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Health and Economic Effects of Two Proposals to Increase the California State Cigarette Excise Tax

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Executive Summary

- Governor Gray Davis has proposed a \$1.10 increase in the cigarette tax and Assembly Speaker Herb Wesson has proposed a \$2.13 increase in the cigarette tax.
- The state's Tobacco Education and Research Oversight Committee has noted that the California Tobacco Control Program has ceased to be competitive with the tobacco industry and recommended that \$200 million from any tobacco tax increase be used to reinvigorate the Program; doing so would require 20 cents per pack to be allocated to the Program. Previous experience from California (and elsewhere) indicates that doing so would substantially reduce tobacco consumption.
- There is strong public support for increasing the tobacco tax; with 74% approval, the highest of any option considered.
- Allocating a portion of any cigarette tax increase to the Tobacco Control Program so it could assist smokers in quitting and prevent young people from starting would address the "fairness issue," that the tobacco industry and its allies have often used successfully to argue against tobacco tax increases.
- The only loser from a tobacco tax increase and reinvigorated Tobacco Control Program would be the tobacco industry
 - A \$1.10 tax would cost the tobacco industry \$667 million in lost sales annually
 - A \$2.13 tax would cost the tobacco industry \$1.05 billion in lost sales annually
- The Tobacco Securitization Bonds will not affect the general fund, even if smoking decreases. These bonds have been collateralized entirely by payments from the Master Settlement Agreement and the bondholders have no claim on the general fund or any other state revenue.
- A tobacco tax (after allocating 20 cents for Tobacco Control) would generate substantial revenues for the state General Fund through a combination of increased excise and sales taxes:
 - A \$1.10 tax would net \$806 million
 - A \$2.13 tax would net \$1.59 billion
- Implementing either tax proposal will increase sales tax revenues for local government:
 - A \$1.10 tax would net \$47 million for local government
 - A \$2.13 tax would net \$92 million for local government
- The combined effects of the price increase and reinvigorated Tobacco Control Program would have substantial benefits for California smokers:
 - With a \$1.10 tax, 555,000 smokers would quit
 - With a \$2.13 tax, 818,000 smokers would quit
- There would be immediate benefits (in the first year) in terms of reduced heart attacks, low birth weight infants, childhood asthma, and sudden infant death:
 - 475 heart attacks, including 145 deaths would be prevented with a \$1.10 tax (700 and 215 with a \$2.10 tax)
 - 380 low birth weight births would be prevented with a \$1.10 tax (560 with a \$2.10 tax)
 - 500 new cases of childhood asthma would be prevented (745 with a \$2.10 tax)
 - 20 cases of Sudden Infant Death Syndrome would be prevented (30 with a \$2.10 tax)

- About \$29 million would be saved in direct medical costs (\$43 million with a \$2.10 tax)
- Over the longer term, risks for other diseases – such as cancer – would fall and risks of heart disease would continue to fall. The health and economic benefits at steady state would be:
 - 1,500 cancer deaths would be prevented annually with a \$1.10 tax (2,200 with a \$2.10 tax)
 - 1,400 cardiovascular deaths would be prevented annually with a \$1.10 tax (2,000 with a \$2.10 tax)
 - 1,000 lung disease deaths would be prevented annually with a \$1.10 tax (1,600 with a \$2.10 tax)
 - 5,800 smoking-related deaths would be prevented annually with a \$1.10 tax (8,500 with a \$2.10 tax)
 - About \$2.27 billion would be saved in total medical costs with a \$1.10 tax (\$3.34 billion with a \$2.10 tax)
- It is unlikely that increased smuggling, internet, or other nontaxed sales would substantially affect these revenue estimates.
 - These estimates are based on price elasticity values derived from taxable sales, which already account for any smuggling
 - When cigarette prices went up by \$1.20 in 1999 (because of a combination of Proposition 10 and price increases by the tobacco industry to pay for the Master Settlement Agreement), there was not a substantial amount of smokers obtaining cigarettes from illegal sources.
 - An increase in smuggling or nontaxable sales large enough to offset the increased revenues would have to amount to around half all the cigarettes smoked in California, 483 million packs for a \$1.10 tax and 573 million packs for a \$2.13 tax.
 - Smuggling 483 million packs would require enough mobile homes to reach 135 miles, from Sacramento to Reno, Nevada if parked end-to-end; smuggling 573 million packs would require mobile homes stretching 169 miles, from Sacramento to 4 miles past Fernley, Nevada.
 -
- The Tobacco Securitization Bonds will not affect the general fund, even if smoking decreases. These bonds have been collateralized entirely by payments from the Master Settlement Agreement and the bondholders have no claim on the general fund or any other state revenue.
- Even with a \$2.13 increase in the cigarette excise tax, Californians still would be subsidizing smoking through the medical system at \$5 per pack.

