

IMPLICATIONS OF THE JUNE 2008 \$1.25 CIGARETTE TAX INCREASE



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Implications of the June 2008 \$1.25 Cigarette Tax Increase

Topical Report

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Executive Summary

On June 3, 2008, New York raised its cigarette excise tax by \$1.25, to \$2.75 per pack, at the time making New York the state with the highest cigarette excise tax in the nation. New York City levies an additional \$1.50 per pack. On July 1, 2010, New York's cigarette excise tax was increased by an additional \$1.60 per pack and new legislation was enacted to curb cigarette excise tax avoidance. These actions have the potential to appreciably reduce cigarette use and increase tax revenues to the state.

By increasing cigarette prices, cigarette taxes have a significant impact on tobacco use behaviors. Increases in cigarette prices have been shown to prevent youth and adults from starting to smoke and encourage those who do smoke to quit or cut back. However, rising cigarette prices prompt some smokers to seek out low-cost alternatives, either by switching to cheaper brands or by shopping online or from Indian reservations or lower taxed neighboring states.

This report examines the impact of the June 2008 cigarette tax increase on a range of smoking outcomes among New York adult smokers, including price paid, tax avoidance, cigarette sales, and cessation. Key findings are as follows:

- Self-reported cigarette prices have increased significantly since the tax increase, from an average of \$4.95 in the year before the tax increase to \$6.19 in the year after.
- In 2009, smokers in New York City reported paying \$7.68 per pack of cigarettes, compared with \$5.35 in the rest of the state.
- Half of all smokers (50.1%) reported purchasing cigarettes from low-tax locations, such as Indian reservations, the Internet, duty-free shops, toll-free telephone numbers, and neighboring states and Canada in 2009.
- In 2009, smokers who purchased at low-tax locations paid on average \$5.49 per pack, compared with \$6.93 paid by smokers who purchased at full-tax locations.
- A majority of smokers (54.3%) reported being "very or extremely concerned" about the cost of cigarettes in 2009.

- The percentage of smokers who purchase cigarettes from Indian reservations has increased significantly from 1 year before the tax increase (24.7%) to 1 year after (31.7%). Similarly, the percentage of smokers who purchase cigarettes from the Internet has increased significantly from 1.9% to 5.0%.
- The top three Internet cigarette vendors to New York residents are located on Indian reservations in New York State.
- Cigarette purchases that avoid taxes decrease potential revenues to the state by between \$467.5 million and \$612.8 million per year and undermine the public health benefits of the cigarette tax increase.
- In the year since the tax increase, from June 2008 to May 2009, cigarette excise tax revenues collected by New York rose 54%, to \$1.31 billion, while tax-paid cigarette sales decreased 22.8%.
- No significant increase in quit intentions or quit attempts has been noted since the June 2008 tax increase.

The impact of the July 2010 tax increase will be examined in future reports.

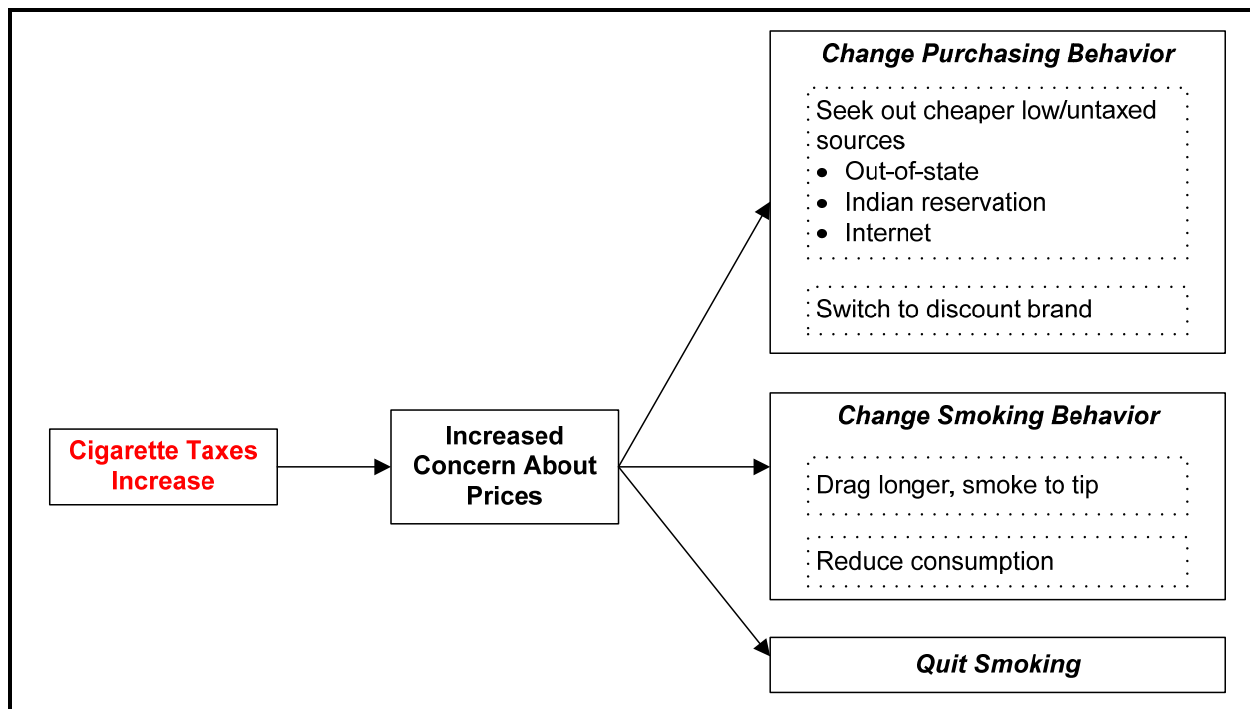
1. Introduction

On June 3, 2008, New York raised its cigarette excise tax by \$1.25, to \$2.75 per pack, at the time making New York the state with the highest cigarette excise tax in the nation. New York City levies an additional \$1.50 per pack. On July 1, 2010, New York's cigarette excise tax was increased by an additional \$1.60 per pack and new legislation was enacted to curb cigarette excise tax avoidance. These actions have the potential to appreciably reduce cigarette use and increase tax revenues to the state.

Raising the price of cigarettes is one of the most effective interventions to prevent and reduce cigarette use (Warner, 2006). Increasing the cigarette tax results in an increase in retail cigarette prices as wholesalers and retailers pass the additional cost of the tax on to smokers (Keeler et al., 1996). This price increase, in turn, provides an incentive for smokers to quit or cut back. Among adults, a 10% increase in the price per pack of cigarettes is associated with a 3% to 5% decline in overall consumption, with approximately half of this decline resulting from smokers quitting altogether (Chaloupka and Warner, 2000). However, recent work suggests that the reduction in cigarette consumption that follows a tax increase may be smaller than the consensus estimate, as cigarette prices and taxes are now much higher, on average, than has been the historical norm (Farrelly and Engelen, 2008; Farrelly et al., 2008).

Smokers who continue to smoke following a tax or price increase may change their purchasing and smoking behaviors to accommodate the increased cost (Exhibit 1-1). Smokers may switch from premium to discount brands; buy fewer cigarettes overall but smoke those cigarettes more intensively; or seek out low- or untaxed sources of cigarettes, such as Indian reservations and Internet vendors. Purchasing from Indian reservations, in particular, is common in New York (Davis et al., 2006). Cigarette tax avoidance not only reduces smokers' intentions to quit smoking (Hyland et al., 2005) but also results in a substantial loss of tax revenue to the state.

Exhibit 1-1. Impact of Cigarette Tax Increase on Purchasing and Smoking Behaviors



In this report, we first examine changes in cigarette prices, smokers' concerns about rising prices, and tax-avoiding shopping behaviors, such as frequent purchasing at Indian reservations, because we expect those outcomes to show the fastest response to the tax increase. Next, we report on changes in cigarette sales and self-reported daily cigarette consumption. Finally, we examine intentions to quit smoking, quit attempts in the past 12 months, and changes in call volume to the New York State Smokers' Quitline.

On July 1, 2010, New York's cigarette excise tax was increased by an additional \$1.60 per pack and new legislation was enacted to curb cigarette excise tax avoidance. The results presented in this report suggest that these actions have the potential to appreciably reduce cigarette use and increase tax revenues to the state.

2. Data and Methods

This report relies primarily on data from the 2005–2009 New York Adult Tobacco Survey (NY-ATS), a representative household survey of New York residents aged 18 or older. One adult is randomly selected in each responding household. The sample includes list-assisted random-digit-dial and directory-listed numbers. The survey is conducted using computer-assisted telephone interviews and includes items that measure the prevalence of smoking behaviors, attitudes and beliefs about tobacco and tobacco control legislation, exposure to secondhand smoke, and perceptions of pro- and antitobacco advertising. Approximately 2,000 NY-ATS telephone interviews are completed each quarter, or about 8,000 interviews per year.

