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This report is the latest in a series of reports that analyze tobacco industry campaign contributions, lobbying, and other political activity in California and other states. The previous reports are:

- M. Begay and S. Glantz. *Political Expenditures by the Tobacco Industry in California State Politics* UCSF IHPS Monograph Series, 1991.
- M. Begay and S. Glantz. *Political Expenditures by the Tobacco Industry in California State Politics from 1976 to 1991*. UCSF IHPS Monograph Series, 1991.
- B. Samuels and S. Glantz. *Tobacco Control Activities and the Tobacco Industry's Response in California Communities, 1990-1991*. UCSF IHPS Monograph Series, 1991.
- M.E. Begay and S.A. Glantz. *Undoing Proposition 99: Political Expenditures by the Tobacco Industry in California Politics in 1991*. UCSF IHPS, 1992.
- S.A. Glantz and L.R.A. Smith. *The effect of ordinances requiring smokefree restaurants on restaurant sales in California*. UCSF IHPS Monograph Series, 1992.
- M.E. Begay, M. Traynor, S. A. Glantz. *Extinguishing Proposition 99: Political Expenditures by the Tobacco Industry in California Politics in 1991-1992*. UCSF IHPS, 1992.
- M.E. Begay, M. Traynor, S.A. Glantz. *Tobacco Industry Political Expenditures in California State Politics, January-June, 1993*. UCSF IHPS, 1993.
- M.E. Begay, M. Traynor, S.A. Glantz. *Tobacco Industry Political Expenditures in California in the 1991-1992 Election*. UCSF IHPS, 1993.
- M.E. Begay, M. Traynor, S.A. Glantz. *The Twilight of Proposition 99: Preauthorization of Tobacco Education Programs and Tobacco Industry Political Expenditures in 1993*. UCSF IHPS, 1994.
- H. Macdonald and S. Glantz. *Analysis of the Smoking and Tobacco Products, Statewide Regulation Initiative Statute*. UCSF IHPS, 1994.
- H. Macdonald, M. Traynor, S. Glantz. *California's Proposition 188 : An Analysis of the Tobacco Industry's Political Advertising Campaign*. UCSF IHPS, 1994.
- S. Aguinaga, H. Macdonald, M. Traynor, M. Begay, S. Glantz. *Undermining Popular Government: Tobacco Industry Political Expenditures in California 1993-1994*. UCSF IHPS, 1995. (Available on the World Wide Web at <http://galen.library.ucsf.edu/tobacco/tobexp>)
- M. Begay, and S. Glantz. *Question 1: Tobacco Education Outlays From the 1994 Fiscal Year to the 1996 Fiscal Year* UCSF IHPS 1995. (Available on the World Wide Web at <http://galen.library.ucsf.edu/tobacco/q1>)
- F. Monardi, E. Balbach, S. Aguinaga, S. Glantz. *Shifting Allegiances: Tobacco Industry Political Expenditures in California, January 1995 - March 1996*. UCSF IHPS 1996 (Available on the World Wide Web at <http://galen.library.ucsf.edu/tobacco/sa>)
- F. Monardi, A. O'Neill, and S. Glantz. *Tobacco Industry Political Activity in Colorado 1979 - 1995*. UCSF IHPS 1996. (Available on the World Wide Web at <http://galen.library.ucsf.edu/tobacco/co>)
- F. Monardi, and S. Glantz. *Tobacco Industry Political Activity in Washington 1983 - 1996*. UCSF IHPS 1996. (Available on the World Wide Web at <http://galen.library.ucsf.edu/tobacco/wa>)
- F. Monardi, and S. Glantz. *Tobacco Industry Political Activity and Tobacco Control Policy Making in New Jersey 1982 - 1995*. UCSF IHPS 1997. (Available on the World Wide Web at <http://galen.library.ucsf.edu/tobacco/nj>)
- E. Balbach, F. Monardi, B. Fox, S. Glantz. *Holding Government Accountable: Tobacco Policy Making in California, 1995-1997*. UCSF IHPS 1997. (Available on the World Wide Web at <http://galen.library.ucsf.edu/tobacco/ca9596/>)
- S. Aguinaga-Bialous and Stanton A. Glantz. *Tobacco Control in Arizona 1973-1997*. UCSF IHPS 1997. (Available on the World Wide Web at <http://galen.library.ucsf.edu/tobacco/az/>)
- F. Monardi, and S. Glantz. *Tobacco Industry Political Activity and Tobacco Control Policy Making in Pennsylvania 1979 - 1996*. UCSF IHPS 1997. (Available on the World Wide Web at <http://galen.library.ucsf.edu/tobacco/pa>)
- B.J. Fox, J.M. Lightwood, S.A. Glantz, *A Public Health Analysis of the Proposed Resolution of Tobacco Litigation*. UCSF IHPS 1998. (Available on the World Wide Web at <http://www.library.ucsf.edu/tobacco/ustl/>)
- L. Goldman, and S.A. Glantz. *Tobacco Industry Political Activity and Tobacco Control Policy Making in Oregon 1985 - 1997*. UCSF IHPS 1998. (Available on the World Wide Web at <http://galen.library.ucsf.edu/tobacco/or/>)
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- F. Monardi, and S. Glantz. *Tobacco Industry Political Activity and Tobacco Control Policy Making in Ohio 1981 - 1998*. UCSF IHPS 1998. (Available on the World Wide Web at <http://galen.library.ucsf.edu/tobacco/oh>)
- M. Givel, and S.A. Glantz. *Tobacco Industry Political Power and Influence in Florida from 1979 to 1999*. UCSF IHPS 1999. (Available on the World Wide Web at <http://galen.library.ucsf.edu/tobacco/fl>)
- S. Magzamen and S. A. Glantz. *Turning the Tide: Tobacco Industry Political Influence and Tobacco Policy Making in California: 1997-1999* UCSF IHPS 1999. (Available on the Worldwide web at <http://www.library.ucsf.edu/tobacco/ca9799>)

