

Revenue Analysis of a Cigarette Tax Increase Proposal in New York

Proposals to implement a \$1.60 per pack increase in cigarette taxes in New York would, inclusive of trade mark-up, raise the price of a pack of cigarettes in the state from \$7.61 to at least \$9.50. [1] It is estimated that net state tax revenues from cigarettes would increase by \$45.40 million following the tax hike.

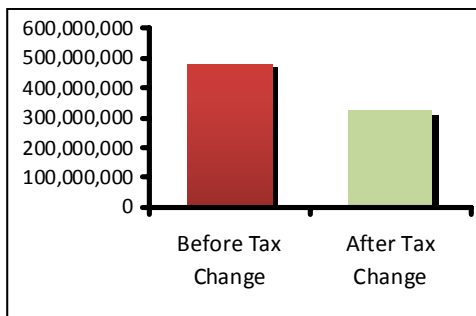
The Number of Tax-paid Cigarette Sales Will Fall as the Tax Increases Prices to Adult Consumers

The table below sets forth the current and proposed cigarette excise tax rate. The legislation would increase the cigarette excise tax by \$1.60 from \$2.75 to \$4.35 per pack.

Change in State Tax Revenue Following the New York Excise Tax Increase

	Price [2]	Packs Sold [3]	Revenue
Before Tax Change	\$7.61	482,700,000	\$ 1,327,425,000
After Tax Change	\$9.50	325,643,001	\$ 1,416,547,056
Change	\$1.89	-157,056,999	\$ 89,122,056
Revenues from NYC Tax Transfer			\$ (20,488,630)
Net Loss in NYS Sales Tax			\$ (23,234,438)
Net Total Change	\$1.89	-157,056,999	\$ 45,398,987

The \$1.60 tax hike will reduce the number of packs sold in New York



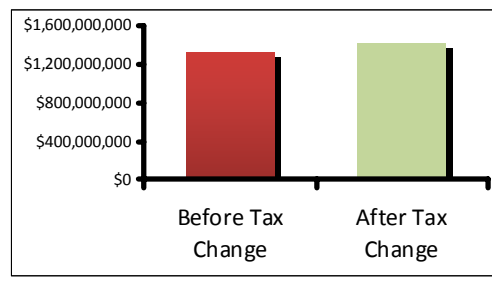
Any estimates of the revenue generated by higher tobacco taxes are highly dependent on two factors. First, the estimates depend on the trend in overall tax-paid sales volumes. Second, they are dependent on the understanding that higher taxes will reduce tax-paid sales of cigarettes and other tobacco products.

Economists call the relationship between price changes and sales volumes the elasticity. The proposed \$1.60 excise tax increase would raise the price by 24.8%. Based on case studies of previous tax increases, every 1% change in the price of cigarettes due to a change in taxes will reduce taxable sales by about 1.31%. [4]

Tax Revenues From Cigarettes Sold Will Rise Despite A Decline in The Number of Packs Sold

The proposed change in the cigarette tax could lead to a 33% drop in taxable packs sold. Despite this, it is estimated that state tax revenues will rise by 7%, in response to the tax change. [5]

Revenue generated from the tax increase in New York



It is likely that the state government will predict a much larger increase in revenue. This is because states generally underestimate the elasticity response.

New York, like other states, must contend with cross-border sales (adults going to other states to buy their products) and sales from certain sources like Native American reservations, duty-free stores, and even sales from over the internet. As such, tax-paid sales are generally much more reactive to state tax increases than to Federal tax hikes.

New York City also stands to lose \$47.05 million, due to reduced taxable cigarette sales as a consequence of the state excise tax increase. [6] Of this, about \$20.49 million is currently transferred to the State to pay for tobacco control programs. [7] This revenue will be lost if the excise tax is raised. In addition, the State will lose about \$23.23 million in sales tax revenues due to the lost volume of cigarette sales so the net revenue increase will be just \$45.40 million.



Notes

[1] Initial price from Orzechowski, Bill and Rob Walker, *The Tax Burden on Tobacco*, Volume 44, (March 2010); funded in part by Altria Client Services Inc. New price is equal to the initial price plus the proposed excise tax increase multiplied by 1.18. This reflects an additional trade markup of 18 percent applied at the retail level. (*State of the Industry: Convenience Store Totals, Trends & Averages*, National Association of Convenience Stores, 2007). Actual retail prices will vary.

