

Prohibiting Flavored Tobacco Products Would Bring Substantial Public Health Benefits and Is Consistent with a strong economy and fiscal responsibility

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Executive Summary

Tobacco consumption and its associated health problems create billions in added health care costs in Maryland and contribute to health disparities facing Black Marylanders. Policies to reduce tobacco consumption, such as a prohibition on the sale of flavored tobacco products, can bring significant economic benefits and promote racial equity.

Research shows that this policy would be effective in reducing tobacco consumption and mitigating the racialized harms associated with it. The policy is also fiscally responsible and consistent with a strong economy.

Effective Tobacco Policy Is Fiscally Responsible

Tobacco policy choices such as tobacco taxes and a flavored tobacco products prohibition directly affect state revenues by influencing the quantity of tobacco products sold and the amount of revenue generated by each sale. Tobacco policy also has significant impacts on long-term health costs, a large portion of

which show up in the state budget, most notably through the state's share of Medicaid funding.

Considering both the direct revenue impacts and the long-term health impacts, effective tobacco policy is a fiscally responsible choice.

- Tobacco tax legislation passed in 2020 is expected to raise \$100 million of ongoing revenue in fiscal year 2021 if the General Assembly overrides Gov. Hogan's veto.^{vii}
- Additional investments in tobacco cessation services funded under the 2020 bill will likely reduce long-term health care costs. Based on estimates from the CDC, these savings could add up to hundreds of millions of dollars.
- If a prohibition on flavored tobacco products were fully implemented in FY 2021, the combined impact of this policy and 2020 tobacco tax legislation would be an additional \$41 million in ongoing state revenue in that fiscal year, plus significant health care savings.

Flavored Tobacco Products Do Not Contribute Significantly to Maryland Jobs

The impact of a flavored tobacco products prohibition on employment directly linked to these products would be minimal. Data show that e-cigarette retailers or "vape shops"—the retail category most heavily invested in flavored tobacco products—do not employ significant numbers of workers and generally create low-wage jobs.

- Researchers at Johns Hopkins University estimate that there are between 124 and 408 e-cigarette retailers in Maryland, which employ between 378 and 1,093 workers.^v This means that even if the entire e-cigarette retail sector closed, the impact would be at most 0.4 percent of retail jobs.

- In comparison, seasonal variation alone generates month-to-month employment swings of up to $\pm 26,000$ jobs.^{vi}
- Average annual wages at tobacco stores in Maryland were slightly less than \$22,000 in 2019, less than double the federal poverty line for a single adult. Average earnings at tobacco stores in Maryland were *lower* between 2015 and 2019 than they were between 2005 and 2009, even before adjusting for inflation.

Rigorous research finds no connection between tobacco consumption and convenience store employment:

- [A 50-state analysis of tobacco tax increases over 13 years found a slight *increase* in the number of convenience stores following tobacco tax increases.](#)
- [A 2011 study found no impact of long-term declines in cigarette consumption on convenience store jobs.](#)

A Flavored Tobacco Products Prohibition Would Likely Increase Non-Tobacco Spending

It is an expected and desirable outcome that a prohibition on flavored tobacco products will result in a decline in total household expenditures on tobacco products. However, the economic impact of this reduction would be partially offset by families shifting a portion of the savings from reduced tobacco consumption into spending on other products. This offset would likely be significant for several reasons:

- During economic downturns like the one Maryland faces today, households have little financial cushion and therefore are more likely to spend any extra money than save it.
- On average, tobacco constitutes a larger share of low-income families' total spending than for higher-income families. Because low-income families often live paycheck to paycheck, they will primarily spend rather than save any savings from reduced tobacco consumption.
- Data collected by the U.S. Census Bureau in summer 2020 confirm that families are more likely to spend than save any extra money during the current recession, with low-income families spending the largest portion.ⁱⁱⁱ

MDCEP analysis finds in the current economic environment, about 25 percent of an across-the-board reduction in tobacco consumption could translate into non-tobacco spending.^{iv}

Evidence from Menthol Cigarette Prohibition

States such as Massachusetts and California have enacted bans on menthol cigarettes, but these bans are too recent to provide an appreciable body of evidence. ([Citation here](#)). The best available evidence on likely impacts of a flavored tobacco products prohibition comes from Canada, where a number of provinces enacted menthol cigarette prohibitions beginning in 2015, culminating in a nationwide prohibition that took effect in October 2017:ⁱⁱ

Rigorous studies of provincial and nationwide prohibitions found increases in the number of menthol smokers who tried to quit and in the number who successfully quit. Research also found a reduction in total cigarette sales, indicating that smokers did not simply shift to non-menthol cigarettes after the prohibition.

Flavored Tobacco Products Contribute to Racial Health Disparities

Historically, menthol cigarettes have been among the most widespread flavored tobacco products. The public health harms caused by menthol cigarettes have disproportionately fallen on Black Americans.

- Tobacco industry documents show a decades-long strategy of targeting predominantly Black communities and media for menthol cigarette advertising.ⁱ
- A 2012 study found that stores in predominantly Black communities in California dedicated larger shares of cigarette advertising to menthol brands and charged lower prices for menthols.
- Black smokers are nearly three times as likely as white smokers to use menthol cigarettes. Latinx smokers are [1.7 times as likely](#) as white smokers to smoke menthols.
- Black men in Maryland face an above-average risk of death from health conditions related to tobacco. They are more likely than any other group to die of heart disease and are tied with white men for the highest mortality rate from lung cancer.

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1. Introduction

Tobacco consumption and its associated health problems, from lung cancer and heart disease to acute lung injuries associated with vaping, creates significant economic, fiscal, and social costs. The Centers for Disease Control and Prevention estimate that Marylanders spent \$2.7 billion on health care costs associated with smoking, and that each \$1 spent on tobacco cessation can reduce tobacco-related health care expenditures by up to \$55.^{ix} Tobacco also contributes to many of the health disparities facing Black Marylanders, with Black men facing among the highest mortality rates from tobacco-linked conditions such as lung cancer and heart disease. In light of these harms, policies to reduce tobacco consumption can bring significant benefits to Maryland's economy and promote racial equity.

Prohibiting the sale of flavored tobacco products in Maryland is one such policy. Research supports a flavored tobacco products prohibition as effective in reducing tobacco consumption, effective in mitigating the racialized harms caused by tobacco, consistent with a strong economy, and fiscally responsible.

Key Takeaways

- Tobacco companies have for decades pursued explicitly racialized marketing strategies for menthol cigarettes, the most widespread flavored tobacco product. Research on advertising and pricing confirm that this strategy continues today. Targeted cigarette advertising toward Black Americans has contributed to a range of racialized health disparities.
- Evidence from Canada's menthol cigarette prohibition supports the policy as effective in reducing consumption, with modest likely fiscal impacts.
- Families are likely to recycle a significant share of any savings from reduced tobacco consumption into purchases of other goods and services, reducing the size of the economic and fiscal impact of a prohibition.
- There are currently relatively few jobs in Maryland tightly linked to the tobacco market. For example, "vape shops"—stores that specialize in electronic smoking devices, supplies, and equipment—is estimated to employ several hundreds of Marylanders, with average wages of only about \$22,000.
- Because it reduces tobacco consumption as an expected and desirable goal, a flavored tobacco products prohibition is likely to reduce excise and sales tax revenues generated by reduced consumption. MDCEP estimates that the combined effect of a flavored products prohibition and the tobacco tax provisions of HB 732 of 2020 jointly increase annual revenue by about \$41 million while potentially saving hundreds of millions in health costs.

