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The Impact of the Vermont Tobacco Control Program, Cigarette Excise Taxes, Smoke-Free Air Laws, and Cross-Border Sales on Per Capita Cigarette Consumption in Vermont: 1980–2009

Topical Report

Prepared for

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EXECUTIVE SUMMARY

Tobacco use remains the single most preventable cause of death in the United States. Twenty percent of all deaths in the United States are the result of cigarette smoking and exposure to secondhand smoke (CDC, 2007). The Centers for Disease Control and Prevention's (CDC's) 2010 Tobacco Control State Highlights report outlines evidence-based strategies states can use to prevent tobacco use, promote cessation, and reduce exposure to secondhand smoke. The recommended strategies include monitoring tobacco use, implementing prevention policies, protecting people from tobacco smoke, and raising state cigarette taxes (CDC, 2010b).

Prior research has demonstrated the effectiveness of state tobacco control programs in reducing tobacco consumption and prevalence among youth and adults (Chattopadhyay & Pieper, 2011; Ciecierski et al., 2011; Farrelly, Pechacek, & Chaloupka, 2003; Farrelly et al., 2008; Tauras et al., 2005).

Vermont has been a frontrunner in implementing programs and policies aimed at reducing tobacco use. Vermont established a comprehensive tobacco control program in 2001 that was built on a solid foundation of evidence-based approaches to tobacco control. Real per capita tobacco control funding was nonexistent or very low until the establishment of the Vermont Tobacco Control Program (VTCP) in 2001. From 2001 to 2009, real tobacco control program funding stayed above $10.00 per capita (adjusted to 2010 dollars). In 2007, Vermont ranked 6th among states in tobacco control program funding; the program was funded at 61.8% of the recommended level (CDC, 2010b). Additionally, Vermont increased its cigarette excise tax several times between 1980 and 2009; the real tax on a pack of cigarettes increased from $0.12 per pack in 1980 to $2.24 per pack in 2009. As of December 31, 2009, Vermont had the 9th highest state cigarette tax (CDC, 2010a). In addition to increasing funds for VTCP and the cigarette excise tax, Vermont enacted legislation to make all public bars and restaurants smoke-free in 2005 and enacted a statewide ban on smoking in workplaces in 2009 (ANRF, 2012).

This report models cigarette consumption in Vermont from 1980 through 2009 using tax-paid cigarette sales adjusted for cross-border sales. Our results show that tobacco control funding independently, and synergistically with cigarette excise taxes and smoke-free air laws, has led to dramatic reductions in cigarette consumption. Estimated annual per capita cigarette consumption in Vermont has declined about 74%, from 144.6 packs per capita in 1980 to 97.9 packs per capita in 2009. The results from our counterfactual models show that estimated cigarette consumption in 2009 would have been 22% higher had tobacco control program funding stayed constant at its 2000 level and 60% higher had tobacco control program funding, cigarette excise taxes, and smoke-free air law coverage stayed constant at their 2000 levels.

1. INTRODUCTION

To estimate the impact of tobacco control programs and policies on cigarette consumption in Vermont, we used a national model using tax-paid cigarette sales data from 1980 through 2009 for all states. We used a national model because there has not been enough variation in these variables within Vermont over time to precisely estimate their impact. We then used that model to estimate cigarette consumption in Vermont by removing the influence of cross-border sales.

Tax-paid cigarette sales, typically expressed as packs per person, are a key outcome indicator for evaluating comprehensive tobacco control programs (Starr et al., 2005). State tobacco control programs are known to be effective in reducing per capita cigarette sales, and numerous studies have shown that raising the cigarette excise tax can substantially reduce tobacco use (Farrelly, Pechacek, & Chaloupka, 2003; IOM, 2007; USDHHS, 2000).

The first part of this report presents trends in Vermont's tobacco control program funding, cigarette excise taxes, and smoke-free air law coverage from 1980 through 2009. We then present the results of the national model to demonstrate the effect of tobacco control policies on tax-paid cigarette sales. Finally, we remove the influence of cross-border sales and analyze cigarette consumption in Vermont. We also conducted two what-if scenarios. The first scenario estimates per capita cigarette consumption in Vermont holding tobacco control program funding, cigarette excise taxes, and smoke-free air law population coverage at their 2000 levels. The second scenario estimates per capita cigarette consumption in Vermont holding only tobacco control program funding at its 2000 level.

2. METHODS

Our model uses annual data from all 50 states from 1980 through 2009 to estimate the impact of state funding for tobacco control programs, combined federal and state cigarette excise taxes, and population coverage of smoke-free air laws on per capita tax-paid cigarette sales. The model includes measures of cross-border sales potential, the state unemployment rate, and a quadratic time trend to capture the increasing rate at which the tobacco control programs and policies reduce cigarette consumption. Indicator variables for individual states are also included to control for other time-invariant factors that could affect tax-paid cigarette sales but that are omitted from the model, such as state sentiment toward tobacco use.

Tax-paid cigarette sales and tax rates for all states from 1980 through 2009 were obtained from annual volumes of *The Tax Burden on Tobacco* (Orzechowski & Walker, 2010) and are reported by fiscal year from July 1 through June 30. The sales data for each state were converted to per capita sales using annual population estimates for adults aged 18 or older from the U.S. Census Bureau (2011).