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Introduction

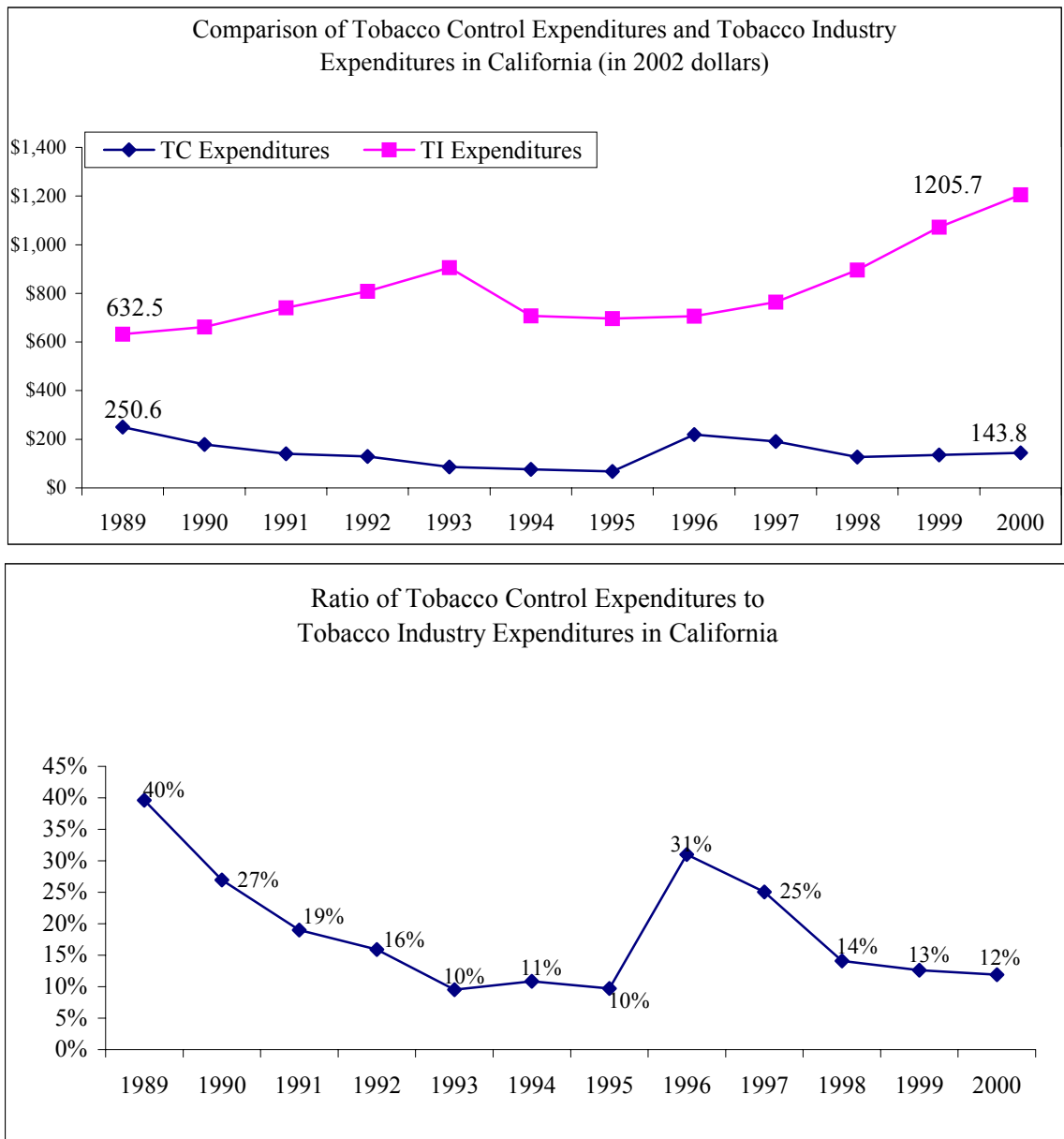
California voters have repeatedly supported the use of cigarette excise taxes as a tobacco control measure. In 1988, California voters passed Proposition 99, which increased the state cigarette excise tax by 25 cents per pack and allocated the revenues to tobacco control education, research, medical care, and environmental improvement. California voters passed Proposition 10 in 1999, which increased the state cigarette excise tax by 50 cents per pack to fund the California Children and Families First Fund for early childhood education. The voters also rejected an effort to repeal Proposition 10. In 2003, 74% of Californians support increasing the tobacco tax again¹, the highest of the options for raising additional revenues that was evaluated.

Governor Gray Davis proposed a \$1.10 increase in the state cigarette excise tax as part of his January, 2003 budget plan and Assembly Speaker Herb Wesson proposed a \$2.13 increase as part of his plan to balance the fiscal 2002-3 budget. The state's Tobacco Education and Research Oversight Committee (TEROC) has recommended that 20 cents of any tobacco tax increase be allocated to reinvigorate the California Tobacco Control Program². This study examines the effects of \$1.10 and \$2.13 increases in the state cigarette excise tax with 20 cents allocated to the Tobacco Control Program on smoking behavior, tobacco industry revenues, state and local tax revenues, as well as short-term and long-term health and economic effects.

The California Tobacco Control Program was once the model for all state tobacco control programs. The program once combined an aggressive media campaign with community-based activities, offered services to smokers who wished to quit, and provided programs to prevent smoking initiation among youth and young adults. However, its effectiveness has been eroded by inflation, which has eroded the purchasing power of the 5 cents for tobacco control established by Proposition 99 when it passed in 1988, as well as the fact that the tobacco industry has continued to increase its real spending to promote smoking in California² (Figure 1). During 1989-1993, the period when the California Tobacco Control Program was most effective, the Program was spending at about 25% of the expenditures made by the tobacco industry on advertising and promotion² (Figure 1). As of 2000, this ratio had dropped to 12%². The Program led to rapid declines in cigarette consumption and death rates from heart disease³ (Figure 2). When the Program was cut back and toned down, the reductions in smoking and death rates slowed³. The California Tobacco Education and Research Oversight Committee estimates that in order to regain the previous level of effectiveness, the Program budget would need at least an additional \$194 million per year². This level of additional funding could be achieved with a 20 cent allocation from the cigarette excise tax.