To better assess the extent to which New Yorkers evaded higher taxes by purchasing cigarettes online, RTI purchased Web site traffic and sales transaction data from Web analytics firm comScore, Inc. comScore is an industry leader in measuring online audience behavior and has conducted studies estimating online cigarette purchases for private clients (Moritz, 2008). comScore data are collected from a custom panel of more than 2 million Internet users who have given comScore permission to confidentially and continuously monitor their online behavior. comScore unobtrusively captures the details of panelists' Internet browsing behavior at every site, including details of online purchases. The comScore tracking software can distinguish multiple users in the household by each user's unique mouse and typing behavior (e.g., time between keystrokes and mouse usage). This ensures that Web site exposure and purchasing behaviors are accurately linked to each panelist in a household. All data are aggregated, weighted, and projected to the Internet user population to arrive at population estimates of exposure. RTI purchased data on the number of unique visitors to the top 158 Internet cigarette vendor Web sites, as well as the number of cartons purchased, estimated dollar sales, and demographic characteristics of visitors. The comScore data cover the period from January to December 2008, with monthly estimates for New York State compared with the rest of the United States.

Other data included in this report are monthly tax-paid cigarette sales from New York from 1999 to 2009, number of

calls to the New York State Smokers' Quitline, and number of units of nicotine replacement therapy from 2006 to 2009.

The \$1.25 tax increase took effect on June 3, 2008. We tested for statistically significant differences in outcomes between the year before the tax increase (Q3 2007–Q2 2008) and the year after the tax increase (Q3 2008–Q2 2009). We also tested for statistically significant trends over time in each outcome from Q3 2005 to Q2 2009, spanning 16 calendar quarters of data.

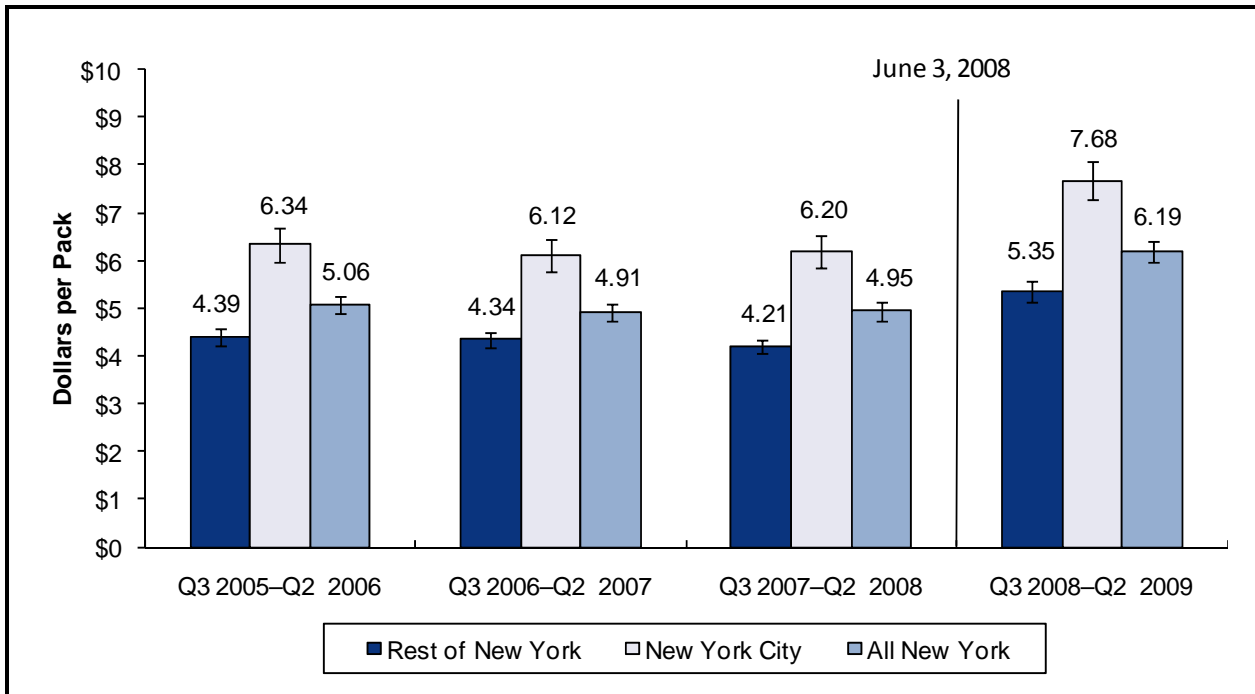
On April 1, 2009, 10 months after New York raised its cigarette tax, the federal government raised its cigarette excise tax by \$0.62, to \$1.01 per pack, a 159% increase. Because this tax increase occurs within the 1-year post-tax period used for testing differences in outcomes before and after the New York tax, it undoubtedly caused average cigarette prices to appear significantly higher in the post-tax period than in the pre-tax period.

3. Results

3.1 Cigarette Prices

The average price per pack of cigarettes in New York increased significantly from \$4.95 per pack in the year before the June 2008 cigarette tax increase to \$6.19 per pack in the year after the tax increase (Exhibit 3-1) (all prices in this report are adjusted for inflation and are self-reported by smokers). Among New Yorkers, smokers in New York City pay the highest prices, \$7.68 per pack on average, compared with \$5.35 for smokers in the rest of the state.

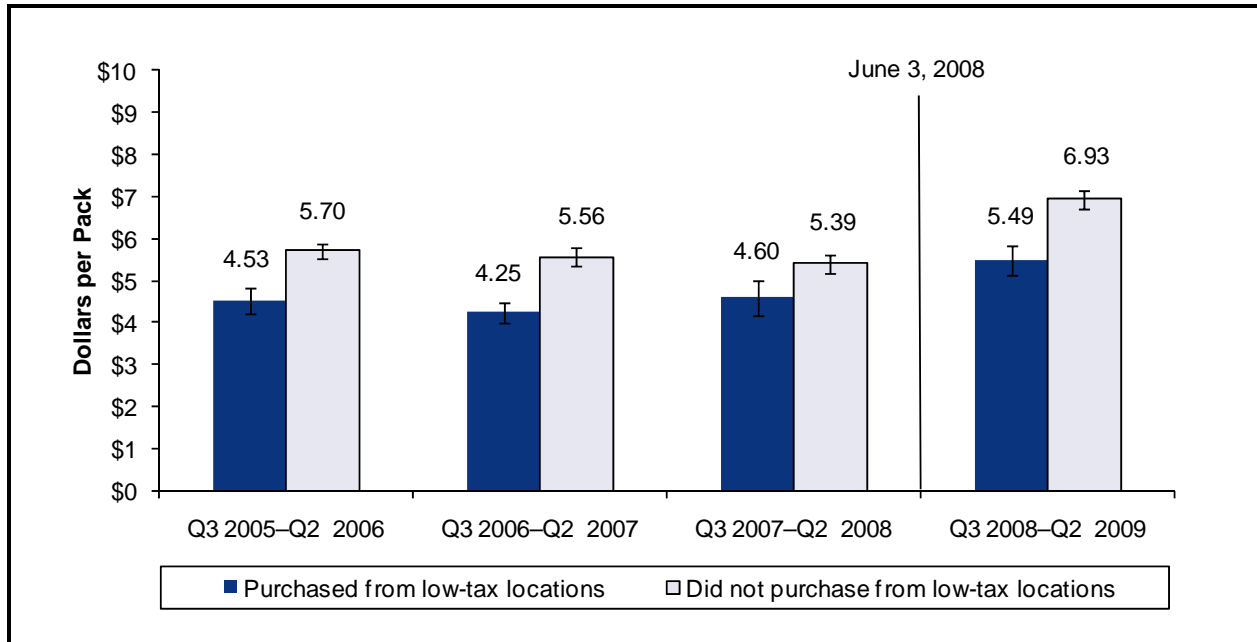
Exhibit 3-1. Average Price Per Pack Paid by Current Smokers, NY-ATS Q3 2005–Q2 2009



Notes: There is a statistically significant upward trend in the price per pack of cigarettes from Q3 2005 to Q2 2009. The average price per pack in New York is significantly higher in the year after the tax increase than in the year before. All prices are adjusted for inflation. The June 2008 New York State tax increase is indicated by a vertical line.

New Yorkers who purchased their cigarettes from a low-tax location (Indian reservations, Internet, toll-free numbers, duty-free shops, and other states and countries) paid significantly less than smokers who purchased at full-tax locations (Exhibit 3-2). The average price per pack at low-taxed locations the year before the tax increase was \$4.60, compared with \$5.49 in the year after the tax increase, a statistically

Exhibit 3-2. Average Price Per Pack Paid by Current Smokers by Purchase Location, NY-ATS Q3 2005–Q2 2009



Notes: The difference in price per pack between the year before and the year after the tax increase is statistically significant. All prices are adjusted for inflation. Low-tax locations include Indian reservations, Internet, toll-free numbers, duty-free shops, and other states and countries. The June 2008 New York State tax increase is indicated by a vertical line.

