).**
17 A: I have consulted with the CDC's Office on Smoking and Health for many years on a diverse
18 set of activities. These included: my involvement as reviewer, contributor, and editor on
19 various Reports of the Surgeon General reports, as described above; reviewing other
20 publications of the Office on Smoking and Health (OSH) and other products; providing
21 input on OSH-led analyses on issues related to the economics of tobacco and tobacco
22 control; participating in several OSH meetings on issues ranging from youth access to
23 tobacco to the development of a global tobacco surveillance system; presenting at CDC-

1 sponsored workshops, its annual Tobacco Use Prevention Training Institute, and other
2 meetings; and more.

3 **Q: Please describe the consulting work you performed for the National Association of**
4 **Attorneys General (NAAG).**

5 A: My initial consultation with NAAG concerned the implementation of a clause in the Master
6 Settlement Agreement related to changes in the market shares of non-participating and
7 participating manufacturers after the MSA and the resulting impact on payments to the
8 states. As part of this consulting work, I developed a plan for assessing the changes in
9 cigarette company market shares and the impact of companies' marketing practices,
10 particularly those related to price, on market shares. Subsequently, I provided input on
11 economic consulting firms that were candidates to serve as the decision making firm on the
12 issue of whether or not the MSA itself caused the observed changes in market shares. In
13 addition, I have presented at the Triennial meetings on the impact of the MSA that NAAG
14 organizes.

15 **Q: Please describe the consulting work you performed for the National Cancer Institute.**

16 A: My earliest consultation with the National Cancer Institute involved participation in an
17 expert panel meeting focused on the impact cigarette prices and taxes on teenage, young
18 adult, and adult tobacco use and in reviewing an NCI report based on the discussions at the
19 meeting. Subsequently, I consulted with NCI on a set of activities related to the evaluation
20 of its ASSIST program, a state-level, coalition-based effort aimed at reducing tobacco use
21 by strengthening tobacco policies. I was a member of several of the evaluations
22 workgroups and was the chair of the Economics workgroup.

1 **Q: Please describe the consulting work you performed for the Robert Wood Johnson**
2 **Foundation.**
3 A: I have consulted with the Robert Wood Johnson Foundation (RWJF) for many years on a
4 variety of activities, including: serving as a grant proposal reviewer for its Tobacco Policy
5 Research Program, its Substance Abuse Policy Research Program, and other research
6 proposals; assisting in the development of a multi-component survey of youth and young
7 adult tobacco use and relevant school and community influences on tobacco use which
8 included a primary focus on the impact of price on teenage and young adult smoking;
9 participating in a variety of RWJF sponsored meetings on tobacco policy, tobacco addiction,
10 etiology of tobacco use, and related topics; and more.
11 **Q: Can you please describe your work with the World Bank relating to tobacco use?**
12 A: My tobacco-related work with the World Bank consisted of several components, including:
13 a thorough assessment of the existing economic and other relevant evidence on the
14 economics of tobacco and tobacco control, largely drawn from research on the United States
15 and other high-income countries; the gathering of a variety of tobacco-related country-level
16 data; original analyses that filled gaps in the evidence on the economics of tobacco and
17 tobacco control; the application of the findings from the existing and new research to
18 developing countries; and the dissemination of the evidence on the economics of tobacco
19 and tobacco control. I co-led this effort with Dr. Prabhat Jha who, at that time, worked at
20 the World Bank. As part of our efforts, we developed a large team of economists, policy
21 researchers, epidemiologists, and other researchers from a number of different countries
22 who contributed to the activities described above.

1 **Q. Have you authored any reports or publications in conjunction with your work with**
2 **the World Bank?**
3 A: Yes. Two major publications resulted from my work. The first was the peer reviewed
4 World Bank's policy report on tobacco entitled Curbing the Epidemic: Governments and
5 the Economics of Tobacco Control. This was a non-technical summary of the key findings
6 targeted at policy makers in developing countries. The second – an edited peer reviewed
7 volume entitled Tobacco Control in Developing Countries – contained the background
8 papers from which the policy report was developed. I have also published several peer-
9 reviewed journal articles based on this work and subsequent extensions of this work. This
10 work also led to the formation of the International Tobacco Evidence Network (ITEN) – a
11 network of economists, policy researchers, epidemiologists, and other tobacco control
12 experts from around the world – which grew out of the team that Dr. Jha and I put together
13 in developing the World Bank's policy report on tobacco. ITEN's overall goal is to build
14 and expand capacity for tobacco control research globally, with an initial focus on economic
15 research.
16 **Q: What are your responsibilities with ITEN?**
17 A: I am the Co-Director, with Dr. Prabhat Jha, of ITEN. In that capacity, I have been or am
18 currently engaged in a variety of training and technical assistance activities in various
19 regions and countries, including many countries in Southeast Asia, several countries in
20 Central and Eastern Europe, Mexico, Venezuela, and South Africa. These activities have
21 been supported by funding from the Rockefeller Foundation, Open Society Institute, and the
22 Centers for Disease Control and Prevention. I oversee ITEN's peer review and

1 dissemination activities, coordinate the network's efforts, and engage in a variety of
2 administrative activities.
3 **Q: Can you please describe your work with the World Health Organization?**
4 A: The World Health Organization is the United Nations' lead agency focused on global
5 health. WHO provided some core funding for ITEN in its early stages, part of which was
6 used to support my time leading the development of The Evidence Base for Reducing
7 Mortality from Smoking in Low and Middle Income Countries, a June 2001 peer reviewed
8 working paper prepared for the World Health Organization Commission on
9 Macroeconomics and Health.
10 ***G. Expert Testimony***
11 **Q: How many times have you been retained by a party as an expert witness in**
12 **litigation?**
13 A: Including this litigation, I have been retained as an expert witness six times.
14 **Q. Please name the cases and briefly describe your involvement.**
15 A. I provided expert testimony on behalf of the defendants in Santa Fe Natural Tobacco Co.,
16 Inc. v. Eliot Spitzer and Brown & Williamson et al., v. George E. Pataki. On behalf of the
17 defendants, I provided an expert report in Swedenburg, et al., v. Kelly, et al. On behalf of
18 defendants, I provided expert testimony in TFWS, Inc. v. William Donald Schaefer, et al.
19 On behalf of defendants, I provided an expert report in Freedom Holdings, Inc., v. Eliot
20 Spitzer. I have recently been retained by defendants in Costco Wholesale Corporation v.
21 Norm Maleng et al.
22 **Q: Did you provide deposition or trial testimony in those cases?**

1 A. I have been deposed in three cases (*Santa Fe/Brown & Williamson*, *TFWS*, and this case),
2 and have testified in two trials (*Santa Fe/Brown & Williamson* and *TFWS*).
3 **Q: As what kind of expert were you qualified the times you testified?**
4 A: As an economist, with particular expertise in the effects of price on smoking and on alcohol
5 related behaviors.
6 ***II. SUMMARY OF CONCLUSIONS***
7 **Q: What topics do you address in this case?**
8 A: I address Defendants' price-related cigarette marketing and the impact of price on youth
9 smoking.
10 **Q: When you use the term "youth," what age group are you referring to?**
11 A: The studies that I and others have performed and that I rely upon and will testify about
12 typically include 12-18 year olds, middle school and high school students. When I refer to
13 youth or teenage smoking in this testimony, I am referring to 12-18 year olds unless I state
14 otherwise.
15 **Q: What do you mean by Defendants' price-related cigarette marketing?**
16 A: Price-related cigarette marketing includes the many different marketing tools that
17 Defendants use to promote their cigarettes that affect the price of cigarettes, such as setting
18 prices directly, reducing prices through coupons and other offers, and other activities that
19 communicate price such as point of sale signage.
20 **Q: What do you mean by the impact of price on youth smoking?**
21 A: I mean the effects that price has on whether or not teenagers smoke cigarettes, and how
22 price affects: the smoking initiation and smoking uptake process among teenagers; smoking

1 cessation efforts by teenage smokers; the number of cigarettes smoked by teenage smokers;
2 and other aspects of teenager smoking behavior.
3 **Q: What if any conclusions did you reach regarding Defendants' price-related cigarette**
4 **marketing and how price impacts teenage smoking initiation and continuation?**
5 A. I have reached two conclusions. My first conclusion is that, in relation to their smoking
6 behavior, teenagers are price sensitive.
7 **Q: What do you mean by price sensitive?**
8 A: In other words, teenagers' smoking behavior is affected by cigarette prices. When prices go
9 up, fewer teenagers will take up smoking, particularly daily smoking; more teenagers will
10 try to quit smoking; teenagers will smoke on fewer days; and teenage smokers will smoke
11 fewer cigarettes each day. When prices go down, more teenagers will take up smoking;
12 teenagers will smoke more frequently; and teenage smokers will smoke more cigarettes.
13 **Q: Briefly, how did you come to this conclusion that, in relation to their smoking**
14 **behavior, teenagers are price sensitive?**
15 A: I have relied upon the large body of economic research that has found that price has a
16 limited affect on adult smoking. I have also relied on the body of research that looks
17 specifically at teenagers and has found that, related to their smoking behavior, teenagers are
18 much more sensitive to price than adults.
19 **Q: Can you further explain the economic research regarding adult smoking?**
20 A: This research has found that adult smoking responds to price, with higher cigarette prices
21 leading to increases in the number of adult smokers who try to quit smoking, reductions in
22 the number of adults who smoke, and reductions in the number of cigarettes smoked by
23 adult smokers. In addition, this research generally finds that, as people get older, their

1 smoking behavior becomes less responsive to price. For example, this research generally
2 finds that young adults – those aged 18-24 – are fairly responsive to price. Older adults, as
3 they age, are less price sensitive in relation to smoking.

4 **Q: What is your second conclusion?**

5 A: Second, I have concluded that Defendants understand the impact of cigarette prices on
6 smoking; Defendants know that teenage smoking is particularly price sensitive; and
7 Defendants use this knowledge in developing and implementing their price-related
8 marketing strategies.

9 **Q: When you say that Defendants know that teenagers and young people are more price**
10 **sensitive, what do you mean?**

11 A: Defendants have paid close attention to the economic research on the effects of price on
12 cigarette smoking, particularly on the effects of price on teenage smoking. In addition, their
13 own internal studies recognize the importance of price as a key factor affecting youth
14 smoking behavior.

15 **Q: When you say that you have concluded that Defendants use this knowledge to develop**
16 **and implement their price-related marketing strategies, what do you mean?**

17 A: Defendants have long recognized the importance of price as a key marketing strategy, and
18 have known for at least two decades that smoking by teenagers is very responsive to price.
19 Once Defendants gained this knowledge, Defendants have increasingly concentrated more
20 and more of their growing marketing budgets on price-related marketing strategies.

21 **Q: What materials did you draw from to reach these conclusions?**

22 A: I have drawn on a variety of materials and my own experiences, including: (1) my research
23 in this area, including research on Defendants' marketing practices and research on the

1 effects of price on teenage, young adult, and adult smoking, much of which has been
2 published in peer-reviewed publications, including journals, books, and reports; (2) other
3 published research on marketing, tobacco use, and other relevant topics such as smoking
4 uptake among adolescents; (3) my work in developing and implementing original data
5 collection efforts, particularly those that focus on Defendants' marketing at retail (also
6 known as the point of sale); and (4) Defendants' internal documents.

7 ## *III. FIRST CONCLUSION: TEENAGERS ARE PRICE SENSITIVE*

8 ### *A. Research Supporting the First Conclusion*

9 **Q: You testified that your first conclusion, that teenage smoking is affected by price, is**
10 **based on a body of research. What does that body of research consist of?**

11 A: This research consists of numerous econometric studies that have examined the effects of
12 price on teenage smoking behavior.

13 **Q: What kind of economic data are included in the econometric studies that have looked**
14 **the effects of price on teenage smoking behavior?**

15 A: Key data include: cigarette prices; cigarette taxes; measures of cigarette smoking, such as
16 whether or not a teenager smokes; and measures of smoking frequency and intensity, such
17 as the number of days a teenager smokes or the average number of cigarettes a teenager
18 smokes each day.

19 **Q: Have you created a chart of the econometric studies that have looked the effects of**
20 **price on teenage smoking behavior?**

21 A: Yes, it is Demonstrative 1.

22 **Q. Please describe Demonstrative 1.**

1 A: In this chart, I have included in date order two general categories of econometric studies:
2 smoking prevalence studies and smoking initiation/uptake studies.
3 **Q: Could you describe the smoking prevalence studies that are included in your**
4 **Demonstrative 1?**
5 A: These studies look at the affect of price on whether or not teenagers smoke. These studies
6 generally conclude that smoking by teens is two to three times more sensitive to price than
7 is smoking by adults. Many of these studies also look at the affect of price on the number
8 of cigarettes teenage smokers smoke, generally concluding that higher cigarette prices
9 reduce the number of cigarettes smoked by teenage smokers. Some of these studies have
10 considered other issues, such as how price affects teenage smoking behavior through its
11 impact on peer and parental smoking. These studies are based on cross-sectional survey
12 data.
13 **Q: Could you describe the initiation/uptake studies that are included in your**
14 **Demonstrative 1?**
15 A: These studies look at the affect of price on smoking initiation and smoking uptake. By
16 uptake, I mean a range of smoking behaviors, including smoking experimentation and daily
17 smoking. By initiation, I mean simply starting any smoking behavior such as daily
18 smoking. The 1994 Report of the Surgeon General described smoking initiation as a
19 process that develops in five stages, moving from never smoking through a preparatory
20 stage, then on to trying, experimentation, regular smoking, and eventually addiction. Some
21 of these studies are based on cross-sectional data while others are based on longitudinal
22 data.

1 **Q: What has the recent econometric research that examined the impact of cigarette**
2 **prices on the different stages of the smoking initiation process found?**
3 A: These studies generally find that changes in cigarette prices have a relatively limited impact
4 on experimentation on smoking, but have a sizable effect on the initiation of regular
5 smoking. This is not surprising given that young smokers are more likely to begin buying
6 the cigarettes they smoke as they make the transition from infrequent, experimental
7 smoking to more regular smoking. As they make this transition, cigarette prices will have a
8 more direct impact on their smoking behavior.
9 **Q: Can you highlight some important findings of these studies?**
10 A: There have been several recent studies that have addressed this issue using cross-sectional
11 survey data, including a few of mine. These studies tend to group teenagers into smoking
12 uptake categories based on their smoking histories and current smoking behaviors. For
13 example, in a peer-reviewed 2002 *Nicotine & Tobacco Research* article I co-authored, we
14 used data from the 1992, 1993, and 1994 Monitoring the Future surveys of 8th, 10th, and 12th
15 grade students, grouping these adolescents and teenagers into five categories based on
16 current cigarette consumption, ranging from those that did not report smoking in the 30
17 days prior to the survey to those who smoked one pack or more per day. We concluded
18 that: "Higher prices have an increasing impact as (an) individual's level of cigarette
19 consumption gets higher."
20 **Q: What are cross-sectional survey data?**
21 A: Cross-sectional survey data are data collected one time from a cross-section of the
22 population. For example, the population could be 8th and 10th graders, and the cross-section
23 could be nationally representative groups of these students.

1 **Q: Have other studies also addressed this issue using cross-sectional data?**

2 A: Yes, for example, a peer-reviewed article in the 2001 *Journal of Health Economics* used
3 data from the second (1993) wave of the longitudinal Teenage Attitudes and Practices
4 Survey. The article concluded that "Price was not significantly associated with
5 experimentation . . . [B]ecause experimenters typically consume very few cigarettes, and do
6 so sporadically for at least a period of time, it is not surprising that they do not consider the
7 price of cigarettes in their early smoking behavior." It further found that "Only after they
8 start smoking enough to justify buying their own cigarettes or asking others to buy the
9 cigarettes for them would price become a relevant issue for these teens," and concluded
10 "that price is an important factor in more advanced smoking behavior among adolescents."

11 **Q: Have studies addressed this issue using other data?**

12 A: Yes, other studies have used longitudinal data. The best of these studies is a recent study
13 by John Tauras, Patrick O'Malley, and Lloyd Johnston done as part of the Bridging the Gap
14 project. This study uses data on six different groups of teenagers who were surveyed by the
15 Monitoring the Future study. These groups were drawn from the 1991, 1992, and 1993
16 cross-sectional surveys of 8th and 10th graders and were followed over time through the
17 1990s. The study looked at the initiation of any smoking (including experimentation), the
18 daily smoking and the initiation of heavy smoking. The study concluded that price had
19 relatively little impact on the initiation of any smoking, but that teenage initiation of daily
20 and heavy daily smoking is very responsive to price.

21 **Q: What are longitudinal data?**

22 A: Longitudinal data are data that are collected repeatedly over time from the same individuals.

23 **Q: What is the value of using longitudinal data?**

1 A: Longitudinal data allow researchers to better identify and determine the causal relationships
2 between cigarette prices and teenage smoking initiation.
3 **Q: Could you explain further?**
4 A: The longitudinal data used by Tauras and his colleagues in the study described above are
5 ideal for studying the impact of cigarette prices on youth smoking initiation, given the many
6 changes in cigarette prices during the 1990s, including the Marlboro Friday price reductions
7 and the numerous large increases in state cigarette taxes that provide significant cross-
8 sectional and intertemporal variation in cigarette prices. They employ three alternative
9 measures of initiation: initiation of any smoking, which is dominated by
10 trying/experimentation; initiation of daily smoking; and initiation of heavy daily smoking,
11 defined as smoking half a pack or more per day. Their estimates imply that a ten percent
12 increase in price would reduce initiation of any smoking by one to three percent, initiation
13 of daily smoking by eight to twelve percent, and initiation of heavy daily smoking by ten to
14 fourteen percent.
15 **Q: Based on the Tauras estimates, how many more teenagers would begin daily smoking**
16 **if cigarette prices were reduced?**
17 A: The CDC estimates that 2,000 12 to 17 year olds become daily smokers each day. Given
18 the Tauras, O'Malley and Johnston estimates of the effects of price on initiation of daily
19 smoking, a ten percent drop in cigarette prices would increase the number of teenagers who
20 become daily smokers by as many as 87,600 each year.
21 **Q: Has every econometric study in Demonstrative 1 that looked at the effect of price on**
22 **teenage smoking behavior reached the same conclusion?**
23 A: No.

1 **Q: Can you explain?**

2 A: The majority of the studies conclude that price affects teenage smoking behavior. A few do

3 not reach this conclusion.

4 **Q: What weight do you give to these studies for your conclusion that that teenage**

5 **smoking is affected by price?**

6 A: I give these studies little weight for a combination of reasons related to the time period

7 during which the data were collected for these studies and the methodology that was applied

8 in these studies.

9 **Q: What are the primary reasons that cigarette prices rise or decline?**

10 A: The two primary reasons for changes in cigarette prices are changes in federal, state, and

11 local cigarette excise taxes and tobacco industry initiated changes in cigarette prices. The

12 industry can change prices through pricing strategies and through their price-related

13 marketing activities.

14 **Q: When you refer to the tobacco industry, are you referring to the Defendants in this**

15 **case?**

16 A: Yes, primarily.

17 **Q: What is an excise tax?**

18 A: An excise tax is a tax that is imposed on a specific good or service. In the United States,

19 excise taxes are applied by federal, state, and/or local governments to several products,

20 including cigarettes and other tobacco products, alcoholic beverages, and gasoline.

21 Cigarette excise taxes in the United States are typically levied in cents per cigarette or per

22 pack of cigarettes.

1 *B.* ***Teenage Smoking Is Affected by Price in Four Key Ways***

2 **Q: Now that you have explained the research supporting your first conclusion that**
3 **teenage smoking is affected by price, could you further explain that conclusion?**

4 A: Yes, I can break that conclusion down. Teenage smoking is affected by price in four key
5 ways. When prices go down, there is: (1) increased initiation among potential teenage
6 smokers; (2) increases in the number of cigarettes smoked by teenage smokers; (3) reduced
7 cessation among current teenage smokers; and (4) increased relapse among former teenage
8 smokers.

9 **Q: Dr. Chaloupka, let's take those four key ways one by one. First, what do you mean**
10 **when you conclude that lower cigarette prices lead to increased initiation among**
11 **potential teenage smokers?**

12 A: Reductions in cigarette prices encourage some teenagers who would have not have
13 otherwise taken up smoking to begin to smoke. Because, according to the Surgeon General,
14 90 percent of smokers try their first cigarette before they turn 19 years old, most of those
15 who begin to smoke are teenagers.

16 **Q: What have studies found on this issue?**

17 A: As described above, some recent econometric studies of youth smoking have distinguished
18 between initiation of "any" smoking (including experimentation with cigarettes) and
19 initiation of "regular" smoking (typically, daily smoking). These studies have concluded
20 that increases in cigarette prices have a modest impact on youth experimentation with
21 cigarettes, and have a much larger impact on initiation of daily and heavy daily smoking.

22 **Q: Second, what do you mean when you conclude that decreased cigarette prices lead to**
23 **increases in the number of cigarettes consumed by continuing smokers?**

1 A: Decreases in cigarette prices lead teenage smokers to smoke more cigarettes. Some will
2 smoke more frequently (on more days); others will smoke more cigarettes on the days that
3 they do smoke; some will both smoke more frequently and smoke more cigarettes when
4 they smoke.