## Executive Summary

Proposition 28, titled the Repeal of Proposition 10 Tobacco Surtax Initiative Statute, would repeal the \$.50 tax per pack of cigarettes (and commensurate tax on other tobacco products) enacted on by Proposition 10, passed on November 3, 1998. Proposition 28 would dismantle the California Children and Families First Program, a statewide trust to fund programs for early childhood education, also enacted through Proposition 10. It also prohibits the passage of additional taxes on tobacco products by voter mandate.

People are sensitive to the price of cigarettes and other tobacco products. Imposition of the 50 cent tax by Proposition 10 (combined with a wholesale price increase imposed by the tobacco industry to pay for the Master Settlement Agreement that ended state tobacco litigation) substantially reduced cigarette consumption.

Repealing the tax could substantially increase cigarette consumption and associated disease and medical costs if the price of cigarettes drops.

We analyzed two scenarios, which bracket the likely effects if Proposition 28 passes:

1. The tobacco industry raises wholesale prices to increase industry revenues.

- Since there is no retail price change, there will be no changes in consumption or tobacco-related disease.
- Industry revenues would increase by \$617 million.

2. The tobacco industry does not change wholesale prices, so the retail price of cigarettes drops and consumption increases.

- There would be an additional 114 million packs of cigarettes consumed, increasing industry revenues by \$220 million.
- There would be an increase in teen smoking, between 7,800 and 46,500 new youth smokers.
- An additional 102 low birth weights due to maternal smoking, for an additional \$2 million in direct medical costs for the first year following the repeal of the tax.
- An additional combined total of 78 heart attacks and strokes for Californians over 35 years of age for an increase of \$3 million in direct medical costs for the first year following the repeal of the tax.
- Over the longer term, annual medical costs of smoking-induced disease will increase by \$500 million annually, with an additional 1,800 annual deaths due to active smoking.

