



Evaluating the Impact of Flavor Tobacco Bans in the United States

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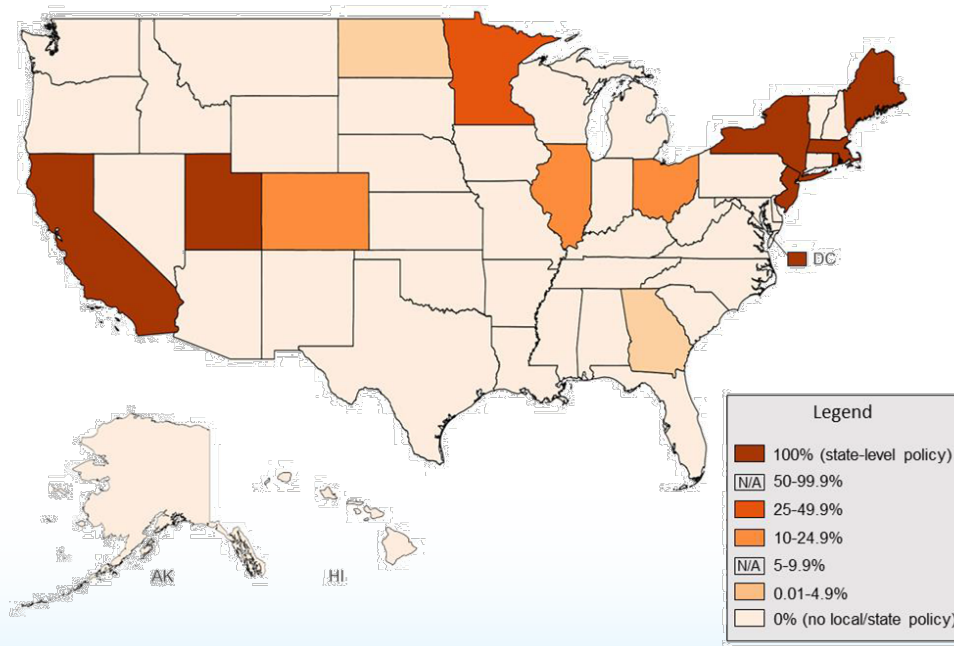


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Flavor Tobacco Bans in the United States

Percent of State Population Covered by a Flavored Tobacco Sales Restriction
As of December 31, 2025



~27%

of the population lives
in flavored-product
ban areas

Two states (and DC) with comprehensive flavor bans

Source: Truth Initiative



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Road Map for Evaluating the Impact of Flavor Tobacco Bans in the United States



BEHAVIORAL DATA

Use National and state-level data to compare **adult and underage smoking** in flavor ban states/districts with non-ban states

Survey menthol cigarette use post-flavor ban



MARKET RESPONSES

Use discarded pack studies to survey **illicit flavored and non-local-tax-paid products** found in banned localities