5 **Q: Third, what do you mean when you conclude decreased prices will lead to reduced**
6 **cessation among current teenage smokers?**

7 A: Decreases in cigarette prices reduce the number of teenage smokers who try to quit
8 smoking.

9 **Q: What do you mean when you testify that reductions in price will lead to increased**
10 **relapse among former teenage smokers?**

11 A: Reductions in cigarette prices will lead some teenagers who had quit smoking to take up
12 smoking again.

13 **Q: You've explained the four key ways that teenage smoking is affected by price. What**
14 **are the outcomes?**

15 A: Three of these (increased initiation, reduced cessation, and increased relapse) raise teenage
16 smoking prevalence. In combination with the fourth (increases in the number of cigarettes
17 smoked by teenage smokers), all increase the number of cigarettes smoked by teenagers.

18 **Q: What do you mean by smoking prevalence?**

19 A: Smoking prevalence is the <u>number of smokers</u>. This is typically expressed as a percentage.
20 Recent data show that smoking prevalence among adults in the United States is 22.5
21 percent, and that there are 46 million current adult smokers. Similar estimates show that
22 22.9 percent of high school students are current smokers.

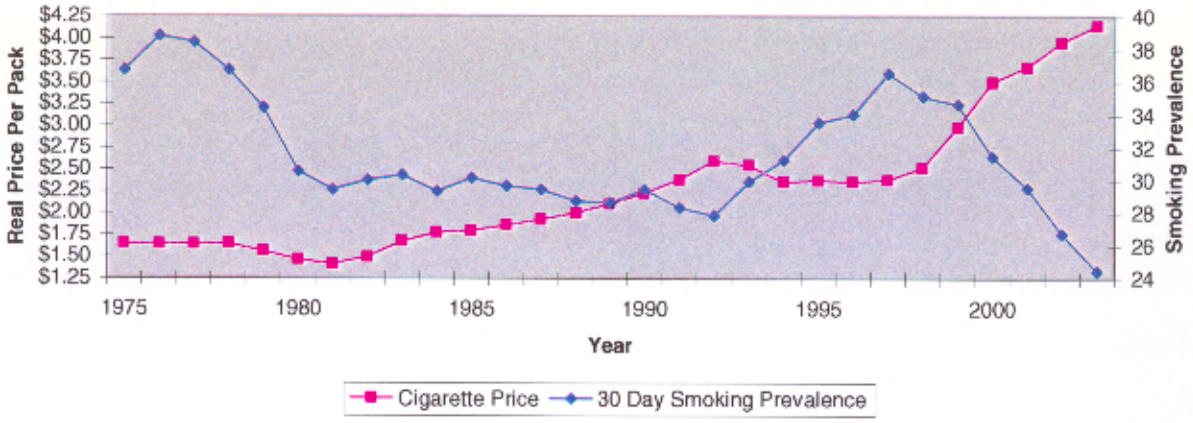
23 **Q: Have you created charts that show teenage smoking prevalence and cigarette prices?**

A: Yes, I have created three charts – Figures 1, 2, and 3 – that show similar data for smoking prevalence among adolescents and teenagers, based on prevalence rates from the Monitoring the Future surveys. Figures 1, 2, and 3 are updated versions of Figures 4, 6, and 8 from my expert report filed on November 15, 2001, extending the data on youth smoking prevalence from 2000 through 2003.

Q: What does Figure 1 show?

A: Figure 1 presents the smoking prevalence rate for high school seniors from 1975 through 2003 on the right axis and inflation adjusted average cigarette prices on the left axis. The smoking prevalence rate reflects the percentage of high school seniors smoking one or more cigarettes in the 30 days before they were surveyed.

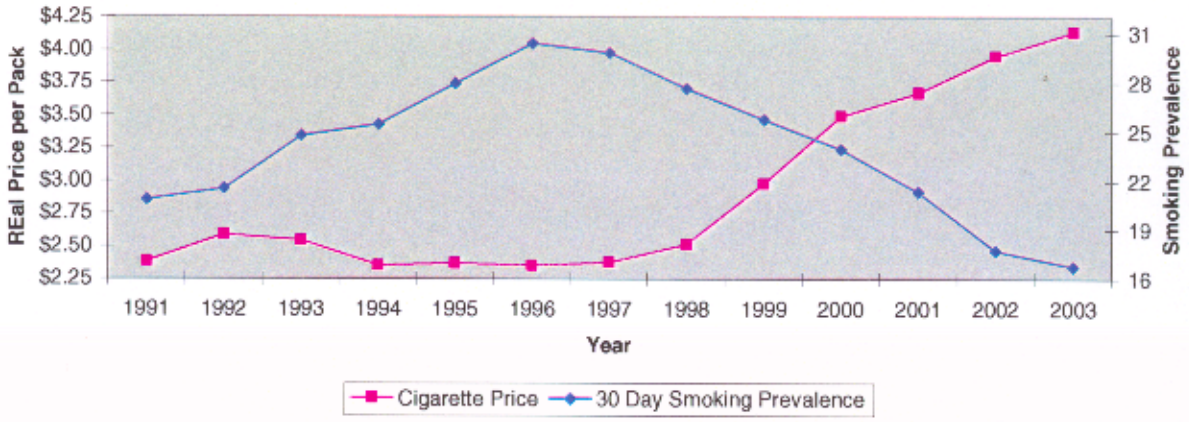
Figure 1
12th Grade 30 Day Smoking Prevalence and Price



Q: What does Figure 2 show?

A: Figure 2 presents comparable data on smoking prevalence for tenth grade students and inflation-adjusted average cigarette prices from 1991 to 2003.

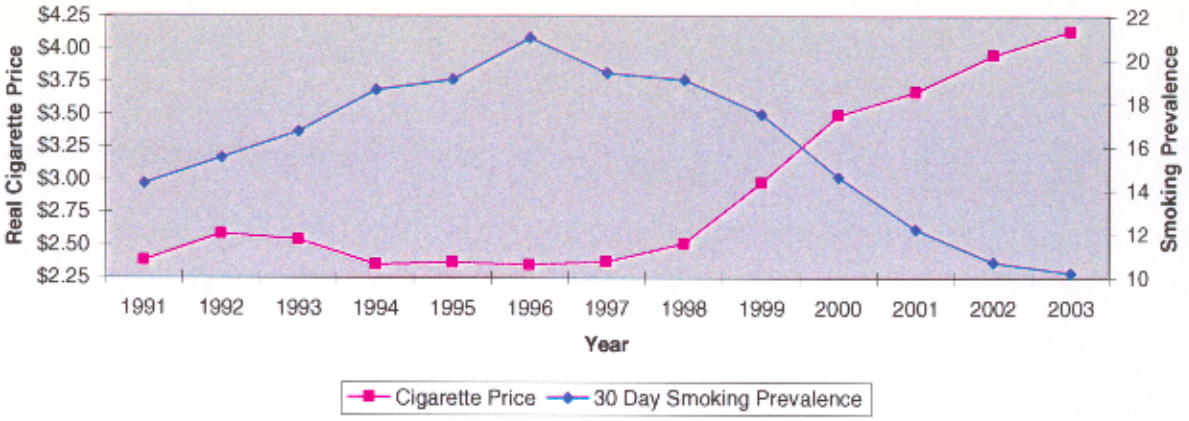
Figure 2
10th Grade 30 Day Smoking Prevalence and Price



Q: What does Figure 3 show?

A: Figure 3 presents comparable data on the prevalence rate for eighth grade students and inflation-adjusted cigarette prices from 1991 to 2003.

Figure 3
8th Grade 30 Day Smoking Prevalence and Price



Q: How do these three figures support your conclusions that teenage smoking behavior is affected by price?

A: These graphs clearly illustrate the strong relationship between youth smoking prevalence and cigarette prices. These figures show that, as cigarette prices increased, youth smoking prevalence fell, and, as cigarette prices decreased, youth smoking prevalence increased.

They also show that the drop in cigarette prices on Marlboro Friday in 1993 significantly increased youth smoking prevalence. Finally, the figures also show how significant price increases following legal settlements in the late 1990s and recent numerous state tax increases have led to reductions in teenage smoking prevalence.

C. Five Reasons Why Teenage Smoking Is More Price Sensitive Than Adult Smoking

Q: You testified that research showed that, as related to smoking behavior, teenagers are much more sensitive to price than adults. Why is this?

A: Economic theory predicts at least five reasons why teenage smoking is expected to be more sensitive to price than adult smoking.

Q: What is the first reason?

A: Teenage smoking prevalence is mostly affected by the number of teenagers who start smoking. Adult prevalence generally changes for a different reason. Adult prevalence is largely affected by the number of adults who quit smoking (not the number who start smoking, since there is little smoking initiation after age 19). Because adults have been smoking for a long time and are addicted, quitting smoking is very difficult. Addiction makes it difficult to change smoking behavior in response to a price change. For those teenagers who are not yet addicted, their smoking behavior is more responsive to price changes. Because there are more teenage smokers who are not addicted than there are adult smokers who are not addicted, teenage smokers are more sensitive to price changes than adult smokers.

Q: What is the second reason?

A: Peers are very important to teenagers. First, when prices go up and fewer teenagers start smoking, their friends will not start smoking or will stop smoking due to peer influence.

1 Second, many teenagers get cigarettes from their friends. When cigarette prices increase,
2 teenagers have fewer cigarettes to share and those who have cigarettes are less likely to
3 share them. Third, higher prices create more negative perceptions about cigarettes among
4 teenagers which causes fewer teenagers to smoke.

5 **Q: What research supports your conclusions?**

6 A: Two peer-reviewed published papers and two studies that have not yet been published in
7 peer-reviewed journals, but that have been released in a working paper series support my
8 conclusions.

9 **Q: Please describe these studies and how they support your conclusions.**

10 A. A 2003 ImpacTeen study, "Peer Effects, Tobacco Control Policies, and Youth Smoking
11 Behavior," concluded that one-third of the overall effect of price on teenage smoking results
12 from the effects of peer influence as I described above. Another 2003 ImpacTeen research
13 study that I co-authored, "New Evidence on Youth Smoking Behavior Based on
14 Experimental Price Increases," found that teenage smokers would be significantly less likely
15 to offer cigarettes to their friends if cigarette prices were to increase. Another recent peer
16 reviewed paper that I co-authored, "Impact of Tobacco Control Spending and Tobacco
17 Control Policies on Adolescents' Attitudes and Beliefs About Cigarette Smoking,"
18 published earlier this year in *Evidence Based Preventive Medicine*, found that higher
19 cigarette prices were associated with various negative perceptions about cigarettes,
20 including increased perception of great risks from smoking and stronger perceptions of
21 addiction, support for bans on smoking in public places, and less tolerance for being around
22 smokers. Fourth, a recent peer reviewed paper I authored, "Contextual Factors and Youth

1 Tobacco Use: Policy Linkages," that was published in 2003 in *Addiction* discussed the
2 conclusions that I stated above.

3 **Q: What is the third reason why teenage smoking is more sensitive to price than adult**
4 **smoking?**

5 A: Because teenage smokers have less money or discretionary income than adults, they spend
6 relatively more of their income on cigarettes than adult smokers do, so they are more
7 responsive to changes in prices. This is supported by studies that have studied price
8 sensitivity among populations with different incomes, such as the 2001 peer reviewed study
9 by Matthew Farrelly and his colleagues published in the *Southern Economic Journal* which
10 found that smoking by persons in households with incomes below the median was at least
11 four times more sensitive to price than smoking by persons in households with incomes
12 above the median.

13 **Q: What is the fourth reason why teenage smoking is more sensitive to price than adult**
14 **smoking?**

15 A: The fourth reason relates to the idea that there are a number of "costs" to cigarette smoking
16 that include not just the monetary price of cigarettes, but also the expected health
17 consequences resulting from smoking, the time costs associated with obtaining cigarettes,
18 the costs associated with using cigarettes (such as having to smoke outdoors in inclement
19 weather due to smoke-free air policies), and others. Teenagers are more apt to think in the
20 present, and as a result they will focus more on the monetary costs than on the long term
21 "costs" – e.g. the health consequences - of smoking. Consequently, they will respond more
22 to price than will adults who generally give more weight to the long term consequences of
23 smoking.

1 **Q. What is the fifth reason why teenage smoking is more sensitive to price than adult**
2 **smoking?**
3 A: Yes. Since parental smoking affects teenage smoking, changes in cigarette prices that
4 affect parental smoking will affect teenage smoking. Higher prices will reduce the number
5 of adults (including parents) who smoke which then leads to reductions in teenage smoking.
6 When parents reduce or quit smoking, teenagers have fewer cigarettes available since many
7 teens, particularly those in the early stages of smoking uptake, get cigarettes by "sneaking"
8 them from their parents. In short, as with peers, price affects teenage smoking in part
9 through its impact on parental smoking.
10 **Q: To sum up the testimony you have just provided, what is your first conclusion?**
11 A: Higher cigarette prices lead to increased smoking cessation among current smokers,
12 reduced relapse among former smokers, fewer teenagers initiating cigarette smoking, and
13 reductions in cigarette consumption among those who continue to smoke. Further, teenage
14 smoking is two to three times more sensitive to price than smoking among adults.
15 ***IV. SECOND CONCLUSION: DEFENDANTS KNOW THAT TEENAGERS ARE PRICE***
16 ***SENSITIVE***
17
18 **Q: Dr. Chaloupka, let's turn now to your second conclusion. Could you remind the**
19 **Court of that conclusion?**
20 A: Defendants understand the impact of cigarette prices on smoking, know that smoking
21 behavior among teenagers is more price sensitive, and use this knowledge in developing
22 and implementing their price-related marketing strategies.
23 **Q: What is this conclusion based upon?**
24 A: I base this conclusion upon Defendants' internal company documents, observations of the
25 Defendants' marketing activities, and data the Federal Trade Commission (FTC) reports to

1 Congress which are based upon data that Defendants report to the FTC regarding
2 Defendants' cigarette marketing expenditures.

3 *A.* ***Defendants' Price-Related Marketing***

4 **Q: Earlier you testified that there were two primary factors that affect cigarette prices.**
5 **Could you repeat those?**

6 A: Yes, the two primary factors are excise taxes and Defendants' price-related marketing.

7 **Q: What do you mean by Defendants' price-related marketing?**

8 A: I am referring to industry pricing strategies and their price-related marketing activities.
9 Defendants' setting of cigarette prices is the clearest form of price-related marketing. Price-
10 related cigarette marketing includes many different marketing tools that Defendants use to
11 promote their cigarettes. Some of these directly lower the price of cigarettes; some provide
12 added value to a consumer; some at times communicate price.

13 Marketing tools that directly lower the price of cigarettes include: retail value added;
14 promotional allowances; coupons; and sampling. Those that provide added value include:
15 specialty item distribution and retail value added. Those that can at times communicate
16 prices or provide opportunities to distribute coupons or samples include: outdoor
17 advertising (billboards and transit); print advertisements (magazines and newspapers);
18 direct mail; point of sale; sponsorship (public entertainment); and the Internet.

19 **Q: Where did you get the terms and categories for marketing that you have just**
20 **described above?**

21 A: I am working from the FTC's categorization of cigarette company marketing expenditures,
22 which the tobacco companies report to the FTC.

1 **Q: Why do you use the FTC's categorization of cigarette company marketing**
2 **expenditures?**
3 A: The FTC has been publicly reporting these data for several decades. The FTC data – which
4 the FTC collects from the cigarette companies and then reports to Congress annually – are
5 the only annual data on cigarette marketing expenditures that are available on a regular
6 basis for the past 40 years.
7 **Q: Could you generally describe what you mean by Defendants' pricing strategies?**
8 A: Yes. The industry sets prices for cigarettes they sell to wholesalers. They lower or raise
9 these prices for strategic reasons as well as for reasons related to changes in the costs of
10 producing, distributing, and marketing cigarettes.
11 ***1. Marketing Tools That Directly Affect Price***
12 **Q: You mentioned retail value added promotions. What are these?**
13 A: In its 2001 annual Cigarette Report to Congress, the FTC defines retail value added as "All
14 expenditures and costs associated with the value added to the purchase of cigarettes,
15 including buy one get one free and buy one get x (promotional item) free." By "buy one get
16 one free," the FTC is referring to those promotions where a customer is given a free pack of
17 cigarettes with purchase of a pack. In addition to buy one get one free promotions, cigarette
18 companies have used many other multi-pack discounts that would fall into the retail value
19 added category, such as "buy two get one free" or "buy four get two free" offers. By "buy
20 one get x (promotional item) free," the FTC is referring to those promotions where a
21 customer gets a free gift of some type with purchase of cigarettes. Defendants have used a
22 wide variety of the "buy one get x free" types of promotions over the years, starting with
23 some of the first baseball cards in the late 1800s and since then including such items as

lighters, bottle openers, baseball caps, playing cards, coffee mugs, flashlights, key chains, and many more.

Q: Could you provide some actual examples of retail value added promotions that Defendants have used?

A: Figures 4 through 14 provide just a few examples of retail value added promotions. Figures 4 through 6 illustrate multipack discounts, while Figures 7 through 14 illustrate gifts with purchase.

Figure 4

Figure 5

Figure 6

1

Figure 7

"The Camel Cooler." Plastic Joe Camel cooler mug, came with three packs, 1991. 5" x 4". $10-13. *Courtesy of Odell Farley.*

2

3

Figure 8

4

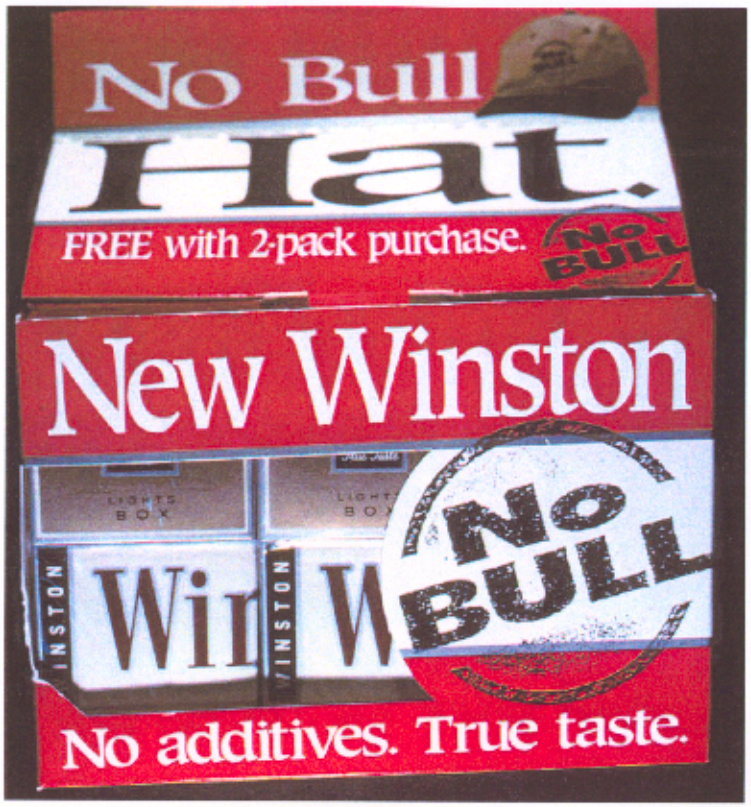
Figure 9

Figure 10

Figure 11

Figure 12

1 **Figure 13**



2

3 **Figure 14**

4

5 **Q: How does Defendants' use of retail value added promotions affect cigarette prices?**

A: Some retail value added promotions directly affect price by reducing the price per pack of cigarettes. A buy one get one free promotion, for example, will cut the price per pack in half. Other retail value added promotions provide an item with some value to smokers at no additional cost.

Q: What are promotional allowances?

A: The FTC defines these as "promotional allowances paid to retailers and any other persons (other than full-time employees of the cigarette manufacturers) in order to facilitate the sale of any cigarette, excluding expenditures in connection with newspapers, magazines, outdoor, audio-visual, transit, and direct mail." In short, promotional allowances are payments or rewards to retailers. They include: direct payments to retailers to allow a retailer to discount cigarettes; payments to compensate retailers for premium shelf space or display space; and payments made to retailers to advertise price reductions in local media. These are provided to retailers through programs such as Philip Morris' Retail Masters programs. Figures 15 through 19 contain some examples of "special price" promotions that almost certainly result from promotional allowances paid by Defendants to retailers.

Figure 15

Figure 16

Figure 17

Figure 18

Figure 19

Q: What do you mean by coupons?

A: Coupons are distributed in a variety of ways, including at the point of sale, in newspaper and magazine advertisements, via direct mail, at sponsored events, in product packaging, on the Internet, and more. The value of coupons can vary widely. For cigarettes, most coupons will be "cents off" type coupons that can apply to single pack, multi-pack, or carton purchases and that will be redeemed when purchasing cigarettes. Figures 20 through 24 contain some examples of coupons.

Figure 20

Figure 21

Figure 22

Figure 23

Figure 24

Q: What do you mean by sampling?