- Increase in costs for diseases related to secondhand smoke, especially in childhood diseases caused or exacerbated by secondhand smoke including SIDS, middle ear infections, asthma, bronchitis, pneumonia, and lung cancer, including
  - 50 to 90 additional low birth weight infants
  - 5 additional cases of SIDS
  - 3,400-8,100 additional physician office visits for middle ear infections
  - 40 to 135 new asthma cases in children
  - 2,000 to 5,200 additional asthma attacks in children
  - 780 to 1,600 cases of bronchitis and pneumonia in children
  - 16 additional lung cancer deaths
  - 180 to 320 additional heart disease deaths

These two cases bracket the likely effects of enactment of Proposition 28. The actual effect will probably be somewhere between these two scenarios.

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## Introduction

Proposition 28, the Repeal of Proposition 10 Tobacco Surtax, is a proposed initiative statute on the March, 2000 California ballot. If enacted, it would

- Repeal the 50¢ tax per pack of cigarettes (and commensurate tax on other tobacco products) enacted by Proposition 10, State and County Early Childhood Development Programs - Additional Tobacco Surtax, passed by California voters on November 3, 1998.
- Dismantle the California Children and Families First Program, a statewide trust to fund programs for early childhood education, created by Proposition 10, and reduce funding for early childhood education by approximately \$670 million per year.
- Prohibit the voters from increasing taxes on tobacco products through the initiative process. Under Proposition 28, only the legislature would have authority to increase the surtax on tobacco.

The sponsor of the initiative is Ned Roscoe, owner of Cigarettes Cheaper!, the largest tobacco retail chain in the country.

This report estimates the impacts of passage of Proposition 28 on tobacco consumption, the associated disease burden, and medical costs, and tobacco industry revenues. Except for the effects of increased secondhand smoke exposure to children as a result of increased tobacco consumption, we do not estimate the effects of substantial reductions in funding for early childhood education.

## Effects of the 1999 price increase on smoking in California

The price increase of cigarettes in 1999 had substantial effects on the consumption of cigarettes and the numbers of both adult and teen smokers in California. In addition, the reduction in smoking means that there was a concordant reduction in exposure of nonsmokers to secondhand smoke.

### *Effects on consumption*

There is a direct relationship between the price of a product and the demand for that product. Increasing the price of cigarettes through tobacco taxes is one of the most effective strategies to reduce tobacco consumption [1-6]. The price elasticity of demand measures the consumption effects of a product to the product's change in price. The price elasticity for adult cigarette consumption is approximately -.4 [7], meaning that a 10% change in the price of tobacco will result in a 4% change in the consumption of cigarettes.

The 1998 retail price of a pack of cigarettes in California averaged \$2.08 [8]. We estimated the 1999 price of cigarettes increased by 46%, to \$3.03, due to the 50¢ increase in the tobacco tax due to Proposition 10 and 45¢ increase in the wholesale price of cigarettes the

tobacco industry reportedly imposed to cover the costs of the Master Settlement Agreement that resolved state litigation against the tobacco industry over the costs of smoking and other issues [9, 10]. Based on a price elasticity of  $-0.4$ , we would expect consumption to drop by 18% between 1998 and 1999.

This predicted 18% reduction in consumption is less than the 26% drop between calendar years 1998 and 1999 reported by the California State Board of Equalization (from 1.752 billion packs to 1.288 billion packs). Doing such a calendar year calculation is misleading, however, because there were unusually high sales of cigarettes in December, 1998 and unusually low consumption in January, 1999, as people “stocked up” on cigarettes right before the 50¢ tax increase imposed by Proposition 10 went in to effect on January 1, 1999. Comparing the February - November sales for 1998 (1.423 billion packs) to 1999 (1.110 billion packs), avoids this problem and yields a 22% drop in consumption, which is close to what we predicted based on a  $-0.4$  elasticity estimate.

The difference between the predicted (based on price change) and actual change in consumption could be due to several factors.