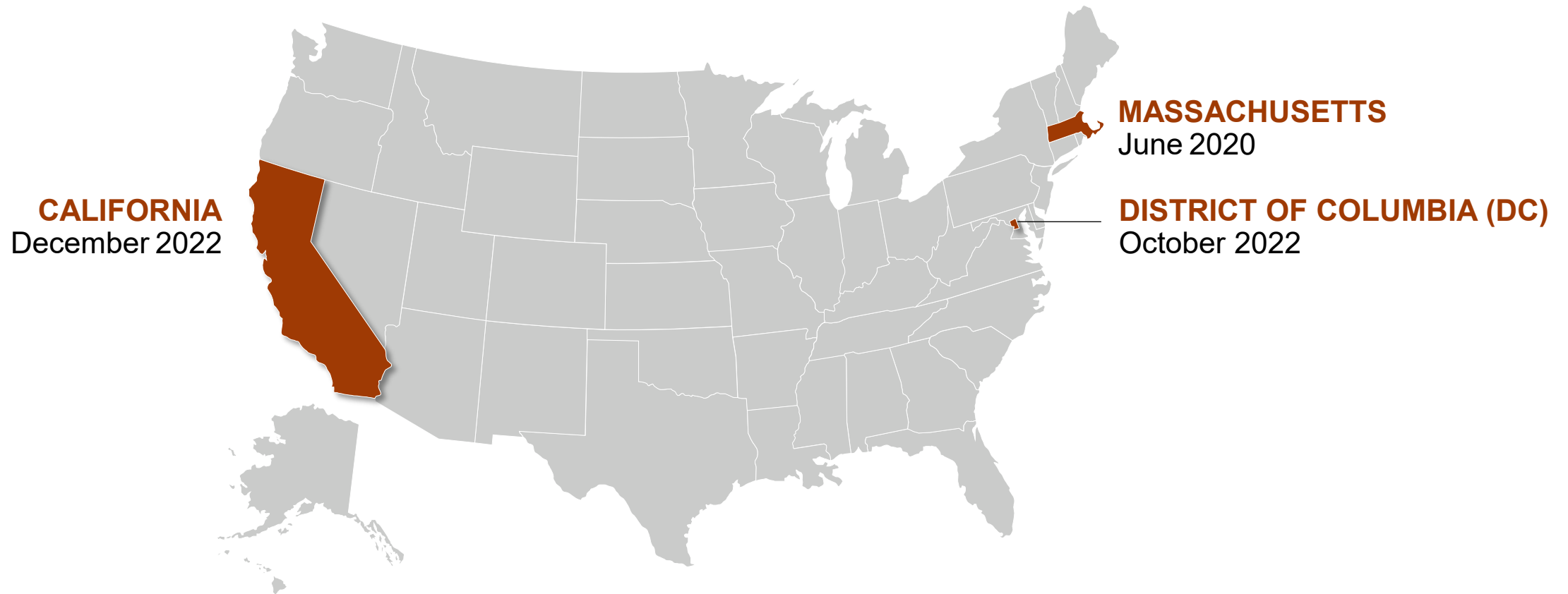


ECONOMIC IMPACTS

Use tax revenue to determine **cross-border purchasing** that circumvents bans



Flavor Ban Localities Evaluated

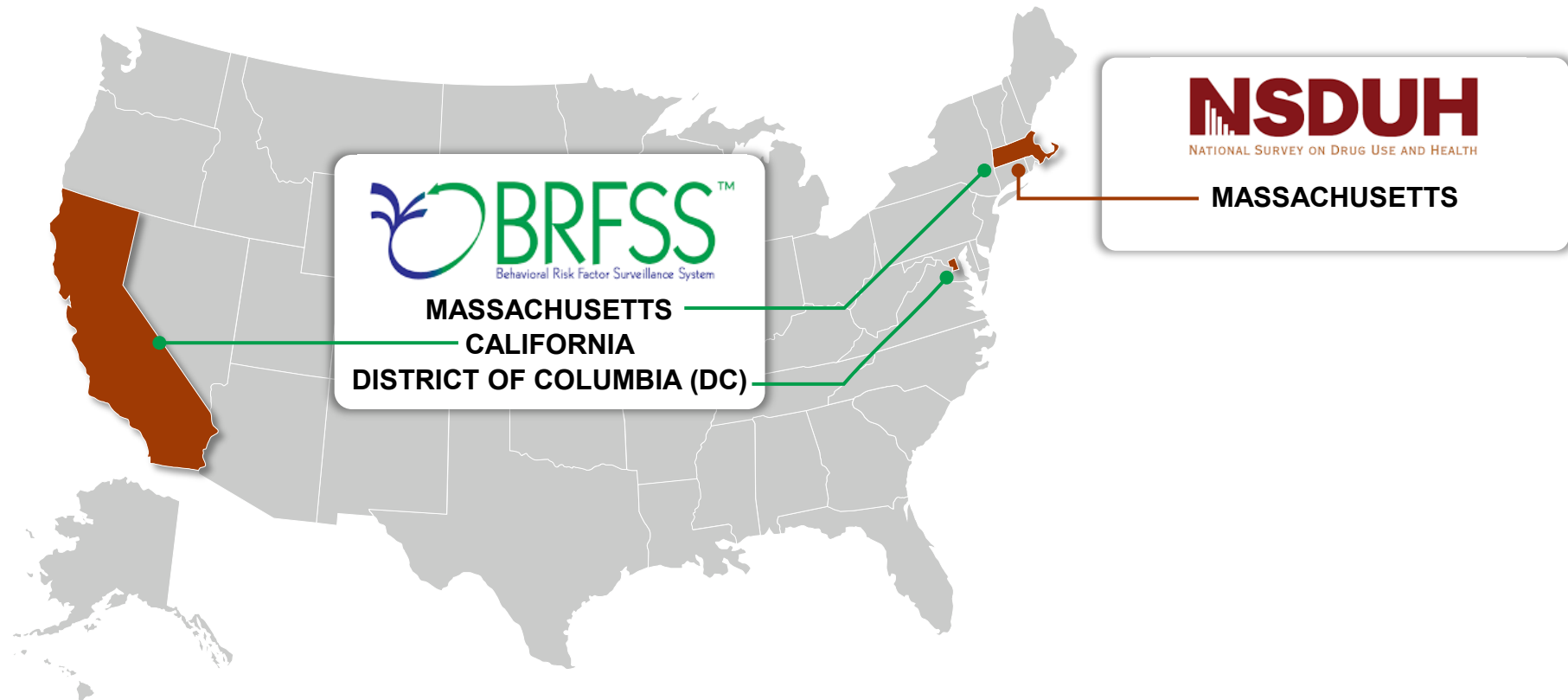


Smoking Behaviors in Response to Flavor Bans

Representative national and state-level behavioral data to assess the impact of flavored tobacco bans on adult and underage smoking behaviors

No meaningful reductions in cigarette smoking or increases in cessation for adults and underage individuals in states/districts with flavor bans compared to states without flavor bans