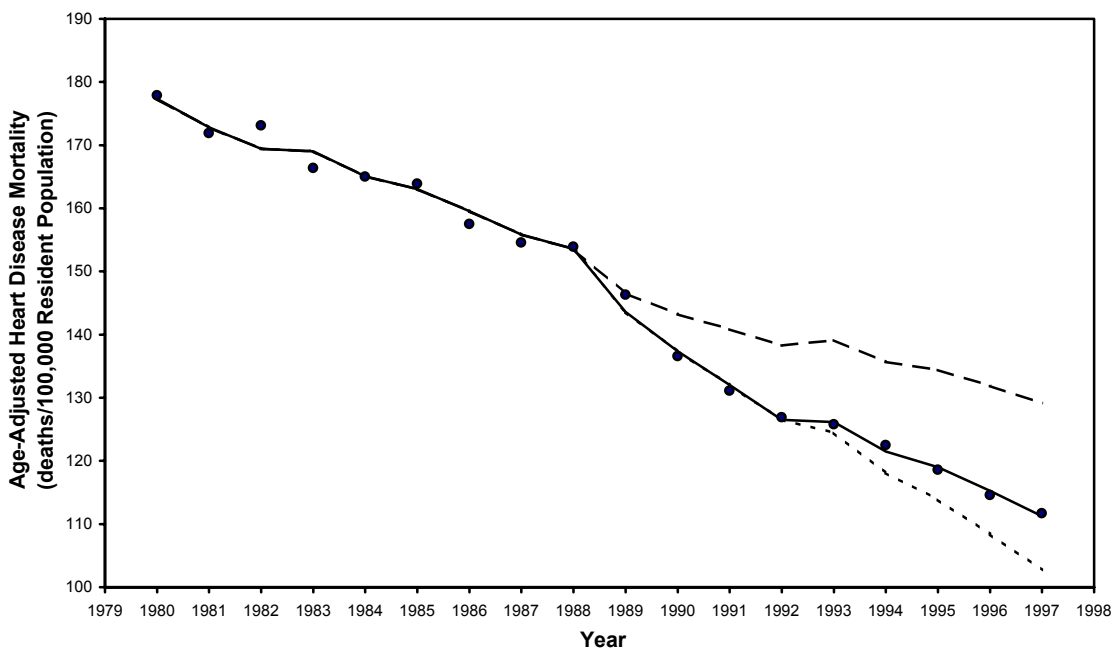
Absent such a policy, an increase in the cigarette excise tax would leave the State open to the criticism that the State is balancing the budget on the backs of the minority of Californians who still smoke while at the same time reducing services to help them stop smoking (and avoid the tax). Furthermore, including such a policy would improve the health of Californians through additional reductions in cigarette consumption and increased quit rates. These subsequent health improvements would include reductions in deaths and illnesses of smokers and those that are caused by second hand smoke.

Figure 1. Funding for the California Tobacco Control Program and Tobacco Industry Promotional Expenditures in California



From Master Plan of the State of California Tobacco Education and Research Oversight Committee²

Figure 2: Effect of the California Tobacco Control Program on Heart Disease Mortality



Rates of age-adjusted heart disease mortality in California, 1980-1997 (solid circles). The solid line represents the fit of the California rates to those in the rest of the country, allowing for changes in slope in 1988 and 1992. The dashed line represents what rates in California would have been if they had continued to be related to rates in the rest of the country as they had up to 1988. The dotted line represents what the rates would have been if they had continued to decrease as they had between 1989 and 1992. The program prevented 59,000 heart disease deaths during this period; the loss of effectiveness in the mid-1990s (made in response to the budget crisis at that time) was associated with 15,000 heart disease deaths beyond what would have been predicted had it maintained the same level of effectiveness as in the early years. (Source: Fichtenberg and Glantz³)

Reductions in Smoking Rates, Cigarette Consumption, and Tobacco Industry Revenues

We estimate the effects of \$1.10 and \$2.13 cigarette excise tax increases using figures for the year 2002 and, where not available, 2001 or 2000. In 2002, the average price of cigarettes in California was \$4.09⁴. This figure includes both brand and generic cigarettes. The tobacco industry collected, on average, \$2.83 per cigarette pack after taxes⁵. The March 2003 total state and federal excise taxes on California cigarettes in 2003 are \$1.26, with a California excise tax rate of 87 cents and a federal excise tax rate of 39 cents.

Price Effects

A \$1.10 cigarette excise tax increase would increase the average price of cigarettes to \$5.19 per pack, a 26.9% increase in the overall price per cigarette pack. A \$2.13 cigarette excise tax increase would increase the average price of cigarettes to \$6.22, a 52% increase.

The effect of any tobacco tax increase is calculated using the price elasticity of smoking demand. Price elasticity measures the demand for a product and how that varies with prices. We use an estimate of the price elasticity of smoking demand as -0.46^6 . We then estimate the price elasticity of smoking participation to be -0.24 and the price elasticity of smoking consumption to

be -0.22^6 . This price elasticity translates into a 2.4% decline in the number of smokers (smoking participation) for every 10% increase in price. Thus, with a 26.9% increase in price due to a \$1.10 cigarette tax increase, we would expect a 6.5% decline in the number of smokers in California. A 52.1% increase in price due to a \$2.13 cigarette excise tax increase would be expected to generate a 12.5% decline in the number of smokers in California.

In order to determine the total number of quitters induced by these excise tax increases, we estimate the number of smokers in California. This number is equal to the total adult population of California multiplied by the smoking prevalence in California. The total California adult population was 24.98 million in March, 2001⁷. The estimated smoking prevalence in California from the California Adult Tobacco Survey 2001 was 17.4%⁸. Thus, the estimated population of California smokers in 2001 is 4.35 million. A 6.9% decline in smoking participation from a \$1.10 cigarette excise tax increase would lead to 281,000 quitters. A 12.5% decline in smoking participation from a \$2.13 cigarette excise tax increase would lead to 543,000 quitters.