- The tobacco industry may have raised wholesale price of cigarettes more than the reported 45¢ that was necessary to pay for the Master Settlement Agreement in order to increase profits.
- The California Tobacco Control Program has accelerated consumption declines substantially faster than one would predict from price increases [11].
- The price elasticity of demand in California may be higher than  $-0.4$ , perhaps because of the large number of heavy smokers that became light smokers due to the effect of the California Tobacco Control Program [11].

In any event, because our price elasticity calculation underestimated the observed change in consumption, it is likely that our estimates of the effects of any reduction in price associated with enactment of Proposition 28 will be conservative.

#### *Effect on smoking prevalence and number of smokers*

The overall consumption estimate of the price elasticity of demand for cigarettes, is actually comprised of two components, changes in the number of smokers (participation elasticity) and changes in consumption among continuing smokers (quantity per smoker elasticity). The participation elasticity has been estimated to be  $-0.26$  and the quantity per smoker elasticity to be  $-0.10$  [7]. In other words, for every 10% increase in the price of a pack of cigarettes, 2.6% of adult smokers will quit, and continuing smokers will reduce their consumption an average of 1%. Likewise, for every 10% decrease in the price of a pack of cigarettes, 2.6% of adults will become smokers, or reinstate smoking, and continuing smokers will increase their consumption an average of 1%.

In 1998, 18.4% of California adults smoked, which translates to 4.4 million adult smokers

in the state [12]. Thus, the 46% increase in price between 1998 and 1999 is estimated to have led 12% (.46x.26) of smokers -- 528,000 Californians -- to stop smoking. In addition, continuing smokers are estimated to have reduced consumption by about 5%.

### *Effect on Youth Smoking*

The elasticity of demand for youth consumption of tobacco products is not as well established as for adult consumption. Several studies [2, 13-17] found a range of youth participation elasticity from -.2 (youth less price sensitive than adults) to -1.2 (youth more price sensitive than adults).

In 1996, 12% of California Youth aged 12 - 17 were smokers (measured by smoking in the last 30 days prior to survey) [11]. This prevalence translates into over 323,000 teens in California who are smokers. The tax increase also had an impact on reduction in consumption of tobacco in California kids. Based the range of reported participation elasticities, the combined effects of the Proposition 10 tax increase and industry wholesale price increase between 1998 and 1999 would be expected to reduce the number of teen smokers by between 9 and 55%, with a midrange estimate of 24% (based on a -.53 elasticity). These percentage reductions translate into between 30,000 and 179,000 fewer teen smokers, with a midrange estimate of 79,000 fewer teen smokers.

### *Effect on Industry Revenues*

Despite the reported increase in the wholesale price of cigarettes of 45¢, the reduction in consumption between 1998 and 1999 reduced tobacco industry revenues in California by \$101 million, from approximately \$2.574 billion to \$2.473 billion.

### **Effects of Repealing the 50¢ California Tax on Smoking**

Just as increasing the price of cigarettes reduced consumption, reducing the price will increase consumption. We present two analyses of the effects of enacting Proposition 28 and repealing the 50¢ tax increase that it imposed, allowing for the fact that the federal tobacco tax increased from 24¢ to 34¢ on January 1, 2000:

1. The tobacco industry raises the wholesale price of cigarettes by 40¢, so there is no net effect on the price of cigarettes. As a result there would be no change in consumption (and associated health effects), but there would be an increase in industry revenues.
2. The tobacco industry does not raise wholesale prices, in which case retail prices decline by 40¢, in which case consumption would increase due to the decreased price, increasing the number of smokers, smoking-induced disease and the associated medical costs, as well as industry revenues.

Leaving aside any additional industry price increases to increase profits, these two cases bracket the effects of Proposition 28.