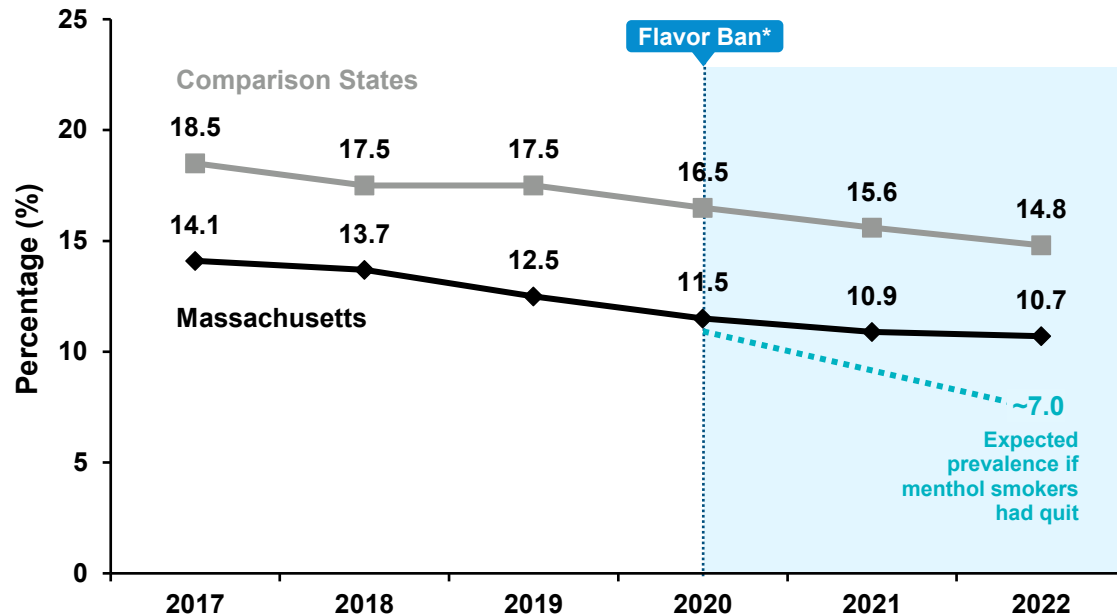
Menthol cigarette use remains highly prevalent among adult cigarette users



Massachusetts Flavor Ban Did Not Reduce Adult Smoking or Menthol Use

BEHAVIORAL DATA

Current Cigarette Smoking Prevalence Among Adults 21+ in Massachusetts & Comparison States
(BRFSS, 2017–2022)¹

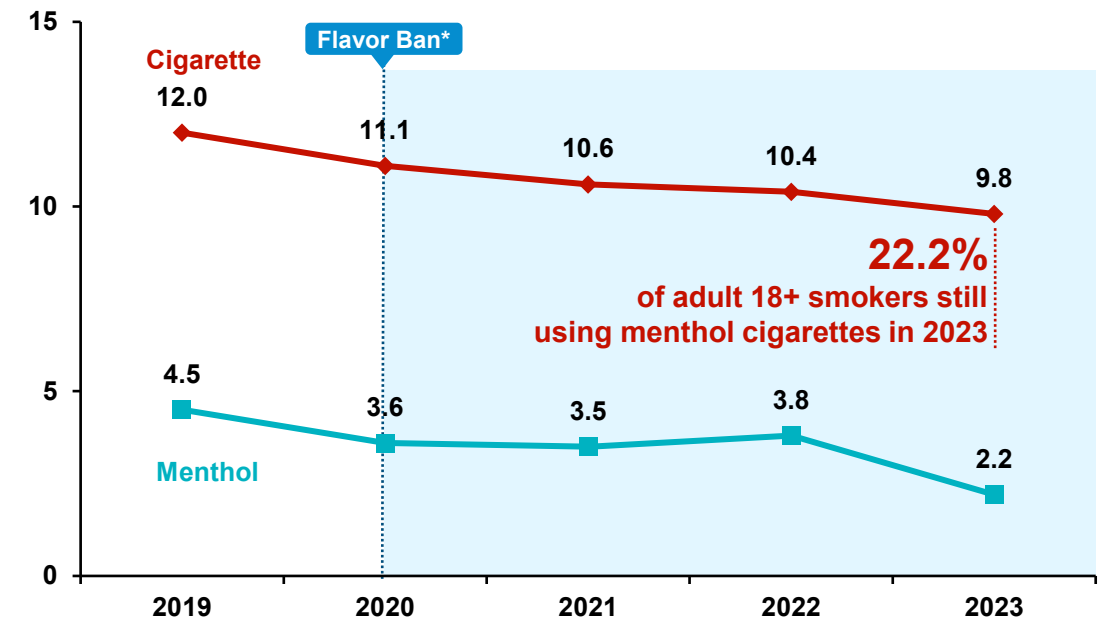


An effective ban would result in lower smoking rates in MA than in comparison states

Association Between Flavor Ban & Smoking Odds: DiD Analysis Results

Group	aOR	95% CI	p-value
Massachusetts	0.94	(0.85, 1.03)	0.1621
Comparison States		Ref.	

Prevalence of Cigarette & Menthol Smoking Among Adults 18+ in Massachusetts
(BRFSS 2019–2023)²



Menthol use did not significantly change from pre to post ban (2019–2023)

*Flavor ban enacted June 1, 2020. 1. Winiger et al., 2025 *AJPM Focus*. 2. MA Behavioral Risk Factors Surveillance Survey 2019–2023