A: Sampling is the distribution of free cigarettes to the public. This can take place at events sponsored by cigarette companies, such as bar and club promotions. Sampling effectively reduces the price of cigarettes to zero.

Q: What is specialty item distribution?

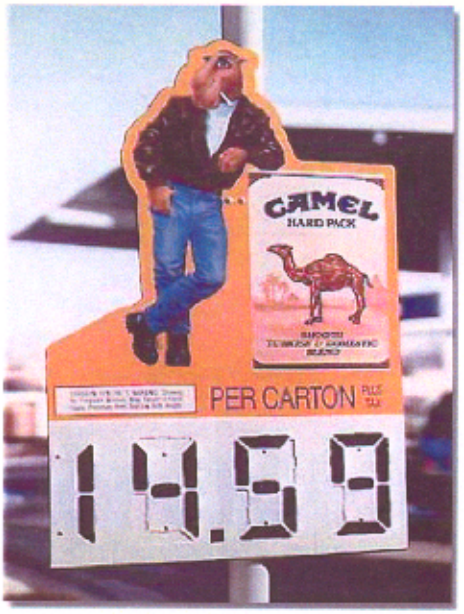
A: Specialty item distribution includes programs that provide gifts that reward brand loyalty. Examples include the "Marlboro Miles" and "Camel Cash" programs. Like frequent flyer programs, these allow cigarette smokers to accumulate credits (e.g. UPC codes, Camel Cash, Marlboro Miles, or other proof of purchase) from each pack purchased that can be redeemed for a wide variety of merchandise that often bears a cigarette brand logo. Other activities, such as sweepstakes programs like the Marlboro "Racing School" that offer cash prizes, vacations, or automobiles, would also be included under specialty item distribution.

Q: How do Defendants use retail value-added promotional allowances, coupons, specialty item distribution, and sampling to affect cigarette prices?

1 A: Many of these marketing tools directly reduce the price of cigarettes, while others provide
2 an item with some additional value at no additional cost.
3 **Q: How do Defendants' marketing activities affect teenage smoking?**
4 A: By reducing cigarette prices, these marketing activities increase teenage smoking, including
5 the number of teenagers who begin smoking and the number of cigarettes smoked by
6 teenage smokers.
7 ***2. Marketing Tools That Communicate Price***
8 **Q: You testified that some marketing tools can at times communicate prices or provide**
9 **opportunities to distribute coupons or samples. Please explain.**
10 A: Outdoor, print, direct mail, and point of sale advertising can at times be used to
11 communicate price. It is rare that outdoor (billboards) and transit advertising communicate
12 prices, although some outdoor advertising has at times been used to do so. Similarly, some
13 print advertising includes coupons and communicates price but much print advertising does
14 not. Direct mail is another marketing tool that sometimes provides coupons or
15 communicates price but does not always do so.
16 Point of sale advertising, on the other hand, very frequently communicates price.
17 Some marketing tools, like sponsorship (public entertainment) also offer the opportunity to
18 do other types of price-related marketing. For example, at bar and club events, companies
19 distribute cigarette samples or coupons and also sign up people for their direct mail
20 databases; these marketing tools both can directly relate to price (in giving away cigarettes)
21 as well as less directly relating to price (signing up people for databases which will then be
22 used to mail coupons).
23 **Q: What is outdoor/transit advertising?**

A: Outdoor and transit advertising includes advertising on billboards, public transportation vehicles (e.g., buses and subway trains) and facilities, and other outdoor locations, including those on the property of cigarette retailers. Outdoor/transit advertising can be used to communicate information about cigarette prices or about specialty item distribution programs, although it is often used for other purposes. For example, billboard advertising was used extensively to communicate specialty item distribution programs such as Marlboro Gear and Camel Cash that provided merchandise to smokers. Other advertising of cigarette prices that takes place outdoors are the free-standing price displays and signs placed outside retail stores on street corners or at gasoline pumps. Figures 25 through 32 provide examples of outdoor advertising that communicates price. Several of these illustrate special price promotions likely to result from promotional allowances paid to retailers.

Figure 25



1

Figure 26

2

3

Figure 27

4

Figure 28

Figure 29

Figure 30

1

Figure 31

Marlboro
SMOKIN' OFFER!
$3.99
PER PACK
PLUS TAX
CAMEL
PLEASURE TO BURN
$ 3.84
SPECIAL OFFER!

2

1 **Figure 32**

2

3 **Q: What is print advertising?**

4 A: Print advertising is advertising placed in newspapers and magazines. These advertisements
5 are an important means for Defendants' distribution of cigarette coupons, typically as part
6 of a larger image-oriented advertisement. Much print advertising is simply image
7 advertising that does not contain coupons or communicate price; some advertisements do
8 however contain coupons.

9 **Q: What do you mean by direct mail?**

1 A: Direct mail is the marketing of cigarettes directly to individuals, using the U.S. mail.
2 Cigarette companies have engaged in a variety of direct mail marketing activities that affect
3 price including mailing coupons and other promotional items, sampling, coupon
4 redemption, and specialty item distribution.

5 **Q: What is point of sale marketing?**

6 A: Broadly, point of sale marketing refers to the range of marketing activities that are
7 conducted at retail. Much point of sale marketing is directly related to price, such as
8 posters, displays, and other signage that promote cigarettes by announcing in-store coupons,
9 multi-pack discounts, and reduced price cigarettes. Point of sale also includes functional
10 items that advertise cigarettes that generally do not communicate price, such as clocks,
11 change trays, shopping baskets, branded shelving and display cases, temporary displays,
12 and much more. Figures 15 through 19 above provide examples of point of sale marketing
13 highlighting special prices; additional examples are presented in Figures 33 through 38. As
14 these figures illustrate, point of sale advertising often communicates price by highlighting
15 special price promotions, retail value added promotions, and specialty item distribution
16 programs.

Figure 33

Figure 34

Figure 35

Figure 36

Figure 37

Figure 38

Q: What is sponsorship?

A: Sponsorship – also called "public entertainment" by the FTC – refers to Defendants' funding of a range of sporting events (e.g. Marlboro Racing and the Winston Cup auto racing), cultural events and concerts (e.g. the Kool Jazz festival), bar and club events, and others. At bar and club events, concerts, and other public entertainment events, Defendants often distribute free samples, coupons, and other promotional items. Similarly, point of sale displays and advertisements that highlight special price-related promotions are tied to sponsored events, as seen in Figure 39, where an in-store display for Winston cigarettes that highlights price is clearly tied to R.J. Reynolds' sponsorship of the Winston Cup.

Figure 39

Q: How is Internet marketing used to communicate or affect price?

1 A: Cigarette companies offer websites where you can sign up for coupons.

2 ***B. Defendants' Price-Related Marketing Over Time***

3 **Q: Have Defendants' price-related marketing strategies changed over time?**

4 A: Yes. Over time, Defendants have increased the amount spent on price-related marketing,

5 both absolutely and as a share of their overall marketing expenditures.

6 **Q: Have you shown these changes in a chart or charts?**

7 A: Yes, I have prepared two sets of figures illustrating the changes over time in Defendants'

8 price-related marketing strategies.

9 **Q: Generally, what do these figures show?**

10 A: These figures show that over time Defendants have placed an increasing emphasis on price-

11 related marketing strategies, as shown by both the sizable increases in the absolute amount

12 of expenditures on marketing activities that directly affect price, as well as by the increased

13 share of overall marketing expenditures that goes to these marketing activities that directly

14 affect price. These figures are based upon FTC cigarette marketing expenditure data.

15 ***1. Price-Related and Image-Oriented Cigarette Marketing Expenditures***

16 **Q: Can you explain the first set of charts?**

17 A: The first set of figures (Figures 40 through 44) shows Defendants' marketing expenditures

18 from 1975 through 2002 grouped into three categories. Defendants' price-related

19 marketing expenditures are shown in green. These include expenditures on all the

20 marketing tools I have discussed that directly reduce price or provide added value: retail

21 value added, promotional allowances, coupons, sampling, and specialty item distribution.

22 Defendants' image-oriented marketing expenditures are shown in blue. These include

23 expenditures on outdoor advertising (billboards and transit); print advertising (magazines

1 and newspapers); direct mail; point of sale; sponsorship (public entertainment); and the
2 Internet. Other expenditures are shown in yellow.

3 **Q: Why do you call these marketing expenditures "image-oriented"?**

4 A: Because many of these marketing tools primarily act to communicate brand imagery rather
5 than primarily communicating price or directly reducing price. Also, I have tried to follow
6 the FTC definitions in creating these charts. While direct mail and print can be used to
7 provide coupons as I have described, under the FTC's definitions, the costs associated with
8 the coupons are included in the "coupon" category and are excluded from the "print" and
9 "direct mail" categories.

10 **Q: What do the "other expenditures" shown in yellow include?**

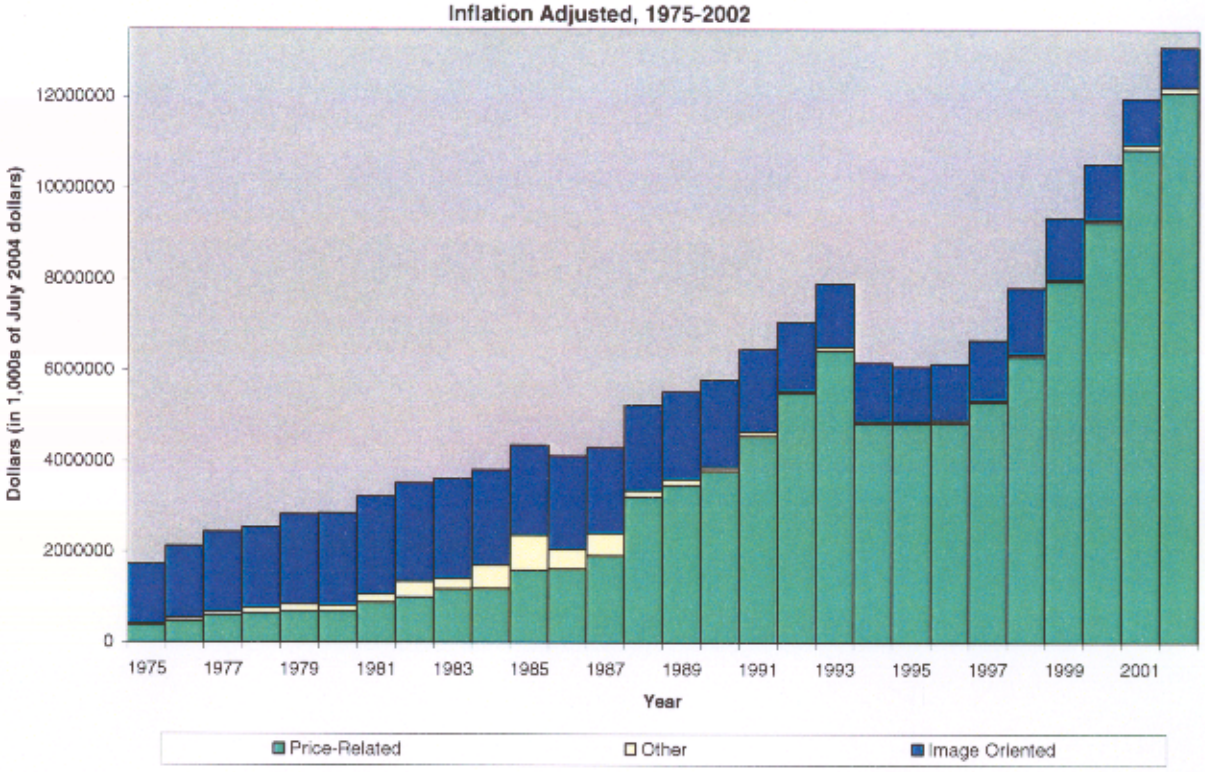
11 A: The FTC reports expenditures in an "other" category, as well as all of the other categories I
12 have already described. The activities included in this "other" category have changed over
13 time, reflecting the growing or diminishing importance of various marketing activities. For
14 example, in early years the "other" category included direct mail, coupons, retail value
15 added, endorsements, testimonials, and audio-visual. Due to the growth in coupons and
16 retail value added, the FTC introduced a separate category for "coupons & retail value
17 added" in 1988. Later, as both of these continued to grow, the FTC began separate
18 reporting of "coupons" and "retail value added" beginning in 1997. Once coupons and
19 retail value added are reported separately from "other," I include those as price-related
20 marketing in the charts I have created.

21 **Q: Would you explain the first of your set of five figures?**

22 A: The first of these, Figure 40, shows annual inflation adjusted price-related (green), image-
23 oriented (blue), and "other" (yellow) cigarette marketing expenditures from 1975 through

2002. The inflation adjustment presents the expenditure data for each year in July 2004 dollars. This figure clearly shows that Defendants have increased their spending on marketing efforts directly related to price (green), both in the absolute amount, and in proportion to image-oriented marketing (blue).

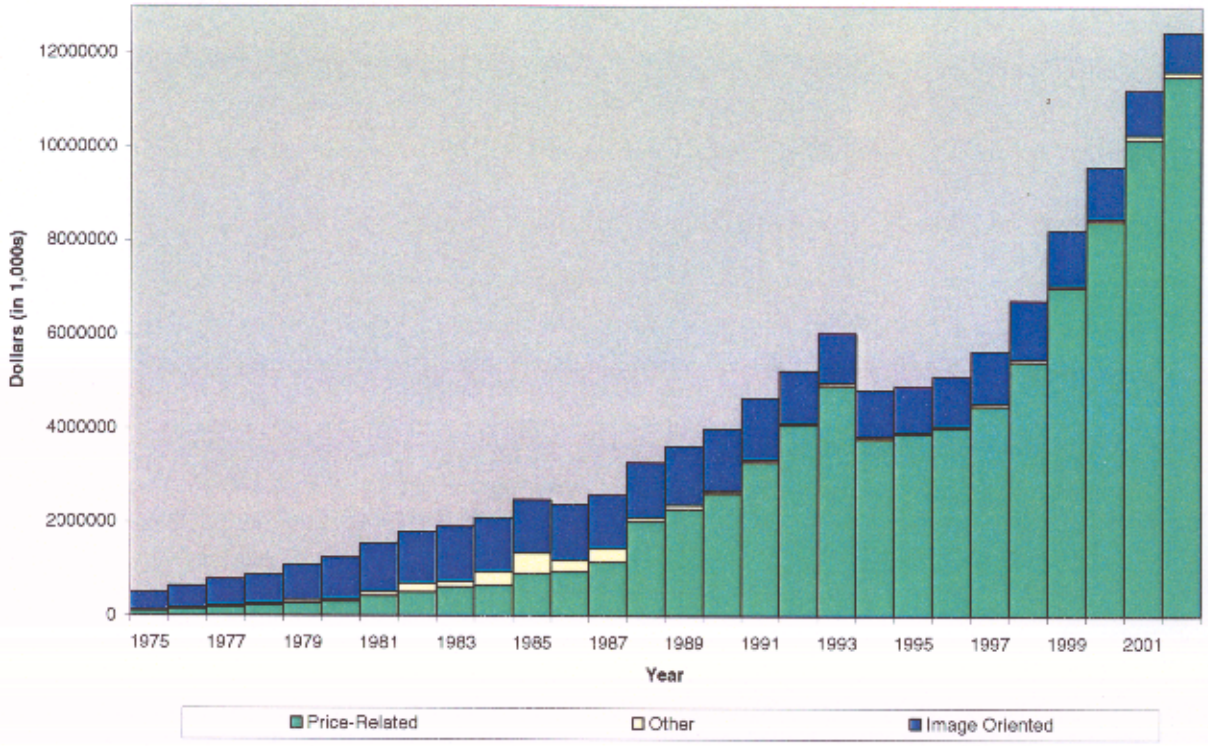
Figure 40
Price-Related and Image Oriented Cigarette Marketing Expenditures, Inflation Adjusted, 1975-2002



Q: What does the second figure in this set show?

A: Figure 41 presents the same data as Figure 40, not adjusted for inflation. As with Figure 40, Figure 41 shows that the total amount spent on price-related cigarette marketing activities (green) has increased over time and has increased relative to spending on image oriented marketing activities (blue).

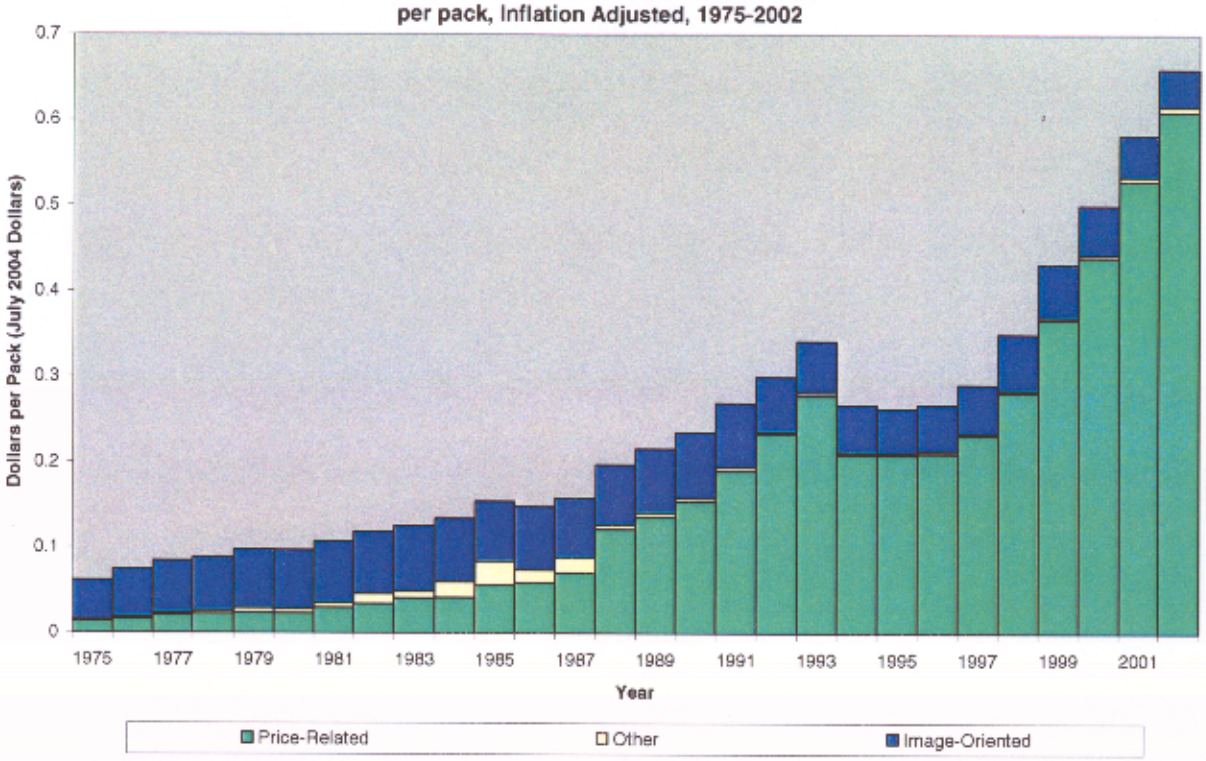
Figure 41
Price-Related and Image Oriented Cigarette Marketing Expenditures, 1975-2002



Q: What does Figure 42, the third figure in this set, show?

A: Figure 42 presents the same data, adjusted for inflation, in terms of marketing expenditures per pack rather than total expenditures. As with Figure 40, annual expenditures per pack are adjusted for inflation and shown in July 2004 dollars. Figure 41 shows even more dramatically than the first two figures, the increased emphasis that the tobacco companies have placed on price-related marketing activities. This per pack measure takes account of the fact that Defendants have been selling fewer cigarettes over the last two decades, while at the same time Defendants have been increasing marketing expenditures overall, particularly expenditures on price-related marketing activities.