The impact of these quitters on the tobacco industry is measured in both cigarette packs forgone and net revenues from cigarette sales lost. Total California tax-paid cigarette sales were 1,287,600,000 packs in 2001⁵. Cigarette pack consumption per smoker consumption is equal to 1,287,600,000 divided by 4.35 million, or 296 packs per smoker per year. We assume that all individuals who would quit due to these cigarette excise tax increases would quit immediately, which may somewhat overestimate the effect on consumption during the first year. Thus, the number of packs forgone with a \$1.10 cigarette excise tax increase would be equal to the 281,000 quitters multiplied by 296 packs, or 83.1 million packs per year. The number of packs forgone with a \$2.13 cigarette excise tax increase would be 161 million packs per year.

Additionally, increased cigarette excise taxes would reduce consumption among the remaining smokers. We use the same price elasticity noted previously as the rate at which remaining smokers reduce their consumption. With a 26.9% increase in price from a \$1.10 cigarette excise tax increase, we would expect a 5.9% decline in consumption among continuing smokers. The resultant consumption would decline from 296 packs per smoker per year to 279 packs per smoker per year. The remaining smokers would then forgo an additional 71 million packs per year. A 52.1% increase in price from a \$2.13 cigarette excise tax increase would result in a 11.5% decline in consumption among continuing smokers, or 262 packs per smoker per year. The remaining smokers after a \$2.13 cigarette excise tax increase would forgo an additional 129 million packs per year.

These two effects would combine to reduce cigarette consumption with a \$1.10 cigarette excise tax increase by a total of 154 million packs per year, worth \$437 million in lost revenues to the tobacco industry each year. A \$2.13 cigarette excise tax increase would reduce cigarette consumption by a total of 290 million packs per year, worth \$821 million in lost revenues to the tobacco industry each year.

Tobacco Control Program Effects

Fully funding the California Tobacco Control Program would also reduce smoking prevalence and cigarette consumption among continuing smokers. TEROC estimates that a 20 cent allocation of the cigarette excise tax to the Tobacco Control Program would return the Program to the level of effectiveness it exhibited in the early 1990s, when it was financially competitive with the tobacco industry².

Smoking prevalence has been stagnant in California at around 17.5%⁸ since 1994. Based on the experience of the early California Program, when it was effectively competing with the tobacco industry, as well as the experience in similar programs in other states, it has been estimated that a reinvigorated California Tobacco Control Program would increase the absolute rate of decline in the rate of smoking participation (absolute prevalence) by 1.1% per year⁹. The fact that 60% of current smokers in California are light smokers makes reaching this rate of decline possible⁹.

The total number of quitters that would result from a fully funded program is estimated by multiplying 1.1% by the total California adult population. Thus, 275,000 smokers would quit in the first year due to an effective tobacco control program. Multiplying 275,000 quitters by 296 packs per year means that the program would prevent an additional 81 million packs (worth \$230 million to the tobacco industry) from being smoked; there would be additional unquantified reductions because of cutting down among continuing smokers.

Combined Effects

The combined effects of the cigarette excise tax increase and improved tobacco control program would be to help 555,000 people quit smoking in the first year and reduce total cigarette consumption by 236 million packs with a \$1.10 cigarette excise tax with 20 cents allocated to the Tobacco Control Program and 818,000 quitters smoking 341 million fewer packs of cigarettes with a \$2.13 cigarette excise tax increase. The combined effect of an excise tax increase and a reinvigorated Tobacco Control Program on quitting would lead to a 12.8% decline in smoking participation (555,000 quitters divided by 4.35 million smokers) with a \$1.10 excise tax increase and a 18.8% decline in smoking participation (818,000 quitters divided by 4.35 million smokers) with a \$2.13 excise tax increase. This additive effect would make the \$1.10 excise tax increase cause as many quitters as a \$2.18 excise tax increase; likewise, this additive effect would make the \$2.13 excise tax increase cause as many quitters as a \$3.21 excise tax increase.