No Substantial Reduction in Adult Smoking Following the Massachusetts Flavor Ban

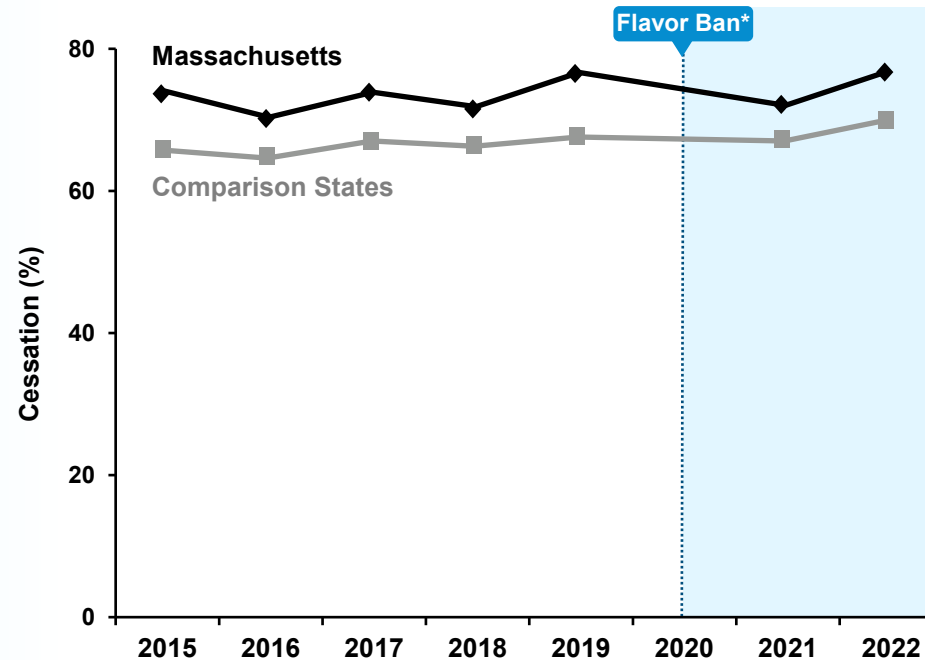
BEHAVIORAL DATA

Effect of Flavor Ban

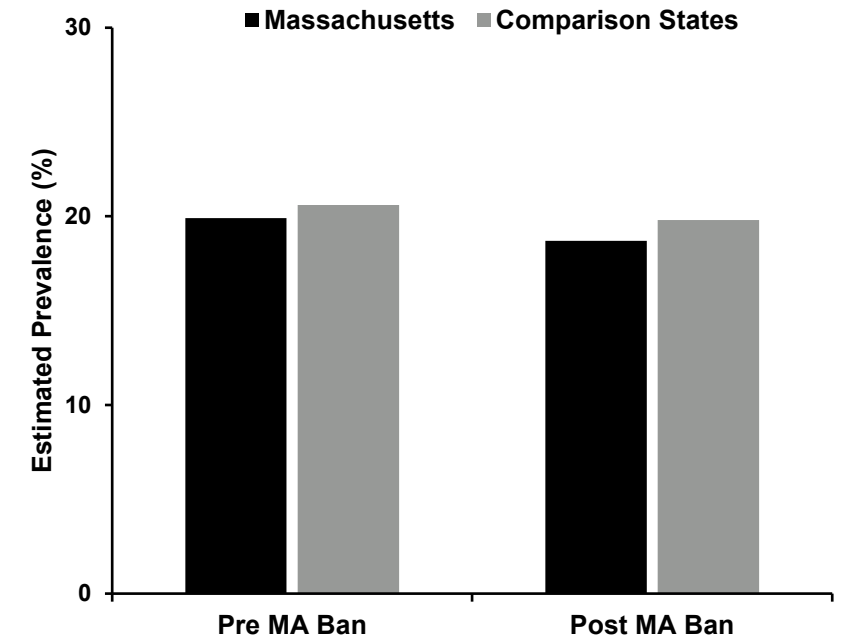
Negligible effects on overall cigarette smoking and cessation among adults 21+

1/4 of adult smokers used menthol cigarettes two years after the ban

Overall Smoking Cessation Rates (Adults 21+)



Adjusted DiD-Estimated Overall Smoking Prevalence (Adults 21+) Pre vs. Post Ban



*Flavor ban enacted June 1, 2020. Source: Adapted from the National Survey on Drug Use and Health Restricted Use Files 2015–2019 and 2021–2022



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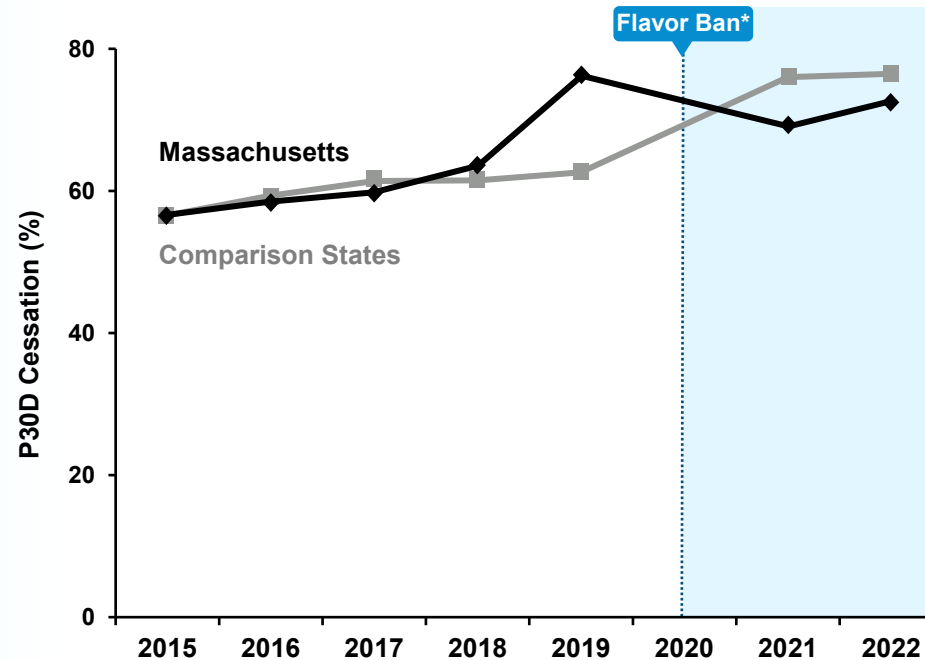
Underage Smoking Did Not Decline Following the Massachusetts Flavor Ban