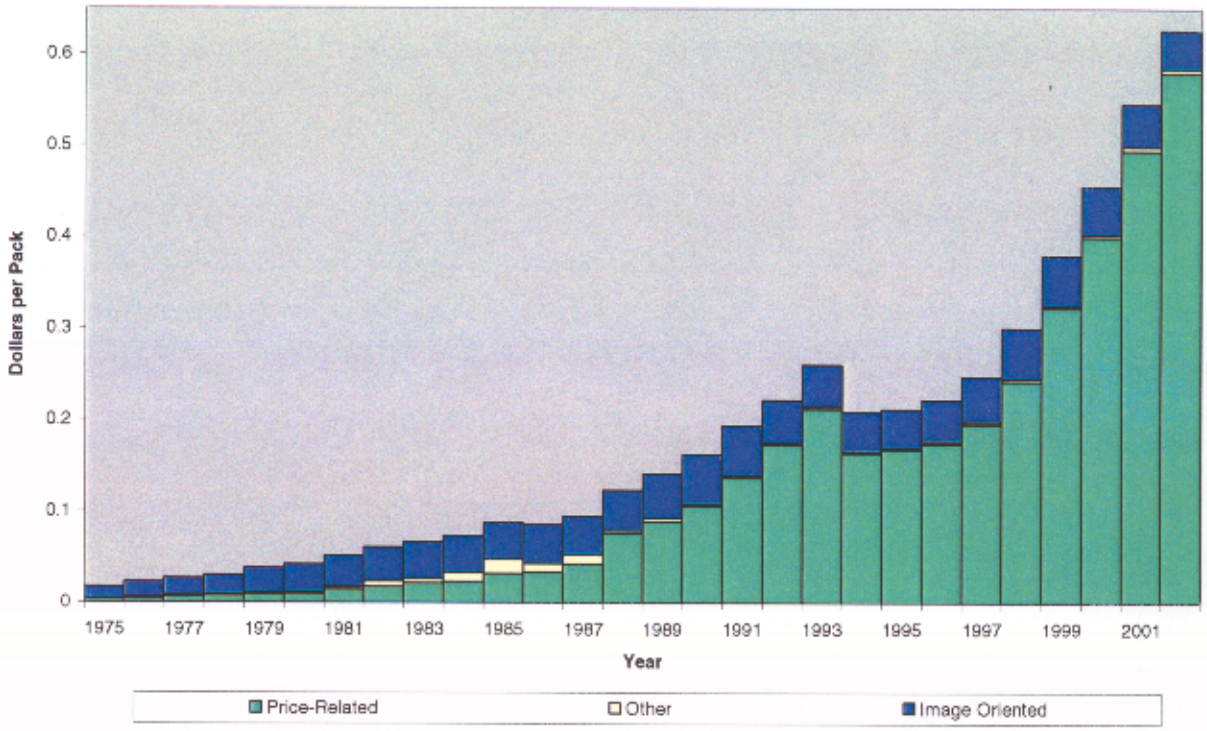
Figure 42
Price-Related and Image-Oriented Cigarette Marketing Expenditures
per pack, Inflation Adjusted, 1975-2002



Q: What does the fourth figure in this set show?

A: Figure 43 presents the same data as shown in the previous figure, not adjusted for inflation. Again, this figure clearly shows the growth in price-related cigarette marketing activities (green) over time, both in absolute terms and in relation to image oriented marketing activities (blue).

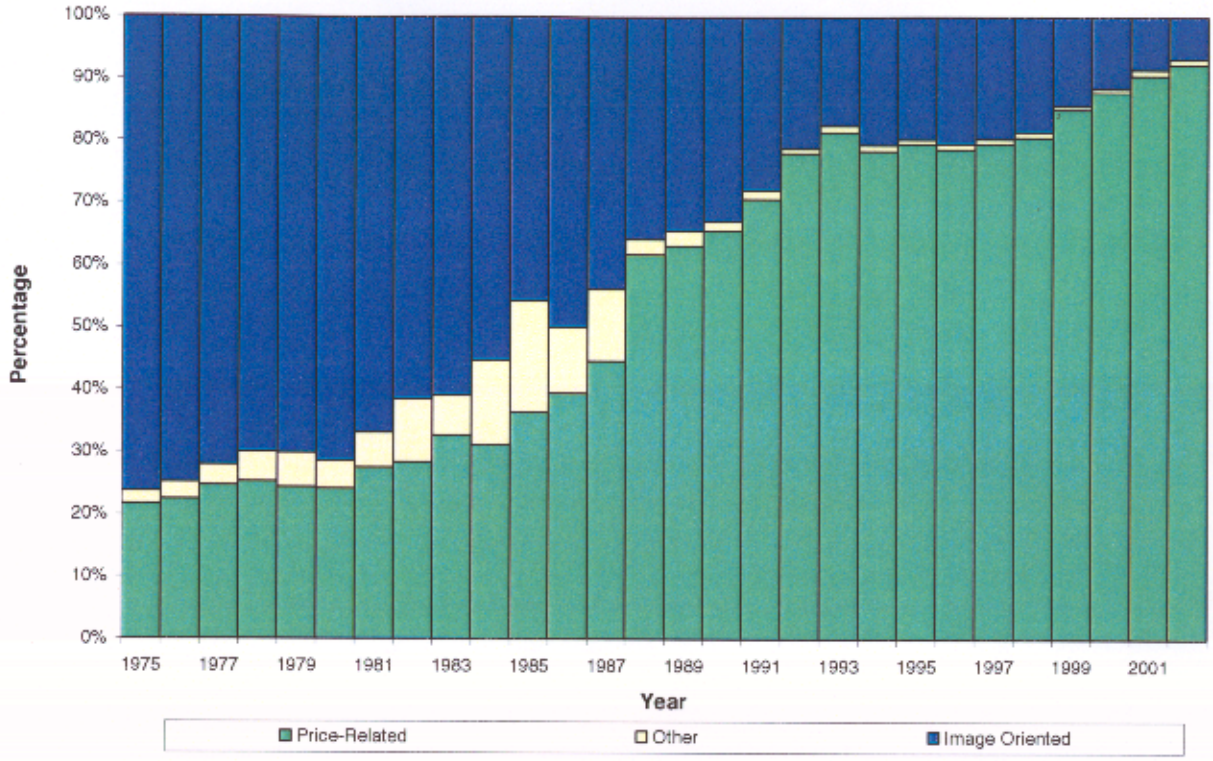
Figure 43
Price-Related and Image Oriented Cigarette Marketing Expenditures per Pack, 1975-2002



Q: What does the final figure in this set show?

A: Figure 44 presents these same data in terms of the overall share of the marketing budget spent on price-related (green), image-oriented (blue), and other (yellow) marketing activities. This chart clearly shows the shift in emphasis from image-oriented advertising to price-oriented advertising over time. In 1975, for example, price-related marketing activities accounted for 21.6 percent of the total cigarette marketing budget. By 2002, these activities accounted for 92.4 percent of the total.

Figure 44
Share of Price-Related and Image Oriented Cigarette Marketing Expenditures, 1975-2001



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2 ***2. Cigarette Marketing Expenditures by Major Category***

3 **Q: Let's turn to the second set of figures. What information is contained in these charts?**

4 A: The second set of figures, Figures 45 through 49, presents the underlying category-specific
5 information that was shown grouped into three categories in the first set of charts. The
6 categories included in these figures change over time as the FTC's reporting of annual
7 cigarette marketing expenditures has been expanded to include more detailed information
8 on key marketing activities.

9 **Q. Can you describe the changes in these categories that are important to understanding**
10 **Defendants' price-related cigarette marketing activities?**

11 A. Yes. There are several notable changes in these categories over time. For example, as
12 described above, prior to 1988, tobacco companies' spending on coupons and retail value

1 added was included in the "other" category. Beginning in 1988, combined spending on
2 coupons & retail value added began to be separately reported; separate spending on each
3 was reported beginning in 1997. The most recent FTC Report, released this October and
4 reporting data for 2002, contains the most extensive revisions to these categories,
5 particularly with respect to the "promotional allowances" and "retail value added"
6 categories.

7 **Q. What changes did the 2002 FTC Report make in terms of the categories reported?**

8 A. In the FTC report for 2002, spending that was previously contained in the single
9 promotional allowances category has been broken out into four categories: price discounts;
10 promotional allowances – retailers; promotional allowances – wholesalers; and promotional
11 allowances – other. The first of these new categories – price discounts – reflects the buy-
12 downs and other price-related promotional activities that reduce the prices consumers pay
13 for cigarettes. The other three new categories primarily reflect the payments that are made
14 to retailers, wholesalers, and others related to the placement of cigarettes in stores, and also
15 include payments related to volume rebates, incentive payments, and others received by
16 retailers, wholesalers, and others. Under this new categorization, over 81.5 percent of the
17 expenditures formerly reported as "promotional allowances" are marketing expenditures
18 that are now reported in the new "price discount" category.

19 **Q. What other changes, if any, were made in the 2002 FTC Report?**

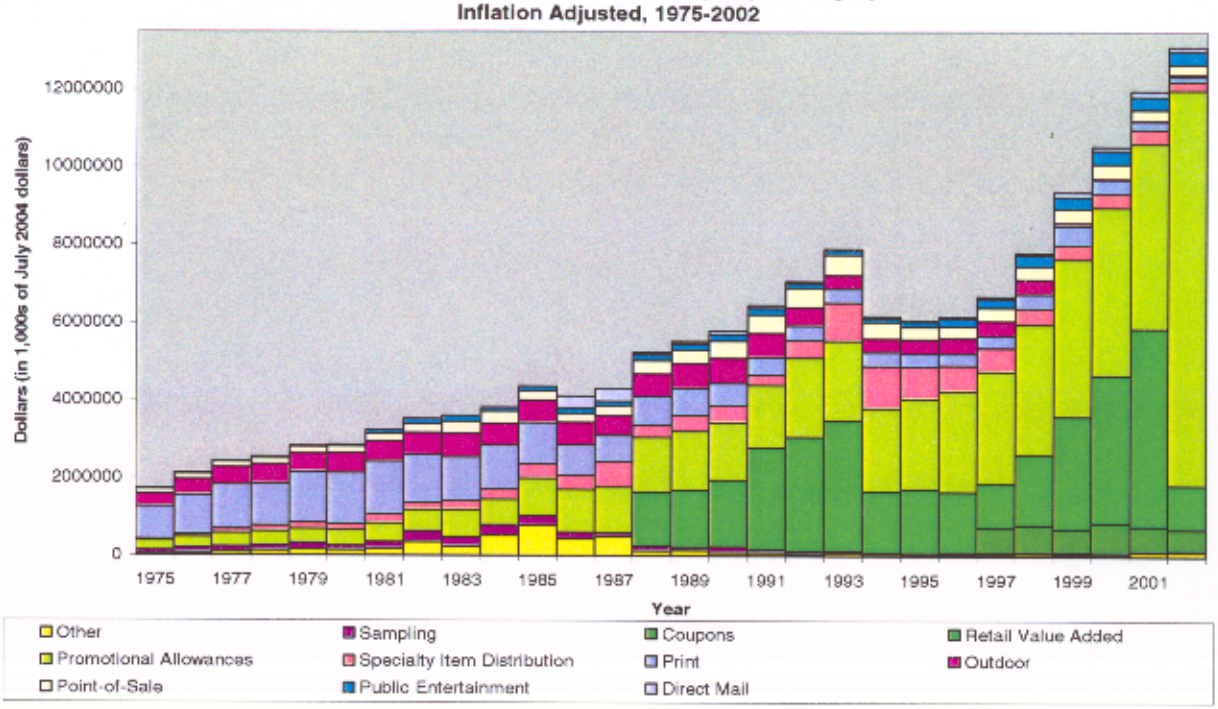
20 A. The other significant change concerns the categorization of expenditures on retail value
21 added. In the 2002 FTC Report, these expenditures are broken out into two categories: (1)
22 spending on "retail value added – bonus cigarettes," reflecting the spending associated with
23 offers such as "buy one get one free"; and (2) "retail value added – non-cigarette bonus,"

1 reflecting the spending on the "buy one get x free" type offers that provide some non-
2 cigarette items or gift with purchase, such as a hat or radio that I describe above. Under
3 this new categorization, the 2002 FTC Report finds that the spending on "bonus cigarette"
4 type promotions accounts for the vast majority – 97.7 percent – of total retail value added
5 spending.

6 **Q: What information is presented in these five figures?**

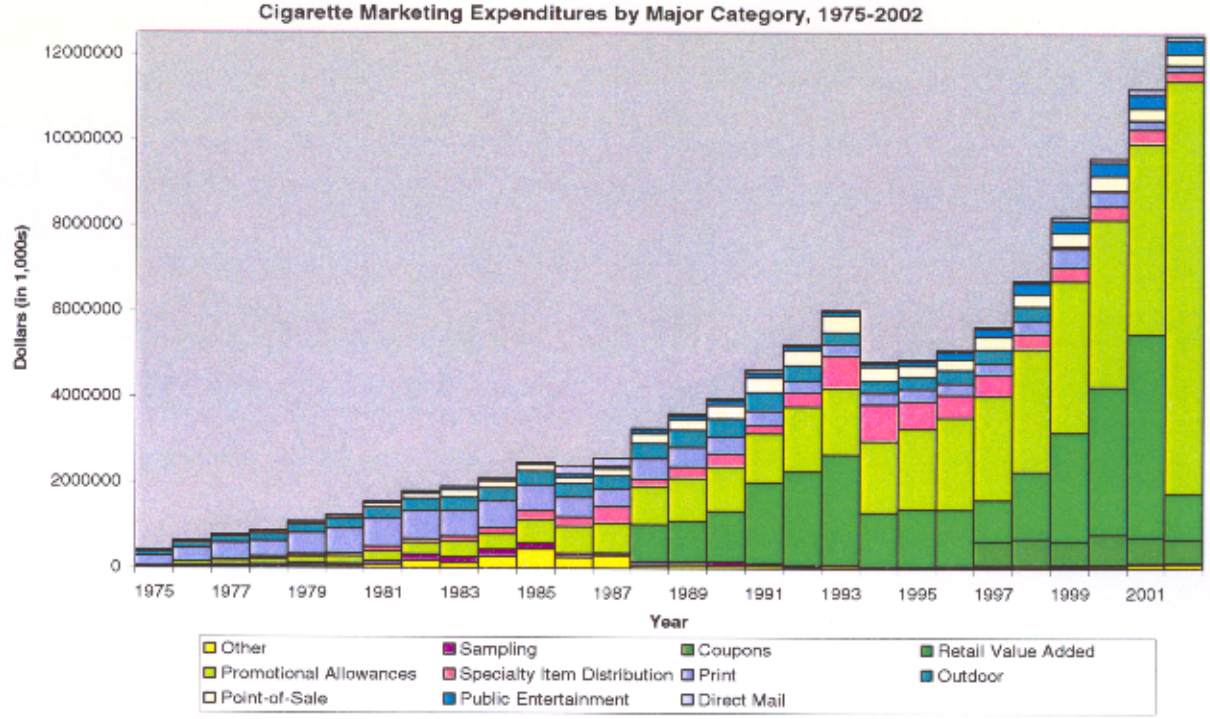
7 A. Figures 45 through 49 are comparable to Figures 40 through 44, but present the more
8 detailed, category specific expenditures from 1975 through 2002. Figure 45 presents
9 inflation adjusted expenditures, while Figure 46 presents the unadjusted expenditures.
10 Figures 47 and 48 present these data in terms of inflation adjusted and unadjusted
11 expenditures per pack, respectively. Figure 49 presents these in terms of the share of total
12 expenditures accounted for by each category. As in the earlier figures, all inflation adjusted
13 data are shown in July 2004 dollars.

Figure 45
Cigarette Marketing Expenditures by Major Category, Inflation Adjusted, 1975-2002



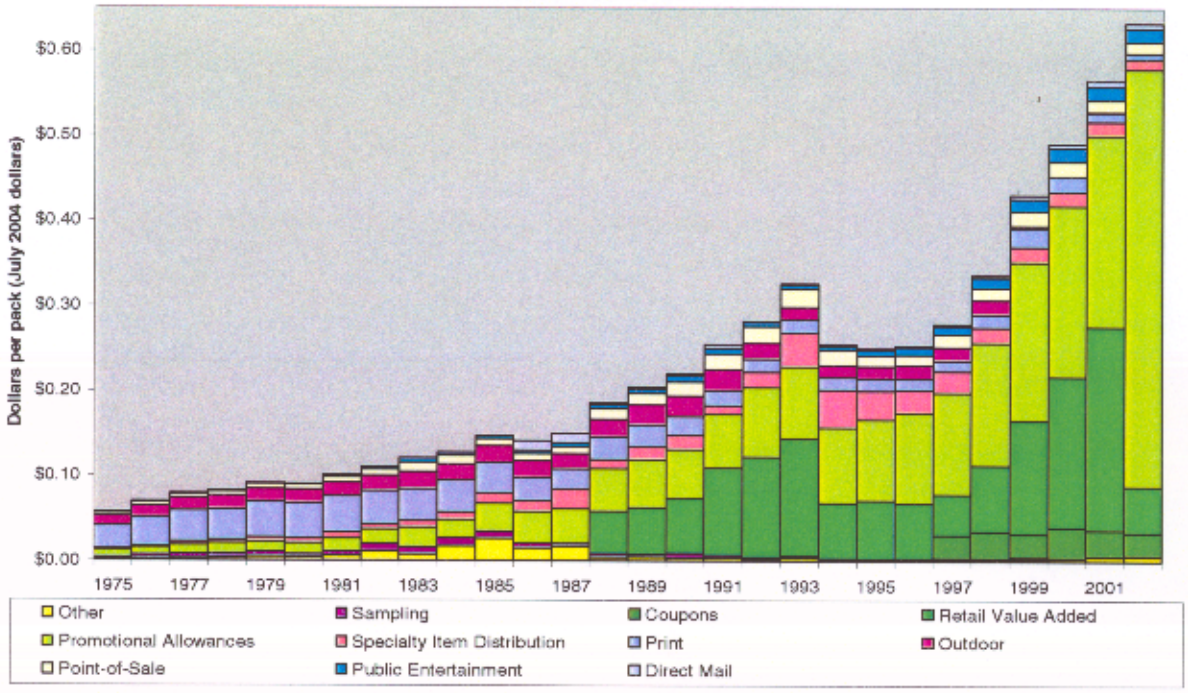
1

Figure 46
Cigarette Marketing Expenditures by Major Category, 1975-2002



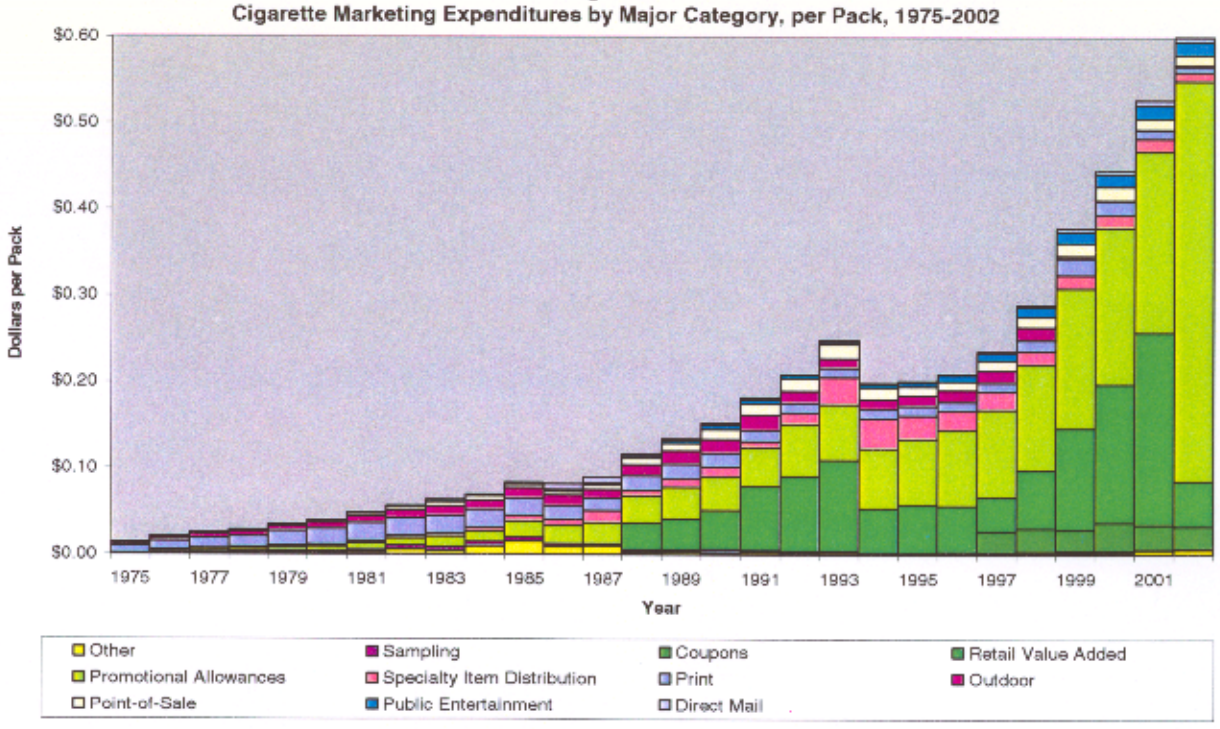
2

Figure 47
Cigarette Marketing Expenditures by Major Category
Inflation Adjusted, per Pack, 1975-2002



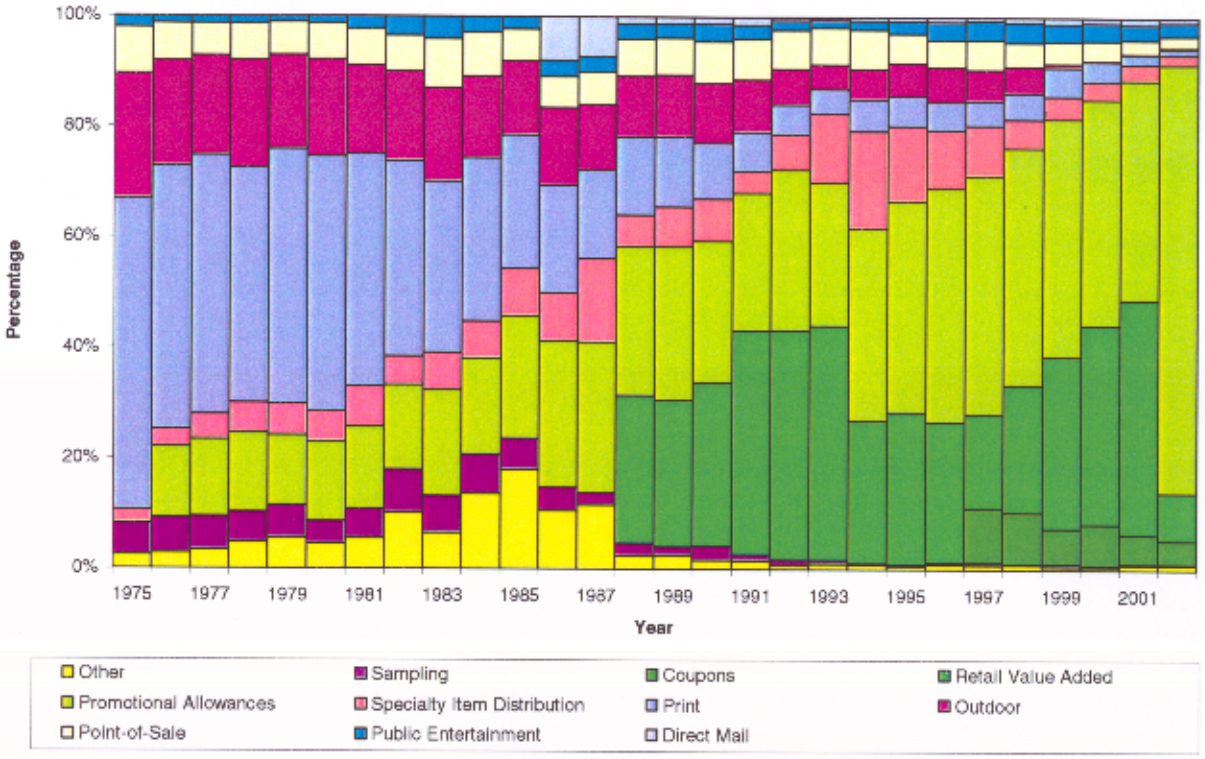
1

Figure 48
Cigarette Marketing Expenditures by Major Category, per Pack, 1975-2002



2

Figure 49
Shares of Cigarette Marketing Expenditures by Major Category, 1975-2002



Q. What do Figures 45 through 49 show?

A: Figures 45 through 49 clearly illustrate the growing importance of several key price-related marketing activities. Specifically, these figures show how Defendants' price-related marketing has become increasingly dominated by promotional allowances and retail value added.