2. Effective Tobacco Policy Is Fiscally Responsible

Tobacco policy choices such as tobacco taxes and a flavored tobacco products prohibition directly affect state revenues by influencing the quantity of tobacco products sold and the amount of revenue generated by each sale. But these direct affects are not the only or even necessarily the most significant way tobacco policy factors into the state's fiscal health. The Centers for Disease Control and Prevention estimate that Marylanders spent \$2.7 billion on health care costs associated with smoking in 2009, including more

than \$500 million in Medicaid expenditures. and that each \$1 spent on tobacco prevention and cessation can reduce tobacco-related health care expenditures by up to \$55.^{xxvi} A significant portion of the health care costs associated with tobacco show up in the state budget, most notably through the state's share of Medicaid funding. Considering both the direct revenue impacts and the long-term health impacts, effective tobacco policy is a fiscally responsible choice.

This analysis considers the fiscal impacts of two pieces of tobacco-related policy in Maryland:

- HB 732 of 2020, which increased taxes on a number of tobacco products and dedicated additional funding to tobacco cessation programs
- A prohibition on the sale of flavored tobacco products (including menthol) such as that called for under HB 3 of 2020

Both policies primarily aim to achieve the same goal: Improving public health by reducing tobacco consumption. These policies also have four potential fiscal effects:

- Increased revenue from the tobacco-related tax provisions of HB 732
- Decreased revenue from reductions in tobacco consumption and taxable tobacco product sales
- Increased expenditures from new tobacco cessation services
- Decreased expenditures from reduced health care costs

HB 732 of 2020 increased excise taxes on cigarettes and certain other tobacco products and established an additional sales tax on electronic smoking devices.^{xxvii} Together, these revenue measures will raise \$100 million in fiscal year 2021 if the Maryland General Assembly overrides Gov. Hogan's veto of the bill and a cumulative \$445 million during the five-year period ending in FY 2025.^{xxviii}

The bill also calls for \$8.3 million annually in additional tobacco cessation services beginning in FY 2022. Helping smokers quit would secure millions of dollars in future health care cost savings. In Maryland, for each one percentage point decline in adult smoking rates, future health care costs in Maryland would be reduced by over \$500 million. The long term savings also directly reduce state Medicaid program expenditures.¹

The fiscal impact of a prohibition on flavored tobacco products depends on a number of assumptions necessitated by gaps in data and uncertainty about potential behavioral impacts. Under the most plausible assumptions, MDCEP believes that a fully implemented prohibition on flavored tobacco products in FY 2021 would result in a net revenue decline of about \$59 million in that fiscal year due to reduced taxable sales of tobacco products—an expected and desirable outcome of the policy.^{xxx} Annual revenue impacts in later years would be of the same order of magnitude. The policy would likely generate additional health care savings as well, especially in the long term as today's children and adolescents take up tobacco use at lower rates in the future.

¹ Estimates based on T.A. Hodgson, "Cigarette Smoking and Lifetime Medical Expenditures," *Milbank Quarterly* 70(1), 1992.

For more detail, see the TFK factsheet Health Costs of Smokers vs. Former Smokers vs. Non-Smokers And Related Savings From Quitting, <http://tobaccofreekids.org/research/factsheets/pdf/0327.pdf>

If a prohibition on flavored tobacco products were fully implemented in FY 2021, the combined impact of this policy and the tobacco-related tax provisions of HB 732 would be an **additional \$41 million in ongoing state revenue in that fiscal year**, as well as **potentially hundreds of millions in short- and long-term health care savings** for Maryland residents.

Table 1. Fiscal and Economic Impacts of Tobacco Reduction Policy		
	Direct fiscal impacts	Potential health care cost savings including Medicaid expenditures
HB 732 Tobacco-related tax provisions	+\$100 million ongoing revenue in FY 2021	\$970 million in future healthcare costs.
HB 732 Tobacco cessation services	+\$8.3 ongoing expenditures beginning FY 2022	See above, for savings stemming from declines in tobacco use.
Prohibition on sales of flavored tobacco products	-\$59 million ongoing revenue if fully implemented in FY 2021	A \$180 million reduction in lifetime healthcare spending (Chaloupka 2020).

The remainder of this analysis concerns the estimated revenue impact of a prohibition on flavored tobacco products if fully implemented in FY 2021. Unless otherwise specified, all revenue impacts discussed in this section refer to one-year revenue impacts in FY 2021; revenue impacts in later years would be of the same order of magnitude. This analysis projects impacts in fiscal year 2021, although legislation passed during the 2021 legislative session would not take effect until FY 2022. This choice is motivated by the lack of published cigarette and OTP revenue estimates for FY 2022. Because cigarettes remain the dominant component of the tobacco market, if the recent decline in cigarette consumption continues, the future-year impact may be lower. For example, the revenue impact of HB 732 is expected to decline by 7.9 percent from FY 2021 to FY 2022 (although this partially reflects the one-time floor tax assessed in FY 2021). The considerably smaller markets for OTP and ESD have expanded significantly in recent years, however.

Required assumptions:

- Impact of HB 732 of 2020 tax provisions on taxable sales of cigarettes, other tobacco products (hereafter OTP), and electronic smoking devices (hereafter ESD)
- Sales tax revenue generated by cigarettes, OTP, and ESD post-HB 732; in particular, revenue generated by the additional sales tax on ESD
- Adjustment for FY 2020 actual excise tax revenues
- Impact of flavored tobacco products prohibition on taxable sales of cigarettes, OTP, and ESD
- Mitigation of sales tax impact from increased consumption of non-tobacco goods

Impact on Taxable Tobacco Products Sales of HB 732 of 2020

Taxes on tobacco and other products that produce negative health impacts are intended to improve public health by reducing demand for these products. Because of this, an accurate estimate of the revenue impact of a flavored tobacco products prohibition must incorporate the reduction in taxable sales of tobacco products induced by HB 732.

MDCEP estimated an own-price elasticity of tobacco sales based on the HB 732 fiscal and policy note and historical cigarette price data.

HB 732 increases the excise tax on cigarettes by 87.5 percent, from \$2.00 per pack to \$3.75 per pack. However, the fiscal and policy note projects increased cigarette tax revenues of only \$87.3 million in FY 2021 (with comparable increases in later years), 29.2 percent of the December 2019 estimate of status quo cigarette tax revenue.

This revenue estimate implies a substantial decline in taxable cigarette sales as a result of the increased tax rate, an expected and desirable effect.