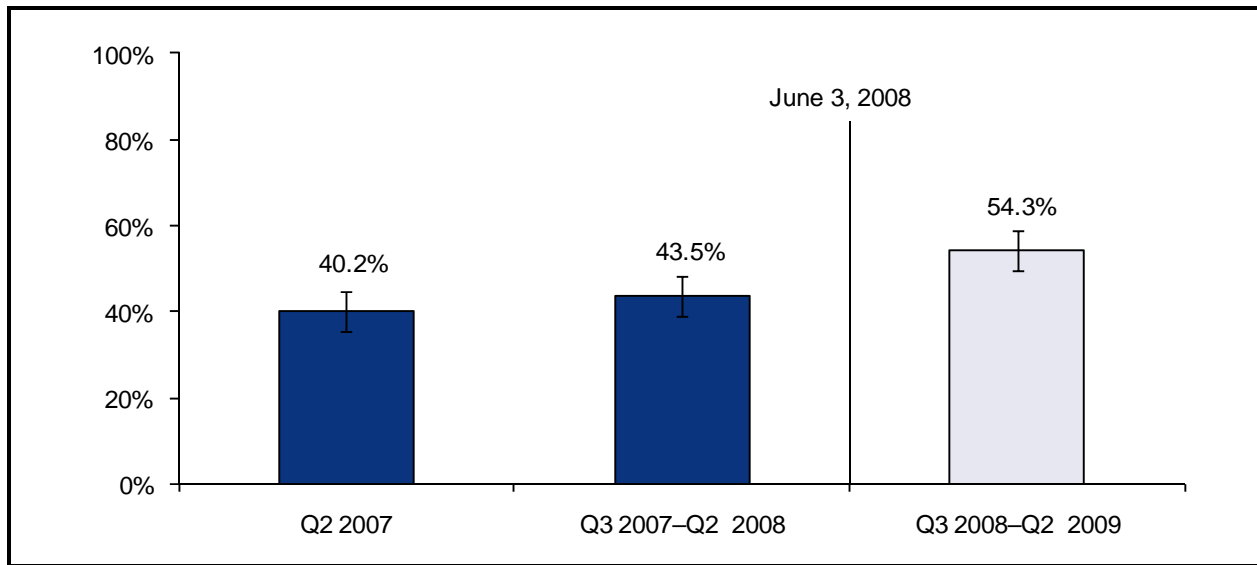
significant difference. The average price per pack at full-tax locations in the year before the tax increase was \$5.39, compared with \$6.93 in the year after, also a statistically significant increase.

A majority of New York smokers remain concerned about the cost of cigarettes (Exhibit 3-3). In the year before the tax increase, 43.5% of smokers reported being very or extremely concerned about the price of cigarettes, compared with 54.3% in the year after the increase, a statistically significant increase. Concerns about cigarette prices began to rise before the cigarette tax increase took effect, perhaps in anticipation of the impending tax hike.

3.2 Cigarette Purchasing Behavior

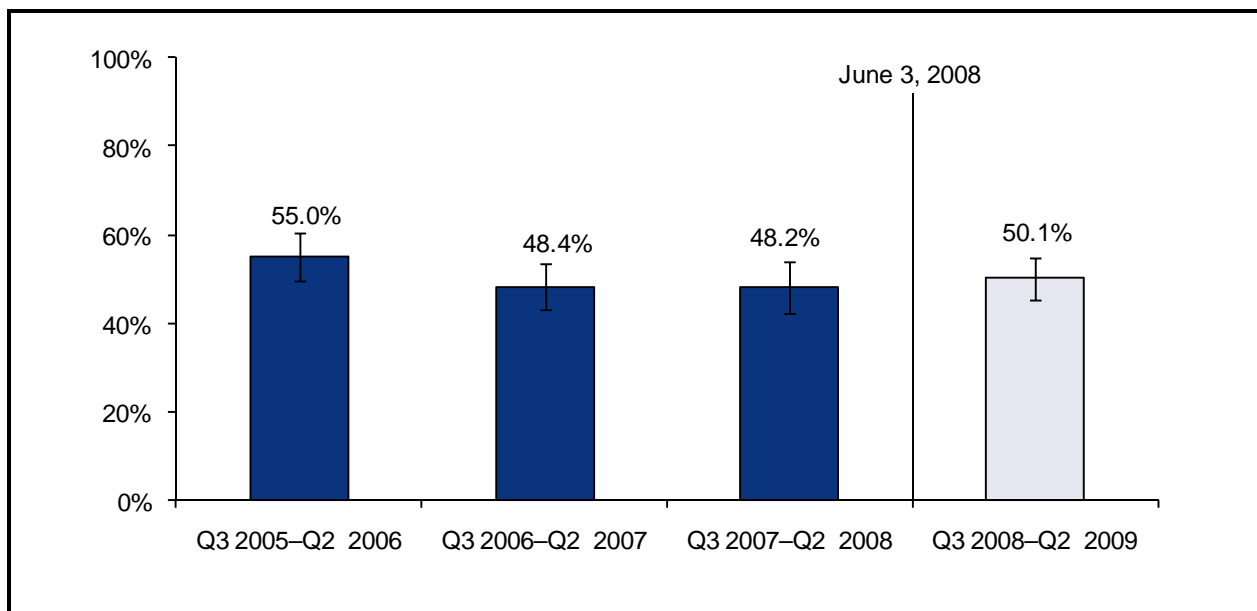
Just over 50% of New York smokers purchased cigarettes from low-tax locations in the year after the tax increase (Exhibit 3-4), up only slightly from the year before the tax increase. Therefore, despite facing rising cigarette prices and expressing concern about the cost of cigarettes, more New York

Exhibit 3-3. Percentage of Adult Smokers in New York Who Are Very or Extremely Concerned about the Cost of Cigarettes, NY-ATS Q2 2007–Q2 2009



Notes: Smokers were first asked about their concern for cigarette prices in Q2 2007. There is a statistically significant upward trend in the proportion of smokers who are concerned about cigarette prices from Q2 2007 to Q2 2009. The difference in the proportion of smokers who are concerned about cigarette prices in the year before the tax increase and the year after the tax increase is statistically significant. The June 2008 New York State tax increase is indicated by a vertical line.

Exhibit 3-4. Percentage of Adult Smokers Who Purchased Cigarettes from Any Low-Tax Location in the Past 12 Months, NY-ATS Q3 2005–Q2 2009

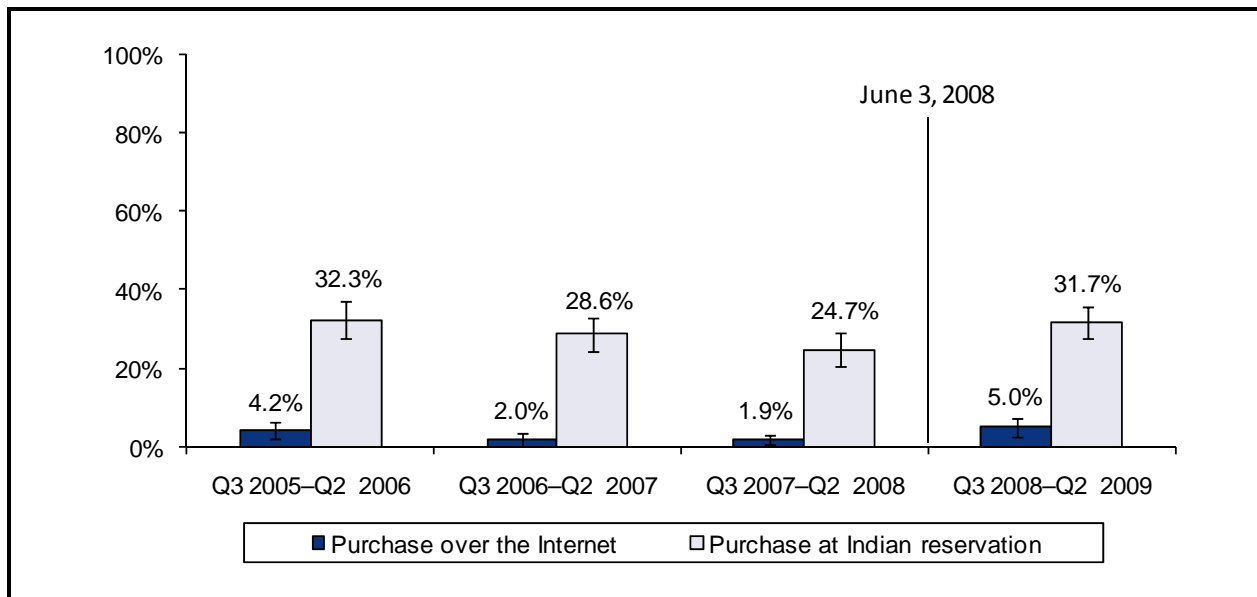


Notes: Low-tax locations include Indian reservations, Internet, toll-free numbers, duty-free shops, and other states and countries. The June 2008 New York State tax increase is indicated by a vertical line.

smokers do not appear to be shopping at low-tax sources, such as Indian reservations, the Internet, duty-free shops, and neighboring states that may have lower cigarette tax rates.

Although the overall trend in purchases from low-taxed locations has changed little since Q3 2005, we do observe significant increases in the percentage of smokers who report purchasing specifically from Indian reservations and the Internet (Exhibit 3-5). The percentage of smokers who purchased cigarettes from Indian reservations increased significantly from 24.7% in the year before the tax increase to 31.7% in the year after. Similarly, the percentage of smokers who purchased cigarettes from the Internet increased significantly from 1.9% to 5.0%.