Q: Using the Figures you have created, can you explain the changes in Defendants' marketing expenditures over time?

A: Figures 40 through 49 clearly illustrate the growing emphasis on price-related marketing activities to the major cigarette companies as a proportion of overall marketing spending, in both absolute and relative terms. From 1975 to 1981, the balance between image-oriented

1 marketing and price-related marketing was relatively stable. In 1975, expenditures on
2 image-oriented marketing activities accounted for more than three-quarters of total cigarette
3 marketing expenditures, with spending on print and outdoor advertising accounting for most
4 of these expenditures. In contrast, expenditures on price-related marketing activities
5 accounted for just over one-fifth of the total, with spending on promotional allowances
6 accounting for most of this. By 1981, total marketing expenditures had more than tripled,
7 while the balance between image-oriented and price-related marketing had shifted slightly,
8 with spending on image-oriented activities accounting for about two-thirds of the total, and
9 spending on price-related marketing accounting for over one-fourth of the total.

10 **Q: Did these trends continue?**

11 A: No. Over the next ten years, this balance shifted markedly in the other direction.
12 Defendants' overall marketing increased sharply and more and more of the marketing
13 dollars went into price-related marketing. By the end of the 1980s, Defendants' spending
14 on price-related cigarette marketing activities was about double their spending on image-
15 oriented activities. In 1989, price-related marketing expenditures accounted for about two-
16 thirds of total marketing, while spending on image-oriented activities accounted for about
17 one-third of the total. After accounting for inflation, by 1989 spending on price-related
18 activities was almost four times as high as in 1981, while spending on image-oriented
19 activities had fallen by more than ten percent.

20 **Q: What happened in the 1990s?**

21 A: The increasing trend towards price-related marketing continued through 1993, with
22 spending on price-related marketing activities increasing both absolutely and as a share of
23 the total. Between 1989 and 1993, inflation adjusted spending on price-related marketing

activities rose by nearly 85 percent, while inflation adjusted spending on image-oriented marketing activities fell by more than a quarter. In 1993, price-related marketing expenditures accounted for over four-fifths of total cigarette marketing expenditures, which continued the earlier trend but was also related to "Marlboro Friday."

Q: What was Marlboro Friday?

A: April 2, 1993 has come to be known as "Marlboro Friday." On that date, Philip Morris announced that it would:

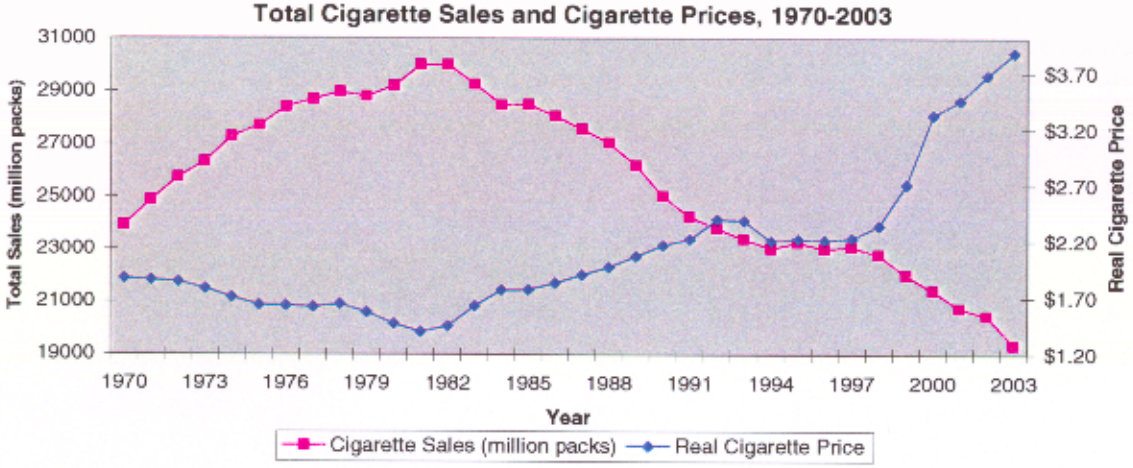
> take four key actions. First the company will execute an extensive promotional program which, over the next several weeks, will reduce the average price of Marlboro to a level which has proven in test market to be effective in encouraging consumers to make brand selections based on brand preferences rather that price. Second, Philip Morris USA will expand the Marlboro Adventure Team, a popular promotion that has increased the visibility of Marlboro and consumer involvement with the brand. Third, the company will intensify its efforts to obtain market share in all industry segments and will take prompt action to expand the distribution of its discount brands. Finally, the Company said it expects to forego any further price increases on premium brands for the foreseeable future.

2048188736-8738 at 8737 (U.S. Ex. 38,646). As part of the first action, Philip Morris reduced the price of Marlboro cigarettes by forty cents per pack. Philip Morris did this price reduction through a combination of price-related marketing strategies, including promotional allowances involving payments directly to retailers in exchange for retailers lowering cigarette prices. Other major cigarette companies quickly matched the reduction in the price of Marlboro with comparable reductions in the prices of their leading premium brands. In August 1993, Philip Morris's temporary price cut was made permanent as Philip Morris lowered the price for all of its premium brand cigarettes to wholesalers, a move matched almost immediately by R.J. Reynolds, Brown & Williamson, Lorillard, and American Brands, and matched shortly after by Liggett.

1 **Q: What were the effects of Marlboro Friday?**

2 A: There were two major effects. One effect was that the reduction in the prices of leading
3 premium brands significantly lowered the market share of discount brands that had gained
4 an increasing share of the market. The second effect was that Marlboro Friday had a
5 significant impact on overall cigarette sales and on youth smoking prevalence. As seen in
6 Figures 1 through 3 above, the Marlboro Friday price reductions contributed to the sharp
7 rise in teenage smoking prevalence in the mid-1990s. Similarly, as Figure 50 shows,
8 Marlboro Friday stopped the downward trend in overall cigarette sales in the United States.

Figure 50
Total Cigarette Sales and Cigarette Prices, 1970-2003



9

10 **Q: Have studies quantified the effects of Marlboro Friday on teenage smoking?**

11 A: Yes. One recent peer reviewed econometric study of teenage smoking co-authored by Dr.
12 Jonathan Gruber, an expert in this case, attributed 26 percent of the increase in teenage
13 smoking in the 1990s to the Marlboro Friday price reductions.

14 **Q: What happened after Marlboro Friday?**

15 A: Overall marketing expenditures that the tobacco companies reported to the FTC dropped
16 sharply in 1994. This was almost certainly the result of the "Marlboro Friday" price cuts
17 which directly reduced prices on leading cigarette brands. The initial "Marlboro Friday"

1 price cuts were the result of price-related marketing efforts that were included in
2 companies' 1993 budgets as marketing expenditures. Once the companies made these
3 price cuts permanent and directly to wholesalers, the tobacco companies no longer included
4 these as marketing expenditures reported to the FTC, so expenditure levels appeared to
5 drop. By 1998, however, the companies' inflation adjusted marketing expenditures
6 reported to the FTC had gradually returned to their 1993 level, with the share going to price-
7 related activities relatively stable at about four-fifths of the total.

8 **Q: What happened in 1998?**

9 A: In late 1998, Defendants settled their lawsuits with the states in the Master Settlement
10 Agreement (MSA). The MSA contained several provisions limiting participating cigarette
11 manufacturers' marketing activities, including: a ban on the use of cartoon characters in
12 cigarette advertising, promotion, or packaging; a ban on most outdoor and transit
13 advertising; a ban on product placement in movies and television shows; a ban on the
14 distribution of free samples except in adult-only facilities; a ban on the distribution of
15 apparel or other merchandise bearing cigarette brand names or logos; and restrictions on
16 cigarette company sponsorship of various events. Some of the MSA's provisions (e.g.
17 those concerning sampling and branded merchandise) affected price-related marketing
18 activities, while others (e.g. those concerning outdoor and transit advertising, product
19 placement and sponsorships) affected the image-oriented marketing activities that, at times,
20 Defendants had used to communicate information about price.

21 **Q: What happened to cigarette marketing expenditures after the MSA?**

22 A: After the MSA, overall cigarette marketing expenditures rose sharply and tobacco
23 companies increased their share of spending on price-related marketing. In inflation

1 adjusted terms, the tobacco companies nearly doubled their cigarette marketing
2 expenditures between 1997 (the last full year prior to the MSA) and 2002 (the most recent
3 year for which tobacco company data are reported by the FTC). Over the same period, the
4 share of Defendants' spending on price-related activities rose from just over 80 percent to
5 over 92 percent. In contrast, Defendants' inflation-adjusted spending on image-oriented
6 marketing fell somewhat from 1997 to 2002.

7 **Q: What was Defendants' increase in cigarette marketing expenditures due to?**

8 A: It was due to the tobacco companies' increases in spending on price-related marketing,
9 primarily for promotional allowances and retail value added. Defendants' total marketing
10 expenditures went from 5.7 billion dollars in 1997 to 11.2 billion dollars in 2001, an
11 increase of 5.5 billion dollars. Expenditures on retail value added during this time went
12 from under one billion dollars to nearly 4.8 billion dollars in 2001; expenditures on
13 promotion allowances went from almost 2.4 billion dollars to almost 4.5 billion dollars in
14 2001. Together, promotional allowances and retail value added went from 3.4 billion
15 dollars to 9.2 billion dollars between 1997 and 2001, a total increase of 5.8 billion dollars.
16 Since Defendants' total marketing expenditures only increased by 5.5 billion dollars, their
17 increase in promotional allowances and retail value added together account for more than
18 the total increase in marketing expenditures.

19 **Q: What was the tobacco companies' greatest increase in spending on marketing**
20 **activities during this time?**

21 A: By far the greatest increase was Defendants' spending on retail value added, such as
22 multipack discounts and gifts with purchase, which rose by nearly 400 percent during this
23 period. By 2001, it was the single largest expenditure category, accounting for 42.5 percent

1 of total cigarette marketing expenditures (up from 17.1 percent in 1997). Defendants'
2 spending on retail value added accounted for almost 70 percent of the total increase during
3 this time. Spending on promotional allowances (e.g. "buydowns" and slotting fees) rose by
4 over 80 percent during the same period.

5 **Q: What happened to Defendants' sales during this time?**

6 A: Defendants' sales went down, meaning that Defendants were spending significantly more
7 money to market fewer packs of cigarettes. Looking at the expenditures per pack of
8 cigarettes sold in the United States from 1997 to 2001, as illustrated in Figures 42 and 47
9 (aggregated and disaggregated, respectively), inflation adjusted per-pack marketing
10 expenditures doubled from about 29 cents to over 58 cents per pack. As I discussed above,
11 these increases were due to price-related marketing which rose from just over 23 cents per
12 pack to nearly 53 cents per pack, while expenditures on all other marketing activities fell
13 from about 6 cents per pack to 5.5 cents per pack.

14 **Q. Have you prepared any additional figures on Defendants' cigarette marketing**
15 **activities?**

16 A. Yes. Given the significant changes in the FTC's reporting of expenditures on promotional
17 allowances and retail value added in 2002, I prepared two figures focused on the 2002 data.
18 Figure 51 presents the 2002 data separately for each category reported by FTC, with the
19 newly disaggregated information for the promotional allowances and retail value added
20 categories, as well as the more detailed information on public entertainment, specialty item
21 distribution, and Internet, and the new category for telephone marketing.

Figure 51
Cigarette Marketing Expenditures by Detailed Category, per Pack, 2002

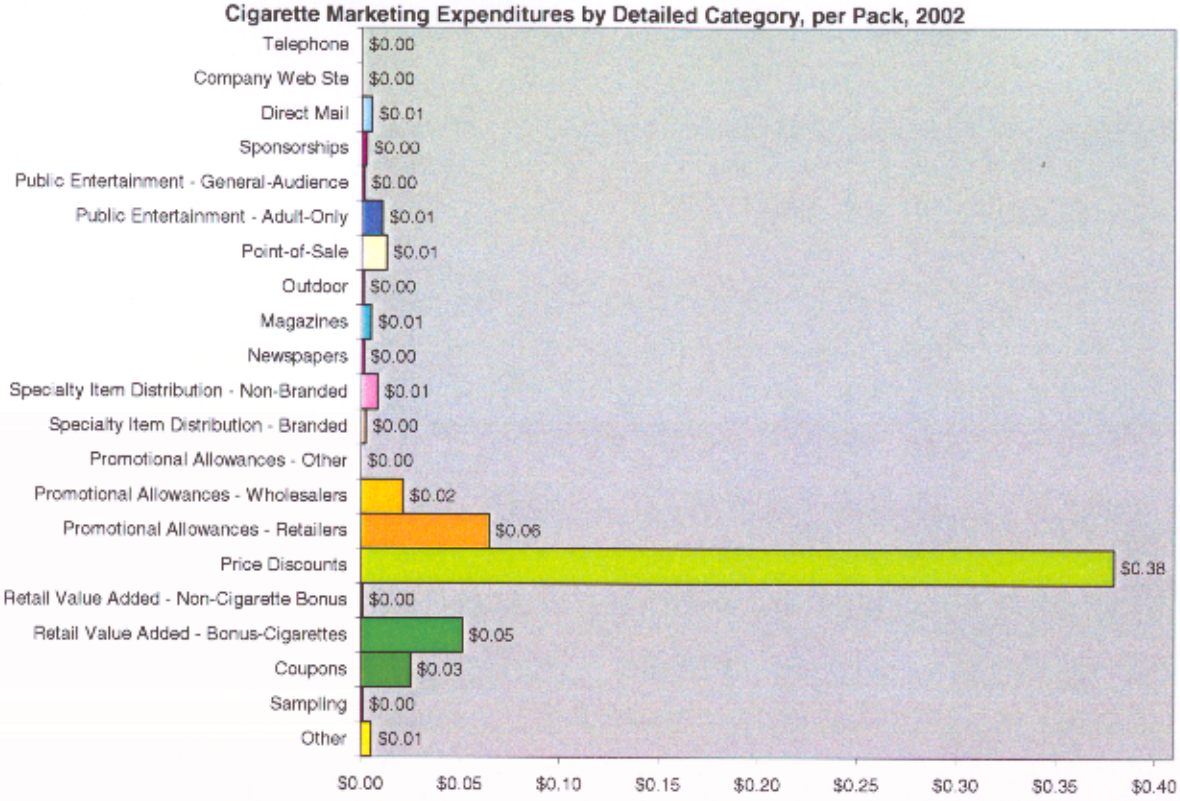
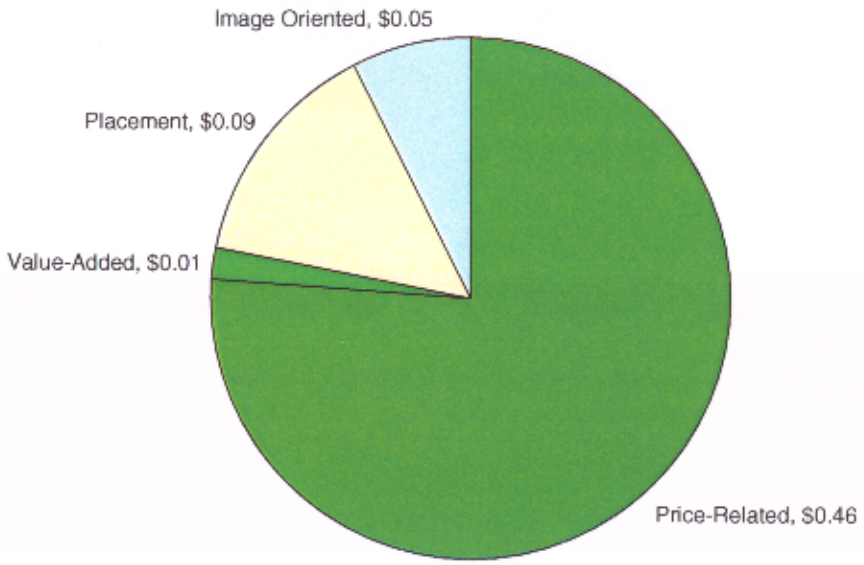


Figure 52 presents these data grouped into five key categories: (1) directly price-related (includes price discounts, retail value added – bonus cigarettes, coupons, and sampling); (2) value added promotions (includes specialty item distribution and retail value added – non-cigarette bonus); (3) placement-focused (includes promotional allowances to retailers, wholesalers, and others); (4) image-oriented (includes all print, outdoor, point of sale, public entertainment & sponsorships, Internet, and telephone); and (5) other.

Figure 52
Cigarette Marketing Expenditures by Type, per Pack, 2002



1

2 **Q. What do Figures 51 and 52 show?**

3 A. Figures 51 and 52, which are based on the more disaggregated information reported for
4 these categories in 2002, clearly show that the vast majority of Defendants' recent
5 marketing activities result in reductions in the prices smokers pay for cigarettes. More than
6 three-quarters of all cigarette marketing expenditures in 2002 directly reduced the price of
7 cigarettes to smokers.

8 **Q: In general, from 1975 to the present, have the prices for cigarettes risen or fallen?**

9 A: Over time, actual as well as inflation-adjusted prices for cigarettes have increased.

10 **Q: Why have prices increased?**

11 A: Prices have increased due to various factors. The two primary factors that have increased
12 prices over time are increases in Defendants' prices and increases in federal, state, and local

1 excise taxes. Industry prices changes are driven, in part, by the costs of producing,
2 distributing, and marketing cigarettes.

3 **Q. If cigarette prices have increased over time, how can Defendants' price-related**
4 **marketing that lowers prices or cigarettes have impacted teenagers in the way that**
5 **you describe?**

6 A: The recent drop in teenage smoking is not as large as it would have otherwise been due to
7 the increase in Defendants' price-related marketing. On the one hand you have increases in
8 prices because of industry price increases and increases in excise taxes. These increases in
9 prices generally reduce the number of teenagers who smoke and the number of cigarettes
10 they smoke. On the other hand, increases in the tobacco companies' price-related cigarette
11 marketing that reduce the actual price that teenagers pay for cigarettes increase the number
12 of teenagers who smoke and increase the number of cigarettes they smoke.