Data on annual funding for state tobacco control programs are from a proprietary data set compiled by RTI that includes information on federal tobacco control initiatives, including the American Stop Smoking Intervention Study (ASSIST) (1991 through 1999), the Initiatives to Mobilize for the Prevention and Control of Tobacco Use (IMPACT) (1993 through 1999), the National Tobacco Control Program (1999 to date), the Robert Wood Johnson Foundation's Smokeless States program (1994 through 2000), and state sources (excise tax earmarks for tobacco control, state settlement and Master Settlement Agreement sources, and other state appropriations). Whenever possible, the tobacco control funding data reflect actual expenditures made by programs. However, for some states and years, we were only able to obtain funding or allocations for tobacco control programs and not actual expenditures. The program funding variable included in the model is cumulative funding, not annual funding. To calculate cumulative funding in a given year and state, the current year's annual funding amount is added to all previous years' funding amounts, which have been discounted by 5% annually. We also present results using discount rates ranging from 10% to 50% to test the sensitivity of our model.

By using cumulative funding rather than annual funding, we are assuming that investments in tobacco control programs made in previous years will continue to affect tax-paid cigarette consumption in future years (although at a diminishing rate). This assumption is reasonable, as experience has shown that states often take several years to build capacity within their own program staff and to build a functioning network of community partners. The tobacco control capacity developed in this way is sustainable and persistent, and programs can

continue to operate effectively for a few years even in the face of budget cuts (Chattopadhyay & Pieper, 2011; Farrelly, Pechacek, & Chaloupka, 2003).

Information on state and local smoke-free air laws comes from the Americans for Nonsmokers' Rights Foundation, which reports enforcement dates for state laws and local ordinances that provide for 100% smoke-free workplaces, restaurants, or freestanding bars across all U.S. municipalities (e.g., cities, counties, states). We combined the information on laws and ordinances with annual population estimates for these localities, obtained from the U.S. Census Bureau, to construct a measure of the percentage of a state's population covered by a smoke-free workplace, restaurant, or bar law.

State-level unemployment rate data come from the U.S. Department of Labor (Bureau of Labor Statistics, 2011a). Cigarette excise taxes and funding for tobacco control programs in all models were adjusted for inflation to 2010 dollars using the consumer price index from the U.S. Department of Labor (Bureau of Labor Statistics, 2011b).

Cross-border sales create a false representation of how many cigarettes are consumed. Studies have shown that smokers will travel to neighboring states with lower taxes in order to purchase lower-cost cigarettes (DeCicca et al., 2010; Lovenheim, 2008; Stehr, 2005). We accounted for tax avoidance, which can create differences between cigarette sales and cigarette consumption in a state, by calculating the tax differentials between states and weighting these differences by the distance from each county to adjacent state borders and the population of each county (Farrelly, Pechacek, & Chaloupka, 2003; GAO, 2011). One measure accounts for the occurrence of cigarettes leaving the state to neighboring states, essentially "exporting" state's sales (i.e., it increases the state's sales), and another measure accounts for the occurrence of smokers purchasing cigarettes elsewhere, essentially "importing" state's sales (i.e., it decreases the state's sales). More details on this method are presented elsewhere (Farrelly, Pechacek, & Chaloupka, 2003). Although Vermont boasts a high cigarette excise tax relative to many other U.S. states, bordering states New York and Massachusetts have higher cigarette excise taxes. Estimating cigarette consumption using tax-paid cigarette sales is more accurate when cross-border sales are taken into account.

We used a linear regression model, with state annual per capita tax-paid cigarette sales as the dependent variable. The specification presented here is based on a previously published model (Farrelly, Pechacek, & Chaloupka, 2003) and other, similar, analyses (Marlow, 2007; Sung et al., 2005). We estimated a regression model of cumulative tobacco control expenditures on per capita tax-paid cigarette sales, controlling for cigarette excise taxes, cross-border cigarette sales from interstate tax differentials, time-varying state factors (e.g., state unemployment rate), state-specific indicator variables, and a linear and

quadratic time trend to capture an overall secular trend in cigarette consumption not related to other factors in the model.

The model specification uses variation over time for all 50 states and the District of Columbia. The model is weighted by state annual population. Our main model specification is as follows:

$$\textit{Per Capita Tax-Paid Cigarette Sales} = a + \beta_1 TCP_CumulativeFunding_{it} + \beta_2 Taxes_{it} + \beta_3 Smokefree_Law_Coverage_{it} + \beta_4 CrossBorderExports_{it} + \beta_5 CrossBorderImports_{it} + \beta_6 UnemploymentRate_{it} + \beta_7 Time_t + \beta_8 Time^2_t + \delta_i State_i + \varepsilon_{it}.$$

To illustrate the magnitude of tobacco control program funding, cigarette excise taxes, and smoke-free air laws, we calculated elasticities that translate coefficients into a standardized measure that can be compared across variables. Elasticity is a ratio of the percentage change in the outcome to the percentage change in the covariate (e.g., cigarette tax). In other words, an elasticity of −0.2 for cigarette taxes indicates that a 100% increase in the tax would lead to a 20% decline in per capita tax-paid cigarette sales in our model (i.e., −20%/100%=−0.2). To illustrate how changing the discount rate on tobacco control program funding influences the effect of tobacco control program funding, cigarette excise taxes, and smoke-free air laws, we present a table of regression results to show how these variables change as the discount rate increases. We also plot how the tobacco control program funding elasticity changes with respect to changes in the discount rate.