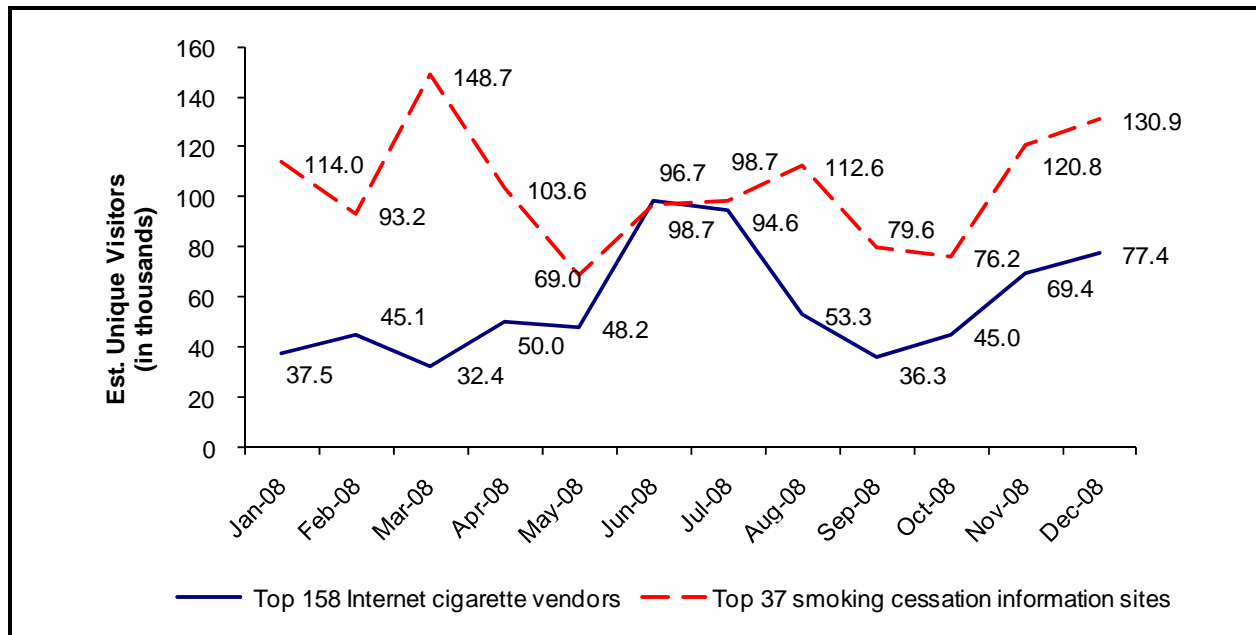
Exhibit 3-5. Percentage of Adult Smokers Who Purchased Cigarettes from an Indian Reservation or on the Internet in the Past 12 Months, NY-ATS Q3 2005–Q2 2009



Notes: There is a statistically significant increase in purchasing cigarettes on the Internet between the year before and the year after the tax increase. There is a statistically significant increase in purchasing cigarettes at an Indian reservation between the year before and the year after the tax increase. The June 2008 New York State tax increase is indicated by a vertical line.

Exhibit 3-5 shows that more New Yorkers are purchasing cigarettes online, and this is supported by Internet traffic data from comScore. Exhibit 3-6 shows an increase in the number of New Yorkers who sought out cheaper prices online when the tax increase went into effect in June 2008. The number of New York residents visiting the top 158 Internet cigarette vendors

Exhibit 3-6. Estimated Number of Unique New York State Visitors (in thousands) to Internet Cigarette Vendors and Cessation Web Sites, comScore Internet Panel, January–December 2008



peaked in June 2008 at 98,700 unique visitors. This number of visitors compares well with results from the NY-ATS. Five percent of the approximately 2.6 million smokers in New York equals about 130,000 smokers who admit purchasing cigarettes over the Internet. Monthly visits to cessation Web sites peaked before the June 2008 cigarette tax increase. However, overall, more New Yorkers visited cessation Web sites than Web sites that sell cigarettes in 2008.

Three Web sites—Smokes-Spirits.com, SmartSmoker.com, and CigarettesExpress.com—captured the majority of online cigarette sales among New York residents (Exhibit 3-7). All three of these Internet cigarette vendors are based on American Indian reservations in western New York. All claimed they would verify age and utilize the United States Postal Service for shipping, and one Web site (SmartSmoker.com) claimed it accepted credit cards, despite the fact that the leading credit card companies voluntarily banned credit card payments for online transactions of tobacco sales under the 2005 agreement with state Attorneys General.

Exhibit 3-7. Characteristics of Major New York–Based Internet Cigarette Vendors, comScore Internet Panel

Web Site	Accept Credit Cards	Age Verification	Shipping	Location
Smokes-Spirits.com	No	Copy of ID	USPS	Salamanca, NY
SmartSmoker.com	Yes	Signature at delivery	USPS	Salamanca, NY
CigarettesExpress.com	No	Copy of ID	USPS	Irving, NY

Note: USPS = United States Postal Service

The top three Internet cigarette vendors also claimed that their sovereign status allowed them to sell cigarette products tax-free and that buyers were responsible to comply with existing tax laws:

“We are a Native American business located on the Seneca Nation (a Sovereign Nation) in Western New York. It is the responsibility of the Buyer to ascertain and comply with any laws in regard to the purchase and use of any cigarette products.”—Smokes-Spirits.com

“As part of the Seneca Nation of Indians and the Iroquois Confederacy, SmartSmoker is currently not required to collect state sales tax for products sold on Native land. Nonetheless, we are required under federal law to report all sales and shipments of cigarettes to the state taxing authority within your home state. You should contact the taxing authority within your state to determine your tax obligation on the use of these products within your state. LINKS TO STATES TAX DEPARTMENTS.”—SmartSmoker.com

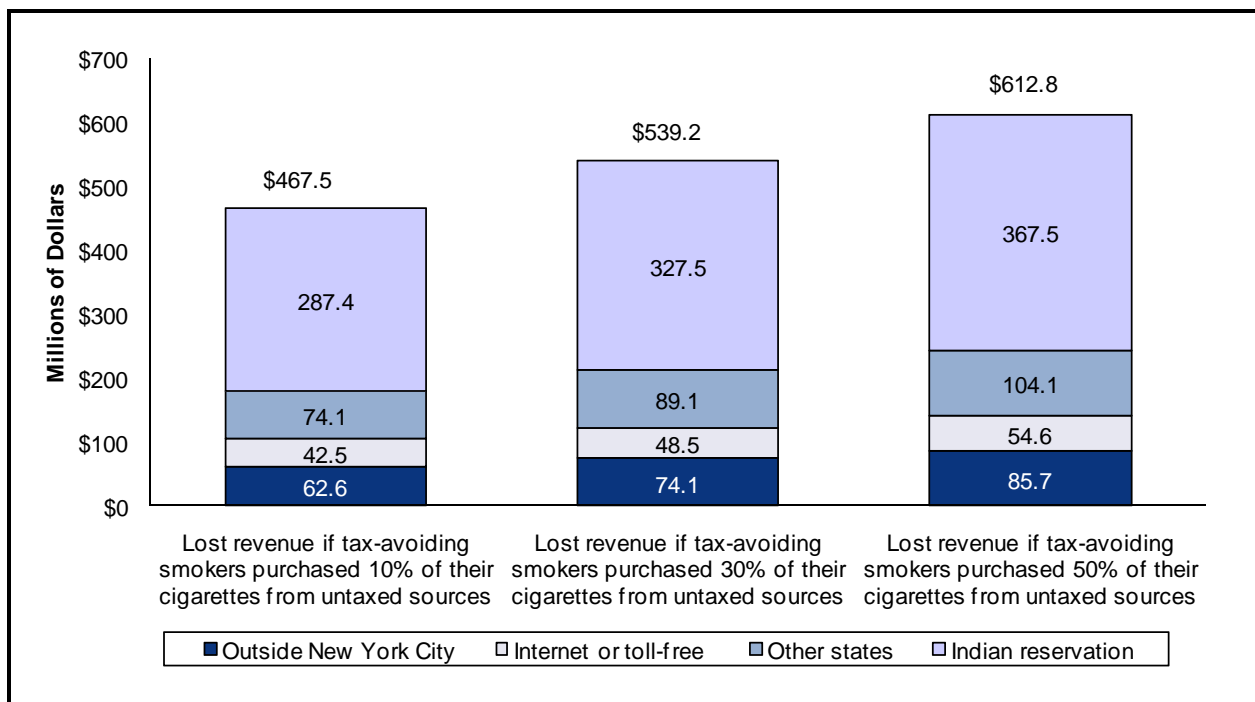
“Federal legislation permits the purchase and interstate shipment of cigarette products for personal consumption in all 50 states. It is the responsibility of the customer to comply with any laws regarding the purchase and use of any cigarettes in their State. In order to determine the applicable limits on purchases or taxing responsibilities, if any, imposed by your particular State, you may want to contact your State tax authorities. We do not collect Sales or Excise taxes on the behalf of any State, nor are we required to do so.”—CigarettesExpress.com

SmartSmoker.com was the only site that stated it would report purchases to state taxing authorities.