Table 2. Estimated Impact of HB 732 of 2020 on FY 2021 Taxable Cigarette Sales				
	Cigarette tax revenue	Cigarette tax rate	Implied sales volume	% Change
Dec. 2019 BRE Estimate	\$299.0 million	\$2.00 / pack	149.5 million packs	
HB 732 Fiscal note	\$87.3 million	\$3.75 / pack		
Est. Impact Ex. Floor Tax	\$84.1 million	\$3.75 / pack		
Total	\$383.1 million	\$3.75 / pack	102.2 million packs	-31.7%
Note: HB 732 impact on FY 2021 cigarette tax revenue excluding floor tax estimated based on -5.2% average annual change in revenue impact FY 2022-2025.				

Estimating the own-price elasticity requires an estimate of average cigarette prices in FY 2021. MDCEP estimated the FY 2021 price based on historical cigarette price data published by the CDC.^{xxxi}

Year	MD Avg. Total Cost / Pack	Price Subject to Sales Tax	State and Federal Excise Tax	Pretax Price	% Change
2013	\$6.38	\$6.02	\$3.01	\$3.01	
2014	\$6.47	\$6.10	\$3.01	\$3.09	2.73%
2015	\$6.56	\$6.18	\$3.01	\$3.17	2.62%
2016	\$6.72	\$6.34	\$3.01	\$3.33	4.84%
2017	\$6.87	\$6.48	\$3.01	\$3.47	4.36%
2018	\$6.91	\$6.52	\$3.01	\$3.51	1.06%
				5-Year average annual growth	3.12%
2020	\$7.15	\$6.74	\$3.01	\$3.73	
2021	\$7.27	\$6.86	\$3.01	\$3.85	
FY 2021	\$7.21				

Source: Orzechowski and Walker, "The Tax Burden on Tobacco," data published by CDC, with calculations by MDCEP.

Assuming a total price of \$7.21 under the status quo, HB 732 increases the average price to \$8.96, an increase of 24.3 percent.

This implies an own-price elasticity of -1.23 (a 31.7 percent decline in taxable sales divided by a 24.3 percent price increase).^{xxxiii} MDCEP used this elasticity to estimate the impact of HB 732 on consumption of all tobacco products.

Sales Tax Revenue from Tobacco Products Post-HB 732

To estimate the fiscal impact of a prohibition on flavored tobacco products, it is necessary to estimate the amount of annual sales tax generated by sales of cigarettes, OTP, and ESD. This is especially important because HB 732 taxes ESD through a higher sales tax rate rather than a separate excise tax.

Sales tax revenues for cigarettes and OTP were estimated based on application of the own-price elasticity estimated above to the HB 732 tax increases.

	Est. FY 2021 Sales Tax Revenue
Cigarettes	\$41.7 million
OTP	\$9.8 million

Sales tax revenues for ESD were estimated based on CDC data on the composition of the Maryland ESD market in calendar year 2016,^{xxxiii} adjusted for Euromonitor estimates of ESD market growth.^{xxxiv} Note that these data do not include online sales or sales at vape shops. Additionally, while the best available detailed data on the composition of the ESD market are from 2016, the ESD market has changed in important ways since then. In general, sales tax revenues from HB 732 will be higher if disposable and prefilled ESD products are a greater share of the ESD market and lower if these products account for a smaller share of the market.

Product	Rechargeable	Disposable	Prefilled	E-liquids
2016 MD Sales	\$1.6 million	\$2.0 million	\$8.1 million	\$0.3 million
% Of total	13%	16%	68%	3%
Est. FY 2021 Sales	\$4.1 million	\$5.1 million	\$21.0 million	\$0.8 million
FY 2021 Sales tax Pre- HB 732 (6%)	\$0.2 million	\$0.3 million	\$1.3 million	\$0.1 million
Sales tax rate under HB 732	12%*	60%*	60%*	12%*
HB 732 % Price increase	5.7%	50.9%	50.9%	5.7%
FY 2021 Sales post- HB 732	\$3.8 million	\$1.9 million	\$7.8 million	\$0.8 million
FY 2021 Sales Tax Post- HB 732	\$0.5 million	\$1.1 million	\$4.7 million	\$0.1 million
“Ordinary” 6% Sales Tax	\$0.2 million	\$0.1 million	\$0.5 million	< \$0.1 million
Additional Sales Tax	\$0.2 million	\$1.0 million	\$4.2 million	< \$0.1 million
Note: 2016 sales based on Wang et al. (2018) Maryland sales data. FY 2021 sales estimated based on Euromonitor global ESD market growth projections. * Assumes 12% tax rate is applied to rechargeable ESDs and e-liquids; assumes that disposable ESDs and prefilled cartridges contain 5 ml or less of ESD liquid and therefore are subject to the 60% tax rate.				

Adjustment for FY 2020 Actual Excise Tax Revenues

The HB 732 fiscal note as well as all estimates in preceding sections are based on December 2019 revenue estimates. However, FY 2020 cigarette and OTP tax revenues ultimately came in higher than expected (possibly due to impacts of the COVID-19 pandemic and policy response on tobacco consumption), suggesting that these estimates may understate true FY 2021 revenues.^{xxxv}

	FY 2020 Revenues, Dec. 2019 Estimate	Actual FY 2020 Revenues	% Difference
Cigarette Tax	\$307.2 million	\$319.4 million	4.0%
OTP Tax	\$41.3 million	\$43.4 million	5.0%

Accordingly, estimated cigarette tax revenues for FY 2021 were adjusted upward by 4.0 percent and OTP revenues were adjusted upward by 5.0 percent. To the extent that the cigarette tax revenue collected may be lower than estimated, the revenue declines from the flavor ban would also be lower. Because ESD sales

tax revenues are not published, no adjustment was made for ESD estimates.

This adjustment may introduce upward bias into the estimated revenue impact of a flavored tobacco products prohibition. To the extent that FY 2020 tobacco consumption increased only temporarily rather than shifting the overall trend, this upward adjustment would not be necessary. The adjustment is included here out of an abundance of caution to avoid underestimating the true impact.

	Excise Tax*	Sales Tax*	Total
Cigarettes	\$401.5 million	\$43.3 million	\$444.8 million
OTP	\$51.9 million	\$10.8 million	\$62.7 million
ESD	\$5.5 million	\$0.9 million	\$6.4 million
Total	\$458.9 million	\$55.0 million	\$513.9 million

* For ESD, "Sales tax" includes only the ordinary 6% sales tax. "Excise tax" refers to the additional tax levied under HB 732.

Impact of Flavored Tobacco Products Prohibition

The impact of a flavored tobacco products prohibition on taxable sales depends on two major factors:

- The status quo flavored and menthol share of cigarette, OTP, and ESD sales
- The behavioral responses of flavored tobacco product users to a prohibition:
 - Cessation or reduction in use
 - Shift to non-flavored tobacco products
 - Avoidance or evasion through interstate or underground market purchases

MDCEP did not estimate these factors independently but relied on existing estimates, with adjustments as necessary.