BEHAVIORAL DATA

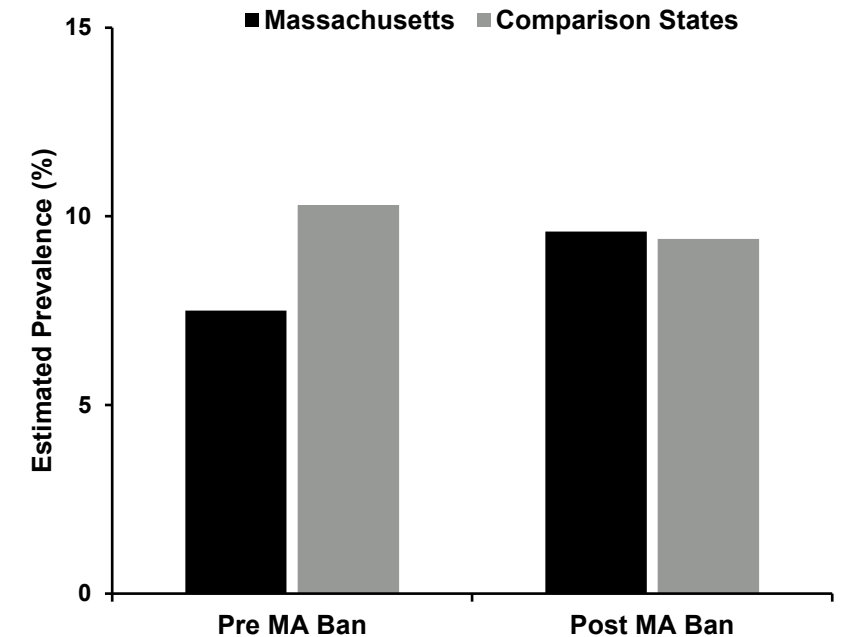
Effect of Flavor Ban

Negligible effects on overall cigarette smoking and cessation for underage individuals (12–20 years of age)

Overall Smoking Cessation Rates



Adjusted DiD-Estimated Overall Smoking Prevalence of Underage Individuals (12–20) Pre vs. Post Ban



*Flavor ban enacted June 1, 2020.

Source: Adapted from the National Survey on Drug Use and Health Restricted Use Files 2015–2019 and 2021–2022.



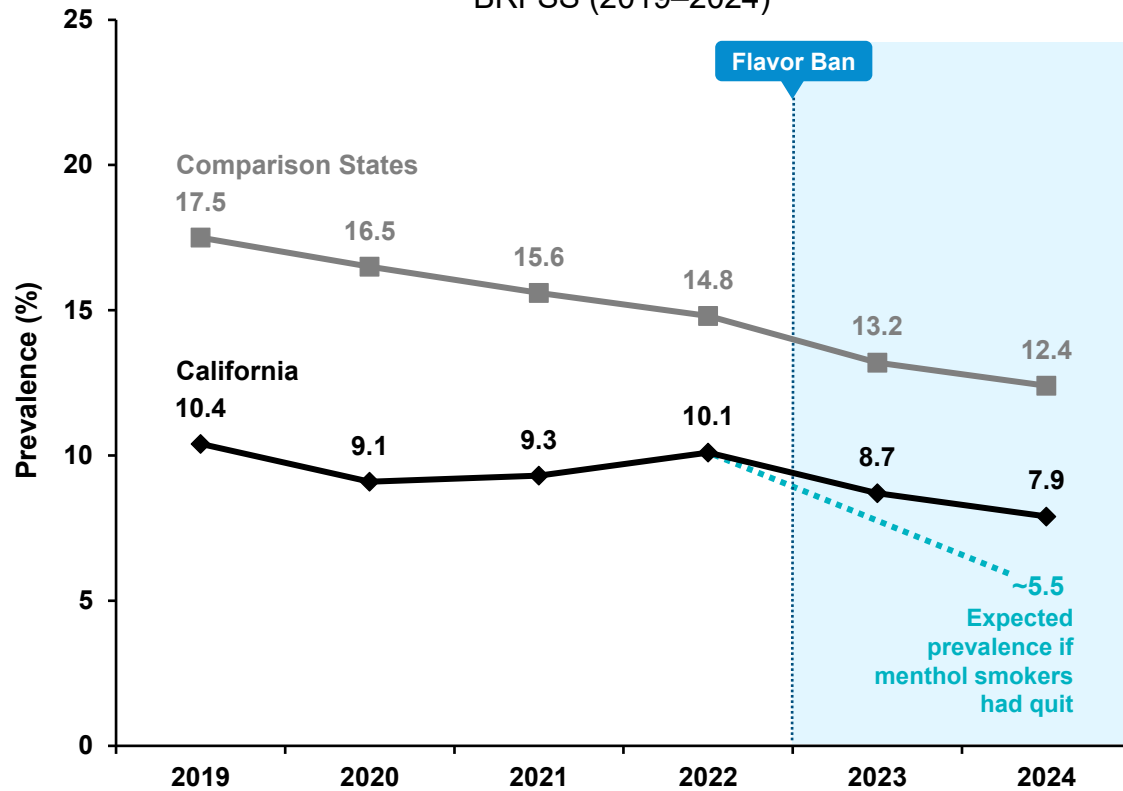
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California's Flavor Ban Did Not Reduce Adult Smoking and May Have Slowed Smoking Decline Among Vulnerable Groups

BEHAVIORAL DATA

Current Cigarette Smoking Prevalence
Among Adults 21+: California vs. Comparison States
BRFSS (2019–2024)



An effective ban would result in lower smoking rates in CA than in comparison states

Association Between Flavor Ban & Smoking Odds:
DiD Analysis Results

Group	aOR	95% CI	p-value
California Overall 21+	1.09	1.00–1.20	0.052
21–34 Year Olds	1.26	1.05–1.52	0.015
Hispanics	1.19	1.01–1.41	0.043
Comparison States	Ref.		