With half of all New York smokers reporting some tax avoidance behavior, and significant increases in the percentage of smokers who report purchasing from Indian reservations and

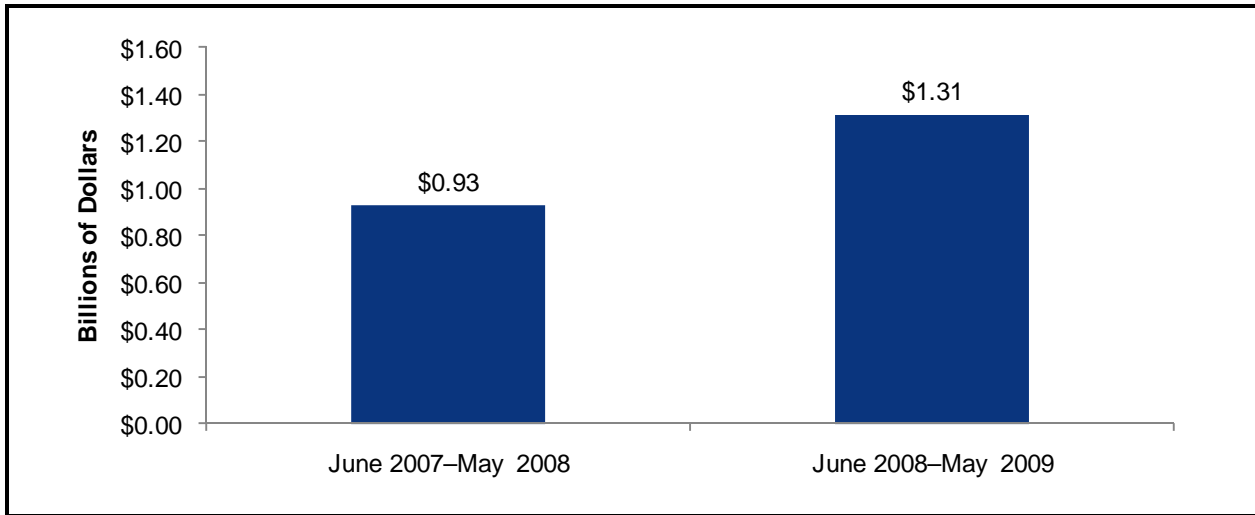
the Internet, cigarette tax evasion remains a serious concern in New York. Exhibit 3-8 shows estimated revenue lost to New York State from tax-avoiding smokers from July 1, 2008, through June 30, 2009. The state could lose \$467.5 million per year if smokers purchased 10% of their cigarettes from untaxed sources, and up to \$612.8 million if 50% of such purchases were from untaxed sources. This is a slight decline from the 2008 estimates of \$489 million and \$669 million, respectively, due to lower overall cigarette sales that resulted from the higher tax and the long-term downward trend in cigarette consumption. These estimates include losses due to uncollected cigarette excise taxes as well as forgone sales taxes and are calculated using the same methods as in previous reports (Davis et al., 2006; RTI International, 2009).

Exhibit 3-8. Estimated Lost Revenue in New York State from Tax Avoidance, in Millions of Dollars, July 1, 2008–June 30, 2009



Despite the extent of tax evasion, cigarette excise tax revenues to the state increased from \$930 million in the year before the tax to \$1.31 billion in the year after the tax, an increase of 41% (Exhibit 3-9). Over that same period, tax-paid cigarette sales decreased 22.8% from 618.3 million packs to 477.6 million packs.

Exhibit 3-9. Cigarette Excise Tax Revenue to New York State, June 2007–May 2009, in Billions of Dollars



3.3 Cigarette Sales and Use

Between 1999 and 2009, tax-paid cigarette sales dropped from 6.8 packs per person per month to 2.5 packs, a 63% decline (Exhibit 3-10). Tax-paid cigarette sales show a marked decrease in the months after a cigarette tax increase, as illustrated by Exhibit 3-11, which shows the year-over-year percentage change in monthly per capita tax-paid sales from January 1999 through June 2009. In the exhibit, the vertical lines note when federal and New York state cigarette excise tax increases occurred. The first state cigarette excise tax increase shown occurred in March 2000 and raised the tax from \$0.56 to \$1.11 per pack, the second in April 2002 raised the tax to \$1.50, and the third in June 2008 increased the tax to \$2.75. The federal cigarette excise tax increases occurred in January 2000 and raised the tax from \$0.24 to \$0.34; in January 2002, the tax went to \$0.39; and in April 2009, the tax went to \$1.00 per pack. Exhibit 3-11 suggests that tax-paid cigarette sales decline steeply after a state tax increase and then rise back to a new, lower equilibrium level over time. For example, in April 2002, 1 month after the March 2002 state cigarette tax increase, cigarette sales were 14% lower than in April 2001. In September 2002, a full 6 months after the March 2002 tax increase, cigarette sales were 40% lower than in the previous September. Per capita sales appeared to finally return to a stable trend pattern around June 2003, 15 months after the March 2002 tax increase.

Exhibit 3-10. Per Capita Monthly Tax-Paid Cigarette Sales, New York State, Orzechowski and Walker, January 1999–June 2009

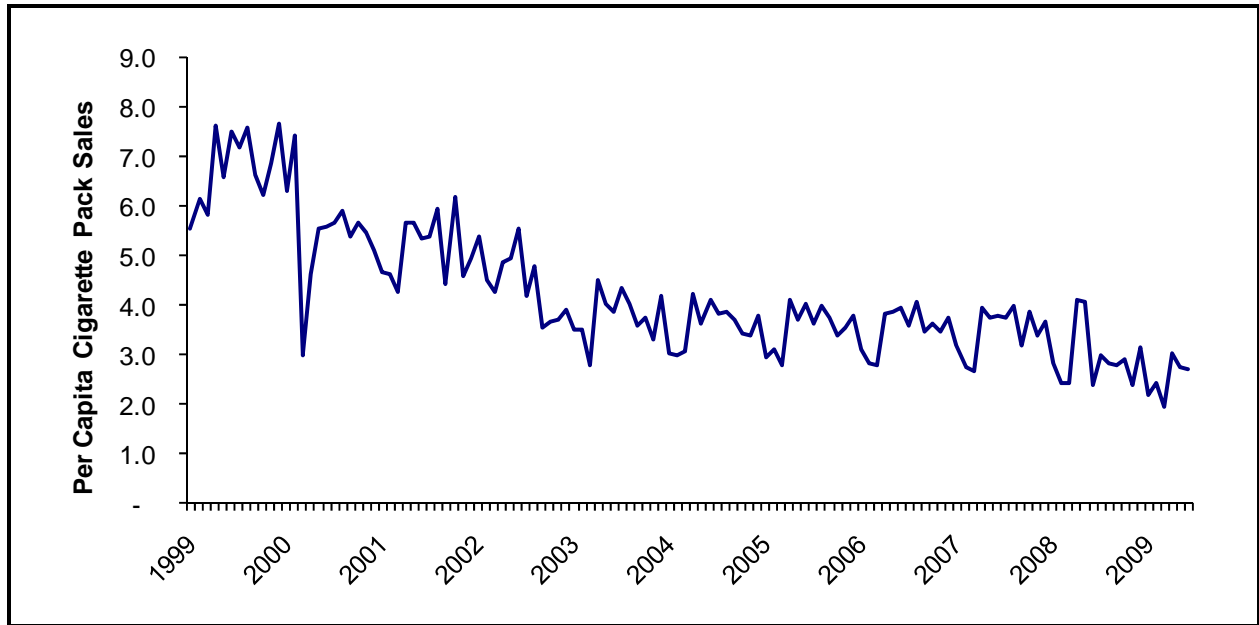
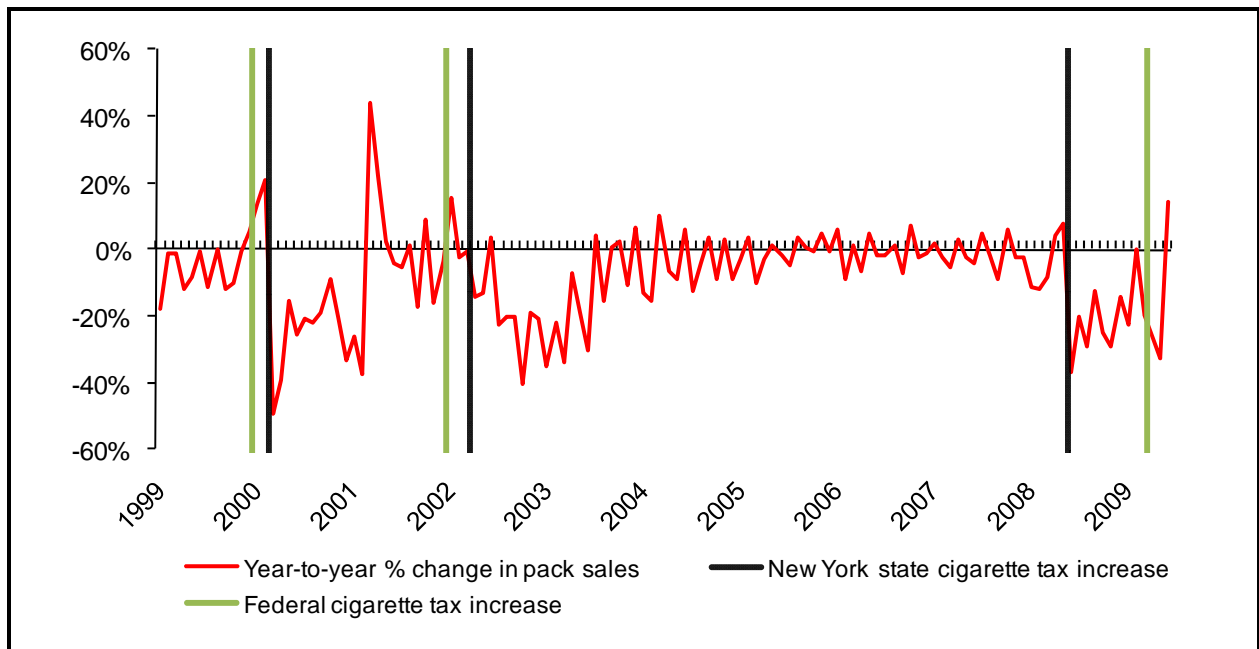