13 **Q: Can you provide some estimate of the effect of Defendants' price-related marketing**
14 **on teenage smoking initiation?**

15 A: Yes. As I described above, economic theory and econometric research clearly indicate that
16 teenage smoking is affected by cigarette prices. Marketing activities that significantly
17 reduce cigarette prices will increase the initiation of regular smoking and daily smoking by
18 teenagers, and will increase the number of cigarettes smoked by teenage smokers beyond
19 what would have been the case in the absence of these marketing activities. Based on the
20 2002 FTC data, marketing expenditures that directly reduced the price of cigarettes
21 amounted to about 46 cents per pack. In November 2002, as reported in the annual *Tax*
22 *Burden on Tobacco*, average cigarette prices, not including generic brands and not
23 including temporary price reductions caused by the price-related marketing described

above, were just under four dollars per pack. Given this, price-related marketing activities reduced the average price per pack by at least 11.6 percent, which, based on the estimates described above, means that as many as 100,000 teenagers would have initiated daily smoking in 2002 as a result of these marketing activities. Given the likelihood that Defendants' marketing activities are concentrated on their leading brands which are the brands most likely to be smoked by teenage smokers, it is likely that these price-related marketing activities resulted in even larger increases in teenage smoking initiation.

C. Defendants' Documents Show Their Understanding of Teenage Price Sensitivity

Q: Have you reviewed Defendants' internal documents relevant to your conclusions?

A: Yes.

Q: Were the documents that you will discuss specifically below disclosed in your expert report filed on November 15, 2001?

A: Yes.

Q: What general topics are covered by these internal documents?

A: First, the documents discuss the effects of price on overall smoking, including smoking prevalence, cessation, industry cigarette sales, and company-specific and brand-specific cigarette sales. Second, the documents discuss the effects of price on teenage smoking and young adult smoking. Third, the documents discuss the importance of new teenage smokers to the long term viability of the industry and individual companies. Fourth, the documents discuss the use of this information to develop, test, and implement price-related marketing strategies. Fifth, the documents discuss industry concerns about state and federal excise taxation and industry strategies to handle any cigarette tax changes.

1. Defendants' Understanding of the Effect of Price on Smoking

1 **Q: What do Defendants know about the effect of price on smoking?**

2 A: Defendants know changes in cigarette prices affect cigarette smoking and smoking

3 prevalence of both teenagers and adults.

4 **Q: How long have Defendants known these two things?**

5 A: Defendants have known for decades that changes in cigarette prices affect cigarette

6 smoking.

7 **Q: Can you provide an example?**

8 A: Yes. For example, in its "Interim Report to Stockholders" for the first quarter of 1969,

9 Liggett & Myers states: "There is strong evidence to indicate that the consumer demand for

10 cigarettes is elastic, as it is for most other products, and that the state cigarette excise taxes

11 do affect sales wherever they are imposed. According to the U.S. Department of

12 Agriculture, in 28 states where cigarette prices have increased 12 per cent in the last two

13 years, sales have declined by 6 per cent; whereas in 21 other states where the price has

14 increased 1 per cent, sales have increased almost 1 per cent." 500397668-7690 at 7675

15 (U.S. Ex. 22,711).

16 **Q: How is this document significant?**

17 A: It shows that Defendants understand that higher cigarette taxes which increase cigarette

18 prices will reduce their cigarette sales.

19 **Q: Do you have another example?**

20 A: Yes. Similarly, in a March 3, 1975 Economic Forecast produced by analyst Myron

21 Johnston for Philip Morris, Johnston reports that:

22 [s]till another factor is the price elasticity of cigarettes, i.e., the change in
23 cigarette sales that will result from a change in the retail price of cigarettes.
24 My calculations, using a variety of methods, show the price elasticity to be
25 –0.43. This means that a ten percent increase in the retail price of

> cigarettes will, other things being equal, lead to a 4.3 percent decline in unit sales. Since the average retail price per pack of cigarettes is about 45c [cents], over twice the wholesale price, a ten percent increase in the wholesale price of cigarettes would, other things being equal, cause only a 2.1 percent decline in unit sales.

Johnston also notes "the Department of Agriculture, calculated price elasticity at –0.42, remarkably close to my own figure." 1000739883-9907 at 9904 (U.S. Ex. 21,601).

Q: How is this document significant?

A: It shows that Philip Morris had quantified the affect of price increases on cigarette sales, was aware of comparable outside estimates, such as those from the USDA, and knew that higher cigarette prices would reduce cigarettes sales.

Q: Do you have another example?

A: Yes, a May 21, 1975 Philip Morris internal memorandum from Myron Johnston to Dr. R.B. Seligman describes declines in sales as a result of wholesale price increases in 1974 and discusses the differential response to price among different sub-groups. Mr. Johnston attributed the decline in Marlboro's growth rate to four factors: "Slower growth in the number of 15-19 year-olds; The recession; Price increases in 1974; Changing brand preferences of younger smokers," and then analyzed each of these factors individually. 1003285497-5502 at 5497 (U.S. Ex. 20,160).

Q: How is this document significant?

A: It shows that Philip Morris understood the impact of the 1974 price increases on overall sales and knew that different population sub-groups would respond differently to price.

Q: Do you have another example?

A: Yes. In a September 1977 document prepared for the Tobacco Merchants Association and produced from R.J. Reynolds's files entitled "A Temporal Cross-Section Analysis of Cigarette Price Elasticity in the United States," Herbert Lyon of the University of Houston and M. Lynn Spruill of the University of Kentucky conducted their own analysis of the impact of cigarette prices on cigarette smoking at the regional level. In the summary of the study, they state:

> In this study, price elasticities of cigarette demand for the United States and nine individual regions were estimated by covariance regression analysis. Six cross-section samples provided the data base for the analysis. Based on earlier experimental work the estimates in this study can be considered the least biased yet developed. The value of the cigarette price elasticity of demand for the United States was estimated at -.445. This finding reinforces some of the earlier work in this area. Collectively these studies indicate that cigarette price elasticity of demand is about -.50.

502016148-6154 at 6154 (U.S. Ex. 49,016).

Q: What is the significance of this document to your conclusions?

A: This document shows that the Tobacco Merchants Association commissioned its own research on the impact of prices on cigarette smoking that was provided to R.J. Reynolds and that the findings from this research were consistent with published academic research and internal industry research.

Q: Do you have another example?

A: Yes. In a May 1978 report of a study prepared for the Tobacco Institute, the Roper Organization found that tax increases of increasing amounts would lead an increasing number of smokers to give up smoking. When smokers were asked if they would continue smoking if the tax went up by five cents, fifty cents, and one dollar, 93 percent, 62 percent, and 41 percent of smokers, respectively, indicated that they would continue to smoke. The study stated:

> Taxation is one of the more rigorous forms of government control and has long been recognized as an effective way to encourage social objectives. And for a growing number of Americans, the tax power is now being seen as a way to reduce cigarette smoking. It is perhaps instructive that the increase of sentiment in favor of taxes to stop smoking is found not only among non-smokers but also among smokers, even though their numbers are not large. And among non-smokers for the first time, there is a majority sentiment in favor of cigarette tax increases to force smokers to quit. Whether or not such taxes accomplish their purposes is arguable. But there is a suggestion that this could be so.

A Study of Public Attitudes Toward Cigarette Smoking and the Tobacco Industry in 1978, Volume 1, The Roper Organization, Inc., May 1978. 501565967-6019 at 5990 (U.S. Ex. 21,866).

Q: How is this document significant?

A: This shows that the Tobacco Institute knew that increases in cigarette prices that result from larger and larger tax increases would lead to larger and larger reductions in the number of people who smoke. It also shows that there was at least some support for cigarette tax increases among some smokers.

Q: Do you have another example?

A: Yes. A March 28, 1984 R.J. Reynolds memorandum and accompanying graphs document the impact of cigarette price increases resulting from state and federal cigarette tax increases and industry price increases on industry sales. The memorandum stated:

> Rising cigarette prices had a significant impact on the Cigarette Industry in 1982 and 1983. The doubling of the Federal Excise Tax on cigarettes in January, 1983, from 8c to 16c was the primary cause of higher cigarette prices. In addition, 14 states enacted tax hikes on cigarettes in 1983. In the last two years, 24 increases have been enacted, which is more than in the previous six years combined. In addition, manufacturer, wholesale, and retail price increases have also raised the price of cigarettes to the consumer during the past year. Since Fourth Quarter, 1982, when cigarette companies began phasing in the new Federal Excise Tax, consumers have been bombarded by frequent retail price increases. Over this time period, the retail price of a pack of cigarettes has risen from 74c per pack in late

> 1982 to 88c per pack in late 1983. Overall, the cost of cigarettes to the consumer rose 19% during the past year. This far exceeds the general inflation rate, making cigarettes a relatively more expensive item for consumers to buy. Historically, when the relative price of cigarettes has increased, cigarette sales have been hurt and this time was certainly no exception. Consequently, Industry volume began declining in 1982. The 1982 volume loss was about 1% for the total year. The 1983 loss, reflecting the full impact of the Federal Excise Tax increase, was about 4%.

501973072-3075 (U.S. Ex. 22,716).

Q: What is the significance of this document?

A: It shows that R.J. Reynolds knew that the price increases resulting from the 1983 doubling of the federal cigarette tax, numerous state cigarette tax increases around the same time, and the industry's own price increases leading up to the federal tax increase significantly reduced industry cigarette sales.

Q: Do you have another example?

A: A November 3, 1989, Philip Morris memorandum written by Jeanne Eibon reviewed Nielsen data to describe the impact of a 25 cent per pack increase in the California cigarette excise tax effective January 1989 and a 12 cent per pack increase in the New York state cigarette excise tax effective May 1989. Total cigarette sales are observed to have declined significantly in both states following the tax increases. 2047937494-7508 (U.S. Ex. 38,630).

A subsequent January 12, 1990 memorandum from Peggy Martin to Myron Johnston compares panel data from California to the rest of the United States during the first three quarters of 1989 to examine the impact of the over 20 percent increase in cigarette prices in California resulting from the state's tax increase. The memorandum concludes: "Relative to smokers in other states, Californians reduced their cigarette

1 consumption, increased their quit rates, and accelerated their switching to price values."
2 2045440173-0179 at 0173 (U.S. Ex. 22,719).

3 **Q: What is the significance of this document?**

4 A: It shows that Philip Morris knew that state tax increases reduced overall cigarette smoking
5 and promoted smoking cessation.

6 **Q: Do you have other examples?**

7 A: Yes. In a February 1990 report entitled "Analysis of Cigarette Price Elasticities" prepared
8 by the KPMG Peat Marwick Policy Economics Group for the internal use of Philip Morris
9 U.S.A., then recent estimates of the effects of price on cigarette smoking are discussed and
10 an original econometric analysis is conducted. Based on this analysis, the authors conclude
11 that cigarette smoking was becoming increasingly responsive to price. The authors go on to
12 discuss the cigarette tax revenue implications of their findings, concluding that "excise
13 taxes could be increased significantly before causing a net reduction in revenues."
14 2044982672-2689 (U.S. Ex. 38,384).

15 Similarly, a January 1991 report entitled "Total Industry Shipment Forecasts Based
16 on National Price Elasticity Estimate" prepared by Management Science Associates, Inc.
17 for Philip Morris contained an analysis of the impact of cigarette prices on industry sales
18 and sales of "full margin" and "price value" brands. Findings from this analysis were used
19 to estimate the effect of a four cent per pack increase in the federal excise tax on industry
20 sales, Philip Morris' sales, and Philip Morris' market share. 2045522017-2038 (U.S. Ex.
21 38,422).

22 **Q: What is the significance of these documents?**

1 A: These documents show that Philip Morris commissioned its own research on the impact of
2 cigarette prices on industry sales and its own sales, that this research confirmed that higher
3 prices would significantly reduce cigarette sales, and that the estimates implied that
4 significant cigarette tax increases would be effective in both reducing cigarette smoking and
5 increasing cigarette tax revenues.

6 **Q: Do you have another example?**

7 A: An August 1994 report *A Study of the Effect of Pricing Changes in Michigan Two Months*
8 *After Tax Increase* by SE Surveys, Inc., prepared for Lorillard, describes the findings from
9 tracking surveys conducted in Michigan just prior to the May 1, 1994, 50-cent per pack
10 increase in the state cigarette excise tax and approximately two months after the tax
11 increase; the state sample was augmented by samples of black smokers and smokers in the
12 Grand Rapids marketing area. All three surveys showed sizable reductions in the number
13 of smokers after the tax increase. The survey indicated that, in the two months after the
14 Michigan state cigarette excise tax increase, overall smoking prevalence in Michigan had
15 fallen by 7 percent, that smoking prevalence among blacks had fallen by 4 percent, and that
16 smoking prevalence in the Grand Rapids marketing area had fallen by 10 percent.
17 82885447-5500 (U.S. Ex. 22,724).

18 **Q: What is the significance of this document?**

19 A: It shows that Lorillard commissioned its own studies of the impact of state tax increases on
20 cigarette smoking, and that Lorillard knows that increases in state cigarette taxes lead to
21 smoking cessation and that some population sub-groups are more responsive to the price
22 increases resulting from state tax increases.

1 **Q: Could you describe, in general, how these documents are significant to your**
2 **conclusions?**
3 A: They show that the companies are doing their own analyses of internal data on the issue of
4 how overall cigarette smoking is affected by cigarette tax and price increases. They are
5 contracting with outside groups to do additional research on the impact of price on smoking.
6 They show that companies know that price increases will reduce cigarette sales and
7 promote smoking cessation and that different parts of the population respond differently to
8 price increases.

9 ***2. Defendants' Understanding that Teenagers Are Price Sensitive***

10 **Q: Do Defendants know that teenagers specifically are affected by price?**
11 A: Yes. Defendants know that teenagers are more affected by price than adults.
12 **Q: Can you provide specific examples of documents that showed that Defendants know**
13 **that teenagers are price sensitive?**
14 A: Yes. In his memorandum to Dr. R.B. Seligman on "The Decline in the Rate of Growth of
15 Marlboro Red," Philip Morris analyst Myron Johnston discusses the impact of price on
16 overall smoking and on smoking by younger persons. Johnston discussed the effect of the
17 recession on the decline in the growth of Marlboro Red, concluding that "Marlboro
18 smokers, being on average considerably younger than the total smoking population, tend to
19 have lower than average incomes. Thus, I would expect a disproportionately large number
20 of Marlboro smokers to quit smoking or reduced daily consumption. . . . Furthermore, many
21 teenagers who might otherwise have begun to smoke may have decided against it because
22 of the adverse economic conditions." Johnston also stated:

23 the wholesale price increase of 1974, which were, of course, passed on to
24 the consumer, undoubtedly depressed sales. I think price elasticity, like

> income elasticity, has a greater effect on lower income people than on those with higher incomes. . . . Marlboro smokers, being younger, tend to have lower incomes. Thus, Marlboro sales are probably more responsive to price changes than are the sales of brands which appeal to older segments of the population." Johnston concluded "I am convinced that the recession and the price increases are responsible for the slower industry growth, and that these factors have hurt Marlboro more than any other brand.

10003285497-5502 at 5500 (U.S. Ex. 20,160).

Q: What is the significance of this document?

A: This document shows Philip Morris understood the predictions of economic theory about people with lower incomes being more responsive to price and applied these to teenagers to predict how teenagers would respond to cigarette price changes, concluding that smoking by teenagers was relatively responsive to changes in cigarette prices and other economic factors and that this was particularly important for Philip Morris given its higher market share for Marlboro among teenagers.

Q: Do you have another example?

A: Yes. Subsequent econometric studies cited by internal Philip Morris documents provided support for Mr. Johnston's hypothesis that adolescent smoking would be relatively responsive to price. For example, several Philip Morris documents from the 1980s discussed early econometric studies on the effects of price on teenage smoking and the implications of these studies for Philip Morris's business.

Q: What studies are referred to by these Philip Morris documents?

A: In a series of memoranda to Harry Daniel, Myron Johnston discussed two working papers published by the National Bureau of Economic Research in the early 1980s, one by Eugene M. Lewit, Douglas Coate, and Michael Grossman entitled "The Effect of Government Regulation on Teenage Smoking," and a second by Lewit and Coate entitled "The Potential

for Using Excise Taxes to Reduce Smoking." These two working papers were subsequently published in peer-reviewed journals.

Q: What conclusions did Mr. Johnston reach about these studies?

A: In his September 17, 1981 memorandum on the first study, Johnston notes that the study "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," and further states:

> [b]ecause 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 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.

He also points out that:

> [t]he 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.

Johnston further states that:

> 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 excites tax increase would substantially 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.'

1000797544-7547 at 7544, 7546-7547 (U.S. Ex. 22,715).

Q: What other conclusions, if any, did Mr. Johnston reach?

A: In a lengthier January 5, 1982 memorandum describing the both of the econometric studies named above, Johnston summarizes the second econometric study, noting that "a ten percent increase in the price of cigarettes would lead to a 4.2 percent decline in sales." Johnston further states:

> price increases would affect the demand for cigarettes among teenagers chiefly through the smoker participation elasticity. That is, the chief effect would be to influence the decision as to whether or not to begin smoking, rather than to influence the demand for cigarettes among committed smokers. This appears to be true also of the 20-25 year olds, among whom the total demand elasticity is nearly twice that of the total population, and, as with the teenagers, appears to operate through the decision regarding beginning (or continuing) to smoke, since the smoker participation elasticity accounts for a great proportion of the aggregate demand elasticity." Johnston reiterates a point he also made in the September 17 memorandum, that "many of us have hypothesized that price elasticities may be different for different demographic or socio-economic groups, and the authors, in their earlier paper, did indeed find that the smoking participation elasticity for teenagers was –1.2 and their total demand elasticity to be –1.4. In this later paper the authors investigate three different age groups: 20-25 year olds, 26-35 year-olds, and persons over age 35.

In a subsequent section of that memorandum headed "The Significance for Philip Morris," Johnston states:

> The conclusion to be drawn is that any increase in the price of cigarettes will have its greatest effect on the young, and, in particular, on young males. Unfortunately, it is among the young that we have our greatest market penetration, and theoretically price increases should affect Philip Morris to a greater extent than the total industry.

He does go on to suggest, however, that there are some factors that would offset this. 1003478185-8191 at 8185-8186, 8188, 8189 (U.S. Ex. 35,774).

Q: What do you conclude from this series of Philip Morris documents?

A: Philip Morris paid close attention to the econometric research on the effects of price on teenage smoking. This research confirmed Philip Morris' earlier hypotheses about how teenage smoking behavior was affected by price, specifically that teenage smoking was much more responsive than adult smoking to changes in cigarette prices. Philip Morris understood the importance of this information to Philip Morris' business given the popularity of Marlboro among teenage smokers who were particularly price sensitive and given the likelihood at the time of an increase in the federal cigarette excise tax.

Q: Did Philip Morris collect and analyze subsequent econometric research on teenage smoking and price?

A: Yes, the next significant study was a study by Jeffrey Harris entitled "The 1983 Increase in the Federal Cigarette Excise Tax" that used the estimates produced from these earlier studies. Philip Morris discussed this study in internal documents. (U.S. Ex. 65,349).

Q: Can you discuss those documents?

A: In two memoranda to Jon Zoler concerning the study by Jeffrey Harris, Johnston discussed the implications of the greater price sensitivity of adolescent smokers for Philip Morris. In his July 15, 1987 memorandum, Johnston stated:

> The conclusion of greatest interest to us, and one with which I cannot disagree, is that by increasing prices by more than the amount of the excise tax, we priced ourselves out of the market, or, as he puts it: 'If the change in the federal excise tax actually induced a full $0.16-per-pack increase in the nominal price of cigarettes, then I compute that, as a result of the federal excise tax increase and the resultant oligopoly response, about 2 million adults stopped smoking and 600,000 teenagers (aged 12-17) did not start.'

Later in the memorandum, Johnston pointed out:

> My data suggest that the initial reaction to the price increases was a reduction in consumption per smoker, followed by a decline in the number of smokers. I have to agree with Harris, when, in discussing attempts to quit smoking he says, 'Perhaps price increases trigger new attempts or improve the success rate of such attempts.'

2058122171-2172 at 2171, 2172 (U.S. Ex. 22,717).

Q: What did the second memorandum discuss?

A: In his subsequent September 3, 1987 memorandum, Johnston gave his views on "how we should pass on the price increase in the event of an increase in the excise tax." Johnston notes that:

> Jeffery [sic] Harris of MIT calculated, on the basis of the Lewin [sic] 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 <u>had been</u> PM smokers and 420,000 of the non-starters <u>would have been</u> PM smokers. Thus, if Harris is right, we were hit disproportionately hard. We don't need to have that happen again.

2022216179-6180 at 6179, 6180 (U.S. Ex. 76,177) (emphasis in original).

Q: How are these documents significant to your conclusions?

A: These Philip Morris documents are important in several ways. First, they show that Philip Morris knew that federal excise tax increases affected teenage and adult smoking. Philip Morris knew that its own pricing behavior – raising prices before the tax increase -- in response to the tax increase further reduced teenage and adult smoking. Second, Philip Morris knew that its business was particularly affected by the tax increase and their own price increases given their high market share among teenage smokers for their brands particularly Marlboro. Finally, it is clear that this knowledge affected Philip Morris's thinking about how to respond to future tax increases.

Q: Did other companies review and analyze the econometric studies you have just testified about that were analyzed by Philip Morris?