- **Cigarettes:** The fiscal note for HB 3 of 2020 (the House bill to prohibit flavored tobacco products) assumes a 15.0 percent reduction in taxed cigarette sales. Tobacco economics expert Dr. Frank Chaloupka, Director of the Institute for Health Research and Policy at the University of Illinois at Chicago, estimates an 11.3 percent decline based on analysis of consumption data and empirical impacts of Canada’s menthol cigarette prohibition.^{xxxvi} Specifically, Chaloupka estimates that menthols account for 33.2 percent of Maryland cigarette consumption, but because of behavioral responses, a prohibition would result in a 1.8 percent reduction in total cigarette consumption as well as a 9.4 percent reduction in taxable sales due to other behavioral responses. **Because of its recency and rigorous methodology, MDCEP considers the Chaloupka (2020) estimate most plausible.**
- **OTP:** The HB 3 fiscal note assumes a 27.8 percent reduction in taxed OTP sales. Chaloupka estimates a nationwide reduction in taxed OTP sales of 10.5 percent but notes that the impact varies considerably by state.^{xxxvii} Based on state-level data on the flavored and menthol shares of the OTP market, MDCEP adjusted this reduction to 13.2 percent to account for a slightly higher

share of flavored and menthol products in Maryland’s tobacco market.^{xxxviii} **MDCEP considers the 13.2 percent estimate based on the Chaloupka methodology most plausible.**

- **ESD:** MDCEP estimated the reduction in ESD sales by applying assumptions from the Chaloupka methodology to state-level data on the flavored and menthol shares of the ESD market.^{xxxix} During the 2015–2016 period, 19.4 percent of Maryland ESD sales were of flavored products and 39.6 percent were menthol, for a combined share of 50.9 percent. Applying the Chaloupka methodology regarding behavioral responses results in an estimated 20.1 percent reduction in taxed ESD sales.

	HB 3 Fiscal Note	Chaloupka (2020) Methodology
Cigarettes	15.0%	11.3%
OTP	27.8%	13.2%
ESD	NA	20.1%

Note: For OTP and ESD, “Chaloupka (2020) Methodology” refers to estimate produced by MDCEP based on the Chaloupka methodology.

MDCEP estimated the gross reduction in annual tobacco-related tax revenue under four scenarios:

		Cigarettes	OTP	ESD	Total
Scenario 1: Cigarettes: HB 3 OTP: HB 3	Excise Tax*	\$60.2	\$14.4	\$1.1	\$75.7
	Gross Sales Tax**	\$6.5	\$3.0	\$0.2	\$9.7
	Total	\$66.7	\$17.4	\$1.3	\$85.4
Scenario 2 Cigarettes: HB 3 OTP: MDCEP/Chaloupka methodology	Excise Tax*	\$60.2	\$6.9	\$1.1	\$68.2
	Gross Sales Tax**	\$6.5	\$1.4	\$0.2	\$8.1
	Total	\$66.7	\$8.3	\$1.3	\$76.3
Scenario 3 Cigarettes: Chaloupka (MDCEP adj.) OTP: HB 3	Excise Tax*	\$45.4	\$14.4	\$1.1	\$60.9
	Gross Sales Tax**	\$4.9	\$3.0	\$0.2	\$8.1
	Total	\$50.3	\$17.4	\$1.3	\$68.9
Scenario 4 Cigarettes: Chaloupka (MDCEP adj.) OTP: MDCEP/Chaloupka methodology	Excise Tax*	\$45.4	\$6.9	\$1.1	\$53.3
	Gross Sales Tax**	\$4.9	\$1.4	\$0.2	\$6.5
	Total	\$50.3	\$8.3	\$1.3	\$59.8

* For ESD, “Excise tax” includes the additional sales tax levied under HB 732.
 ** “Gross sales tax” refers to the change in sales tax on sales of tobacco-related products. It does not adjust for any potential increase in non-tobacco spending. For ESD, “Gross sales tax” includes only the 6% ordinary sales tax.

As discussed in an earlier section, MDCEP considers the Chaloupka methodology most plausible for estimating the impacts of a flavored tobacco products prohibition. For this reason, **Scenario 4**

is considered the best estimate of the gross impact of a prohibition.

Adjustment for Increased Non-Tobacco Spending

To the extent that a prohibition on flavored tobacco products reduces total tobacco consumption, households will save money that they can then spend on other needs. To the extent that households spend this money on taxable goods, the net impact on sales tax revenues will be smaller than the gross reduction from reduced spending on tobacco products.

The additional sales tax revenue generated by households spending money saved because of reduced tobacco consumption depends on three factors:

- What share of the decline in taxable tobacco sales is attributable to reduced tobacco consumption as opposed to shifts to less-expensive tobacco products or tax avoidance/evasion?
- What share of savings do households spend rather than save?
- What share of new spending goes toward goods subject to the sales tax?

MDCEP considered five scenarios, in which the share of sales tax regained through increased non-tobacco spending ranges from 10 percent to 90 percent.

In all scenarios, it is assumed that increased non-tobacco spending offsets the reduction in “ordinary” sales tax revenue, equal to 6 percent of retail sales. Because most non-tobacco consumer products are taxed at 6 percent, the additional sales tax on ESD levied under HB 732 is assumed to remain constant.

% Of Sales Tax Reduction Offset	Net Fiscal Impact
90%	\$54.0 million
75%	\$55.0 million
67%	\$55.5 million
50%	\$56.6 million
33%	\$57.7 million
25%	\$58.2 million
10%	\$59.2 million

MDCEP did not attempt to precisely estimate the share of sales tax revenue offset by non-tobacco spending. However, three factors are worth considering:

- Both the HB 3 fiscal note and Chaloupka assume the reduction in tobacco-related revenues comes from a mix of reduced tobacco consumption and shifts in tobacco consumption. This suggests it is unlikely that all or nearly all revenue will be offset.
- During an economic downturn, most families have little income cushion. For this reason, they are likely to spend a large portion of any additional money on necessities rather than spend it. This

suggests that to the extent tobacco consumption declines, the resulting savings will largely go toward potentially taxable spending rather than savings.

- The necessities families could spend any savings on include both taxable goods like apparel, personal protective equipment, and takeout or delivery meals and nontaxable goods such as groceries. This suggests that some but not all of the resulting increase in non-tobacco spending will generate additional sales tax revenue.

In light of the significant portion of HB 3 revenue losses expected to result from behavioral responses other than tobacco cessation or reduction, as well as the significant share of household necessities not subject to sales tax, MDCEP believes it is most plausible to assume that increased non-tobacco spending will offset 10 percent of the reduction in sales tax revenue from the flavored tobacco products prohibition. This suggests a **net annual revenue impact of \$59.2 million**.

Combined with the \$100 million annual revenue increase from HB 732 of 2020, **the two policies together increase state revenues by \$41 million**.