No overall effect among adults 21+, with smaller declines in cigarette smoking among Hispanics (19%) and adults aged 21–34 (26%)

Source: Winiger et al., 2026 AJBH.

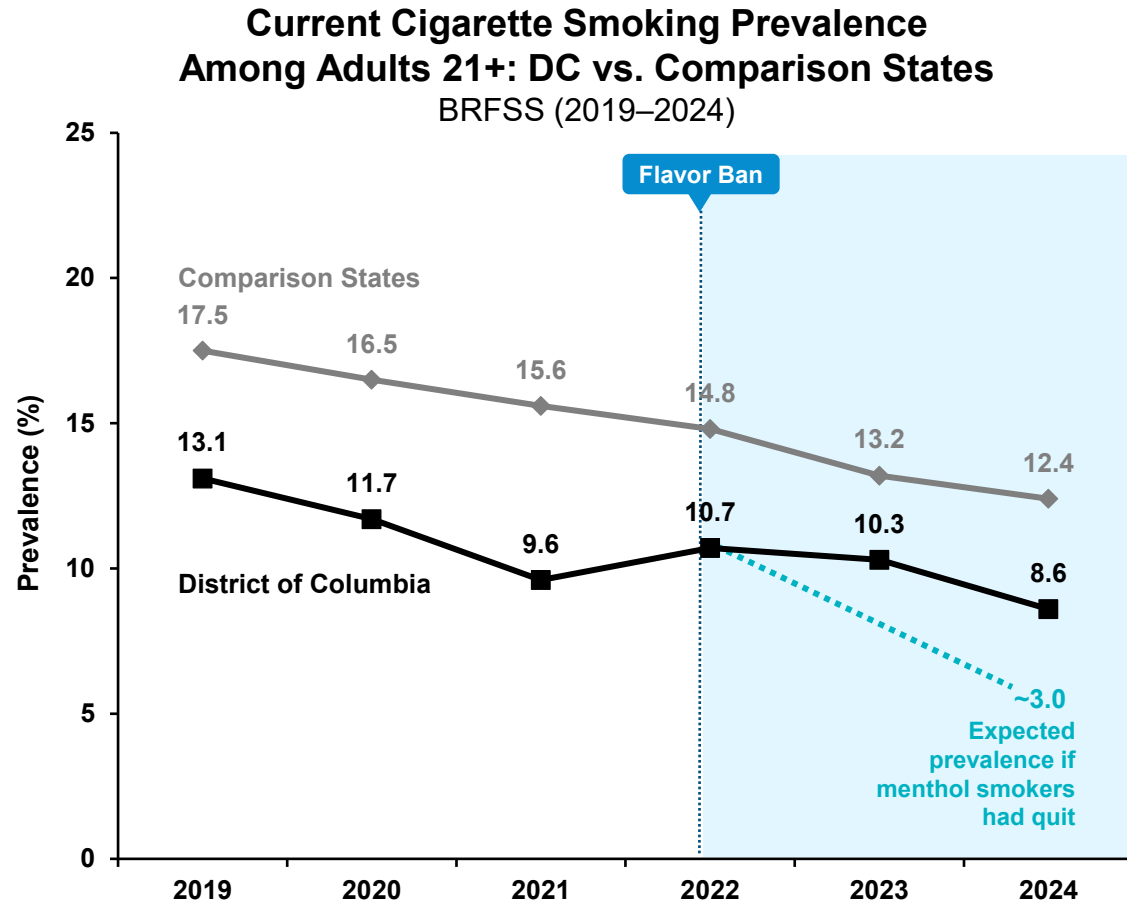


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Adult Smoking Rates Did Not Change After DC's Flavor Ban

BEHAVIORAL DATA



An effective ban would result in lower smoking rates in DC than in comparison states

Association Between Flavor Ban & Smoking Odds: DiD Analysis Results

Group	aOR	95% CI	p-value
District of Columbia	1.00	(0.86, 1.27)	0.999
Comparison States		Ref.	