Table 1. Estimated Industry Revenues							
Year	Packs sold (millions)	Retail Price (cents)	State tax (cents)	Total tax (cents)	Industry revenue per pack (cents)	Total industry revenue (millions)	Change in industry revenue (millions)
1998	1,751	208	37	61	147	\$2,574	
1999	1,288	303	87	111	192	\$2,473	(\$101)
Scenario 1	1,332	303	37	71	232	\$3,090	\$617
Scenario 2	1,402	263	37	71	192	\$2,692	\$220

We based our analysis on an initial average price of \$3.03 in 1999. We obtained information packs of cigarettes sold in California from the State Board of Equalization. To avoid the results being distorted by the discontinuity in sales between December, 1998 and January, 1999, we “annualized” the consumption for 1999 by multiplying the average monthly consumption between February and November 1999 by 12. For Scenario 2, packs sold for Scenario 1 was increased based on the adult elasticity of -.4 and an assumed price decrease of cigarettes 40 cents per pack below the 1999 estimated price of \$3.03 per pack. The two scenarios are in 1999 dollars and assume no population growth.

### *Tobacco Industry Revenue*

Under the first scenario (Table 1), there is no change in price or consumption, but the tobacco industry receives 40¢ of additional revenue on each of the 1.332 billion packs of cigarettes consumed in California, increasing total industry revenue by \$617 million, from \$2.473 billion to \$3.090 billion, a 25% increase over 1999 levels.

Under the second scenario (Table 1), we assume that the tobacco industry does not take advantage of the repeal of the tax to increase wholesale prices, and allows the retail price to drop by 40¢ (the 50¢ reduction in California tax combined with the 10¢ increase in federal tax). We estimate a price drop of that magnitude would increase cigarette consumption from 1.228 billion packs to 1.402 billion packs. While the industry does not increase the wholesale price of a pack of cigarettes, the increase in volume would increase industry revenues by \$220 million, from \$2.473 billion to \$2.692 billion, a 9% increase over 1999 levels.

### *Smoking Prevalence*

Under the second scenario, the overall prevalence of adult smoking would increase from 16.2% of adult smokers in the state to 16.8%, an increase of approximately 133,000 adult smokers. Youth smoking prevalence would increase from the previous year, however, because youth participation elasticity is not as well defined as adult participation elasticity, we utilized three published elasticities of youth participation. We estimate that there will be an additional 7,800 and 46,500 new youth smokers in the state under Scenario 2 (Table 2).

Table 2. Projected Impact of Tax Repeal on Youth Smoking Prevalence, Scenario 2.			
	Low estimate	High estimate	Midpoint estimate
<b>Price Estimates</b>	\$2.63	\$2.63	\$2.63
<b>Change from Previous Year</b>	-\$ .40	-\$ .40	-\$ .40
<b>Percent Change in Price</b>	13%	13%	13%
<b>Youth Elasticity</b>	-.20	-1.20	-.53
<b>% Increase in Youth Participation</b>	2.7%	15.8%	7.0%
<b>Additional Youth Smokers</b>	7,795	46,534	12,454

### Public Health Impacts Costs of Repealing the 50¢ Tax

If the Proposition 10 tax is repealed and the tobacco industry does not increase the wholesale price of cigarettes (Scenario 2), there will be more smoking and, therefore, an increase in smoking related diseases and deaths from both active and passive smoking. We estimate the short term effects based on the increase in adult prevalence of smoking, and the long term effects and increase in passive smoking problems based on the increase in consumption due to the decrease in cost of cigarettes in the state under our second scenario. These estimates are probably upper bound estimates of the health effects, since they assume that the tobacco industry will not increase wholesale prices at all.

All costs are presented in 1999 dollars; if the studies we used to compute our estimates are based on other years, we inflated the results to 1999 dollars using the medical cost component of the Consumer Price Index for urban areas.

#### *Immediate effects: Heart Attacks, Stroke, and Low Birth Weight Infants*

While some of the effects of smoking take many years to develop, some of the health effects are manifest immediately. For example, smoking cessation is associated with immediate reductions in the incidence of heart attacks and strokes [18] and low birth weight infants [19]. Assuming that these effects are reversed when smoking increases due to the price reduction, we estimate the number and costs associated with these diseases in the first year of Scenario 2.