A: Yes. The same econometric studies on differences in price sensitivity of smoking by age that were the subject of much interest within Philip Morris were of similar interest to analysts at R.J. Reynolds. For example, in a September 27, 1982 memorandum to P.E. Galyan on the marketing implications of the NBER studies, Ms. Burrows states:

> A key finding is that younger adult males are highly sensitive to price. This suggests that the steep rise in prices expected in the coming months could threaten the log term vitality of the industry, by drying up the supply of new/younger adult smokers entering the market. <u>It could also undermine the long range growth potential of brands which rely on new/younger smokers, including Marlboro and Newport.</u> There is no reason to assume that price makes the idea of smoking less appealing to younger adults. But price may create a barrier which prevents that appeal from developing into an ongoing choice to become a smoker. <u>RJR has an opportunity to break this price barrier with a brand targeted to younger adult males, the most sensitive group</u>.

503011368-1369 at 1368 (U.S. Ex. 20,709) (emphasis in original).

In a subsequent October 6, 1982 memorandum from D.S. Burrows to L.W. Hall, Jr., Ms. Burrows summarizes the findings from the two NBER studies, and states:

> [b]ecause the NBER models were cross-sectional (testing differences between people rather than over time) they were able to relate price separately to incidence and rate per day, by age and sex. The NBER elasticities may not reflect the exact effects of price increases, since their models didn't deal with changes over time. However, the effects they found for other variables (race, income, working women, etc.) are highly consistent with our understanding of market dynamics. Thus, it is likely that the NBER models have correctly identified relative price sensitivity among age/sex groups.

Ms. Burrows states that, according to the NBER models: "Teenagers and younger adult males are highly price sensitive" and "Price affects incidence; rate per day is virtually unchanged." She also concludes, in the context of a federal excise tax increase, that:

> In terms of immediate impact, the effect of price on sales 35+ is most important. Half (50%) of the total drop in industry volume is attributable to males 35+, compared to 24% from younger adult males, and 7% from teenagers. But, the loss of younger adult males and teenagers is more important to the long term, drying up the supply of new smokers to replace the old. This is not a fixed loss to the industry: its importance increases with time. In ten years, increased rate per day would have been expected to raise this group's consumption by more than fifty percent.

503010298-0299 at 0298, 0299 (U.S. Ex. 22,713) (footnote omitted).

Q: What is the significance of these documents to your conclusions?

A: They show that R.J. Reynolds knew that teenage smoking is significantly affected by price, that R.J. Reynolds knew that federal excise tax increases would significantly reduce the number of teens who take up smoking, and that the impact of increased taxes on the industry's business would grow over time because it would "dry up the supply of new smokers to replace the old."

Q: Do you have another example?

A: Yes, a September 20, 1982 R.J. Reynolds memorandum from G. Novak to J.W. Johnston and H.J. Lee in which Mr. Novak states:

> Our Forecasting Group has determined that younger adult smokers, particularly younger adult male smokers, tend to be very price sensitive. The effect of a price increase on younger adult male smokers could be three to four times greater than on smokers in general, in terms of negative impact on volume. This has obvious implications to the growth of Marlboro, as well as implications to our own Project VB.

500151647-1647 (U.S. Ex. 21,785).

Q. Do you have another example?

A: Yes. A January 3, 1984 memorandum from Margaret Parham of the R.J. Reynolds Marketing Development Department summarized "three major MDD sources of evidence regarding price sensitivity by age/sex. The key data supporting the conclusion that younger adult males do exhibit price sensitivity" came from three sources: an internal "1983 Segment Description Study," the internal "Project VB ASSESSOR Analysis," and the NBER studies. 503981058-1058 (U.S. Ex. 22,714).

Q: How are these documents significant?

A: These documents indicate that R.J. Reynolds was doing its own internal research on the affects of price on smoking behavior among younger smokers and that this research indicated that "younger adult male smokers" are highly sensitive to price. It also showed that R.J. Reynolds recognized the importance of this for brands which were the leading brands among teenage smokers such as Marlboro, as well as R.J. Reynolds's own brands, and that R.J. Reynolds was developing price-related marketing strategies to respond to this greater price sensitivity.

Q: Did R.J. Reynolds continue to analyze the affect of price on teenage smoking?

1 A: Yes. An R.J. Reynolds document from the late 1980s stated that "Increasing prices,
2 however, appear to be the most important factor as YAS appear to be more concerned about
3 the price or value of cigarettes than the market in general." This is followed by a graph
4 showing the relationship between young adult (18-24 years of age) smoking prevalence and
5 the inflation adjusted price of cigarettes for much of the 1980s that is accompanied by a
6 statement that "It has been estimated that YAS may account for 50% of the market's overall
7 price response." These data are eventually summarized in the statement "Declining social
8 acceptability of smoking and increasing price are responsible for the disproportionate rate of
9 incidence decline among YAS. Increasing cigarette prices, however, is believed to be the
10 single most influential factor." 506654883-4969 at 4896, 4992, 4995 (U.S. Ex. 50,933)
11 (emphasis in original)
12 **Q: What is the significance of this document?**
13 A: This document clearly shows that R.J. Reynolds recognized the importance of price in
14 affecting smoking by young people and that it understood how price-induced changes in
15 their smoking affected the overall market for cigarettes.
16 **Q: Can you provide another example?**
17 A: Yes. In a March 20, 1992 memorandum from Lorillard's S.R. Benson to S.T. Jones, the
18 price sensitivity of smoking by age is discussed. Based on data from their 1991 National
19 Cigarette Tracking Study for "full price brand smokers," Benson states, "While we know
20 that older smokers have historically represented a greater share of the off price category,
21 there is some evidence that the younger adult smokers currently smoking a full price brand
22 may be demonstrating a sensitivity towards price." He further states:

23 [I]t is clear that the younger adult, 18-24 smoker group, although still
24 smoking a full price brand, 'claim' a greater sensitivity to price than the

> older age groups. Furthermore, among those who claim to shop for price, it is the younger age group that exhibits the highest switching rate. While we know that switching rates have traditionally been higher among younger adult smokers, this information lends further support to that finding. It is the older smokers who are more brand loyal and probably less likely to 'shop around.' We know that younger adult smokers may be in a lower economic group and this information may reflect that phenomenon.

82849666-9667 at 9666 (U.S. Ex. 55,569).

Q: What is the significance of this document to your conclusions?

A. This document shows that Lorillard, based on its internal tracking data, was aware of the greater price sensitivity of younger smokers.

Q: Could you describe, in general, how these documents are significant to your conclusions?

A. These documents clearly demonstrate that Defendants, based on their own internal research as well as published academic research, know that smoking by teenagers and young adults is more affected by cigarette prices than is smoking by adults.

3. Defendants Know That Teenage Smokers Are Important to Their Long Term Success

Q: Why is this knowledge important to Defendants?

A: As indicated in some of the documents described above, Defendants recognize that their future success is contingent on getting new smokers to replace those who die or quit. Similarly, they recognize that there is a high degree of brand loyalty and that recruiting new smokers to their brands initially will provide them with a long term advantage. Thus, Defendants' knowledge that price significantly affects teenage and young adult smoking behavior is important to their developing pricing and price-related marketing strategies that are particularly effective in reaching this population.

Q: Can you provide specific example of Defendants' internal documents describing the importance of teenage and young adult smokers to their long term success?

A: Yes. For example, in the March 3, 1975 Economic Forecast produced by analyst Myron Johnston for Philip Morris discussed above, Johnston reports that:

> [d]uring the last ten years Marlboro has benefited from the rapid increase in the number of people 15 to 19 years old, the ages at which most smokers begin smoking. This age group increased 13.4 percent from 1965 to 1970 and 8.7 percent between 1970 and 1975. The number of 15-19 year olds will reach a peak in 1976, however, and then decline. Between 1975 and 1980 there will be a 3.7 percent decline in the number of 15-19 year olds, and from 1980 to 1985 the number will decline 12.6 percent. As noted earlier, because of the increase in the incidence of teenage smoking the number of smokers in this age group will remain constant through 1980. This increase has been chiefly among females, however, so the number of male smokers 15 to 19 will decline. Thus Marlboro will be deprived of one source of its growth and, increasingly, will have to rely for growth more on switchers from other brands and on maintaining the brand loyalty of Marlboro smokers. Because of the decline in the number of 15-19 year olds, Marlboro sales will increase at a decreasing rate. Marlboro is also particularly vulnerable to the effects of the recession. The highest unemployment rates are among the younger age groups, precisely the groups in which Marlboro's market penetration is the highest. There is also some evidence, chiefly anecdotal to be sure, that parents are reducing the allowances they give to their teenage children. This could also cut into Marlboro sales. Menthol brands, and Kool in particular, are also likely to be hurt by the recession, for unemployment is very high among blacks.

1000739883-9907 at 9905, 9907 (U.S. Ex. 21,601).

Q: How is this document significant?

A: This document clearly shows that Philip Morris knows that most smokers begin smoking as teenagers, that many teenage smokers smoke Marlboro cigarettes, that this has contributed to the growth of Marlboro over time, and that expected declines in the size of the teenage population will make future Marlboro growth more difficult. In addition, this document demonstrates that Philip Morris recognizes the importance of disposable income, including

allowances teenagers receive from their parents, as an important factor affecting teenage smoking.

Q: Do you have another example?

A: Yes. In the May 21, 1975 Philip Morris memorandum on "The Decline in the Rate of Growth of Marlboro Red," Myron Johnston discusses the importance of teenage smokers to Marlboro. Specifically, he states:

> It has been well established by the National Tracking Study and other studies that Marlboro has for many years had its highest market penetration among younger smokers. Most of these studies have been restricted to people age 18 and over, but my own data, which includes younger teenagers, shows even higher Marlboro penetration among 15-17 year-olds. The teenage years are also important because those are the years during which most smokers begin to smoke, the years in which initial brand selections are made, and the period in the life-cycle in which conformity to peer-group norms is greatest.

Mr. Johnston also conducted several correlational analyses that support his hypothesis that there is a strong relationship between the number of teenagers and Marlboro sales. Given the then downward trend in the teenage population, Mr. Johnston concludes that "heavy reliance for sales on an age group that is declining in number is dangerous."

Q: How is this document significant?

A: As with the previous document, this document clearly shows that Philip Morris recognized the importance of teenagers for Marlboro sales, knew that its market share among younger teenagers was substantial, and knew that declines in the number of teenagers would have an adverse impact on Marlboro sales and, consequently, on Philip Morris.

Q: Did R.J. Reynolds continue to explore this issue?

A: Yes. In a lengthy February 29, 1984 R.J. Reynolds report entitled "Younger Adult Smokers: Strategies and Opportunities," Diane Burrows described the importance of younger adult

smokers to long term performance and identified key factors contributing to the past success of particular brands among young smokers. Specifically, Ms. Burrows states: "Though decreasing in number, younger adult smokers are a key market for RJR because improved RJR performance among younger adult smokers could contribute more to long term profitability and positive share momentum than could be achieved from gains in any other age group." She highlights three key factors: "1. Younger adult smokers are the only source of replacement smokers; 2. A 'first brand' strategy has significant share advantages; 3. Younger adult smokers offer the most concentrated switching opportunity." With respect to the advantages of a "first brand" strategy, Ms. Burrows describes several, including:

> 'First brands' compete from the high ground. They do not need switching gains to grow and can afford some switching losses. Brands which rely on older smokers must achieve net switching gains to break even on share. Strength among younger adult smokers will ultimately yield growth in older age brackets. Aging has been contributing all of Marlboro's and Newport's smoker share gains among smokers 25+. Aging of loyal younger adult smokers creates disproportionately large gains in market share, due to their increasing consumption. This does not accrue from gains among older smokers. Younger adult strength, past or present, will tend to extend the lifecycle of a brand.

Ms. Burrows further notes that external factors have provided opportunities that were capitalized on by successful "younger adult brands of the past" and that "pricing is a key issue in the industry" at the time of this report. 501431517-1610 (U.S. Ex. 20,680).

Q: What is the significance of these documents?

A: These R.J. Reynolds documents describe the importance of attracting younger adult smokers for R.J. Reynolds's long term profitability, the significance of first brand choice by new smokers, and the importance of price as a key factor influencing the smoking behavior of younger adults.

4. Defendants Used Their Knowledge of Teenage Price Sensitivity to Market to Teenagers

Q: How did Defendants use their knowledge of teenage price sensitivity?

A: Defendants used their knowledge about the greater price sensitivity of teenage and young adult smoking to develop their price-related marketing strategies.

Q: Can you provide an example?

A: Yes. Several documents from R.J. Reynolds illustrate how marketing strategies were developed based on the research showing that smoking among teenagers and younger adults was more price sensitive than smoking among adults. For example, the September 27, 1982 memorandum from Diane Burrows discussed above suggests several possibilities. Specifically, in the context of a "steep rise in price expected in the coming months," Ms. Burrows states:

> There is no reason to assume that price makes the idea of smoking less appealing to younger adults. But price may create a barrier which prevents that appeal from developing into an ongoing choice to become a smoker. RJR has an opportunity to break this price barrier with a brand targeted to younger adult males, the most sensitive group. Three approaches are possible: 1. A new younger adult male brand which offers imagery combined with lower price. 2. A larger, economy size pack of a new or existing brand. 3. Marketing 'half-packs' (10's or 12's) of a new or existing younger adult male brand, in addition to 20's.

Ms. Burrows ends up recommending 'half-packs,' in part because "Newport 10's are showing up in regular outlets (not just vending) suggesting Lorillard may also be aware of this younger adult price sensitivity. 503011368-1369 at 1368 (U.S. Ex. 20,709) (emphasis in original).

Q: Was this recommendation implemented?

A: To my knowledge, the recommendation concerning the marketing of "half-packs" was not widely implemented. Instead, greater effort was placed on one of the other possibilities

1 raised by Ms. Burrows, marketing a larger pack of a new brand. Several documents from
2 mid-1983, for example, describe "Project VB Assessor." This "project" included
3 qualitative and quantitative research on the marketing of Century cigarettes in packs of 25
4 cigarettes and cartons of nine packs (225 cigarettes). Alternative pricing strategies were
5 tested, including offering the larger packs at the same price as traditional packs of 20
6 cigarettes and charging a somewhat higher price for the 25 pack (but at lower average price
7 per cigarette). Based on the promising results of their research, including "the potential to
8 draw significantly from Philip Morris, particularly from Marlboro," R.J. Reynolds decided
9 to introduce Century in 34 states in July 1983 (state laws in the remaining states would not
10 allow its introduction). Print and point of sale advertising emphasized Century's price
11 advantage with statements like "25 to the pack. More for your money," "Taste that delivers
12 in a pack that saves," and "Costs no more than other cartons" prominently noting that the
13 carton contained 225 cigarettes. Within three years, the Century brands had amassed a
14 market share of over five percent.

15 **Q: Did R.J. Reynolds pursue other price-related marketing strategies?**

16 A: Yes, R.J. Reynolds's Marketing Development Department continued to examine alternative
17 price-related marketing strategies. For example, a May 5, 1983 R.J. Reynolds
18 memorandum on "Action Alternatives in a Price sensitive Market" states that "MDD
19 concluded that current RJR volume and share softness was primarily attributable to the
20 recent great increase in price sensitivity of all smokers and the above average price
21 sensitivity for RJR smokers relative to other smokers. To deal with this situation, we
22 recommended that RJR develop and implement a multi-faceted strategy to address current
23 price competition and the prospect of new and different forms of price competition in the

future, including the prospect of retail 'price wars.'" The memorandum concluded by noting that this was "mainly a framework for thinking and planning." 505250251-0252 (U.S. Ex. 50,750).

The subsequent February 29, 1984 R.J. Reynolds report entitled "Younger Adult Smokers: Strategies and Opportunities" that was discussed above provided more specific recommendations, including "RJR should make a substantial long term commitment of manpower and money dedicated to younger adult smoker programs. An unusually strong commitment from Executive Management will be necessary, since major volume payoffs may lag several years behind the implementation of a successful younger adult smoker strategy," and "RJR should seek to better understand and capitalize on the market conditions/approaches which have successfully created younger adult strength for brands/companies in the past."

The report further highlights the importance of price as a key market condition because of the pressures of the FET increse [sic] and the ensuing surge in sales of generic/private label brands," and because "price had a much stronger effect on smoking by younger adults, particularly males, than on any other age group, because people were less likely to start smoking in an environment of higher cigarette prices."

Among the specific strategies, the report states that "To maximize the possible pricing opportunity among younger adult smokers, several alternatives should be considered" including: "A price/value brand would need a conspicuous second 'hook' to reduce possible conflict between younger adults' value wants and imagery wants. The most saleable 'hooks' are likely to be based on product quality, since these provide easy-to-explain public reasons for switching. Suitable imagery should also be used," and

"Tactically, extended periods of closely targeted pack promotion (B1G1F, sampling) in selected sites (e.g., convenience stores, military exchanges, special events) could lead to brand loyalty from repeated trial. This should be considered an investment program." 501431517-1610 (U.S. Ex. 20,680) (emphasis in original).

Q: Were any of these strategies implemented?

A: Yes. For example, a July 25, 1986 memorandum from F.V. Creighton highlights the use of Camel pack promotions in the Midwest and the impact of these promotions on Camel's market share among 18-24 year old male smokers during the period from March 1985 through early 1986. Creighton states "The major factor contributing to CAMEL's dramatic growth among Mid-West 18-24 year old males appears to be the increased level of Mid-West promotional support, and in particular, CAMEL's targeted promotions which were implemented the same time as the boost in CAMEL's share and completed just prior to the downward trend." He further states:

> CAMEL's initial growth among target smokers in the Mid-West began following the 1985 March and May B1G1F promotions (which included coupon inserts). Growth accelerated immediately following the placement of the CAMEL 'Six Pack' B3G3F promotion in August (which the Mid-West reportedly executed at 150% of its allocation). This offer created a total of 12 free pack opportunities per 'Six Pack' purchase (with each 'Six Pack' unit containing three additional B3G3F coupons, effectively extending the duration of the promotion's impact into fourth quarter). As the B3G3F promotion lapsed, fourth quarter FSI coupon offers were distributed nationally, offering pack as well as carton discounts. The early 1986 CAMEL T-shirt promotion (which included coupons and were distributed among competitive smokers responding to the toll free number) concluded CAMEL's relatively continuous series of targeted events. CAMEL's OOH and display programs also concluded during the mid-February to mid-May period (when share began to taper off).

In a final section on "Implications," Creighton further notes that "an opportunity to expand targeted efforts could exist in other sales areas which are now only receiving broad based volume programs." 505727418-7431 (U.S. Ex. 21,400).

Q: Did R.J. Reynolds expand the use of these targeted promotions for Camel?

A: Yes. For example, a 1987 R.J. Reynolds video describing plans for a 75th birthday promotional campaign for Camel prominently features buy-one-get-one-free coupons planned for magazines with high readership by young adult males, in-store promotional discounts of 75 cents off two packs, newspaper coupons for $2.00 off of a purchase of one carton, and a variety of other gifts and promotions tied to various events. (U.S. Ex. 80,777).

Q: What was the impact of the expanded use of these targeted promotions?

A: Camel's market share among young smokers increased significantly after the expansion of these activities. For example, a 1989 report on the "Volume Impact of Camel YAS Growth" concluded that "In 1988, CAMEL Ex. Regular posted a 2.2 point national gain in usual brand share among males 18-24 (the brand's target) and a gain of 1.4 points among total 18-24 (YAS). This was the largest 12-month YAS gain ever recorded on Tracker, for CAMEL or any other RJR brand." The report further states that "The timing of this turnaround appears closely related to key changes in CAMEL marketing: National expansion of the 'Old Joe' imagery" and "Return of YAS-oriented retail pack programs which had been absent outside CAMEL's emphasis markets for at least a year," concluding that "These observations point to CAMEL's 1988 YAS gains as <u>real YAS growth</u>." In a subsequent section of the report, the question "Is retail pack support critical to sustaining YAS gains?" was raised, with the following response: "In the mid-1980's, retail pack

1 programs were available to CAMEL with some regularity in the PMSA. In 1987, only 3
2 pack programs were executed (including one on F100's only) and the brand's YAS share
3 stepped down by nearly 2 points. There was no rebound until pack support was resumed in
4 1988." This is illustrated graphically for the period from July 1986 through October 1988.
5 The report also states that "While 'Old Joe' might be able to generate growth by imagery
6 alone, the above patterns suggest that retail pack programs play an important role in
7 maintaining loyalty among the brand's YAS franchise during this key stage in brand choice,
8 as well as in generating trial which could stimulate further growth momentum. Thus,
9 reducing CAMEL's pack presence would likely jeopardize the brand's ability to sustain the
10 rate of YAS growth achieved in 1988." 507181304-1311 (U.S. Ex. 29,843).

11 **Q: How is this series of documents relevant to your conclusions?**

12 A: These documents highlight how R.J. Reynolds' marketing efforts responded to the early
13 academic research on the impact of cigarette prices on youth and young adult smoking and
14 its own internal research on this issue, both of which demonstrated that teenage and young
15 adult smoking was relatively price sensitive. As described in these documents, several
16 price-related marketing activities were explored and tested, with some of these eventually
17 implemented. The "Old Joe" campaign provides a particularly important illustration of the
18 combination of image-oriented and price-related marketing and the success of this
19 combination in reaching teenage and younger adult smokers, the population identified as
20 critical to the long-term success of the company.