Source: DC Behavioral Risk Factors Surveillance Survey 2019–2024



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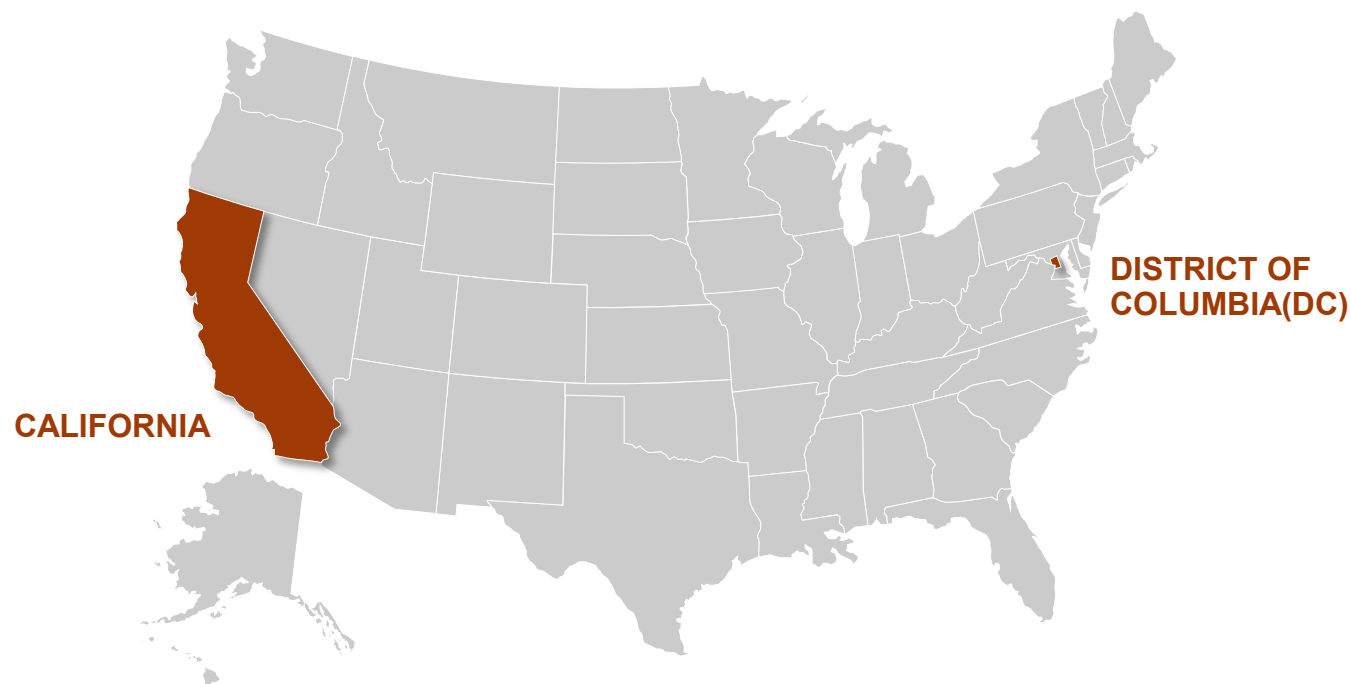
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Banned Tobacco Products Found in Localities with Flavor Bans

Discarded pack studies
survey tobacco products
from public trash receptacles

Localities with flavor bans
have **large amounts of
flavored products**

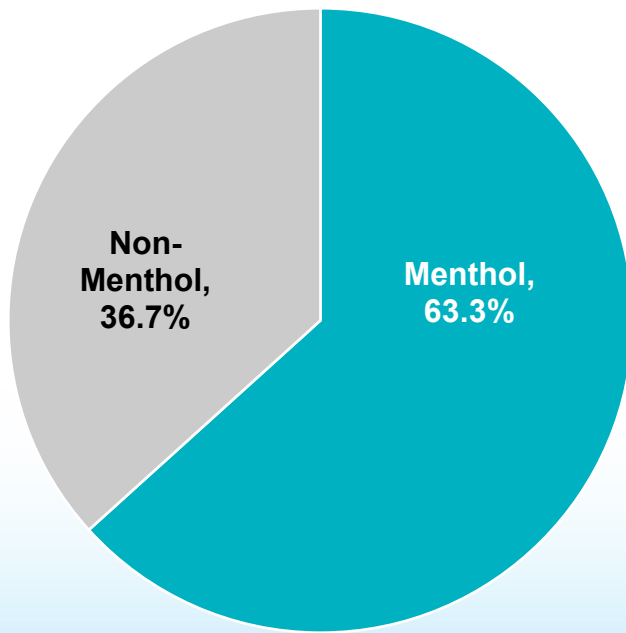
Large amounts of tobacco products come from
outside of areas with flavor bans, **suggesting
illicit markets widely circumvent the ban**



DC's Flavor Ban was Widely Circumvented, with Flavored Products Flourishing and Most Packs Sourced Outside DC

