

Revenue Potential of a Tax on E-Cigarettes in Hawaii

E-Cigarette Use in Hawaii

Over the past several years, e-cigarette use has increased rapidly in Hawaii, particularly among young people, offsetting some of the health and economic benefits resulting from declines in traditional tobacco product use.

In 2019, 30.6% of high school students reported currently using e-cigarettes, up from 25.1% in 2015, with about one in three users reporting frequent use. Among middle school students, 17.7% reported current e-cigarette use in 2019, up from 15.7% in 2015. Youth e-cigarette use is of particular concern given the unclear health consequences of vaping and the potential for some young e-cigarette users to transition to combustible tobacco product use.

Similarly, adults in Hawaii are more likely to be e-cigarette users than adults in the rest of the country. In 2019, 6.2% of Hawaii residents ages 18 and older reported current vaping, about one-third higher than the 4.5% of adults reporting current e-cigarette use nationally.

Introduction

The rapid increases in e-cigarette use seen over the past decade have led many state and local governments to adopt policies aimed at reducing vaping, particularly among young people. These policies include bans on the sale of vaping products to minors, limits on the sales of flavored vaping products, expansion of smoke-free air policies to include vaping, and taxation of vaping products. Given the evidence for cigarette and other tobacco

product taxation that shows that taxes that lead to significant price increases are the single most effective way to reduce tobacco use, new taxes on vaping products are likely to be of particular importance in reducing e-cigarette use.

Emerging evidence shows that the sales and use of e-cigarettes are highly responsive to changes in e-cigarette prices. Studies based on sales data, for example, find that a 10% increase in e-cigarette prices reduces e-cigarette sales by around 12%, about three times the estimated impact of a cigarette price increase on cigarette smoking. As with cigarette smoking, e-cigarette use among young people appears to be highly responsive to increases in e-cigarette prices.

Given the epidemic rates of vaping among young people, the well-established evidence that youth smoking is highly responsive to increases in cigarette taxes, and the emerging evidence on the

Key Revenue Projections:

- E-cigarette tax of 15% of wholesale price: \$8.1 million
- E-cigarette tax of 40% of wholesale price: \$13.6 million
- E-cigarette tax of 70% of wholesale price: \$7.3 million

impact of prices on e-cigarette use, many state and local governments have adopted new taxes on vaping products, with most of these new taxes implemented in the last few years. Currently, 29 states and the District of Columbia, along with

several local governments, levy taxes on e-cigarettes.

These taxes vary considerably, in terms of both the level of the tax and how the tax is implemented. Some states tax e-cigarettes at rates equivalent to their taxes on cigarettes and other tobacco products (e.g. California and Minnesota), while others impose relatively low taxes. Some follow an approach similar to that used in taxing other tobacco products, levying taxes based on wholesale or distributor prices, while others tax based on retail price, and still others implement taxes based on the volume of the vaping solution. Others impose taxes that differ based on the type of vaping product, taxing solutions used in closed systems at one rate and taxing liquids used in open systems at a different rate. The diversity of vaping products on the market, the lack of product standards, and the non-traditional distribution chains many products go through creates numerous challenges for the implementation of these taxes.

Modeling the Revenue Impact of an E-Cigarette Tax

Estimating the revenue potential of an e-cigarette tax is challenging given the very limited data available on e-cigarette sales and prices. As a starting point, I use the prevalence of current e-cigarette use among Hawaii youth and adults and age-specific population figures to estimate the total number of vapers in the state. Based on the most recent available survey data, from 2019, an estimated 17.7% of middle school students, 30.6% of high school students, and 6.2% of adults ages 18 and older were current vapers. Applying these prevalence figures to population estimates for 12 through 14 year olds, 15 through 18 year olds, and those older than 18 years, I estimate that there are approximately 91,800 vapers in Hawaii.

According to Euromonitor International, the average vaper in the United States spent almost \$860 on e-cigarettes in 2020. Assuming that the typical vaper in Hawaii spends the same, total retail sales for e-cigarette are just under \$80 million

annually. Assuming a retail markup of 20%, wholesale sales are just over \$65 million annually.

Hawaii taxes other tobacco products by levying a tax based on the wholesale price of these products. To estimate potential tax revenues, I assume that the same approach would be applied to e-cigarettes. Given limited evidence on the pass through of e-cigarette taxes to retail prices, I also assume that an e-cigarette tax is fully passed on to consumers, so that the retail price rises by the same percentage as the tax. Finally, based on the limited evidence on the effects of e-cigarette prices on e-cigarette sales, I assume that the sales of e-cigarettes fall by 12% for every 10% increase in e-cigarette price.

Given these assumptions, I estimate the potential revenues from alternative e-cigarette tax rates. Specifically, I estimate that revenues from an e-cigarette tax levied as 15%, 40%, and 70% of wholesale e-cigarette prices would be \$8.1 million, \$13.6 million, and \$7.3 million. By comparison, in fiscal year 2020, Hawaii generated \$102.5 million in cigarette excise tax revenues, and an additional \$10.7 million from excise taxes on other tobacco products.

Discussion

These estimates of potential revenues from an e-cigarette tax in Hawaii are highly speculative, based on limited data and several assumptions. Changes in data and/or key assumptions would lead to different estimates for revenues.

For example, if the prevalence of vaping in Hawaii has fallen since 2019, my estimates will overstate the potential revenues from an e-cigarette tax. This appears likely given national data that show significant declines in vaping prevalence. Alternatively, if vaping increased in Hawaii, revenues from an e-cigarette tax would be greater than my estimates.

The price responsiveness of e-cigarette demand is another key determinant of my revenue estimates. As noted above, recent studies find that e-cigarette use is highly sensitive to price. To the extent that

demand is less responsive to price than suggested by these studies, the revenues from an e-cigarette tax will be higher than estimated, and vice-versa. In addition, there is no evidence to date on whether or not the price sensitivity of e-cigarette demand changes as prices increase. Limited evidence for cigarettes finds that smoking becomes more responsive to price increases as prices increase. To the extent that this is true for vaping, larger tax and price increases would result in greater declines in vaping, and my estimates of the potential revenues from higher e-cigarette taxes would be overstated.

Other key assumptions relate to the pass through of e-cigarette taxes to prices and on the retail markup for e-cigarettes. Limited evidence indicates that e-cigarette taxes are fully passed on to consumers, with the retail price rising by the amount of the tax. If e-cigarette taxes are not fully passed on to consumers, then the increase in retail prices and resulting reduction in e-cigarette sales will be smaller than assumed, resulting in greater e-cigarette tax revenues. On the other hand, if prices rise by more than taxes, then sales would fall by more than assumed and tax revenues would be

lower than estimated. Similarly, if retailers mark-up e-cigarettes by more than the 20% above wholesale price assumed in my modeling, wholesale revenues from e-cigarettes would be smaller than I estimate, resulting in lower e-cigarette tax revenues, and vice-versa.

Finally, in addition to the revenues generated directly by an e-cigarette tax, other tobacco tax revenues are likely to increase following the imposition of an e-cigarette tax. Recent studies find that increases in e-cigarette prices that are not accompanied by comparable increases in cigarette prices lead some e-cigarette users to switch to conventional cigarettes. To the extent that this type of substitution occurs, Hawaii's cigarette tax revenues would increase, as would the health and economic consequences of smoking. An increase in the state's taxes on cigarettes and other tobacco products would prevent this type of substitution from occurring, increasing the public health impact of the taxes while raising additional tax revenue.

Suggested Citation

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