Finally, we used our national model to estimate per capita cigarette consumption in Vermont by removing the influence of cross-border sales for the entire study period (1980 through 2009). We removed the influence of cross-border sales by setting the value of import and export potential to zero for the entire study period. This provides us with baseline estimated consumption in Vermont. We can use this baseline to make predictions about how consumption in Vermont changes under hypothetical situations.

3. RESULTS

Figure 3-1 shows trends in average annual Vermont Tobacco Control Program (VTCP) funding, cigarette excise taxes, and smoke-free air law coverage for Vermont from 1980 through 2009. Average annual funding for tobacco control began to increase after 1997, right around the time of the 1998 Master Settlement Agreement. In 2001, Vermont established a comprehensive tobacco control program, and funding for tobacco control rose accordingly. Average real tobacco control funding (in 2010 dollars) went from around $2.71 per capita in 2000 to around $15.40 per capita in 2001. Although funding declined somewhat after 2001, it remained above $10.00 per capita through 2009. Average real cigarette taxes in Vermont have increased steadily over the study period, with an accelerating increase after 2001. Since 2005, 100% of the bar and restaurant population in Vermont has been covered by smoke-free air laws. From 1980 to 2009, per capita tax-paid cigarette sales in Vermont declined by 68.6%, and estimated per capita consumption declined by 73.8%.

Figure 3-1. Trends in Average Annual VTCP Funding, Cigarette Excise Taxes, and Smoke-Free Air Law Coverage for Vermont, 1980–2009

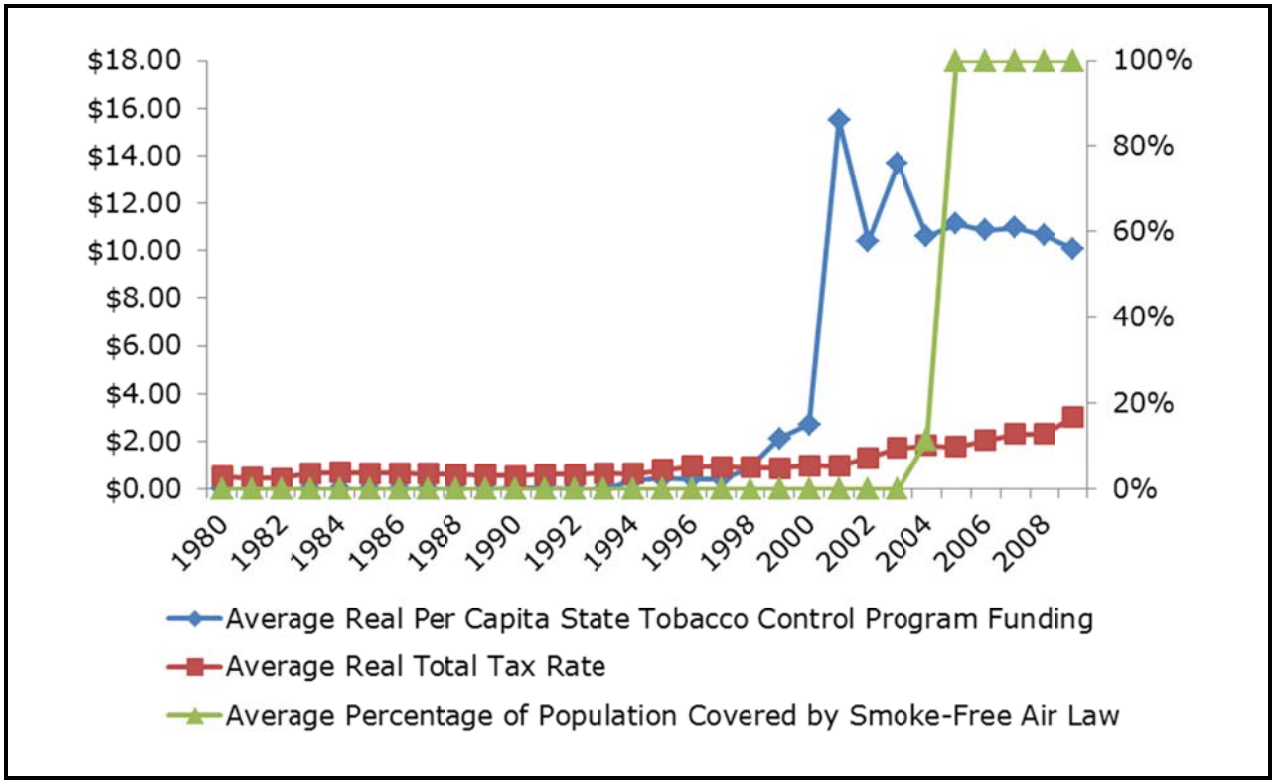


Table 3-1 shows the regression results from the main model on which we based our estimates of cigarette consumption, where we used data from all states to estimate the effects of state tobacco control policies on state-level tax-paid cigarette sales. Cumulative tobacco control program funding is discounted 5% annually. The results from our state-level regression analysis show that tobacco control program funding, excise tax rates, and coverage from smoke-free air laws are all statistically significant predictors of cigarette consumption ($p < 0.01$). Estimates indicate that an increase in each of these policies will result in a decline in cigarette sales. Cross-border tax evasion in the form of exports was found to significantly increase cigarettes sales ($p < 0.01$), and cross-border tax evasion in the form of imports was found to significantly decrease tax-paid cigarette sales ($p < 0.05$), although the magnitude of change was smaller, indicating that exports have a larger effect on tax-paid cigarette sales.