We estimated that after the price increase of cigarettes in 1999, adult smoking prevalence in California was decreased from 18.4% to 16.2%, solely as a result of the passage of Proposition 10 and the increase in the industry's wholesale price of cigarettes. The California Statistical Abstract (1997) indicates that there are 15.5 million adults in California over the age of 35. We estimated the impact of decreasing the price of cigarettes through repealing the tax in terms of additional heart attacks and strokes, and the increased cost as a result of the increased burden of disease among this group.

We used the participation elasticity for adults age 35 and older (-.15) [7] rather than the quantity per smoker elasticity or the consumption elasticity because the model for heart attacks

and strokes was contingent on smoking status (either smoker, or non-smoker) rather than amount of cigarettes consumed.

Under Scenario 2, a 40 cent reduction in retail price of cigarettes would result in a 13% drop in price of cigarettes and a 2% increase in the number of smokers, increasing absolute prevalence to 16.8%. This increase in prevalence translates into an additional 50,000 smokers above age 35 in the state.

Lightwood and Glantz (1997) estimated the saved cost per quitter in terms of heart attacks and strokes for the first year after cessation would be \$53 (1999 dollars). (Medical costs considered were average hospital room and service charges, physician and health professionals' fees, and other ancillary charges [18]). We used that value to determine short run costs for the increase in smokers due to repeal of the tax. We estimated that in the first year after the tax would be repealed, there would be an additional 78 heart attacks and strokes in the state, an additional \$3 million in incurred direct medical costs for these disease.

For low birth weight complications to be avoided, a pregnant smoker must quit in her first trimester, so we utilized the participation elasticity for 20-25 years olds and 26-35 year olds, to approximate the participation elasticity for women of childbearing age, which resulted in a weighted average participation elasticity of -.44 [US Department of Health and Human Services, 1989 #35]. We estimated the number of California pregnant women who smoke based on the US maternal prevalence of smoking to California, reported in Lightwood, Phibbs, and Glantz (1999), which was 10.9%. Using the price elasticity for this age group, we estimated that the increase in price of cigarettes in 1999 caused a 20% drop in the number of pregnant women smokers, resulting in the prevalence of smoking among pregnant women dropping from 10.9% to 8.7%. We utilized the number of live singleton births in California in 1995 to estimate the number of babies born to pregnant smokers. The reduction in the price of cigarettes under Scenario 2 would lead this prevalence to increase to 9.2%.

Lightwood, Phibbs, and Glantz' (1999) estimate of the additional cost per low birth weight baby born due to maternal smoking was \$751 per infant in direct medical costs (1999 dollars). This increase in smoking prevalence in women of reproductive would result in 102 additional low birth weight infants born due to maternal smoking, at a cost of \$2 million.

In sum, if the 50¢ tobacco tax is repealed, under Scenario 2 there would be an increase in heart attacks, strokes, and low birth weight in the first year that would result in an additional 78 heart attacks and strokes, and 102 low birth weight infants, at a cost of \$5 million in direct medical costs. This figure does not include the costs of illness due to second hand smoke, or indirect costs due to illness, and only represents one year of costs.

### *Long Term Costs*

Researchers have estimated the cost of smoking related illness to California [20-22]. "Smoking related illnesses" include cancer, emphysema, arteriosclerosis, heart attacks, and stroke. In 1993, California spent 16% of publically funded medical expenditures (MediCal, Medicare, and all other public funded programs) on smoking related diseases and over 20% of all

public funds for hospital care in 1993 were attributable to smoking related diseases [21]. In 1997, the United States spent \$90 billion on direct medical costs for smoking related diseases [22]. Since California represents approximately 12% of the country's population, we estimate that in 1997, California spent \$10.7 billion on direct medical costs related to smoking. This figure includes both public (MediCal and Medicare) and private expenditures. Inflating this figure to 1998 dollars yields \$11.0 billion.