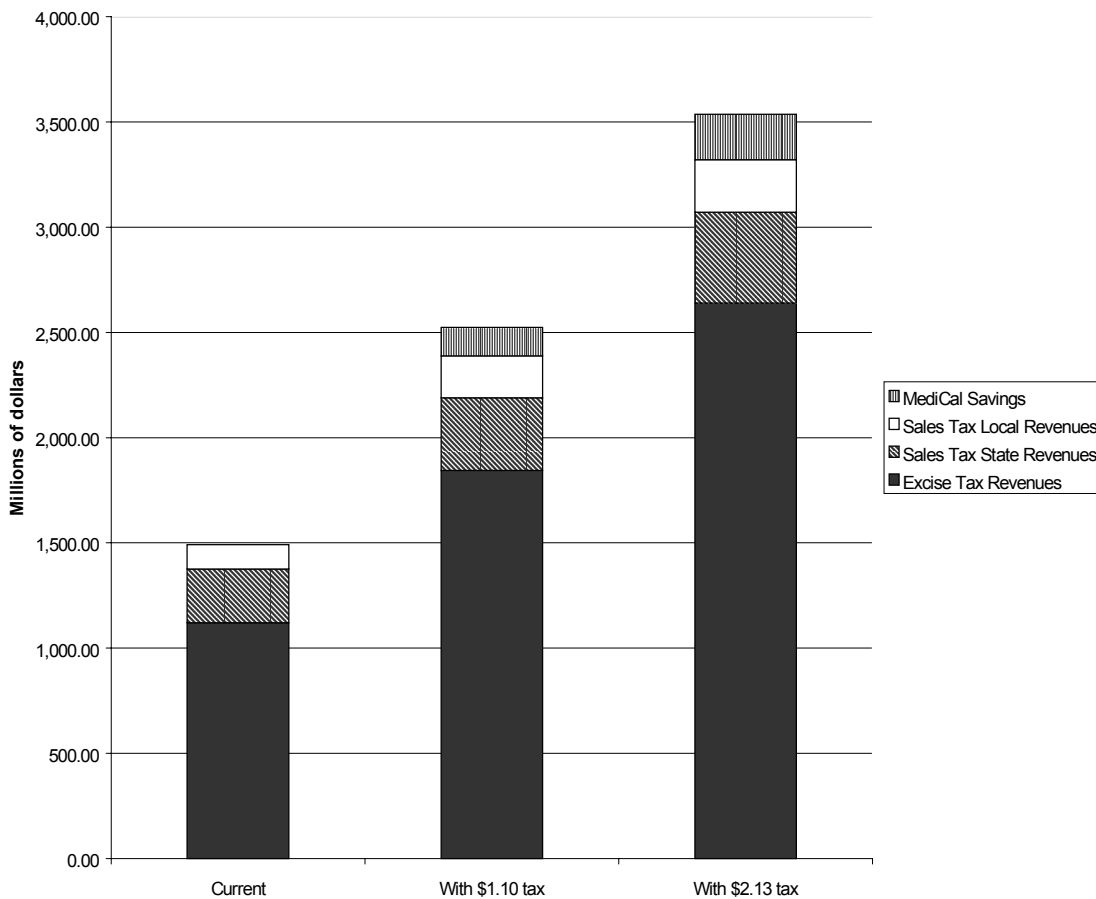
The total reduction in revenue to the tobacco industry would equal \$667 million with a \$1.10 cigarette excise tax increase and \$1.05 billion with a \$2.13 cigarette excise tax increase.

Increases in State and Local Revenue

Despite the substantial drops in smoking and cigarette consumption – and the allocation of 20 cents to the anti-smoking efforts – increasing the cigarette excise tax would have significant positive revenue impact for the State of California and California local governments (Figure 3). Remaining smokers would still smoke about 1 billion cigarette packs a year (Table

1). We calculate the current cigarette excise tax revenue to be \$1.12 billion, based on the 87 cent excise tax multiplied by the 4.3 million smokers and their current consumption of 296 packs per smoker per year (which concurs with the gross state cigarette taxes collected in 2001⁵). After taking into account consumption reductions described previously and the 20 cent allocation for the California Tobacco Control Program, an increase in cigarette excise tax revenue to the state general funds with a \$1.10 cigarette excise tax increase would be \$1.85 billion, \$725 million more in excise taxes than current revenues to the state. A \$2.13 cigarette excise tax increase would result in annual excise tax revenues of \$2.55 billion, \$1.43 billion more than current revenues.

Figure 3: Revenue Effects of Cigarette Excise Tax Increases



In addition, increasing the cigarette excise tax would increase sales tax revenues for both state and local governments because the sales tax is assessed on the full price of a pack of cigarettes, including the excise tax. The sales tax revenues will increase because the excise tax will increase the price by a greater percentage than the percentage drop in cigarette consumption.

The weighted average California state sales tax rate (allowing for varying local sales tax rates) as of 2002 is 7.9¹⁰%. The portion of the state sales tax that goes towards the state general fund is equal to a tax rate of 5%, with the rest going to local government. A total of 236 million

cigarette packs would not be sold with a \$1.10 cigarette excise tax increase and a 20 cent earmark for the California Tobacco Control Program. However, the amount of sales tax per cigarette pack sold would increase from 32 cents to 41 cents on the remaining 1.05 billion cigarette packs. Thus, a \$1.10 cigarette excise tax increase would increase state sales tax revenue by \$81 million. The combined state excise and sales tax revenue would \$806 million. Local sales tax revenues would grow with a \$1.10 cigarette excise tax increase by \$47 million.

A \$2.13 cigarette excise tax increase would increase state sales tax revenue by \$159 million, which combined with state excise tax revenue would equal \$1.59 billion. Local revenues would grow with a \$2.13 tax increase by \$92 million.

In addition, as discussed below, reduced smoking would lower state Medi-Cal costs in the long run by at least \$146 million with a \$1.10 cigarette excise tax increase and \$215 million with a \$2.13 cigarette excise tax increase. This lowered cost would have the same budgetary impact as a corresponding increase in revenues.

Health Benefits

The effect of an excise tax increase on health care in California has both immediate and long-term effects. We measure the impact of increased smoking cessation on the burden of disease and death in California as well as financial benefits through reductions in the associated medical expenditures. We do not include the health benefits of reductions in consumption among continuing smokers, so we underestimate the health benefits of the policies discussed in this report.

Immediate Benefits

Immediate effects will occur in the first year following increases in the California cigarette excise tax with 20 cents devoted to the California Tobacco Control Program. These benefits accrue almost immediately because the risks of five important diseases caused by smoking (or secondhand smoke) begin to drop immediately and rapidly following smoking cessation: heart attacks, strokes, low birth weight infants, and asthma and other problems in children caused by secondhand smoke.

The effects produced by quitters were calculated using methods previously described¹¹. The model used for calculations uses population estimates from the 2000 Census¹² because the Current Population Survey data does not have specific demographic breakdowns required by the model. All cost estimates are calculated for 2003 dollars.