Table 3-1. Regression Results of the Effect of State Tobacco Control Policies on State-level Tax-Paid Cigarette Sales, 1980–2009

Variable	State-Level Model	Average [Min, Max]	
		1980	2009
Real per capita cumulative state tobacco control program funding (5% discount rate)	−0.123** (−0.025) [−0.01]	$0 [$0, $0]	$28.55 [$3.12, $94.33]
Real total excise tax rate	−10.340** (−0.757) [−0.1145]	$0.55 [$0.26, $0.77]	$2.19 [$0.94, $4.31]
% of state population covered by workplace, restaurant, or bar smoke-free air law	−2.312* (−0.921) [−0.0042]	0% [0%, 0%]	71.3% [0%, 100%]
Cross-border tax evasion: exports	52.904** (−4.525)	0.01 [0, 0.11]	0.10 [0, 0.61]
Cross-border tax evasion: imports	−16.767* (−6.745)	0.01 [0, 0.18]	0.07 [0, 1.00]
State unemployment rate	−124.173** (−12.635) [−0.0848]	6.8% [3.9%, 12.1%]	8.5% [4.2%, 14.0%]
Time	−6.963** (−0.273)		
$Time^2$	0.057** (−0.003)		
Constant	301.294** (−5.924)		
N	1,530		
Adjusted R^2	0.96		

Note: Regression results are in the order of coefficient (standard error) [elasticity].
*$p < 0.05$, **$p < 0.01$. The model includes state indicator variables.

Elasticity estimates indicate the magnitude of change resulting from increasing tobacco control policy variables. Per capita tax-paid cigarette sales are estimated to decline approximately 1.0% given a 100% increase in tobacco control program funding. Furthermore, cigarette taxes are a significant predictor of tax-paid cigarette sales; increasing taxes by 100% will lead to an approximately 11.5% decline in per capita cigarette sales. Similarly, estimates show that a 100% increase in the percentage of the population covered by a workplace, restaurant, or bar smoke-free air law will result in a 0.4% decrease in tax-paid cigarette sales.

Additionally, we ran a modified version of our main model where tobacco control program funding was the only policy variable included. The results of this model were similar to those of the main model. The adjusted R^2, which estimates the accuracy of the model in predicting outcomes for the given data set, was 93.4%. The estimated coefficient on funding was −0.220 and statistically significant ($p < 0.01$) with a standard error of 0.03. Elasticity estimates for funding under this model similarly showed that a 100% increase in tobacco control program funding would lead to a 1.8% decline in per capita tax-paid cigarette sales.

Table 3-2 shows several additional estimates from our national model. These regressions assess how state tobacco control program funding, cigarette excise taxes, smoke-free air laws, and cross-border sales affect per capita tax-paid cigarette sales under varying discount rates for per capita cumulative tobacco control funding. Lower discount rates assume that tobacco control program funding in one year has more of an influence in reducing tax-paid cigarette sales in future years, whereas higher discount rates assume that the effects of funding in one year diminish quicker (Table 3-2). With the exception of tobacco control program funding, there are no notable changes in the magnitude or significance of the other policy inputs under the different discount rates. The prominent change is in the estimated elasticity of tobacco control program funding as the discount rate changes. The elasticity of tobacco control program funding on tax-paid cigarette sales decreases as the discount rate increases.

Figure 3-2 plots the elasticity of cumulative tobacco control program funding as the discount rate increases. Under a 5% discount rate, a 100% increase in tobacco control program funding results in a 1.0% decrease in tax-paid cigarette sales on average, whereas under a 50% discount rate, a 100% increase in tobacco control program funding results in a 0.4% decrease in tax-paid cigarette sales on average. This implies that increases in tobacco control funding will affect cigarette sales and consumption to varying degrees based on how long those funds continue to have an impact. Because lower discount rates imply that the effects of funding diminish less over time, and because elasticities have a larger absolute value under lower discount rates, it is beneficial to ensure that funds spent in a given period are used to create a tobacco control infrastructure that can be built upon and sustained in the future.