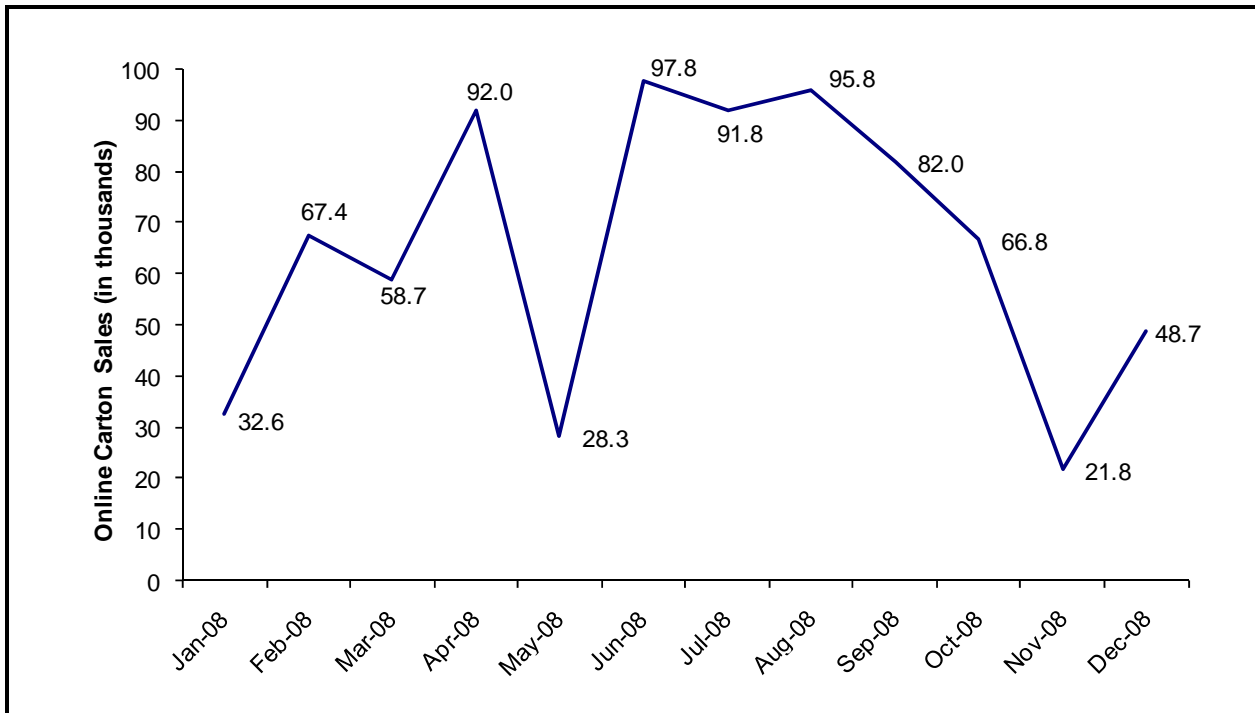
Exhibit 3-11. Year-Over-Year Percentage Change in Monthly Tax-Paid Cigarette Sales in New York State, Orzechowski and Walker, January 1999–June 2009



A similar pattern appears to be emerging following the June 2008 tax increase. In the 12 months following this latest increase, monthly cigarette sales were an average of 18% lower compared with the same period 1 year earlier. The relatively large federal tax increase of \$0.61 per pack that occurred in April 2009 will eventually also serve to drive sales downward.

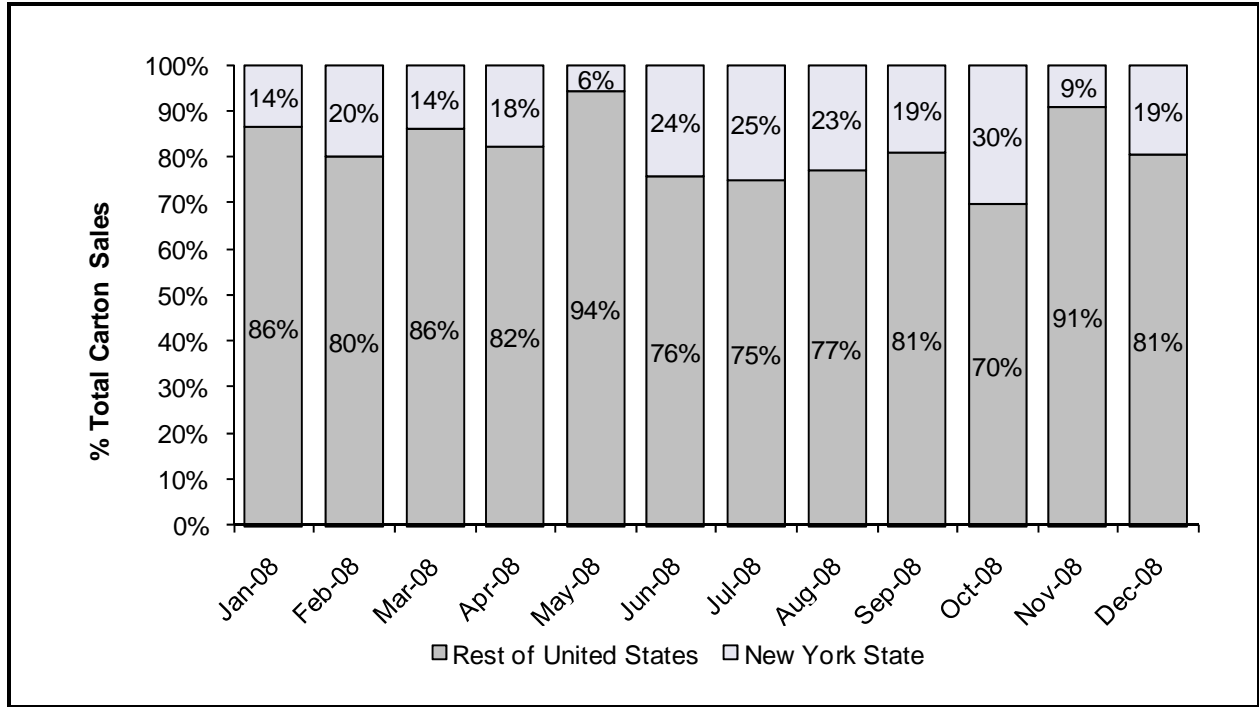
According to comScore e-commerce data, New York State residents purchased approximately 783,000 cigarette cartons online in 2008, with the highest volume of sales reported in June 2008 (Exhibit 3-12). This equates to more than 7.8 million packs of cigarettes sold online in 2008, for a total excise tax revenue loss to the state of approximately \$21.45 million.

Exhibit 3-12. Estimated Number of Cigarette Cartons (in thousands) Purchased Online by New Yorkers, comScore Internet Panel, January–December 2008



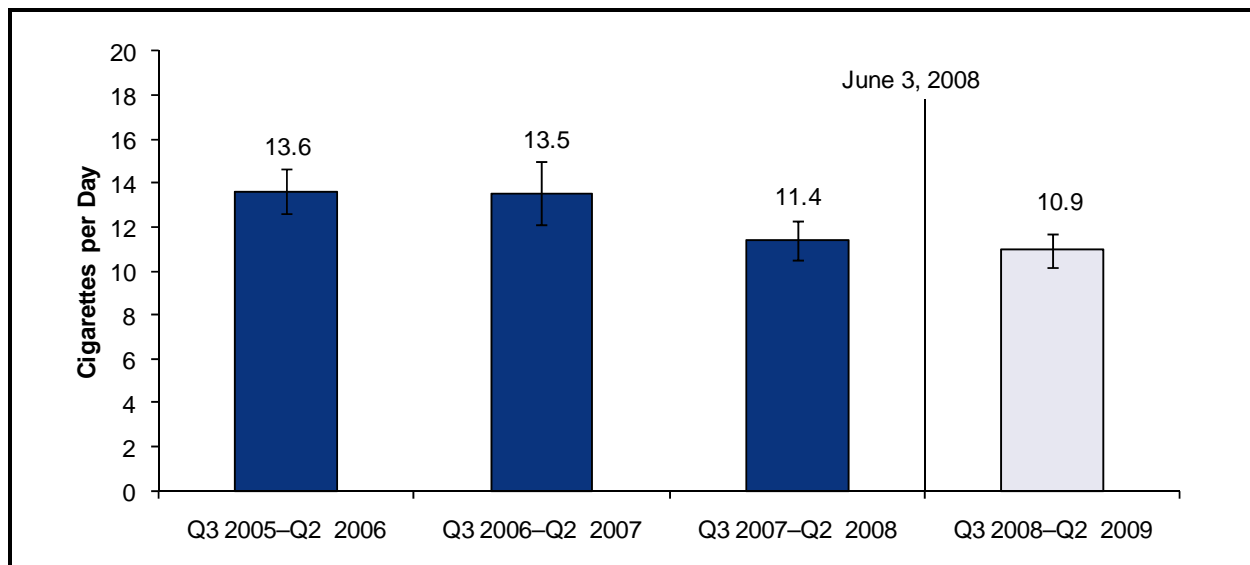
New Yorkers purchased approximately 18% of all cartons sold online in 2008, according to comScore (Exhibit 3-13). The percentage of cartons purchased by New Yorkers increased after the June 2008 tax increase, from 14% in January through May to 21% in June through December.