3. Flavored Tobacco Products Do Not Contribute Significantly to Maryland Jobs

Likewise, the impact of a flavored tobacco products prohibition on employment directly linked to these products would be minimal. Because a prohibition would apply to sales to consumers, the bulk of any employment impact would be related to retail sales rather than manufacturing or distribution.

Tobacco sales are concentrated in two types of retailers:

- Convenience stores and gas stations, which predominantly sell menthol as well as unflavored cigarettes and a limited selection of electronic smoking products
- E-cigarette retailers or “vape-shops,” which specialize in flavored electronic smoking products

Rigorous research finds no connection between tobacco consumption and convenience store employment:

- A 50-state analysis of tobacco tax increases over 13 years found a slight *increase* in the number of convenience stores following tobacco tax increases.²
- A 2011 study found no impact of long-term declines in cigarette consumption on convenience store jobs.³

Tobacco industry lobbyists have pointed to vape shops as a locus for potential job loss from a prohibition on flavored tobacco products. While flavored tobacco products—including electronic smoking devices, menthol cigarettes, and other tobacco products—are sold at a variety of stores, vape shops are unique in

² Jidong Huang and Frank Chaloupka, “The Economic Impact of State Cigarette Taxes and Smoke-Free Air Policies on Convenience Stores,” *Tobacco Control* 22(2), 2013, <https://pubmed.ncbi.nlm.nih.gov/22045805/>

³ K.M. Ribisl, W.N. Evans, and E.C. Feighery, “Falling cigarette consumption in the U.S. and the impact upon tobacco retailer employment,” in P. Bearman, K. Neckerman, and L. Wright, eds., *Social and Economic Consequences of Tobacco Control Policy*, New York: Columbia University Press, 2011.

that flavored tobacco products are their central business.^{xxii} **However, data show that vape shops do not employ significant numbers of workers and generally do not create high-quality, family-supporting jobs.**

Researchers at Johns Hopkins University estimate that there are between 124 and 408 e-cigarette retailers in Maryland, which employ between 378 and 1,093 workers.^{xxiii} This means that even if the entire e-cigarette retail sector closed, the impact would be at most 0.4 percent of retail jobs and less than 0.1 percent of private-sector jobs statewide.

Data from the Bureau of Labor Statistics suggest the true impact could be smaller.^{xxiv}

There were 152 tobacco stores in Maryland in 2019, according to the Quarterly Census of Employment and wages. This category includes e-cigarette retailers as well as cigar shops and other stores specializing in tobacco sales.

The number of tobacco stores in the state nearly tripled from the 2005–2009 period to the 2015–2019 period, according to QCEW, strongly suggesting that this data source accurately reflects recent growth in e-cigarette retail.

During this period, tobacco shops expanded from 6.6 percent of jobs in the “all other miscellaneous store retailers” industry group to 19.7 percent of this group. If we assume that this growth is entirely attributable to e-cigarette retailers, this implies that there are a total of 385 jobs at e-cigarette retailers in Maryland.

4. A Flavored Tobacco Products Prohibition Would Likely Increase Non-Tobacco Spending

In the long run, a prohibition on flavored tobacco products has potential to significantly strengthen Maryland’s economy by reducing mortality, reducing chronic illness, and thereby improving productivity. In the short term, opponents claim that a prohibition would reduce economy-wide demand because of the policy’s effect on tobacco product sales. In fact, households would likely redirect a significant portion of any savings from reduced tobacco consumption into spending on other products, rendering any net impact on household spending modest.

Because the purpose of a prohibition on flavored tobacco products is to reduce tobacco consumption in the short and long term, it is expected and desirable that this policy would result in a decline in total household expenditures on tobacco products. However, the net near-term impact of this reduction on the economy would be smaller than the gross decline in tobacco expenditures. Families that reduce their tobacco spending or eliminate it altogether will generally shift a portion of the savings into increased non-tobacco spending, while perhaps saving a portion of the money or using it to pay down debt. During an economic downturn like the one Maryland faces today, households are likely to cycle an especially large share of money saved from reduced tobacco spending into other spending categories in order to pay for necessities at a time when finances may be tight.

Nationwide, households spent an average of \$320 per year on tobacco products and smoking supplies in 2019, or 0.5 percent of their total expenditures.^{xviii} Average tobacco expenditures were lower in the

Washington, D.C., metropolitan area (\$134 per year, 0.1 percent of total expenditures) and the Baltimore metropolitan area (\$261 per year, 0.2 percent of total expenditures).

On average, tobacco accounts for a larger share of total expenditures for lower-income households than for higher-income households, although higher-income households generally spend more on tobacco in absolute terms. For example, tobacco accounts for 1.0 percent of expenditures among households with less than \$22,500 annual income, compared to 0.6 percent of total expenditures among households with annual income between \$72,200 and \$120,700.

Because lower-income households typically have a smaller financial cushion and are more likely to live paycheck to paycheck, lower-income households typically spend a larger share of each additional \$1 of income than their higher-income counterparts. For example, during a recession, if a household with less than \$22,500 annual income gains \$100, that household will increase its spending by \$41 as a result, on average. In contrast, a household with \$120,700 or more in annual income will increase its spending by only \$18 in this situation, on average.^{xix}

Because relatively low-income households spend a larger share of their income on tobacco than higher-income households and also spend a larger share of any additional income gained, it is likely that a relatively high share of household savings from reduced tobacco use will cycle back into other spending:

- Based on data from the Consumer Expenditure Survey and a 2017 study of household spending behaviors by researchers at Johns Hopkins University, if households treat savings from reduced tobacco consumption as if it were additional income, about 25 percent of an across-the-board reduction in tobacco consumption would translate into non-tobacco spending, if the reduction occurred during an economic downturn.^{xx}
- For example, if households in all income groups reduced their tobacco consumption by 5 percent, these households' total non-tobacco consumption would increase by an amount equal to about 1.2 percent of initial tobacco expenditures.

	Bottom 20%	Second 20%	Middle 20%	Fourth 20%	Top 20%
Income range	Less than \$22,488	\$22,489 to \$43,431	\$43,432 to \$72,232	\$72,233 to \$120,726	\$120,727 or more
Average tobacco expenditures (% of total consumption)	1.0%	0.8%	0.7%	0.6%	0.2%
% Of tobacco expenditures nationwide	18.7%	20.4%	23.1%	24.7%	13.1%
% Of each additional \$1 income spent Recession conditions	41%	21%	31%	21%	18%

Source: Marginal propensity to consume estimates from Carroll et al. (2017), Table 4, Column 2. All other data from 2019 Survey of Consumer Expenditures, with calculations by MDCEP.