Table 3-2. Regression Results of the Effect of State Tobacco Control Program (TCP) Funding, Cigarette Excise Taxes, Smoke-Free Air Law Coverage, and Cross-Border Sales on State-level Tax-Paid Cigarette Sales Using Different Discount Rates on TCP Funding, 1980–2009

	Funding Discount Rates					
Variable	**5%**	**10%**	**15%**	**20%**	**25%**	**50%**
Real per capita cumulative state tobacco control program funding	−0.123** (0.03) [−0.01]	−0.139** (0.03) [−0.0093]	−0.147** (0.04) [−0.0083]	−0.152** (0.04) [−0.0073]	−0.155** (0.04) [−0.0065]	−0.156* (0.07) [−0.004]
Real total excise tax rate	−10.340** (0.76) [−0.115]	−10.329** (0.76) [−0.114]	−10.341** (0.76) [−0.115]	−10.360** (0.76) [−0.115]	−10.380** (0.76) [−0.115]	−10.469** (0.76) [−0.116]
Cross-border tax evasion—exports	52.904** (4.53)	53.095** (4.53)	53.121** (4.54)	53.067** (4.54)	52.981** (4.55)	52.569** (4.56)
Cross-border tax evasion—imports	−16.767* (6.75)	−16.129* (6.75)	−15.701* (6.75)	−15.450* (6.76)	−15.317* (6.76)	−15.241* (6.78)
% of state population covered by workplace, restaurant, or bar smoke-free air law	−2.312* (0.92) [−0.0042]	−2.648** (0.91) [−0.0048]	−2.944** (0.90) [−0.0053]	−3.172** (0.89) [−0.0057]	−3.338** (0.88) [−0.006]	−3.670** (0.88) [−0.0066]

Note: Results are coefficient (standard error) [elasticity].

The model includes state fixed effects, long and short-distance cross-border sales, state unemployment rates, and a linear and quadratic time trend. $^{*}p < 0.05$, $^{**}p < 0.01$.

Figure 3-2. Cumulative Tobacco Control Funding Elasticity by Discount Rate, Vermont, 1980–2009

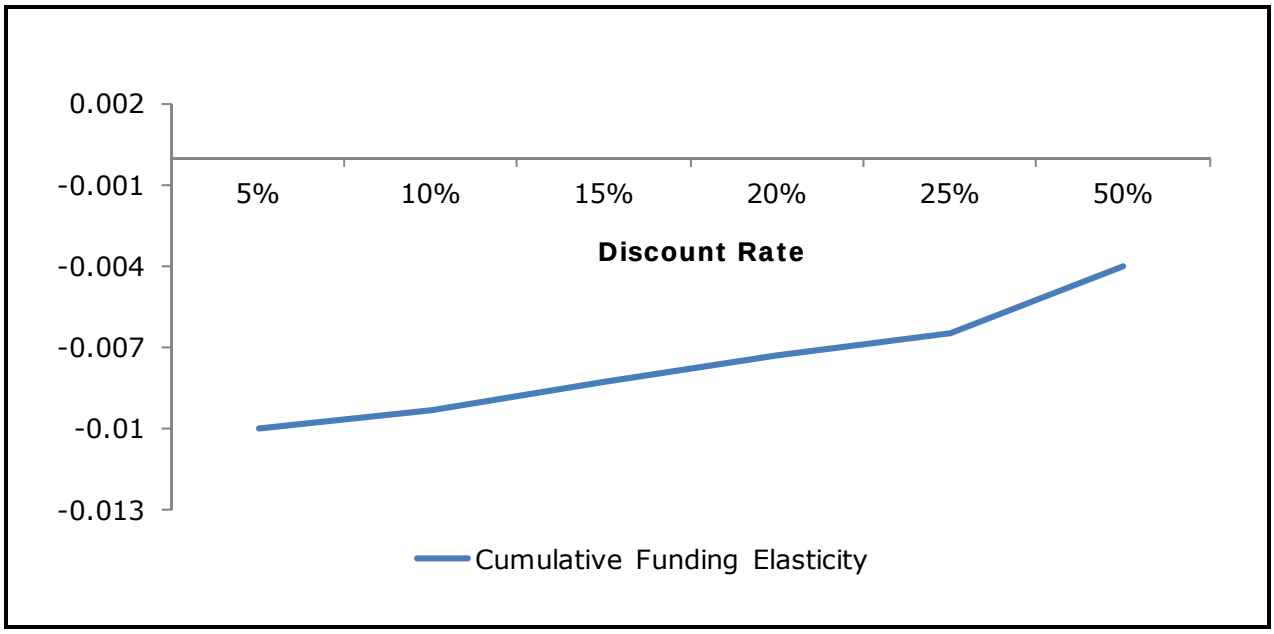
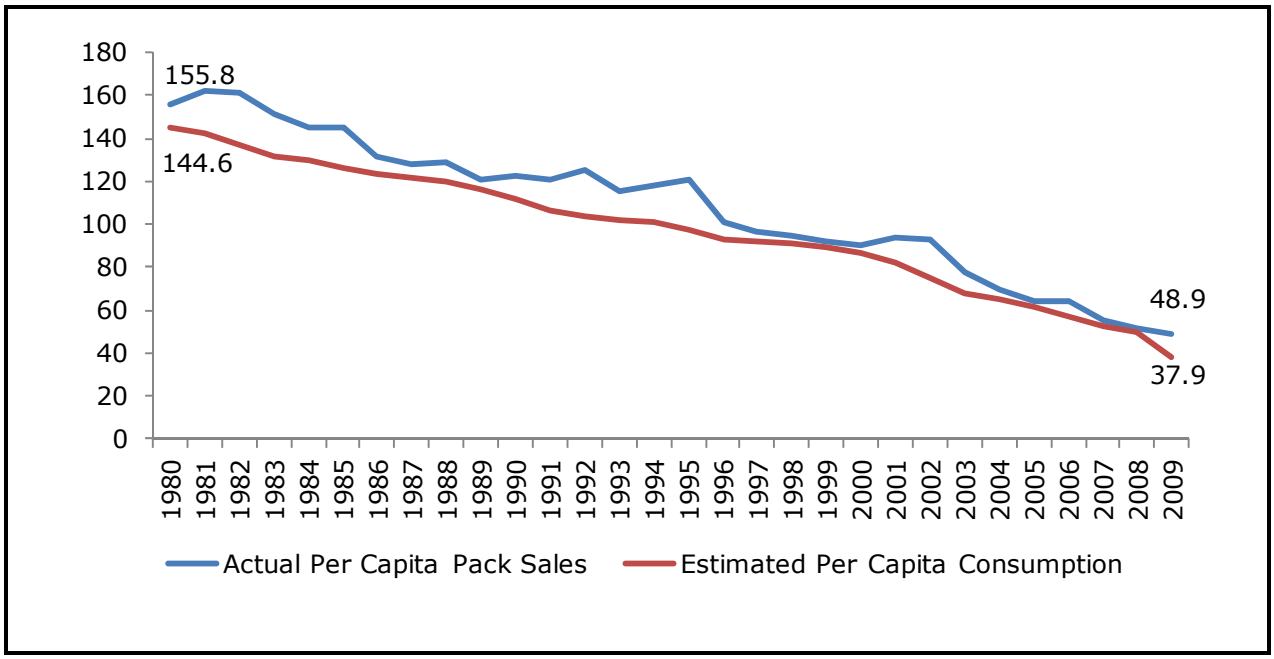


