Evalumetrics Research Report

Estimated Effects of Dime-a-Drink Added to New York State's Alcohol Excise Tax
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This report provides the rationale for the statistical approach to calculation of the estimated effects of the proposed $0.10 per drink, or Dime-a-Drink tax increase on alcoholic beverages sold in New York State. This report is an update from the 2016 report and uses the current alcohol excise tax rates and the 2018 sales figures.

Method

This brief describes the steps used to estimate the net revenue of the proposed addition of $0.10 per drink of alcoholic beverage sold in New York State.

Table 1 shows the steps in and results of these calculations. Column 1 shows the current State Excise tax rate for New York. Beer is taxed at $0.14/gallon, wine at $0.30/gallon and distilled spirits at $6.44/gallon. The revenues generated by the excise tax are shown in column two and total over $258 million. These revenues are collected on the volume of beverage sold as shown in column 3. In FY 2018 approximately 325 million gallons of beer, 33 million gallons of wine and 71 million gallons of distilled spirits were sold in New York State.[1]

In order to estimate the impact of adding a $0.10 per drink tax or fee to alcoholic beverages sold in New York State, a formula was developed that included several steps. First, given that the current tax rates are based on gallons of beverage sold, the current gallonage was converted to equivalent number of drinks of typical volume (standard drinks) for each beverage. A standard drink of beer is a 12 ounce serving; for wine it is a five ounce serving; and for distilled spirits it is a drink made with a 1.5 ounce shot of spirits. Table 1 shows the results of conversion from gallonage to standard drinks.

Based on figures from FI 2018, the last year for which complete data were available, over 428 million gallons of alcoholic beverages were sold in New York State. This is the equivalent of over 10.4 billion standard drinks.

To determine the effect on excise tax collection, the $0.10 per drink was applied to the sales figures for FY 2018. Column 5 shows that applying the $0.10 to the approximately 10.4 billion drinks, new tax collections would equal approximately one billion dollars.

Adjustments to the Estimates; Numerous studies have shown that alcohol is price elastic, that is, as the price of alcohol increases demand will decrease. The relationship of price to demand is not one-to-one and differs by beverage. Meta-analysis of numerous studies on alcohol price elasticity (Wagenaar, Salois and Komro, 2009) determined that beer is elastic at -.30, that is, for every one percent increase in price, demand will decrease .3 percent. Wine is elastic at -1.0 and distilled spirits at -1.5.

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[1] Note sales volumes are based on wholesale removals, the point at which the excise tax is levied.

In his monograph on, *Alcohol Price and Public Health in New York State*, Henry Saffer of the National Bureau of Economic Research provides this discussion of markup added to increased taxes on alcoholic beverages.

> The oldest study of the excise tax mark-up (defined as the percentage increase in price divided by the percentage increase in tax) was by Cook (1981), who found that an increase in liquor taxes increased liquor prices by 120 percent of the tax increase. Young and Bielinska-Kwapisz (2002) found that increases in alcohol taxes increased alcohol prices by 160 percent to 210 percent. The most careful study was by Kenkel (2005), who collected data on alcohol prices in on-premise and off-premise locations before and after an increase in excise taxes on alcohol in Alaska. Kenkel found that the mark-up for off-premise sales was about 200 percent, while the mark-up for on-premise sales was higher, at about 300 percent to 400 percent. He also found that the mark-up was the greatest for the cheapest alcohol brands. Taken together, these research studies indicate that a 10-cent increase in the alcohol excise tax will lead to a 20-cent, or greater, increase in alcohol price, with low-priced brands most likely to increase in price by more than 20 cents. This interpretation assumes a conservative value for the mark-up of two times the tax, because large changes in taxes are outside the range of these prior studies. The value of two is consistent with firms maintaining revenue when taxes increase.

Column 7 shows the increase in unit price, that is, price per drink of each type of beverage as a result of the $0.10 tax. The increase is based on average cost per drink for each beverage type as reported in Adams Beverage Handbook in 2008. In addition, the $0.10 was doubled to $0.20 to reflect the expected markup. The $0.10 tax, with markup, would add 7.78% to the cost of a standard drink of beer, 9.48% to wine and 6.37% to a serving of distilled spirits,

Column 8 shows the results of applying the beverage-specific elasticity rate given above to the increase in price in order to estimate an expected decrease in demand. Demand for beer is estimated to decrease by 3.58%; for wine 6.54% and for distilled spirits by 5.10%. Column 9 shows the adjusted estimates for tax collections based on increased tax rates and decreased demand resulting from price elasticity.

Finally, column 9 shows the adjusted estimates of new tax revenues that would result from a $0.10 per drink tax. New tax collections are estimated at $334.4 million for beer and $75.7 million for wine and $580.5 for distilled spirits for a total of $990,606,927.

Table 1.

Table 1

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New York Alcohol Tax - Estimate of Revenues From "Dime a Drink"

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	Current Tax Rate/Gal	Current Rev. (2018)	Gals. Of Bev. (2018)	Number of Drinks (1)	New Revenues From Dime a Drink Tax	Increase Unit Costs After Markup (2)	Percent Increase in Price (3)	Decreased Demand Due to Elasticity (4)	Adjusted New Revenues
Beer	$0.14	$45,515,258	325,094,702	3,467,676,821	$346,767,682	$0.20	7.78%	3.58%	$334,354,209
Wine	$0.30	$192,345,059	31,652,782	810,311,219	$81,031,122	$0.20	9.48%	6.54%	$75,731,456
Dis Sp	$6.44	$20,468,647	71,682,444	6,116,901,888	$611,690,189	$0.20	6.37%	5.10%	$580,521,262
Total		$258,328,964	428,429,928	10,394,889,929	$1,039,488,993				**$990,606,927**

(1) Based on the following:

> **Beer @ 12 ozs./drink**
> **Wine @ 5ozs./drink**
> **Spirits @1.5 ozs./drink**

(2) Markup = 100%

(3) Current Avg. Retail Price per Drink = Beer: $2.57, Wine: $2.11, Liquor: $3.14 (Based on total on- & off-premise sales divided by total consumption per Adams Beverage Handbooks, 2008 then adjusted for CPI).

(4) Elasticity = Beer: -0.46, Wine: -0.69, Liquor: -0.80. Based on Wagenaar (2009).

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