Data from the Census Bureau's Household Pulse Survey shed light on how families may spend savings from reduced tobacco consumption. Between June 25 and July 12, 2020 (the last four weeks in which respondents were asked this question), seven out of 10 surveyed Maryland adults reported that they used or expected to use their CARES Act stimulus payment primarily for expenses rather than to add to savings

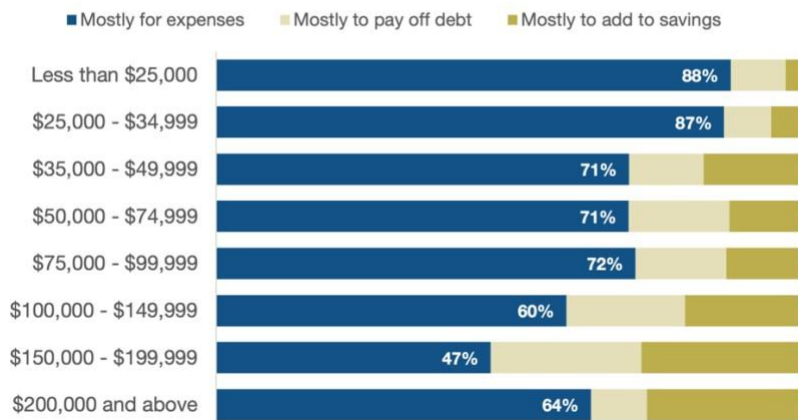
or pay off debt.^{xxi} Consistent with academic research, the survey found that Marylanders with the lowest incomes were more likely to spend their stimulus payment than their higher-income counterparts. The share reporting that they would primarily put their payment toward expenses ranged from more than 85 percent among respondents with less than \$35,000 annual income to less than two-thirds of those with \$100,000 or more in annual income.

Respondents were also asked what specific expenses they expected to spend their stimulus payment on, with the option to choose multiple items. Two-thirds of respondents reported that they expected to spend the money on food, including 81 percent of respondents who expected to spend rather than save the majority of their payment. About half of respondents expected to put part

of the payment toward utilities, household supplies, or personal care products. Significant numbers of respondents also expected to use the money to pay their mortgage or rent. While these data do not allow estimation of what specific share of increased spending would go toward each of these areas, they suggest that any Marylanders who reduce their tobacco consumption because of a prohibition on flavored products are most likely to spend the resulting savings primarily on food, housing, utilities, and daily necessities.

Maryland Residents with Lowest Incomes Most Likely to Cycle New Income Back into the Economy

Primary expected use of CARES Act stimulus payment by income group
U.S. Census Bureau Household Pulse Survey Weeks 9–12, June 25–July 21, 2020



	All Adults Receiving Stimulus Payment	Adults Expecting to Spend Payment on Expenses
Food	66%	81%
Utilities and telecommunications	49%	60%
Household supplies or personal care products	47%	57%
Rent	30%	38%
Mortgage	24%	29%
Paying down debts	23%	16%
Vehicle payments	23%	25%
Clothing	16%	19%

Source: U.S. Census Bureau Household Pulse Survey, Weeks 9–12. Note: Respondents were allowed to choose multiple items.

This number is miniscule in comparison to the overall state economy. There were a total of 2.2 million private-sector jobs in the state in 2019. Seasonal variation alone generates month-to-month employment swings of up to ±26,000 jobs, with a change of ±12,000 jobs in a typical month in 2019.^{xxv}

Furthermore, e-cigarette retailers typically do not create high-quality jobs that can support a family. Average annual wages at tobacco stores in Maryland were slightly less than \$22,000 in 2019, less than the federal poverty line for a family of four. Average earnings at tobacco stores in Maryland were *lower* between 2015 and 2019 than they were between 2005 and 2009, even before adjusting for inflation.

Table 13. Trends in Maryland Tobacco Retail Employment						
Calendar Year	Tobacco Stores (NAICS 453991)		All Other Misc. Store Retailers (NAICS 45399)		Tobacco Stores % of NAICS 45399	
	Employment	Establishments	Employment	Establishments	Employment	Establishments
2005	194	55	3,135	535	6.2%	10.3%
2006	202	43	2,775	475	7.3%	9.1%
2007	186	47	2,899	465	6.4%	10.1%
2008	165	49	2,720	464	6.1%	10.6%
2009	157	49	2,306	454	6.8%	10.8%
2010	180	55	2,407	429	7.5%	12.8%
2011	209	64	2,221	424	9.4%	15.1%
2012	245	72	2,255	404	10.9%	17.8%
2013	236	75	2,160	389	10.9%	19.3%
2014	284	96	2,202	408	12.9%	23.5%
2015	411	120	2,331	434	17.6%	27.6%
2016	479	145	2,469	475	19.4%	30.5%
2017	496	146	2,210	499	22.4%	29.3%
2018	529	146	2,545	538	20.8%	27.1%
2019	530	152	2,936	564	18.1%	27.0%
2005–2009 Avg.	180.8	48.6	2,767.0	478.6	6.6%	10.2%
2015–2019 Avg.	489.0	141.8	2,498.2	502.0	19.7%	28.3%
Change	+308.20	+93.20	–268.8	+23.4	+13.1%	+18.1%
	Employment	Establishments				
	13.1% of NAICS 45399	18.1% of NAICS 45399				
Est. 2019 E-Cigarette Retailers	385	102				

Source: MDCEP analysis of 2005–2019 Quarterly Census of Employment and Wages.

Table 14. Trends in Maryland Tobacco Retail Pay				
Calendar Year	Tobacco Stores Total Employment	Total Annual Pay	Average Annual Pay (Nominal)	Average Annual Pay (Adj. CPI-U)
2005	194	\$4,373,000	\$22,541	\$29,508
2006	202	\$4,306,000	\$21,317	\$27,033
2007	186	\$4,519,000	\$24,296	\$29,957
2008	165	\$3,539,000	\$21,448	\$25,469
2009	157	\$3,493,000	\$22,248	\$26,513
2010	180	\$3,936,000	\$21,867	\$25,637
2011	209	\$4,493,000	\$21,498	\$24,433
2012	245	\$5,177,000	\$21,131	\$23,529
2013	236	\$4,945,000	\$20,953	\$22,995
2014	284	\$6,027,000	\$21,222	\$22,918
2015	411	\$8,878,000	\$21,601	\$23,300
2016	479	\$10,263,000	\$21,426	\$22,823
2017	496	\$10,923,000	\$22,022	\$22,969
2018	529	\$11,482,000	\$21,705	\$22,098
2019	530	\$11,610,000	\$21,906	\$21,906
	Tobacco Stores Total Employment	Total Annual Pay	Average Annual Pay (Nominal)	Average Annual Pay (Adj. CPI-U)
2005–2009 Average	180.8	\$4,046,000	\$22,378	\$27,696
2015–2019 Average	489.0	\$10,631,200	\$21,741	\$22,619

Source: MDCEP analysis of 2005–2019 Quarterly Census of Employment and Wages, adjusted for CPI-U inflation.

5. Evidence on Menthol Cigarette Prohibition

The best available evidence on likely impacts of a flavored tobacco products prohibition comes from Canada, where a number of provinces enacted menthol cigarette prohibitions beginning in 2015, culminating in a nationwide prohibition that took effect in October 2017.^{xvi} The staggered implementation of these laws allowed rigorous analysis of their impacts on tobacco use.