[2] Initial price taken from Orzechowski, Bill and Rob Walker, *The Tax Burden on Tobacco*, Volume 44, (March 2010), Table 13-B: "Cigarette Taxes as a Percentage of Retail Price Generic Brands Included In Average Calculation," funded in part by Altria Client Services Inc. New price is equal to the initial price plus the proposed excise tax increase multiplied by 1.18. This reflects an additional trade markup of 18 percent applied at the retail level. (*State of the Industry: Convenience Store Totals, Trends & Averages*, National Association of Convenience Stores, 2007). Actual retail prices will vary.

[3] Initial volume based on Orzechowski, Bill and Rob Walker, *The Tax Burden on Tobacco*, Volume 44, (March 2010); funded in part by Altria Client Services Inc. New York State's 2009 volume number is used as the base for these calculations.

[4] Prices taken from Orzechowski, Bill and Rob Walker, *The Tax Burden on Tobacco*, Volume 44, (March 2010), Table 13-B, "Cigarette Taxes as a Percentage of Retail Price Generic Brands Included In Average Calculation," funded in part by Altria Client Services Inc. Elasticity following the last tax increase based on year over year changes in taxable sales of cigarettes in New York (12 months prior to the increase compared with 12 months following the increase). In the prior 12 months, a total of 629.865 million packs were sold in New York State. In the 12 months following the increase, about 477.617 million packs were sold, representing a decline of 24.17%. Taxable cigarette sales numbers from Orzechowski and Walker, an Arlington Virginia based consulting firm that collects this data directly from the state of New York. The price of cigarettes prior to the increase was \$5.47 per pack in New York state, and following the increase the average price was \$6.73 reflecting a 22.95% increase. The price elasticity of demand is calculated by taking the quotient of the percent change in sales and the percent change in price. In this case that would be -24.17 divided by 22.95 and the elasticity would be about -1.05. The measure of tax elasticities will increase as prices rise, therefore, it can be expected that New York State will experience a higher elasticity (in absolute terms) following the proposed \$1.60 tax increase. According to Orzechowski and Walker, there have been a total of 36 cigarette tax increases since 2000 where the tax went into effect on the first day of the fiscal year. Of these 34 took place prior to FY 2008, so pre- and post-tax data are available from *The Tax Burden on Tobacco*. In all cases except for one (North Carolina following its tax increase of July 1, 2006, the data show that cigarettes are a normal good – in that sales fall as prices increase. Removing this outlier from the analysis, there are a total of 33 tax increases where pre-tax and post-tax price and taxable sales volume are available. The resulting elasticities from these tax increases range from a high of -15.45 to a low of -0.201. The average elasticity was -2.427 and the Median value was -1.312. When the elasticity figures are weighted by the size of the cigarette market in each state the weighted average value was -2.901. This analysis uses the Median (or middle) value of -1.312 as it is the most conservative.

[5] This estimate was calculated by comparing the volume that would have been sold in 2010, as approximated by volume sold in 2009, with the estimated sales that would exist if the tax change was implemented. The estimate of volume with the new tax was calculated using the elasticity of -1.312, as explained in Note 4 above. 2009 volumes are from Orzechowski, Bill and Rob Walker, *The Tax Burden on Tobacco*, Volume 44, (March 2010); funded in part by Altria Client Services Inc.

[6] This estimate was calculated by comparing the volume that would have been sold in New York City as approximated by sales over the past 12 months (monthly cigarette sales volumes from Orzechowski and Walker, March 26, 2010). The estimate of the volume with the new tax was calculated using the elasticity of -1.312 as explained in Note 5 above. New York City price was estimated at \$9.03 which is based on the New York State price from Orzechowski, Bill and Rob Walker, *The Tax Burden on Tobacco*, Volume 44, (March 2010); funded in part by Altria Client Services Inc., for New York State (which includes the New York City excise tax allocated to state sales). This is discounted to reflect the NYS only price (using an estimate of about 23 percent of sales in NYC which is equal to the current percentage. The NYS price outside of NYC is therefore estimated to be about \$7.26 per pack. The current NYC excise tax of \$1.50 per pack is added, with the tax marked up by 1.18. This reflects an additional trade markup of 18 percent applied at the retail level. (*State of the Industry: Convenience Store Totals, Trends & Averages*, National Association of Convenience Stores, 2007). Actual retail prices will vary.

[7] See *New York State Tax Law, Article 10, Section 235, Part 52, Subsection 1, Part 8, Paragraph 2*. Part of the tax collected by New York City is transferred to the state for tobacco control programs. This equals \$0.6532 for each pack sold in the City. Since City sales are expected to decline by 27.4% following this increase, an additional \$20.49 million in State revenues will be lost.