Because the risk of heart disease drops rapidly when someone stops smoking, the effect of the lower smoking prevalence in California during the first year of the \$1.10 increase in cigarette excise tax and reinvigorated Tobacco Control Program would be 475 prevented acute myocardial infarctions and 240 strokes, including 145 deaths by acute myocardial infarction and 85 deaths by stroke. Smoking cessation also immediately lowers the risk of low birthweight infants and diseases caused by secondhand smoke. Maternal and child health savings include 380 prevented low birthweight births, twenty prevented sudden infant death syndrome cases, and 500 prevented new pediatric asthma cases.

The prevented heart attacks and strokes would lead to a first year cost savings of \$26 million in 2003 dollars, of which \$17 million are attributable to acute myocardial infarction. Among pediatric respiratory illnesses, \$620,000 in 2003 dollars would be saved in one year by averted upper respiratory illnesses among children aged 0 to 5 years. Neonatal care savings for California would total \$3 million in 2003 dollars. These first year savings combined are equal to \$29 million.

A \$2.13 increase in the California excise cigarette tax would nearly double these effects. This larger tax increase would prevent 700 acute myocardial infarctions and 350 strokes. The number of deaths prevented by this larger tax increase would include 215 by acute myocardial infarctions and 130 by strokes. Maternal and child health savings include 560 prevented low birthweight births, thirty prevented sudden infant death syndrome cases, and 745 prevented new pediatric asthma cases.

The prevented cardiovascular disease by this larger tax increase would lead to a first year cost savings of \$38 million in 2003 dollars, of which \$25 million are attributable to acute myocardial infarction. Among pediatric respiratory illnesses, \$914,000 in 2003 dollars would be saved in one year by averted upper respiratory illnesses among children aged 0 to 5 years. Neonatal care savings from this larger tax increase would save California \$4 million in 2003 dollars. These first year savings combined are equal to \$43 million.

Long-Term Benefits

Long-term effects are realized after several years, as the risks of cancer, lung disease, and other diseases caused by smoking fall, and as the risks of heart disease continue to fall. This section describes the long-term overall medical expenditure savings due to quitting, the long-term California-specific Medi-Cal expenditure savings due to quitting, and the long-term health benefits due to quitting. This analysis does not account for inflation or population growth.

The impact of quitters induced by a \$1.10 cigarette excise tax increase and fully funded tobacco control program on medical expenditures is based on the estimated smoking-attributable medical expenditures. The most recent published estimate of smoking-attributable medical expenditures for California was \$15.8 billion in 1999¹³. These expenditures include costs for ambulatory care, prescription drugs, hospital visits, home health services, and nursing home care. In addition, indirect lost productivity due to illness and premature death are included in this figure. We then extrapolated the 1999 expenditures to 2003 dollars using the consumer price medical care index¹⁴ (July, 1999 and January, 2003; seasonally adjusted), equaling \$17.1 billion. We then adjust this figure to account for the decline in smoking between 1999 and 2003. In 1999, the smoking prevalence was 18.0%⁸ and we assume the 2003 smoking prevalence to be 17.4%. We multiplied the extrapolated medical expenditures by the ratio between smoking prevalence in 1999 and in 2003, and derive the 2003 smoking-attributable medical expenditures as \$17.8 billion. We do not adjust this figure for inflation, population growth, or discounting. The effect of the 12.8% decline in smoking participation associated with a \$1.10 cigarette excise tax and a reinvigorated Tobacco Control Program in the long run would lead to a reduction in medical expenditures equal to \$2.27 billion annually. A \$2.13 cigarette excise tax increase and reinvigorated Program would yield \$3.34 billion in annual medical savings.

We use this same methodology to calculate the specific state of California savings from the Medi-Cal program, which is the California version of Medicaid. The most recent published estimate of smoking-attributable Medicaid medical expenditures for California was \$1.73 billion in 1993¹⁵. These expenditures include costs for ambulatory care, prescription drugs, hospital visits, home health services, and nursing home care. We then extrapolated the 1993 expenditures to 2003 dollars using the consumer price medical care index¹⁴ (July, 1993 and January, 2003; seasonally adjusted), equaling \$2.34 billion. We then adjust this figure to account for the decline in smoking between 1993 and 2003. In 1993, the smoking prevalence was 19.1%⁸ and we assume the 2003 smoking prevalence to be 17.4%. We multiplied the extrapolated Medi-Cal expenditures by the ratio between smoking prevalence in 1993 and in 2003, and derive the 2003 smoking-attributable Medi-Cal expenditures as \$2.13 billion. Smoking rates in the Medi-Cal population are probably higher than the general population. This calculation assumes that the relative change in smoking prevalence in the Medi-Cal population tracked with the general population. We do not adjust this figure for inflation, population growth, or discounting.

The effect of the 12.8% decline in smoking participation associated with a \$1.10 cigarette excise tax increase and fully funded tobacco control program in the long run would lead to a reduction in medical expenditures equal to \$292 million. A \$2.13 cigarette excise tax increase would yield \$430 million in Medi-Cal savings. Because Medi-Cal funds are equally divided between state funds and federal matching dollars, we halve this result to calculate the state-specific Medi-Cal expenditure savings, which is equal to \$146 million for the \$1.10 excise tax increase and \$215 million for the \$2.13 excise tax increase. These estimates are probably low because a fully funded tobacco control program would continuously reduce both participation and consumption.