Three consecutive analyses of the prohibition implemented in Ontario in January 2017 found significant reductions in tobacco use among menthol smokers:^{xvii}

- In a one-year follow-up analysis, researchers found that three out of five menthol smokers had tried to quit since implementation, compared to 43 percent of people who smoked non-menthol cigarettes. More than 20 percent of menthol smokers had successfully quit, compared to 14 percent of non-menthol smokers.
- The researchers' two-year follow-up found that the gap in quit rates between menthol smokers and non-menthol smokers had expanded further, and that menthol smokers who tried to quit were more likely to succeed than those attempting to quit smoking non-menthol cigarettes.

Data from the International Tobacco Control Policy Evaluation Study also indicate that menthol prohibitions were effective in reducing smoking. This study included a longitudinal survey that followed a sample of smokers over time, enabling observation of individuals' behavioral responses to policy change.

- Similar to the Ontario law, the study found that 60 percent of Canadian menthol smokers attempted to quit after implementation of the nationwide prohibition, compared to half of non-menthol smokers.
- Furthermore, 12 percent of menthol smokers successfully quit, compared to 6 percent of non-menthol smokers.

Studies of the provincial and nationwide menthol prohibitions in Canada also found that significant numbers of menthol smokers shifted to using non-menthol cigarettes or other tobacco products, while some obtained menthol cigarettes through a variety of channels. However, these responses were not widespread enough to offset the overall decline in tobacco use.

Taken together, the evidence from Canada's menthol cigarette prohibition provides strong support for the effectiveness of flavored tobacco product prohibitions in reducing tobacco use and thereby improving health outcomes.

6. Flavored Tobacco Products Contribute to Racial Health Disparities

Historically, menthol cigarettes have been among the most widespread flavored tobacco products, and as a result have contributed significantly to the public health harms associated with tobacco. The harms caused by menthol cigarettes have disproportionately fallen on Black Americans.

Researchers drawing on hundreds of tobacco industry documents have demonstrated a pattern of “highly targeted menthol cigarette marketing” concentrated in communities “populated predominantly by low- income African American residents”^x since the 1960s. Tobacco companies ramped up menthol advertising in Black-dominated media, cultivated Black celebrity endorsers, and deflected criticism through financial contributions to prominent Black-run organizations.^{xi}

This strategy is not a thing of the past. In a 2012 study, researchers collected and analyzed data on cigarette advertising, promotions, and prices in 407 stores near California high schools.^{xii} The study found that stores near predominantly Black high schools dedicated larger shares of cigarette advertising materials to menthol brands and charged lower prices for menthol cigarettes than stores near predominantly white high schools. The researchers did not find any corresponding difference in the price of non-menthol cigarettes, consistent with a strategy of specifically marketing menthol cigarettes to Black adolescents.

[Survey data from 2018 found that 85 percent of Black smokers prefer menthols, compared to 50 percent of Latinx smokers and 29 percent of white respondents.](#)⁴

The tobacco industry’s targeted marketing of menthol cigarettes to Black Americans works in tandem with other social and economic barriers to place Black Marylanders at greater danger of serious illness or death from a wide range of causes.

- In recent years, Black men in Maryland have generally been more likely to be diagnosed with lung or bronchial cancer and more likely to die of these conditions than any other group.^{xiv} However, the number of Black men in Maryland dying of lung cancer has declined recently, with Black men now about as likely to die of lung cancer as white men, and more than any other group. While men of every racial and ethnic background are more likely to die of lung cancer than women, this gap is larger than average among Black Marylanders.
- Black Marylanders—and in particular Black men—also face an above-average risk of death from heart disease, a health condition linked to tobacco. As of 2018, 190 out of every 100,000 Black Marylanders and 250 out of every 100,000 Black men in Maryland died of heart disease.^{xv} In comparison, 160 white Marylanders and 70 Latinx Marylanders per 100,000 died of heart disease in 2018.

Achieving health equity for Black Marylanders requires a comprehensive policy approach. . Reducing uptake of tobacco use represents a significant step forward on this front.

⁴ 2018 National Survey on Drug Use and Health.

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- ⁱ Valerie Yerger, Jennifer Przewoznik, and Ruth Malone, “Racialized Geography, Corporate Activity, and Health Disparities: Tobacco Industry Targeting of Inner Cities,” *Journal of Health Care for the Poor and Underserved* 18(4), 2007, <https://pubmed.ncbi.nlm.nih.gov/18065850/>
- Phillip Gardiner, “The African Americanization of Menthol Cigarette Use in the United States,” *Nicotine & Tobacco Research* 6(1), 2004, <http://www.fairwarning.org/wp-content/uploads/2015/10/AfricanAmericanizationGARDINER.pdf>
- ⁱⁱ For detailed discussion of impacts of the Canada flavored tobacco products ban, see Frank Chaloupka, “Potential Effects on Tobacco Tax Revenues of a Ban on the Sale of Flavored Tobacco Products,” University of Illinois at Chicago, 2020, https://tobacconomics.org/wp-content/uploads/2020/11/Flavor-Ban-and-Revenues_18-August-2020_report_FINALupdate.pdf
- ⁱⁱⁱ MDCEP analysis of U.S. Census Bureau Household Pulse Survey, Weeks 9–12, Maryland residents.
- ^{iv} Based on marginal propensity to consume estimates by Carroll et al. (2017). This estimate assumes that the reduction on tobacco consumption is evenly distributed across income groups and that households use any savings the same way they would use an increase in income.
- ^v Jeffrey Hardesty, “State of the Evidence: Flavored Tobacco Product Bans or Restrictions,” Institute for Global Tobacco Control, January 2020, <https://www.globaltobaccocontrol.org/resources/flavorreportssummary>
- ^{vi} MDCEP analysis of Quarterly Census of Employment and Wages data for private sector employment in Maryland. The median month-to-month absolute (\pm) change in employment during 2019 was 11,981.
- ^{vii} HB 732 of 2020 fiscal and policy note.
- ^{viii} As discussed in the memo, this analysis estimates the revenue impact of a fully implemented flavored tobacco products ban in FY 2021 rather than FY 2022 or later in order to address gaps in available data.
- ^{ix} “Extinguishing the Tobacco Epidemic in Maryland, Centers for Disease Control and Prevention, <https://www.cdc.gov/tobacco/about/osh/state-fact-sheets/maryland/index.html>
- ^x Valerie Yerger, Jennifer Przewoznik, and Ruth Malone, “Racialized Geography, Corporate Activity, and Health Disparities: Tobacco Industry Targeting of Inner Cities,” *Journal of Health Care for the Poor and Underserved* 18(4), 2007, <https://pubmed.ncbi.nlm.nih.gov/18065850/>
- ^{xi} Phillip Gardiner, “The African Americanization of Menthol Cigarette Use in the United States,” *Nicotine & Tobacco Research* 6(1), 2004, <http://www.fairwarning.org/wp-content/uploads/2015/10/AfricanAmericanizationGARDINER.pdf>
- ^{xii} Lisa Henriksen, Nina Schleicher, Amanda Dauphins, and Stephen Fortmann, “Targeted Advertising, Promotion, and Price for Menthol Cigarettes in California High School Neighborhoods,” *Nicotine & Tobacco Research* 14(1), 2012, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3592564/>
- ^{xiii} Henriksen et al., 2012.