Exhibit 3-13. Percentage of Estimated Online Cigarette Carton Sales in New York State and the Rest of the United States, comScore Internet Panel, January–December 2008



Daily cigarette consumption by New York smokers was virtually unchanged after the tax increase, falling to 10.9 cigarettes per day from 11.4 the year after the tax increase (Exhibit 3-14).

Exhibit 3-14. Average Number of Cigarettes Smoked Per Day by Current Smokers, NY-ATS Q3 2005–Q2 2009



Notes: There is a statistically significant downward trend in the number of cigarettes smoked per day from Q3 2005 to Q2 2009. The June 2008 New York State tax increase is indicated by a vertical line.

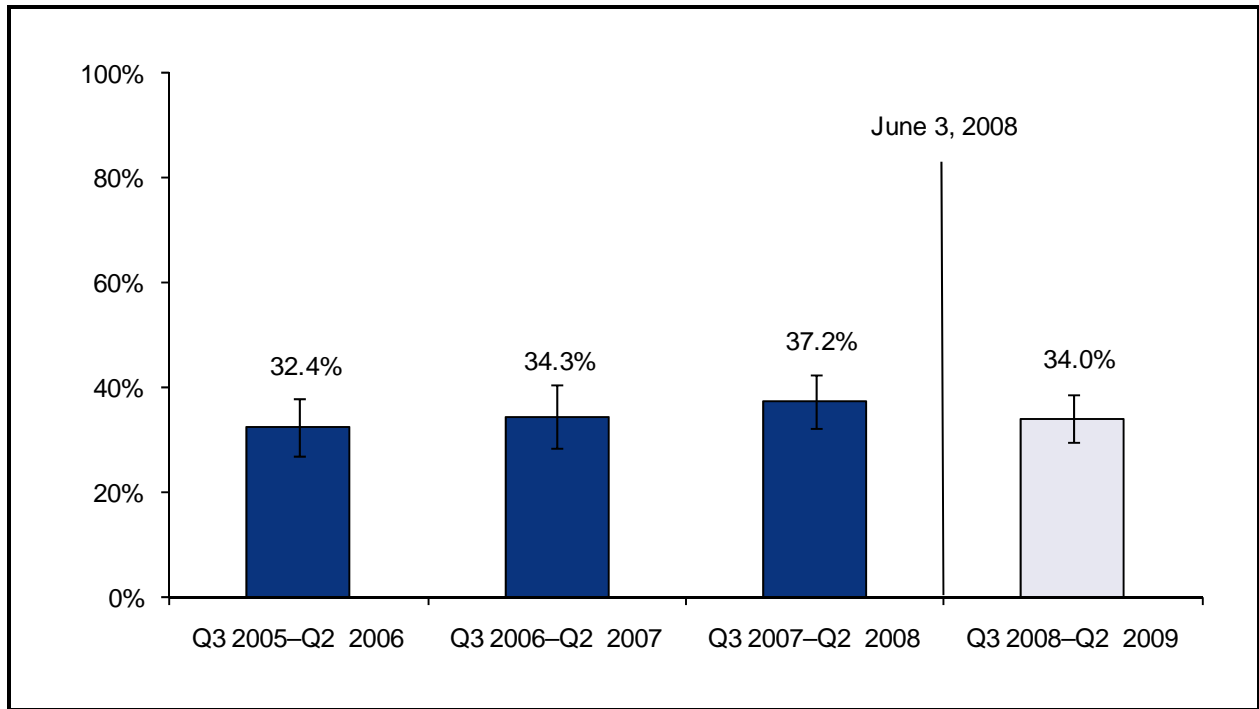
3.4 Cessation

In the year after the tax increase, 34.0% of New York smokers had intentions to quit smoking, down from 37.2% of smokers in the year before the tax increase (Exhibit 3-15). The proportion of smokers who made a quit attempt in the past 12 months decreased to 56.5% from 58.4% over the same time period (Exhibit 3-16).

Exhibit 3-17 shows the monthly call volume to the New York State Smokers' Quitline. As a visual aid, dashed vertical lines mark the month of January in each year. The trend in call volume is slightly upward, with an average volume of just over 19,000 calls per month between January 2006 and June 2009. The heaviest call volumes occur in January and February which typically see twice as many calls as the average month, as smokers attempt to keep New Year's resolutions to quit smoking.

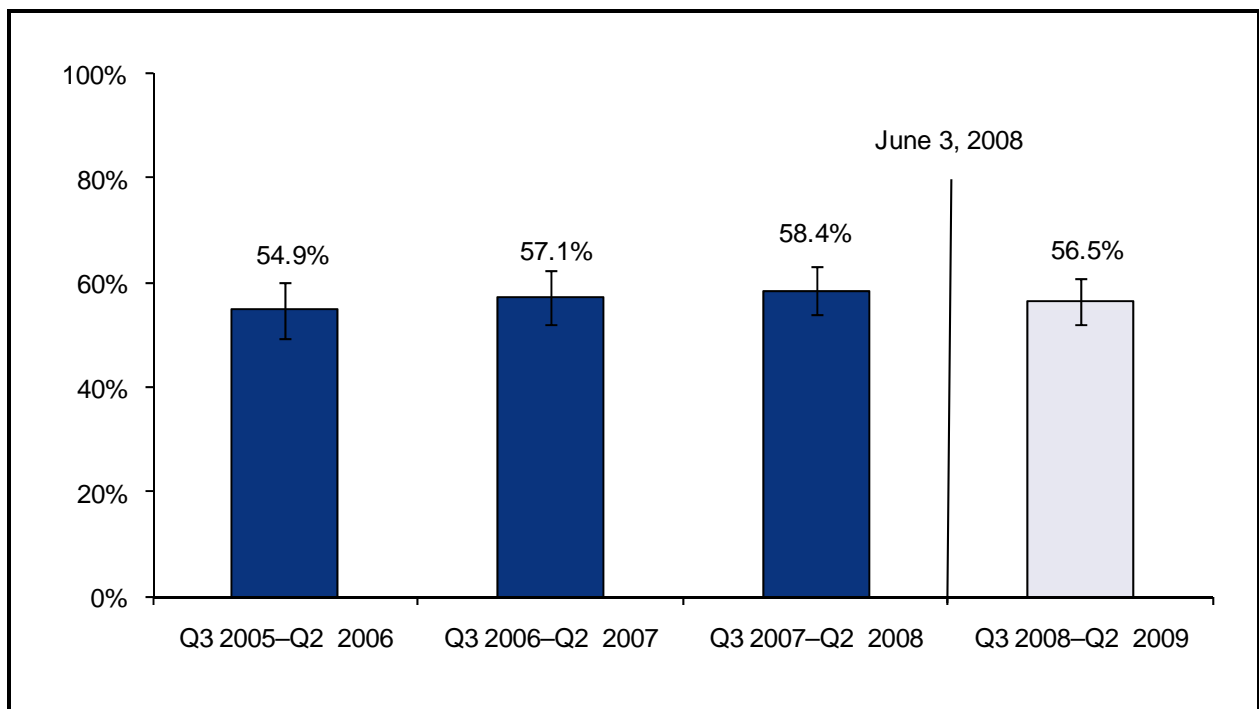
Exhibit 3-18 shows the year-over-year percentage change in monthly Quitline call volume from January 2007 through June 2009. The June 2008 and April 2009 tax increases are denoted by vertical lines along the timeline. Neither tax increase appears to have any notable effect on the number of calls to the Quitline.

Exhibit 3-15. Percentage of Adult Smokers Who Intend to Make a Quit Attempt in the Next 30 Days, NY-ATS Q3 2005–Q2 2009



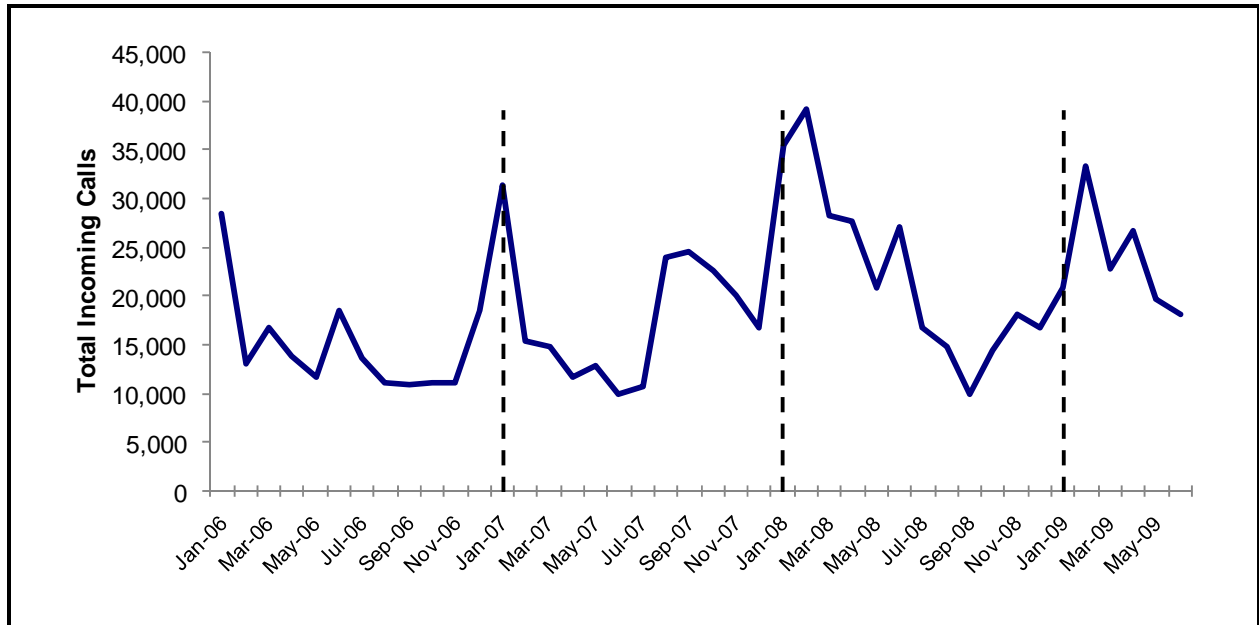
Note: The June 2008 New York State tax increase is indicated by a vertical line.