21 **Q: Did other Defendants engage in similar activities?**

22 A: Yes. As discussed above, the FTC data on cigarette marketing expenditures indicate an
23 industry-wide increase in price-related cigarette marketing activities beginning in the mid-

1980s and accelerating over time. In addition, other internal company documents describe the wide variety of price-related marketing activities that were being explored and implemented.

Q: You cite a number of documents in your testimony that use terms such as "young adult smokers," "younger smokers" and others. What do you understand these terms to mean?

A: One example is Ms. Burrows' use of the term "younger adult males" in a document I cited above. Taken in the context of the various documents written by Ms. Burrows that I have cited here, she uses the terms "new smokers," "teenagers," "younger adults," and "younger adult males" interchangeably. This suggests that "young adults" could include adolescents and teenagers as young as 12.

Q. Is it your understanding that Defendants use terms such as "young adult smokers" to refer to teenagers?

A. Yes.

Q. What is your basis for that understanding?

A. First, I have reviewed Defendants' internal documents from the 1970s and early 1980s where they specifically discuss teenagers. In these early documents, Defendants discuss their own data on teenagers; for example, in one of the documents discussed above, Myron Johnston refers to his own data on teenagers ages 15-17. 10003285497-5502 (U.S. Ex. 20,160). Similarly, in documents from the early 1980s, Defendants refer to the NBER studies on price sensitivity and age. One of these NBER studies focuses specifically to the price sensitivity of 12-17 year olds. 503011368-1369 (U.S. Ex. 20,709); 503010298-0299 (U.S. Ex. 22,713); 503981058-1058 (U.S. Ex. 22,714). Additionally, these early

1 documents also show Defendants' understanding that most smokers initiate smoking before
2 age 18 and make their first brand choice before age 18. Second, in more recent documents,
3 Defendants use terms such as "younger adult smokers," "new smokers," "younger adults,"
4 and "younger adult males" when talking about the relatively price sensitive segment of the
5 market and when discussing smoking initiation and first brand choice. Based on this, I
6 conclude that the population generally referred to in these later documents includes
7 teenagers, including those under age 18.

8 For example, in the October 6, 1982 R.J. Reynolds memorandum from D.S.
9 Burrows to L.W. Hall described above, Ms. Burrows specifically discusses the price
10 sensitivity of teenage smoking, ages 12 through 17, in the context of the NBER studies. For
11 example, in the context of a federal excise tax increase, Ms. Burrows states that "the loss of
12 younger adult males and teenagers is important to the long term, drying up the supply of
13 new smokers to replace the old. This is not a fixed loss to the industry: its importance
14 increases with time. In ten years, increased rate per day would have been expected to raise
15 this group's consumption by more than fifty percent." 503010298-0299 (U.S. Ex. 22,713).
16 An R.J. Reynolds document from the late 1980s (discussed above), however, in the context
17 of a discussion of the impact of price on smoking prevalence and consumption, states that
18 "<u>It has been estimated that YAS may account for 50% of the markets overall price</u>
19 <u>response</u>" 506654883-4969 (U.S. Ex. 50,933) (emphasis in original).

20 **Q. Is your conclusion that you have just described confirmed by any other work that**
21 **you have done or recent peer-reviewed research you have reviewed?**

22 A. Yes. For example, a 2002 peer-reviewed *Tobacco Control* article by K. Michael
23 Cummings and his colleagues entitled "Marketing to America's Youth: Evidence from

1 Corporate Documents" describes the change over time from referring directly to the
2 marketing and sale of cigarettes to teenagers under 18 years of age in documents from the
3 1970s to the use of terms like "younger smokers" and "first usual brand young adult
4 smokers" as euphemisms for "teenage smokers" in the 1980s.

5 ***D. State and Federal Excise Taxes***

6 ***1. The Effect of State and Federal Excise Taxes on Cigarette Prices***

7 **Q: You have testified that one of the two primary reasons that cigarette prices might rise**
8 **is federal, state, and local cigarette excise taxes. Why do governments impose excise**
9 **taxes on cigarettes?**

10 A: Historically, governments have used cigarette excise taxes to generate revenues. Recently,
11 governments have explicitly stated that one of their reasons for increasing cigarette excise
12 taxes is to discourage teenage smoking.

13 **Q: Why have the governments concluded that increasing cigarette excise taxes**
14 **discourages teenage smoking?**

15 A: Governments have recognized the importance of the findings from the studies I described
16 above – that higher cigarette prices will reduce teenage tobacco use – and have responded
17 by increasing excise taxes on cigarettes, citing these findings as a major reason for the tax
18 increases.

19 **Q: How has the federal government in particular responded to these studies**
20 **demonstrating the effects of cigarette prices on smoking?**

21 A: Over the past decade, several proposals to increase the federal cigarette excise tax have
22 been put forward. I have given invited testimony before House and Senate committees
23 regarding the studies that have found that increased excise taxes would decrease the number

1 of teenage smokers. I also provided informal consultation regarding the impact of several
2 of these proposed tax increases. For example, I worked with Senator Kennedy's office to
3 provide estimates of the impact of federal cigarette excise tax increases on cigarette tax
4 revenues, adult smoking, and teenage smoking, and specifically provided information that
5 raising excise taxes would decrease teenage smoking. These estimates were used in
6 developing legislation that expanded the State Children's Health Insurance Program
7 (SCHIP), in part funded by an increase in the federal cigarette excise tax. As a result of this
8 proposal, the federal cigarette excise tax was increased by a total of fifteen cents between
9 2000 and 2002.

10 **Q: Have studies looked at the impact of increases in state excise cigarette taxes on**
11 **cigarette smoking in those states?**

12 A: Yes, there have been several studies that have examined the impact of state excise tax
13 increases on cigarette smoking in those states. Perhaps the most studied are California and
14 Massachusetts, given that they were the first states to adopt significant increases in their
15 cigarette excise tax rates and to use some of the revenues generated from these tax increases
16 to fund comprehensive tobacco control programs.

17 **Q: Could you describe the California studies?**

18 A: Several studies have examined the effects of the 25 cent per pack increase in the California
19 cigarette excise tax that was a part of the Tobacco Tax and Health Protection Act, better
20 known as Proposition 99, approved by California voters in November 1988. For example,
21 Dr. Teh-wei Hu and his colleagues published a series of peer-reviewed journal articles on
22 California excise tax increases. One of these peer-reviewed articles published in the
23 *Journal of Public Health Policy* in 1994, estimated that the 25 cent increase in the

1 California state tax led to a nine percent permanent reduction in per capita cigarette
2 consumption in California. For the period from 1989 through 1991 alone, the article
3 estimated that the increased tax reduced cigarette consumption in California by over 700
4 million packs.

5 **Q: When you discuss cigarette consumption, what do you mean?**

6 A: Consumption of cigarettes is the way that economists refer to smoking cigarettes. For our
7 purposes, cigarettes consumed and cigarettes smoked are the same thing.

8 **Q: Can you describe the Massachusetts studies?**

9 A: In November 1992, Massachusetts voters approved Question 1, raising the state cigarette
10 excise tax by 25 cents per pack in January 1993, and dedicating some of the revenues from
11 the tax increase to a new comprehensive tobacco control program. Subsequent research
12 concluded that the tax increase led to a significant reduction in cigarette sales in
13 Massachusetts. For example, a study co-authored by Dr. Jeffrey Harris, an expert in this
14 case, and published as a peer-reviewed article in *Morbidity and Mortality Weekly Report*,
15 found that Massachusetts sales fell from 117 packs per capita in 1992 to 94 packs per capita
16 in 1996. There was a much greater decline in sales in Massachusetts compared to the rest
17 of the United States, where per capita sales only declined from 131 to 123 packs per capita
18 during this time period.

19 **Q: What does the research from other states find?**

20 A: There have been over 125 state cigarette excise tax increases since the Proposition 99 tax
21 increase in California, including many that increased taxes by 50 cents or more per pack.
22 These state tax increases have been the subject of extensive research which consistently
23 finds that the state tax increases lead to significant reductions in cigarette smoking. For

1 example, I recently completed a study for the Illinois Department of Public Health
2 examining the impact of the 40 cent increase in the Illinois cigarette tax that went into effect
3 in July 2002. Consistent with the studies for California and Massachusetts that I have just
4 described, I found that cigarette sales in Illinois declined by over ten percent between 2001
5 and 2003, while bordering state sales were largely unaffected. I concluded that the tax
6 increase led to a significant drop in cigarette consumption in Illinois. In addition, I found
7 that calls to the Illinois Quitline rose sharply following the tax increase, suggesting that the
8 tax increase led many Illinois smokers to consider quitting.

9 **Q: What do you conclude from the studies of state cigarette tax increases that you have**
10 **just testified about?**

11 A: That increases in state cigarette taxes lead to significant reductions in cigarette consumption
12 within the states that increase their taxes. These reductions in consumption result from
13 increased smoking cessation, reduced smoking initiation and re-initiation, and reductions in
14 cigarette consumption among those who continue to smoke.

15 **Q: Do Defendants have any impact on the rate of excise taxes?**

16 A: Yes. As I will testify to more completely below, Defendants have engaged in a variety of
17 activities to discourage federal, state, and local governments from raising excise taxes,
18 ranging from direct lobbying of policymakers to public relations campaigns that encourage
19 smokers, cigarette retailers, and others to speak out against excise tax increases.

20 **Q: Do Defendants try to counteract the effects of increases in cigarette prices caused by**
21 **excise taxes?**

A: Yes, as I will testify to in more detail below, Defendants have implemented a variety of pricing strategies, price-related marketing activities, and other marketing strategies for dealing with federal and state cigarette excise tax increases.

2. *Defendants Use Price-Related Marketing Strategies to Respond to Excise Tax Increases and Lobby to Defeat Excise Tax Increases*

Q: Are Defendants concerned about the impact of state and federal cigarette tax increases on cigarette prices and smoking rates?

A: Yes. For example, in its "Interim Report to Stockholders" for the first quarter of 1969, Liggett & Myers states:

> We have one more major problem in the cigarette industry which promises to be our most serious threat in the years ahead. That, of course, is the mounting state and local cigarette excise taxes. Excise taxes on cigarettes continue to be the favorite target for state legislatures hungry for new revenues. They are increased the most often and by the greatest amounts. They are unreasonable, but lucrative, and above all punitive. During the past ten years, they have been raised almost as many times as sales, personal income and gasoline taxes combined, and whereas the increases used to be a penny or two per pack at a time, in recent years, they have frequently ranged from four to as high as seven cents per pack at a time. Although manufacturers' prices have increased little since mid-1967, retail prices have risen more than 7 per cent, chiefly because the weighted average state cigarette excise tax has climbed almost 18 per cent, from 7.8 cents per pack to 9.2 cents. There were 12 increases in state taxes in 1967 and 8 increases in 1968. There have been 2 increases already this year, and while increases have been defeated in 10 states, there are tax-increase bills now pending in 24 states. One of these 24 is North Carolina, the only state remaining today with no cigarette tax. We are opposed to this tax as we are to any new cigarette taxes. This one is especially important, not because of its effect on the sale of cigarettes in the state, but because of its effect on the entire cigarette industry. During the past six years, the weighted average cigarette excise tax for all states has increased from approximately 5 cents to more than 9 cents per pack. A 5-cent tax in North Carolina could result in further tax increases elsewhere.

500397668-7690 at 7674-7675 (U.S. Ex. 22,711).

1 **Q: Do Defendants respond in any way to the increase in cigarette prices caused by excise**
2 **taxes?**
3 A: Yes, Defendants have a variety of pricing, directly price-related marketing, and other
4 marketing strategies for dealing with federal and state cigarette excise tax increases.
5 **Q: What are their strategies?**
6 A: For a federal cigarette excise tax increase, Defendants determine how the industry prices for
7 cigarettes will change. Many federal cigarette tax increases result in an increase in industry
8 prices of about the same amount. For example, the four cent per pack increases in the
9 federal cigarette excise tax in January 1991 and again in January 1993 both led to an
10 increase in industry prices of 4.2 cents per pack. Other federal tax increases result in
11 somewhat larger increases in industry prices. For example, industry prices increased by 13
12 cents per pack following the 10 cent per pack increase in the federal tax in January 2000.
13 Similarly, in the paper by Harris discussed above, he estimated that industry prices
14 increased by about double the amount of the increase in the federal tax in 1983. (U.S. Ex.
15 65,349). As discussed above, in still other cases, industry prices increase by less than the
16 increase in the federal cigarette tax. For example, industry prices were not increased after
17 the most recent increase in the federal cigarette tax, a five cent per pack increase in January
18 2003. In the case of state cigarette excise tax increases, industry prices to wholesalers will
19 not change, but wholesaler prices to retailers will increase, typically by about the amount of
20 the increase in the state tax.
21 **Q: Do Defendants have any impact on the rate of excise taxes?**
22 A: Yes. Defendants have engaged in a variety of activities to discourage federal, state, and
23 local governments from raising excise taxes, ranging from direct lobbying of policymakers

to public relations campaigns that encourage smokers, cigarette retailers, and others to speak out against excise tax increases.

Q: Do Defendants' internal documents describe any of these efforts?

A: Yes. For example, in response to an anticipated increase in the federal cigarette tax in 1987, D.W. Shouse of R.J. Reynolds, in a memorandum to J.A. Herberger, discusses efforts to mobilize smokers to oppose the increase. The memorandum points out that the expected "8c or 10c FET increase will represent a significant increase in the retail price of cigarettes. Price-motivated switching, quitting and reduced rate per day will all influence specific brand volume." Shouse also recommends "Core Brand Defense Programs" that were designed to:

> inform franchise smokers of the potential tax increase and ask them to write in opposition to their representatives in Washington; and, offer a tax rebate/coupon program, contingent upon the tax increase, which will defray the retail price increase in the short term. These programs will, therefore, initiate a grass roots effort to fight the increase and protect our most price sensitive core brand smokers if an increase occurs.

Prior to the tax increase, the recommended programs included: a "1. July On-Carton Program Expansion," which would feature: "Postage paid business reply card provided on (or in) carton for smokers to voice their opposition to a FET increase to appropriate parties in Congress." "2. Third Quarter Carton Insert Program," in which "A carton insert will be placed in two weeks production of all key core brand styles to create smoker awareness of the potential FET increase." In the end, the anticipated federal tax increase did not occur. 506767411-7417at 7411, 7413 (U.S. Ex. 21,399).

Q: Do Defendants' internal documents describe strategies for responding to state and federal cigarette excise tax increases?

A: Yes, some of the thinking behind the different responses of industry prices to federal cigarette tax increases is contained in internal company documents. For example, in his September 3, 1987 memo to Jon Zoler, that I testified about earlier, Myron Johnston provides his thoughts on "handling an excise tax increase" that was expected at the federal level as described in my previous answer, drawing on experiences from the January 1983 doubling of the federal tax. As Johnston describes:

> 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 overall rate of inflation was slowing considerably. You may recall from the article I sent you that Jeffery [sic] 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 <u>had been</u> PM smokers and 420,000 of the non-starters <u>would have been</u> PM smokers. Thus, if Harris is right, we were hit disproportionately hard. We don't need to have that happen again.

Mr. Johnston further states:

> 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 <u>our</u> 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.

2022216179-6180 at 6179, 6180 (U.S. Ex. 76,177).

Q: Do Defendants use price-related marketing strategies to respond to increases in state and federal cigarette taxes?

A: Yes. Defendants have engaged in a variety of price-related marketing designed to offset the impact of the tax increase on the prices smokers pay for cigarettes. For example, in the December 22, 1986 R.J. Reynolds memorandum described above, D.W. Shouse provides recommendations for a program "to manage the impact of a potential excise tax increase." Contingent on a tax increase, the program called for carton inserts that "will also provide a toll-free number for franchise smokers to use to participate in a bounceback offer of six $1.00 carton coupons. The program is therefore designed to be self-selecting, or targeted to price sensitive franchise smokers." The memorandum concluded "In addition, whether or not a FET increase is legislated in 1987 or not, pricing pressures will continue to mount with local/state excise tax and manufacturer's price increase activity. Therefore, development of half-cartons and smaller size packs, which should appeal to younger adult and minority smokers, will continue to be aggressively pursed for testing." 506767411-7417at 7411, 7414, 7417 (U.S. Ex. 21,399).

Similarly, when dealing with past state tax increases, as illustrated in Figures 53-55, Defendants have provided coupons offering "tax relief" to smokers facing higher prices as a result of the tax increases.

1

Figure 53

ATTACHMENT XX

SURGEON GENERAL'S WARNING: Smoking By Pregnant Women May Result in Fetal Injury, Premature Birth, And Low Birth Weight.

Delaware joins FEDS in increasing cigarette taxes

DOVER – The Delaware state legislature has again enacted a bill to raise taxes on tobacco products. This increase, along with the recent Federal Excise Tax increase, will place nearly one-third of the population ...

ROP
CIRC: 0.3 MIL
REGION 1 & 2
JAN 1991

Salem
TAX RELIEF
The Refreshest

Here's $1.00 Instant Relief From Salem...

$1.00 OFF CARTON of 4 PACKS any Salem

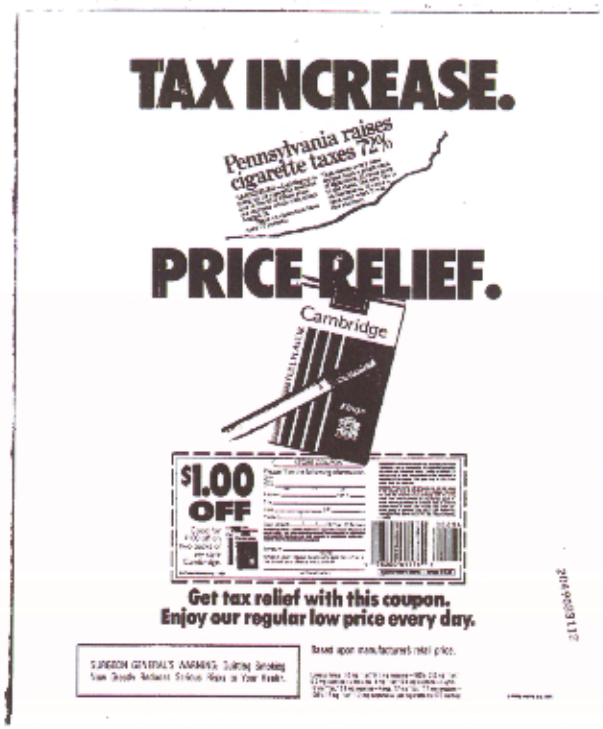
$1 OFF

2040264594

2

1

Figure 54


TAX INCREASE.
Pennsylvania raises cigarette taxes 72%
PRICE RELIEF.
Cambridge
$1.00 OFF
Get tax relief with this coupon.
Enjoy our regular low price every day.

2

1 **Figure 55**

2

3 In addition, other price-reducing marketing strategies have been used to offset the

4 impact of tax increases. For example, in a September 22, 1988 presentation to Philip

5 Morris USA, Leo Burnett outlined a "Proposition 99: Tobacco Tax Initiative, California

6 Defense Plan" for dealing with the 25 cent increase in the California cigarette excise tax

7 that was on the ballot that November. The proposed plan involved a set of targeted

8 marketing efforts that included "target couponing" and "continuity incentive" (e.g. specialty

9 item distribution) via direct mail, and "added value displays" and "couponing" at the point

10 of sale. The targeted couponing would have a "PM Tax Relief" theme and smokers would

11 be recruited from the existing Philip Morris direct mail database, a variety of mass media

1 advertisements, and "carton stuffers" that would be included in cartons of premium brand
2 cigarettes. The size of the coupons would vary based on anticipated brand loyalty and price
3 sensitivity, so that smokers who were most price sensitive would get the "maximum
4 incentive." Similarly, the point of sale strategies would include multipack discounts (buy
5 three, get two free) that would be displayed in "special floor and counter displays," on-
6 carton coupons that would be redeemed at the time of purchase, and more. The success of
7 the California "defense plan" led to the use of similar strategies in other states.
8 2048486666-6686 (U.S. Ex. 21,398).
9 **Q: What is the significance of these documents?**
10 A: These documents show that Defendants have actively engaged in efforts opposing cigarette
11 excise tax increases and that they have used their price-related marketing tools to at least
12 partially offset the impact on cigarette of tax increases that are enacted. Because of the
13 impact of price on cigarette smoking, particularly among teenagers, these activities result in
14 more smoking than would have otherwise been the case.
15 **Q: Are Defendants' price-related marketing strategies that you have described above**
16 **purposeful?**
17 A: Yes. Defendants developed their price-related marketing strategies knowing what the
18 impact of their pricing strategies would be on smoking behavior, particularly smoking
19 behavior among teenagers and young adults, the population Defendants' recognize is most
20 price sensitive and critical to their long-term viability.
21 **Q. Thank you, Dr. Chaloupka.**
22