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- ^{xiv} MDCEP analysis of CDC data on cancer incidence and mortality, https://www.cdc.gov/cancer/uscs/dataviz/download_data.htm
Here, “lung cancer” is used to refer to cancers of the lung and bronchus. Incidence and mortality rates and comparisons are age-adjusted.
- ^{xv} 2018 Maryland Vital Statistics Report, https://health.maryland.gov/vsa/Documents/Reports%20and%20Data/Annual%20Reports/REV_2018annual.pdf
Age-adjusted death rate per 100,000 for diseases of the heart.
- ^{xvi} For detailed discussion of impacts of the Canada flavored tobacco products ban, see Frank Chaloupka, “Potential Effects on Tobacco Tax Revenues of a Ban on the Sale of Flavored Tobacco Products,” University of Illinois at Chicago, 2020, https://tobacconomics.org/wp-content/uploads/2020/11/Flavor-Ban-and-Revenues_18-August-2020_report_FINALupdate.pdf
- ^{xvii} All analyses of menthol bans in Canada cited here are summarized in Chaloupka, 2020, “Potential Effects on Tobacco Tax Revenues of a Ban on the Sale of Flavored Tobacco Products.”
- ^{xviii} 2019 Consumer Expenditure Survey.
Throughout this analysis, “households” refer to consumer units and “tobacco expenditures” refer to all expenditures in the tobacco and smoking supplies category.
- ^{xix} Christopher Carroll, Jiri Slacalek, Kiichi Tokuoka, and Matthew White, “The Distribution of Wealth and the Marginal Propensity to Consume,” *Quantitative Economics* 8(3), 2017, <https://onlinelibrary.wiley.com/doi/10.3982/QE694>
See estimates of the marginal propensity to consume during a recession in Table 4, Column 2.
- ^{xx} Based on marginal propensity to consume estimates by Carroll et al. (2017). This estimate assumes that the reduction on tobacco consumption is evenly distributed across income groups and that households use any savings the same way they would use an increase in income.
- ^{xxi} MDCEP analysis of U.S. Census Bureau Household Pulse Survey, Weeks 9–12, Maryland residents.
- ^{xxii} According to industry analysts, vape shops typically concentrate in flavored products, while tobacco-flavored electronic smoking devices are predominantly sold in other stores such as convenience stores and gas stations.
- ^{xxiii} Jeffrey Hardesty, “State of the Evidence: Flavored Tobacco Product Bans or Restrictions,” Institute for Global Tobacco Control, January 2020, <https://www.globaltobaccocontrol.org/resources/flavorreportsummary>
- ^{xxiv} MDCEP analysis of Quarterly Census of Employment and wages data for NAICS industries 453991 and 45399.
- ^{xxv} MDCEP analysis of Quarterly Census of Employment and Wages data for private sector employment in Maryland. The median month-to-month absolute (\pm) change in employment during 2019 was 11,981.
- ^{xxvi} “Extinguishing the Tobacco Epidemic in Maryland, Centers for Disease Control and Prevention, <https://www.cdc.gov/tobacco/about/osh/state-fact-sheets/maryland/index.html>
- ^{xxvii} HB 732 also includes tax provisions relating to advertising services. These provisions are not considered in this memo, and all references to revenue raised by HB 732 exclude potential revenue from advertising taxes.
- ^{xxviii} HB 732 of 2020 fiscal and policy note.
- ^{xxix} Note that some of these savings may accrue to families, providers, local governments, insurers, or other stakeholders in the health care system. In light of the state’s substantial general fund investment in Medicaid, the fiscal savings to the state would likely be significant.
- ^{xxx} As discussed in the memo, this analysis estimates the revenue impact of a fully implemented flavored tobacco products ban in FY 2021 rather than FY 2022 or later in order to address gaps in available data.
- ^{xxxi} Cigarette price and tax rate data from “The Tax Burden on Tobacco” data set published by the CDC, <https://chronicdata.cdc.gov/Policy/The-Tax-Burden-on-Tobacco-1970-2018/7nwe-3aj9>
- ^{xxxii} Note that this is larger (more negative) than most research-based estimates of the own-price elasticity of tobacco consumption. This larger elasticity estimate could be due to behavioral responses other than reduced consumption.
- ^{xxxiii} Teresa Wang, Ellen Coats, Doris Gammon, Brett Loomis, Nicole Kuiper, Todd Rogers, and Brian King, “National and State-Specific Unit Sales and Prices for Electronic Cigarettes, 2012–2016,” *Preventing Chronic Disease* 15, 2018, https://www.cdc.gov/pcd/issues/2018/17_0555.htm

^{xxxiv} Euromonitor data from Lora Jones, “Vaping: How Popular Are E-Cigarettes?” *BBC News*, September 14, 2019, <https://www.bbc.com/news/business-44295336>
Data extracted from graphic using graphreader.com data extraction tool.

^{xxxv} FY 2020 actual cigarette and OTP tax data from Maryland Alcohol and Tobacco Tax Annual Report: FY 2020, Maryland Office of the Comptroller, <https://www.marylandtaxes.gov/reports/static-files/revenue/alcoholtobacco/annual/AnnualReportFY2020.pdf>

^{xxxvi} Frank Chaloupka, “Potential Effects of a Ban on the Sale of Flavored Tobacco Products in Maryland,” University of Illinois at Chicago, 2020. Online version forthcoming.

^{xxxvii} Frank Chaloupka, “Potential Effects on Tobacco Tax Revenues of a Ban on the Sale of Flavored Tobacco Products,” University of Illinois at Chicago, 2020, https://tobacconomics.org/wp-content/uploads/2020/11/Flavor-Ban-and-Revenues_18-August-2020_report_FINALupdate.pdf

^{xxxviii} Nicole Kuiper, Doris Gammon, Brett Loomis, Kyle Falvey, Teresa Wang, Brian King, and Todd Rogers, “Trends in Sales of Flavored and Menthol Tobacco Products in the United States During 2011–2015,” *Nicotine & Tobacco Research* 20(6), 2018, <https://academic.oup.com/ntr/article/20/6/698/3860082>
Data from Kuiper et al. (2018) suggest that the menthol and flavored share of OTP sales in Maryland is about 1.26x as large as the nationwide menthol and flavored share.

^{xxxix} Nicole Kuiper, Brett Loomis, Kyle Falvey, Doris Gammon, Brian King, Teresa Wang, and Todd Rogers, “Trends in Unit Sales of Flavored and Menthol Electronic Cigarettes in the United States, 2012–2016,” *Preventing Chronic Disease* 15, 2018, https://pdfs.semanticscholar.org/d114/ocea06cc3987630eb06303055e602a5f6dce.pdf?_ga=2.193442350.2016805723.1606208453-422404499.1603643809