Estimates for smoking-attributable deaths in California are available for 1999¹³. In 1999, 43,140 deaths were attributable to smoking. These deaths include 14,290 from cancers, 17,140 from cardiovascular disease, 11,640 from lung diseases, and 68 from pediatric illnesses. More specifically, these deaths include 10,990 from lung cancer, 10,320 from ischemic heart disease, and 8,020 from chronic obstructive pulmonary disease. These deaths are then extrapolated for the year 2001 by the ratio between the estimated total California population in 1999 (33,145,121) and the total California census population in 2001 (34,735,000)⁷. Thus, we estimate in 2001 that 44,210 deaths were attributable to smoking, including 14,980 deaths from cancer, 17,960 deaths from cardiovascular disease, 12,200 deaths from lung diseases, and 71 deaths from pediatric illnesses. In addition, we estimate in 2001 that 11,520 lung cancer deaths, 10,820 ischemic heart disease deaths, and 8,410 chronic obstructive pulmonary disease deaths are due to smoking.

The effect of a 12.8% decline in smoking participation from the \$1.10 cigarette excise tax increase and fully funded tobacco control program in the long run would lead to a yearly reduction of 1,400 deaths from cancers, 1,400 from cardiovascular diseases, 1,100 from lung diseases, and 19 from pediatric illnesses; a total of 5,800 deaths would be prevented yearly. Yearly prevented deaths due to specific diseases include 740 from lung cancer, 700 from ischemic heart disease and 540 from chronic obstructive pulmonary disease. A \$2.13 cigarette excise tax increase would prevent 8,500 deaths annually.

Increasing the California cigarette excise tax would have significant savings to the health care system and save the lives of many Californians. Furthermore, the medical expenditure savings and health benefits calculated here underestimate the true effect as they do not fully take into account effects from second-hand smoke¹¹. In addition, these long-term benefits would continue to increase as more smokers quit over time due to an improved Tobacco Control Program.

Smuggling

Opponents of increased cigarette taxes assert that increasing the tax on cigarettes will lead to increased smuggling of tobacco products. The \$1.10 cigarette excise tax increase is similar to the price increase that California smokers faced in 1999. At that time, the tobacco industry raised retail cigarette prices by approximately 70 cents per pack due to the decision by tobacco companies to pass the costs of the Master Settlement Agreement along to smokers¹⁶. Combined with the 50 cent per pack Proposition 10 tax increase, California smokers faced a \$1.20 cigarette pack price increase in 1999. The experience from 1999 does not support the claim that there will be massive increases in smuggling or shifts in smokers' purchasing habits. Following the 50 cent Proposition 10 tax increase and 70 cent wholesale price increase the tobacco industry imposed to pay for the Master Settlement Agreement, only 5% of California smokers avoided the state excise tax by purchasing cigarettes over the internet, at military commissaries, or out of the state¹⁶. This effect is small compared to the 57% gain in excise tax revenues to the state.

In addition, it is important to emphasize that the elasticity estimates used in this analysis are based on tax-paid sales, so that our revenue estimates already include any effects of smuggling or other forms of tax avoidance. As any change in tax-paid sales include reductions from decreased cigarette consumption, decreased participation and non-tax-paid sales, the effects of any smuggling are already incorporated into the analysis, so that the revenue estimates we make already include the effects of changes in tax-free acquisition of cigarette.

In any event, the amount of smuggling required to create a condition of no fiscal benefit to the State of California of a \$1.10 cigarette excise tax increase would have to be huge: it would have to increase to 50% of remaining smokers' consumption, or about 483 million packs a year smuggled. In Canada, authorities recently apprehended a cigarette smuggler whose motor home was packed with 2,100 cartons of cigarettes¹⁷. Smuggling 483 million packs of cigarettes would require 26,900 motor homes filled with cigarettes. Parked end-to-end, 26,900 30 foot motor homes would stretch for 135 miles, from Sacramento, California to Reno, Nevada. With a \$2.13 cigarette excise tax increase, no fiscal benefit would require 573 million packs a year smuggled, or 63% of remaining smokers' consumption. The motor home equivalent for a \$2.13 tax would be 29,700 motor homes, stretching 169 miles, from Sacramento to 4 miles past Fernley, Nevada.

It is inconceivable that smuggling of this magnitude could occur without being detected by law enforcement authorities. This claim of increased smuggling also ignores the fact that the majority of smokers in California are now light smokers who are buying cigarettes by the pack rather than the carton¹⁶. The cost of buying an individual pack via the internet or by crossing

state lines is prohibitively expensive due to the additional costs involved (e.g., shipping, travel and time) for light smokers.

Similar predictions of massive smuggling were made in New York City, which recently increased its cigarette tax from 8 cents to \$1.50. Despite the easy availability of lower tax cigarettes across the river in New Jersey or just past the city limits in New York state, smoking dropped dramatically while tax revenues quintupled^{18,19}.

The tobacco industry and other opponents of cigarette tax increases have been using predictions that increased smuggling would lower tax revenues; in fact there has been no documented case in the US in which an increase in the tax on cigarettes has led to a decrease in tax revenues.

Regressive and Progressive Aspects

Cigarette excise taxes have been criticized by the tobacco industry and its allies as regressive, because tobacco use in California, and generally in high-income countries, is inversely proportional to income. This argument ignores that fact that the health costs associated with cigarette smoking are also inversely proportional to income. A higher proportion of the negative health effects are borne by lower income families. The reduction in consumption that is estimated above would create health benefits that would fall more to low income households.

The cigarette tax increase has some progressive effects (i.e., greater benefits for lower income people) because price elasticity is inversely proportional to income²⁰. As income declines, individuals are more likely to quit or consume fewer cigarettes in response to an increase in price. This is true because cigarettes comprise a greater percentage of a low-income smoker's income than that of a high-income smoker, thus the income effects of a price increase are greater for the low-income smoker. Lower-income smokers are then more likely to quit or reduce their cigarette consumption with cigarette tax increases and thus gain a disproportionate share of the health benefits that result from the tax increase.