We estimated the reduction in consumption associated with the price increase in 1999 and price reduction under Scenario 2 using a consumption elasticity of -.4, and assumed that, in the long run, the number of smoking-related deaths and associated medical costs would change in proportion to the

Year	Smoking related deaths	Smoking related costs (billions)
1998 estimate	41,883	\$10.9
1999 estimate	34,231	\$9.3
Scenario 2	36,039	\$9.8
Increase	1,808	\$0.5

change in consumption (Table 3). (Scenario 2 calculation in this table are in 1999 dollars.) Under this scenario, repealing the Proposition 10 tobacco tax would likely result in over 1,800 more deaths annually due to smoking related diseases, and create an additional \$500 million in long term direct medical costs for Californians.

#### *Increased exposure to secondhand smoke*

Secondhand smoke causes a wide variety of illnesses; the California Environmental Protection Agency estimated the health effects of secondhand smoke exposure in California for a variety of diseases (Table 4) [23]. The increase in cigarette consumption associated with Scenario 2 would lead to more secondhand smoke exposure. Using estimates from the California Environmental Protection Agency, we estimated the reductions in exposure to secondhand smoke due to lower total cigarette consumption associated with the 1999 price increases, then estimated

	CalEPA Estimate		After 1999 Price Increase		Scenario 2		Increase according to Scenario 2	
	Low	High	Low	High	Low	High	Low	High
Low Birth Weight (births)*	1,200	2,200	981	1,798	1,033	1,893	52	95
SIDS (deaths)*	120		98		103		5	
Middle ear infection (physician visits)*	78,600	188,700	64,240	154,226	67,633	162,370	3,392	8,144
Asthma induction (new cases)*	930	3,120	760	2,550	800	2,685	40	135
Asthma exacerbation (events)*	48,000	120,000	39,231	98,077	41,302	103,256	2,072	5,179
Bronchitis or pneumonia (cases)*	18,000	36,000	14,712	29,423	15,488	30,977	777	1,554
Lung Cancer (deaths)	360		294		310		16	
Heart Disease (deaths)	4,200	7,440	3,433	6,081	3,614	6,402	181	321

\* denote childhood diseases.

the increases from this base due to increased consumption associated with the price increase in Scenario 2. As with the health effects on smokers, these estimates are probably upper bound estimates of the effects. We did not compute any cost estimates.

### **Effect of Repealing Ability of Voters to Increase Tobacco Tax**

Proposition 28 “prohibits the imposition of additional surtaxes on distribution of cigarettes unless enacted by the state legislature.” This provision will most likely eliminate any increases in the tobacco tax in California because the tobacco industry has dominated the State Legislature on tax issues for decades, which routinely has refused to enact tobacco taxes [24-26]. Between 1967 and 1988, there were 36 unsuccessful attempts to increase the tobacco tax in the State Legislature [27]. During this time, the tobacco tax remained at 10¢, among the lowest in the nation, until 1988 when California voters increased the tobacco tax by 25¢ with the passage of Proposition 99. The voters enacted another 50¢ increase when they passed Proposition 10 in 1998. The only increase in tobacco taxes by the legislature was a small 2¢ increase to fund breast cancer research. Of the current \$.87 state excise tax on tobacco, \$.75, or 86% was enacted by the voters.

If Proposition 28 passes, it will effectively eliminate increases in the tobacco tax as a policy to reduce tobacco consumption. As inflation erodes the real value of the tax, it will reduce the effectiveness of existing taxes as deterrents to tobacco use.

### **Limitations of the analysis**

The results we present have several limitations.