Figure 3-3 shows the difference between estimated per capita cigarette tax-paid sales and estimated per capita pack consumption in Vermont from 1980 to 2009. As a result of cross-border sales, estimated cigarette consumption in Vermont is lower than estimated cigarette tax-paid sales. In 2009, there was a 25.4% difference in estimated per capita cigarette pack consumption and estimated per capita tax-paid cigarette sales in Vermont. Vermont borders two densely inhabited states with relatively higher taxes (i.e., New York and Massachusetts); it is not surprising that consumption in Vermont is lower than observed sales in Vermont because people from higher-tax states will buy cigarettes from neighboring lower-tax states. Smokers living in the higher-tax states like New York and Massachusetts have a propensity to travel to lower-tax states to take advantage of the lower cigarette excise tax rates. This figure also shows that not only have tax-paid cigarette sales declined in Vermont, but also that cigarette consumption declined and at a similar rate. Between 1980 and 2009, estimated per capita tax-paid cigarette pack sales declined 68.6%, from 155.8 to 48.9; and estimated per capita cigarette pack consumption declined by 73.8%, from 144.6 to 37.9, over this same period.

To analyze the impact of tobacco control policies on cigarette consumption within Vermont, we removed the influence of cross-border sales. All subsequent figures present estimated consumption in Vermont.

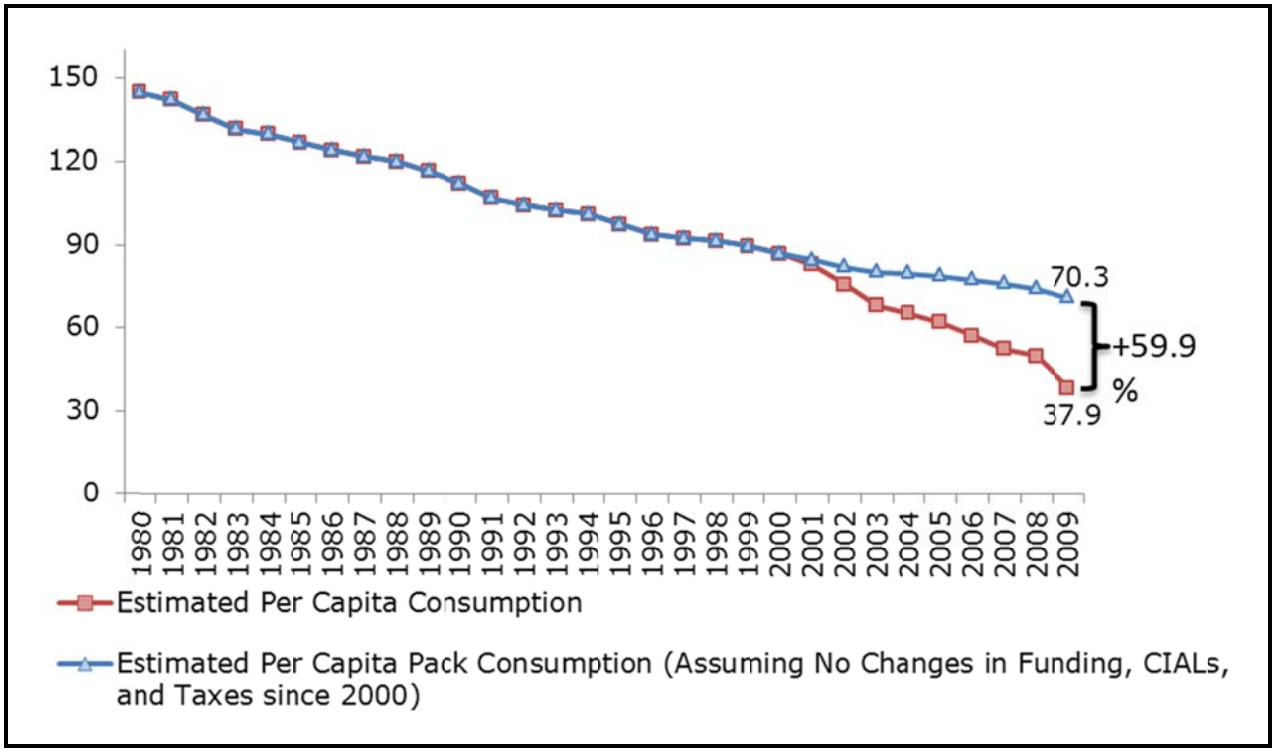
Figure 3-3. Trends in Actual Per Capita Pack Sales and Predicted Per Capita Consumption, Vermont, 1980–2009