A reinvigorated Tobacco Control Program that would assist these people in quitting to smoke and preventing their children from starting would also mitigate the effects of the tax increase, particularly since the Tobacco Control Program has been traditionally concentrated on these groups, which are also targeted by the tobacco industry.

Tobacco Securitization Bonds

In January 2003 the state of California began selling bonds that effectively securitize the future revenue stream from the tobacco industry via the Master Settlement Agreement (MSA). California split the sales of its total revenues, with the first sale covering 56.57% of the MSA and the second sale (scheduled for April 2003) covering the remaining funds. These bonds vary in time to maturity and come due between 2006 and 2042 with the vast majority of the bonds coming due between 2033 and 2042. The payments to the bond owners are tied to the payments from the MSA which are directly linked to the total consumption of cigarettes in the US. If consumption is higher than expected, the bonds will be repaid more quickly than expected and if

consumption is lower than expected, then the repayment of the bonds will be slower. All of the risk of the level of smoking consumption has been effectively transferred to the owner of the bonds.

Tax increases and their resulting decrease in the level of cigarette consumption will have no effect for the general fund on the Tobacco Settlement Bonds. These bonds have been collateralized entirely by payments from the Master Settlement Agreement and the owners who hold the bonds have no claim on any other state revenue. Further, the claim of the bond holders on the MSA income stream is not superior to the remaining claim of the State of California. This means that should payments from the MSA slow, owners of the bonds will not receive a greater share of the revenue. The structure of these bonds provide no incentive for the state to keep smoking levels at the current levels as all of the risk of reduced MSA payments belongs to the owners of the bonds.

California Subsidization of Smoking

The proposed increases in the cigarette excise tax will reduce, but not eliminate, the subsidy of the tobacco industry and smoking that occurs through the medial care system. Smoking cost Californians \$9.3 billion¹⁷ in 2002 in direct medical costs. To allocate this cost on a per pack of cigarette basis, we divide this amount by 1.3 billion packs sold, yielding \$7.15 per pack. The burden of smoking-attributable direct medical expenditures of smokers are not only borne by the public through public insurance programs like Medi-Cal and Medicare, but also through risk-sharing in private insurance funds. Californians bear this burden through their taxes and also their health insurance premiums. Even a \$2.13 cigarette excise tax increase would still leave the smoking subsidy paid by Californians at \$5 per pack.

Conclusion

A \$1.10 increase in the state cigarette excise tax and fully funding the Tobacco Control Program would increase state excise and sales tax revenues by \$800 million. A larger increase of \$2.13 would increase state excise and sales tax revenues by \$1.6 billion. In addition, raising the state cigarette excise tax to \$1.10 and fully funding the Tobacco Control Program would increase local sales tax revenues by \$47 million in the short run and also save the state \$146 million in annual Medi-Cal expenditures in the long run. Larger savings would occur with a \$2.13 increase. The increase in the state cigarette excise tax, combined with the 20 cent earmark for the California Tobacco Control Program would both provide revenues to meet state needs as well as substantially reduce the burden of disease and death that smoking imposes on Californians.

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Table 1. Detailed Comparison of Proposed California State Cigarette Excise Tax Increases

	<u>\$2.13 tax</u>	<u>\$1.10 tax</u>
Total state adult population	24,977,000	24,977,000
State smoking prevalence	17.4%	17.4%
Total state adult smoker population	4,346,000	4,346,000
State pack sales	1,287,600,000	1,287,600,000
State average price of cigarette pack	\$4.09	\$4.09
<u>Effect of State Cigarette Tax Increase</u>		
State cigarette pack price post tax increase	\$6.22	\$5.19
Estimated number of quitters due to tax increase and fully funded tobacco control	818,000	555,000
Total reduction in cigarette consumption (tax and program)	371,000,000	236,000,000
Total reduction in gross revenue to tobacco industry	1,051,000,000	667,000,000
Increase in Excise Tax Revenues	1,429,000,000	725,000,000
Increase in state Sales tax revenue	159,000,000	80,000,000
Earmarked funds for tobacco control (20 cents per pack)	200,000,000	227,000,000
Net available for state general fund (excise and sales tax revenues)	1,588,000,000	806,000,000
Increase in local sales tax revenue	92,000,000	47,000,000
Total increase in revenue	1,680,000,000	852,000,000
Number of packs needed to be smuggled to offset tax revenue increase	573,000,000	483,000,000
Remaining Smokers post tax increase	3,500,000	3,800,000
Estimated packs smoked post tax increase	946,000,000	1,051,000,000
<u>Immediate Health and Economic Benefits in First Year</u>		
Total prevented cardiovascular disease deaths	340	230
Total prevented number of low birthweight births to female quitters	560	380
Total new pediatric asthma cases averted	750	500
Total number of SIDS cases prevented	30	20
Total first year savings from cardiovascular disease, prevented pediatric URIs, and prevented low birthweight births	\$43,000,000	\$29,000,000
<u>Long Term Yearly Health and Economic Benefits</u>		
Yearly reduction in cancer smoking attributable deaths	2,200	1,500
Yearly reduction in cardiovascular disease smoking attributable deaths	2,000	1,400
Yearly reduction in lung disease smoking attributable deaths	1,600	1,000
Total yearly reduction in smoking attributable deaths	8,500	5,800
Total yearly reduction in medical care expenditures	3,344,000,000	\$2,270,000,000
Total yearly reduction in California Medi-Cal expenditures	215,000,000	\$146,000,000