Exhibit 3-16. Percentage of Adult Smokers Who Made a Quit Attempt in the Past 12 Months, NY-ATS Q3 2005–Q2 2009



Note: The June 2008 New York State tax increase is indicated by a vertical line.

Exhibit 3-17. Number of Calls Per Month to the New York State Smokers' Quitline, January 2006–June 2009



Note: Vertical lines indicate the month of January.

Exhibit 3-18. Year-Over-Year Percentage Change in Monthly Calls to the New York State Smokers' Quitline, January 2007–June 2009

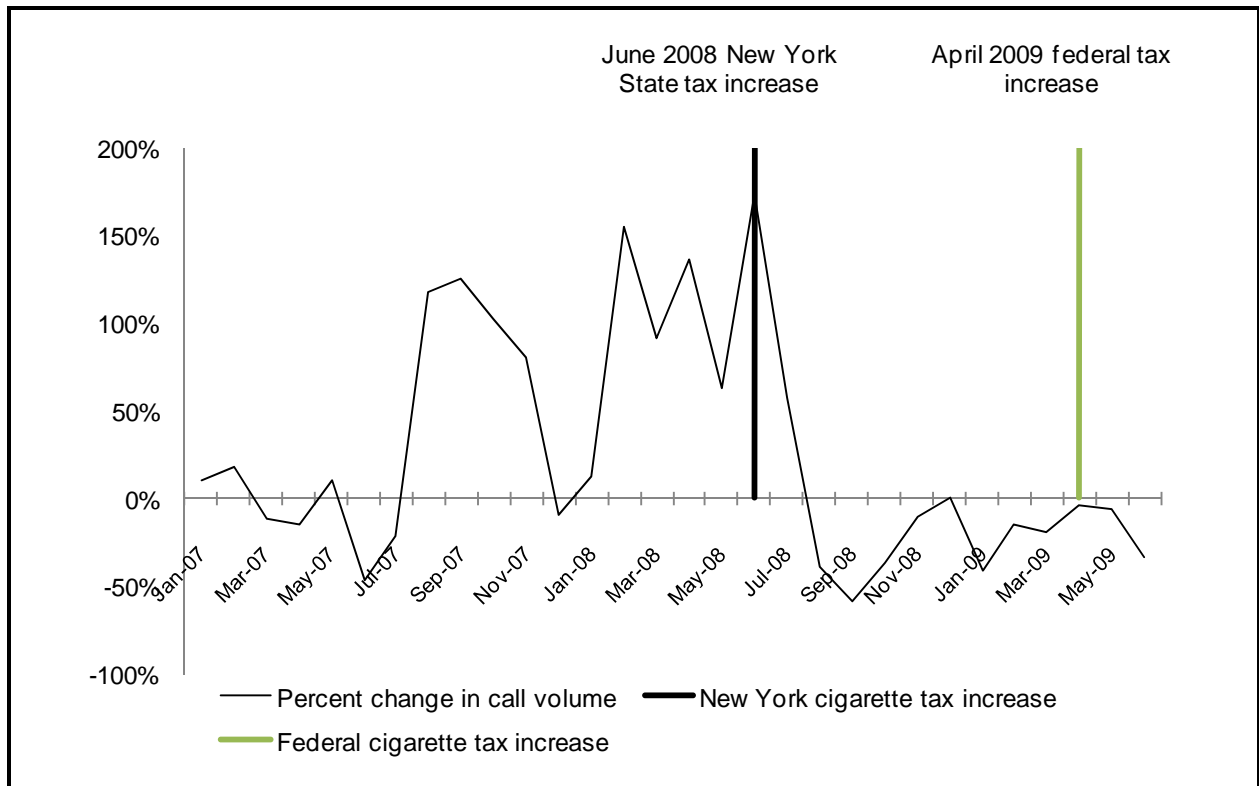
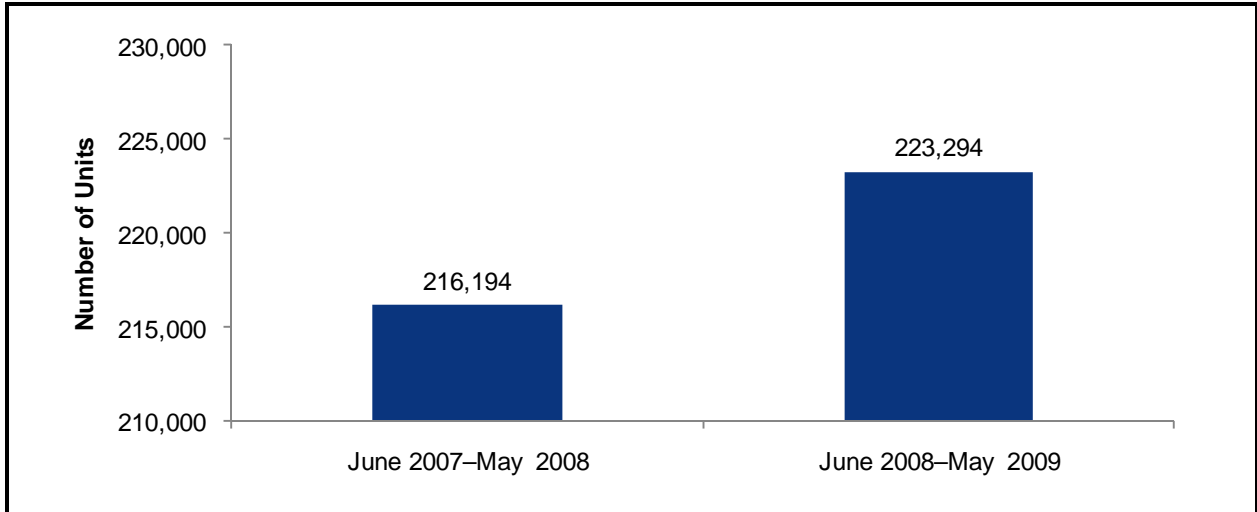


Exhibit 3-19 shows that 216,194 units of nicotine replacement therapy were shipped by the Quitline in the year before the tax increase. In the year after the tax increase, that number rose by 3.3% to 223,294 units.

Exhibit 3-19. Number of Units of Nicotine Replacement Therapy Shipped by the New York State Smokers' Quitline, June 2007–May 2009



4. Summary and Conclusions

The June 2008 \$1.25 tax increase made New York the state with the highest cigarette tax in the nation at the time. This report examines the impact of the tax increase on cigarette prices; purchasing behaviors, including Internet shopping; cigarette sales; and cessation.

In general, since the June 2008 tax increase, cigarette prices have increased significantly, even for smokers who report purchasing from low-taxed sources, and a majority of New York smokers are concerned about the rising cost of cigarettes. A majority of smokers also report purchasing from low-tax sources, with significant increases in the percentage who purchase from Indian reservations and the Internet. Cigarette tax evasion costs the state approximately \$500 million in revenue every year, and the top three Internet cigarette vendors are located on Indian reservations in western New York. Annual tax-paid cigarette sales are approximately 22.8% lower compared with the year before the tax increase, but self-reported cigarette consumption, intentions to quit smoking, and quit attempts have not changed significantly.

These findings indicate that during the 1 year after the June 2008 tax increase, smokers in New York felt the effects of the higher tax. Rather than making more quit attempts or smoking less, however, many found ways to obtain lower cost cigarettes by shopping online or on Indian reservations.

On July 1, 2010, New York's cigarette excise tax was increased by an additional \$1.60 per pack with taxes on other tobacco products increasing in subsequent months. In addition, 2010–2011 New York State budget revenue projections included approximately \$250 million in cigarette taxes collected through the sale of tobacco products on Indian reservations to non-tribal members. Finally, the July 2010 implementation of the federal Prevent All Cigarette Trafficking Act should effectively eliminate the sale of untaxed tobacco products over the Internet. Based on the findings of this report, it is clear that enforcing these new policies to reduce tax evasion is critical for New York to realize the full public health benefits of the 2008 and 2010 tobacco tax increases.

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