Using estimated cigarette consumption, we conducted two Vermont-specific counterfactual analyses. The first counterfactual estimates what per capita cigarette pack consumption would have been if VTCP funding, cigarette excise taxes, and smoke-free air laws were held constant from the year 2000 forward. This counterfactual demonstrates the influence of these policies on cigarette consumption. The second counterfactual estimates the independent effects of VTCP funding on cigarette consumption in Vermont. For this model, we estimated what per capita cigarette pack consumption would be if VTCP funding remained at its 2000 level.

The first counterfactual scenario indicates that VTCP funding, cigarette excise taxes, and smoke-free air laws combined had a significant effect on reducing per capita cigarette pack consumption in Vermont from 2000 through 2009 (Figure 3-4). In 2009, per capita cigarette pack consumption would have been 59.9% higher had these three tobacco control policies remained at their 2000 levels. This difference in per capita cigarette pack consumption translates to approximately 20.1 million fewer packs consumed in 2009, or 93.4 million fewer packs consumed from 2000 through 2009, as a result of increases in VTCP funding, cigarette excise taxes, and smoke-free air law coverage.

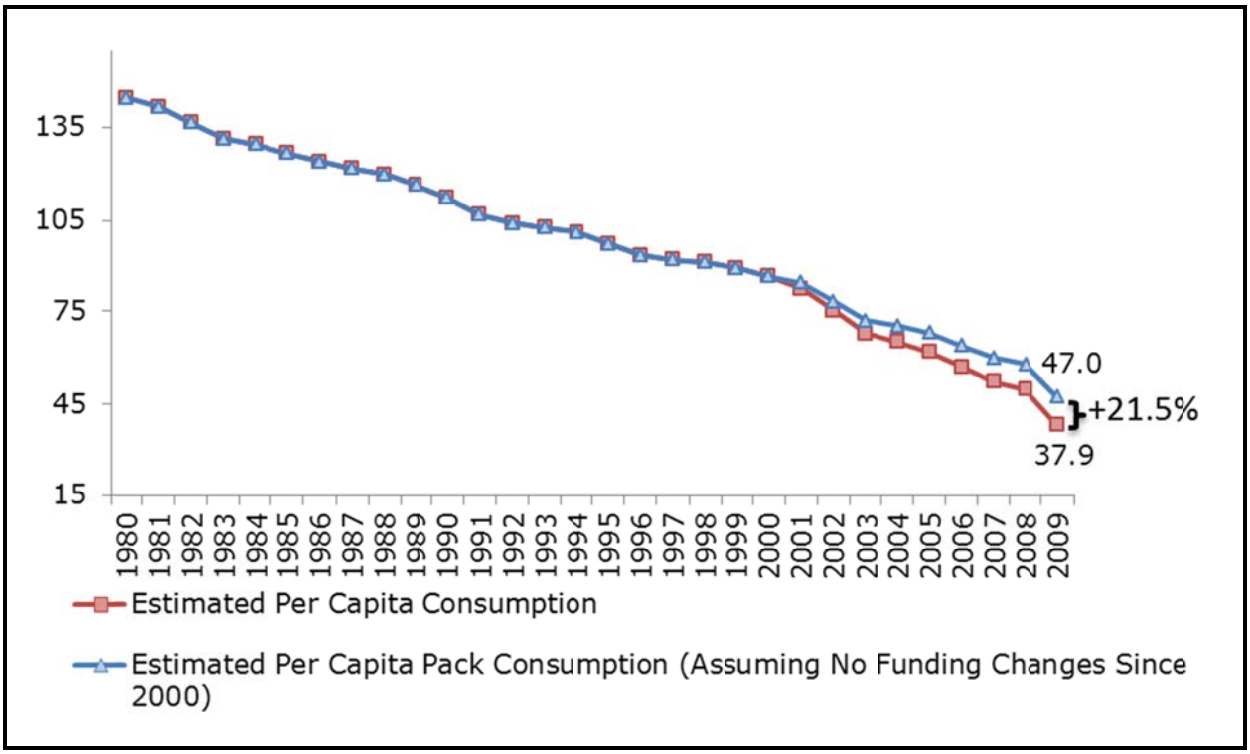
Figure 3-4. Counterfactual: Estimated Per Capita Pack Consumption Holding VTCP Funding, Cigarette Excise Taxes, and Smoke-Free Air Laws Constant at the 2000 Level, Vermont, 1980–2009