Our results depend on the actual price of cigarettes in 1999, but no authoritative source has published sales weighted average prices for California for 1999. As a result, we had to estimate the 1999 price of cigarettes in California using the 1998 average price reported by the Tobacco Institute [8], and increased the price by the increase in the state tobacco tax due to Proposition 10 and the reported increase in industry wholesale price due to the Master Settlement Agreement. We assumed that the industry did not impose any additional wholesale price increases (or reductions). If cigarettes cost more than our estimated price, the effects of repealing the tax will represent a smaller percentage change in the total price than we estimated, so our calculations will overestimate the health and economic impacts of repealing the 50¢ tax. We conducted an informal price survey in a Cigarettes Cheaper store in San Francisco which revealed that our 1999 and 2000 estimates were actually higher than the retail price in this store. To the extent that Cigarettes Cheaper reflects the overall market, we would be underestimating the effects of repealing the tax.

Since there was an increase in the federal cigarette tax, which would increase the total retail price of the cigarettes, we would have to recalculate an elasticity of demand for the new price of cigarettes. However, since we wanted to estimate the effect of repealing the tax without factoring in the new federal tobacco tax, we assumed that price remained constant, and the tobacco industry reduced the wholesale price of cigarettes by 40 cents rather than the full value of the Proposition 10 tax.



Lightwood and Glantz (1997) and Lightwood, Phibbs, and Glantz (1999) measured the result of an overall one percent decrease in smoking on heart attacks, strokes, low birth weights, and their associated costs. We proposed the reverse situation, where there would be an increase in smoking prevalence. The effects may not be symmetrical.

Long term cost increases due to increased smoking both rapidly (e.g., heart attacks) and slowly (e.g., cancer) changes in disease incidence associated with smoking. Therefore, it will take several years for the changes we estimated to fully manifest.

We only examined the change in prevalence and consumption and resulting diseases caused from consumption of cigarettes. We did not estimate the impact of the tax on consumption of other tobacco products (spit tobacco, pipe tobacco, cigars), nor did we estimate industry revenue for an increase in prevalence for other tobacco products if the tax is repealed, or the increase in other tobacco related diseases (cancers of the mouth, pharynx, esophagus, etc.) due to using these forms of tobacco if the tax is repealed. Cigarettes represent a majority of tobacco products used in the state.

Estimating the changes in disease due to changes in secondhand smoke induced diseases based on changes in total consumption may not accurately reflect precise changes in household exposure, where most children are exposed. For instance, if a child lives in a household where there are two adult smokers, one adult may change smoking habits while the other one would not. Alternatively, the smoker may go outside.

We did not allow for population changes or the effects of the California Tobacco Control Program.

## **Conclusions**

This paper estimates both the short term impacts of Proposition 10, as well as the impact of Proposition 28, which would repeal the Proposition 10 tax of \$.50 on cigarettes and a commensurate amount on other tobacco products. Depending on how the tobacco industry decides to modify wholesale prices following the repeal of the 50 cent tax, the impact could be from no effect on tobacco consumption and health to a large impact.

If the industry uses the reduction in the tax as an opportunity to raise wholesale prices to maintain the retail price, industry revenues would increase by \$617 million. There would be no health impacts because consumption would not change.

If the industry allowed the price to drop by the full amount of the tax reduction (minus the increase in federal tax), then total cigarette consumption would increase by 114 million packs annually, generating an additional \$220 million in industry revenues. Because of the price reduction, adult smoking prevalence would rise from the 1999 level of 16.2% to 16.8%, an increase of approximately 133,000 adult smokers, and a 5.3% increase in adult consumption of cigarettes. An additional 7,800 to 46,500 California teens would become smokers. The increase in adult prevalence of smoking under this scenario would result in an additional 78 heart attacks and strokes and 102 low birth weight births, resulting in \$5 million additional direct medical

costs for one year. Over the long run, the increase in consumption would also result in approximately 1,800 additional deaths annually and an increase of \$500 million in direct medical costs due to smoking in California. The increased exposure to secondhand smoke would lead to an increase in childhood disease, including Sudden Infant Death Syndrome, thousands of additional physician visits and asthma attacks in children, and an increase in lung cancer and heart disease deaths in adults.

Proposition 28 would also eliminate the ability of the California public to initiate tax increases on tobacco products, and leave this power only to the legislature, effectively protecting the tobacco industry from tax increases.

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