Note: CIAL = clean indoor air law; VTCP = Vermont Tobacco Control Program

Figure 3-5 demonstrates the independent effect of VTCP funding on per capita cigarette pack consumption from 2000 through 2009. The model shows that had VTCP funding remained at its 2000 level, per capita cigarette pack consumption in Vermont would have been 21.5% higher. This difference in per capita cigarette pack consumption translates to approximately 5.7 million fewer packs consumed in 2009, or 32.7 million fewer packs consumed from 2000 through 2009, as a result of increased funding for VTCP.

Figure 3-5. Counterfactual: Estimated Per Capita Pack Consumption Holding VTCP Funding Constant at the 2000 Level, Vermont, 1980–2009



Note: VTCP = Vermont Tobacco Control Program

4. DISCUSSION AND RECOMMENDATIONS

4.1 Discussion

In this report, we evaluated the influence of tobacco control program funding, cigarette excise taxes, smoke-free air laws, and cross-border sales on tax-paid cigarette sales in Vermont from 1980 through 2009. We also estimated cigarette consumption in Vermont using cigarette sales adjusted for cross-border sales. We first presented trends in average annual Vermont Tobacco Control Program (VTCP) funding, cigarette excise taxes, and smoke-free air law coverage for Vermont from 1980 through 2009. All three tobacco control policies trend upward over the study period, with accelerated increases in the early 2000s. Next, we presented trends in actual per capita tax-paid cigarette sales and estimated per capita cigarette consumption as estimated by our model for Vermont from 1980 through 2009. Our model demonstrates the difference in cigarette sales and cigarette consumption as a result of cross-border sales. Cigarette consumption in Vermont is consistently lower than cigarette sales; this figure also shows a downward trend in cigarette sales and consumption.

The results from the national regression model show that significant declines in tax-paid cigarette sales can be achieved by increasing tobacco control program funding, cigarette excise tax rates, and smoke-free air law coverage. The main national regression model discounts cumulative per capita tobacco control program funding by 5% annually. We also analyzed how the estimates from our national model vary as the discount rate on tobacco control program funding varies. The different discount rates do not significantly alter the influence of cigarette excise taxes and smoke-free air law coverage on tax-paid cigarette sales; however, lower discount rates result in larger estimated elasticity estimates for tobacco control program funding, in absolute terms. Using a lower discount rate implies that investments in tobacco control programs in previous years have a larger impact on decreasing cigarette sales in future years. Evidence-based literature shows that this is a reasonable assumption (Chattopadhyay & Pieper, 2011; Farrelly, Pechacek, & Chaloupka, 2003).

Using estimated cigarette consumption, we conducted two Vermont-specific counterfactual analyses. The first counterfactual estimated what cigarette consumption would have been if tobacco control program funding, cigarette excise taxes, and smoke-free air law coverage were held constant from the year 2000 forward. The second counterfactual estimated what cigarette consumption would have been if only tobacco control program funding were held constant from the year 2000 forward.

The results indicate that annual per capita cigarette consumption in Vermont has declined about 74%, from 144.6 packs per capita in 1980 to 97.9 packs per capita in 2009. Our results also show that tobacco control funding independently, and synergistically with

cigarette excise taxes and smoke-free air laws, has led to dramatic reductions in cigarette consumption. Our first counterfactual estimates that cigarette consumption in 2009 would have been 59.9% higher had tobacco control program funding, cigarette excise taxes, and smoke-free air law coverage stayed constant at their 2000 levels. Between 1980 and 2009, tobacco control program funding, state cigarette excise taxes, and smoke-free air laws led to significant reductions in cigarette consumption in Vermont.

4.2 Recommendations

The results of this analysis and their consistency with other evidence-based results (CDC, 2007, 2009, 2010; Farrelly, Pechacek, & Chaloupka, 2003; IOM, 2007) show that increases in tobacco control program funding, cigarette excise taxes, and smoke-free air laws are effective at decreasing tax-paid cigarette sales and consumption. Although tobacco control funding in Vermont has trended upward over time, Vermont has yet to meet the Centers for Disease Control and Prevention (CDC) guidelines for funding. Increases in tobacco control program funding, cigarette excise taxes, and smoke-free air laws are proven methods for reducing tobacco use (CDC, 2010b). One way Vermont can further reduce cigarette consumption and thus the personal and public burden of tobacco-related illnesses and deaths is to increase funding of the tobacco control program to the CDC recommended level. Another strategy Vermont can employ to reduce tobacco use is to further increase its cigarette excise tax. The recognition is greater than ever that funding for tobacco control programs, price increases, and smoke-free policies reduce tobacco use; this report demonstrates that tobacco control program funding alone and in combination with cigarette excise taxes and smoke-free air laws can significantly reduce cigarette consumption in Vermont. Further reductions in tobacco use can be achieved through increased funding and support of these proven strategies.

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