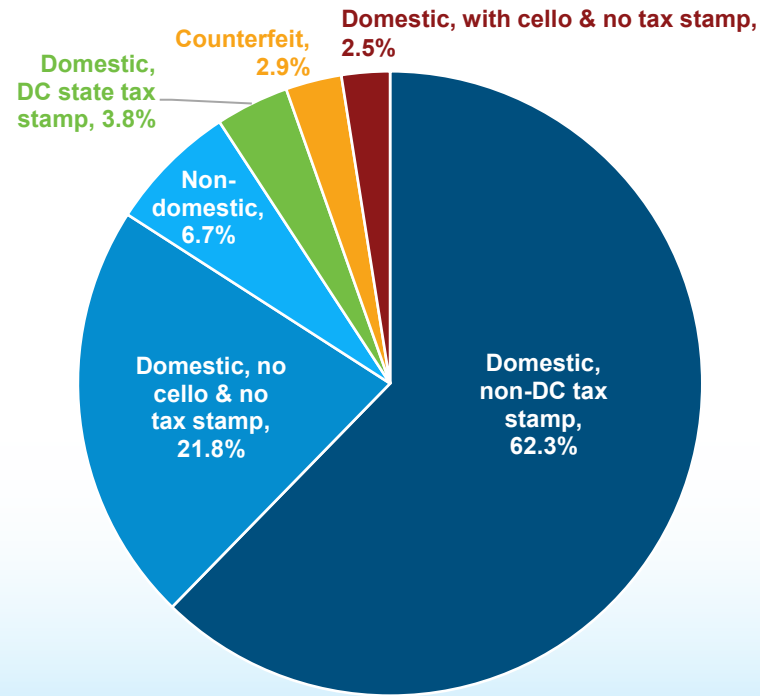
MARKET RESPONSE

DC Menthol Share of Cigarettes
Discarded Pack Survey, 2024



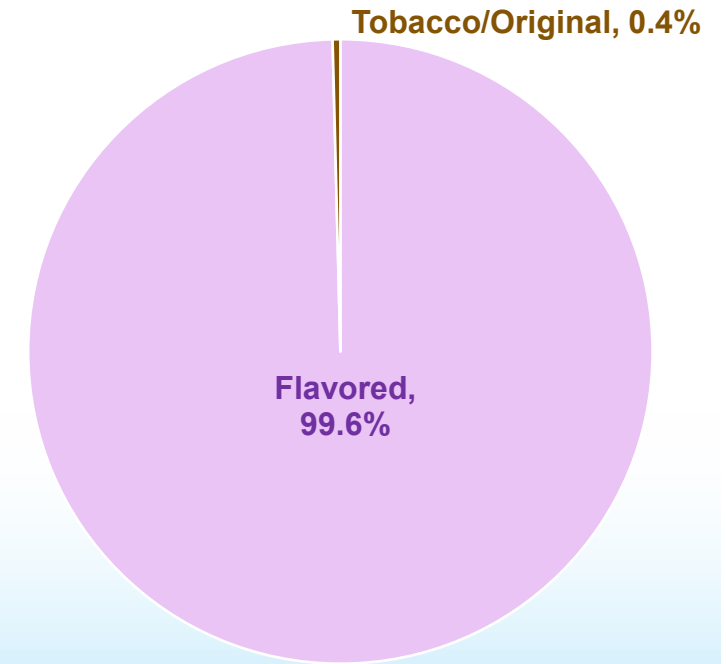
Proportion of Menthol Cigarette sales in legal channels pre-ban was 64.6%*

Cigarette Origin Assessment
Discarded Pack Survey, 2024



Most discarded packs lacked DC tax stamps and were from the neighboring states of Virginia and Maryland

Flavored E-Vapor Prevalence



Source: Study conducted by WSPM Group, project commissioned by Altria. Sample collected February 1–March 21, 2024
* Management Science Associates, Inc, FY 2022



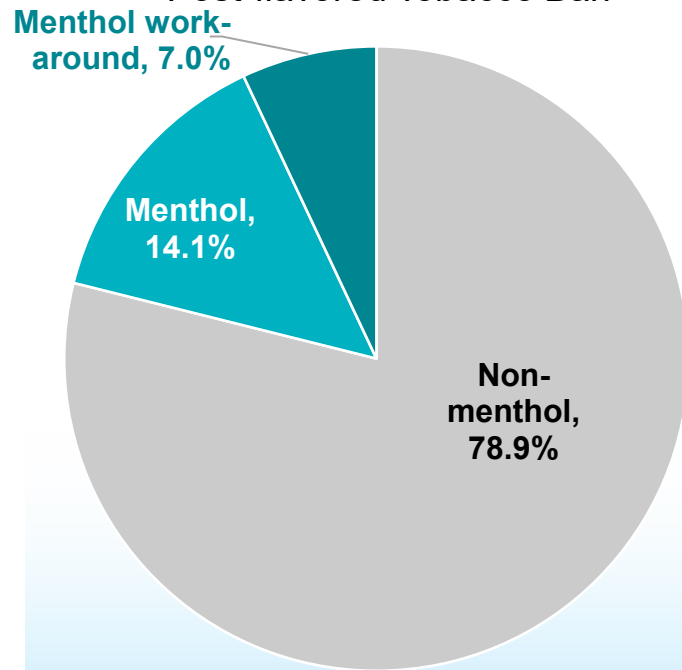
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Illicit Flavored Products and Cross-Border Sourcing Undermined California's Flavor Ban

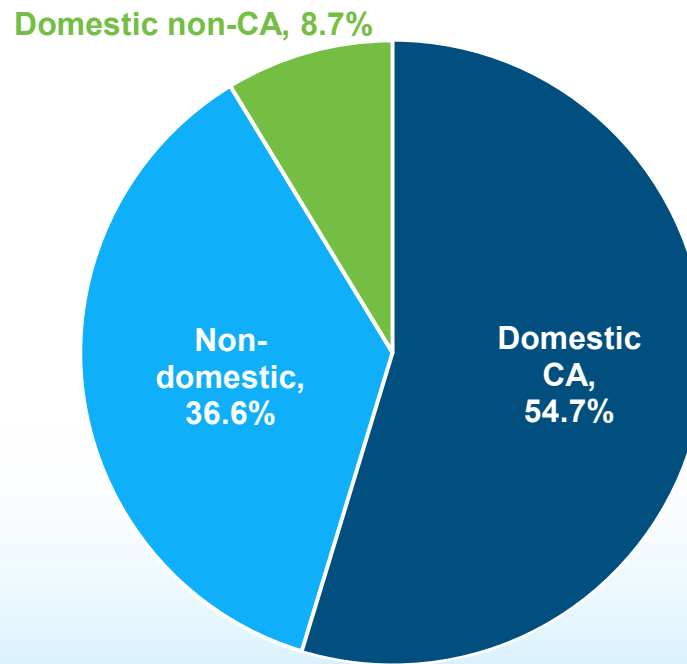
MARKET RESPONSE

Menthol Cigarette Prevalence,
California Discarded Pack Study,
Post-flavored Tobacco Ban

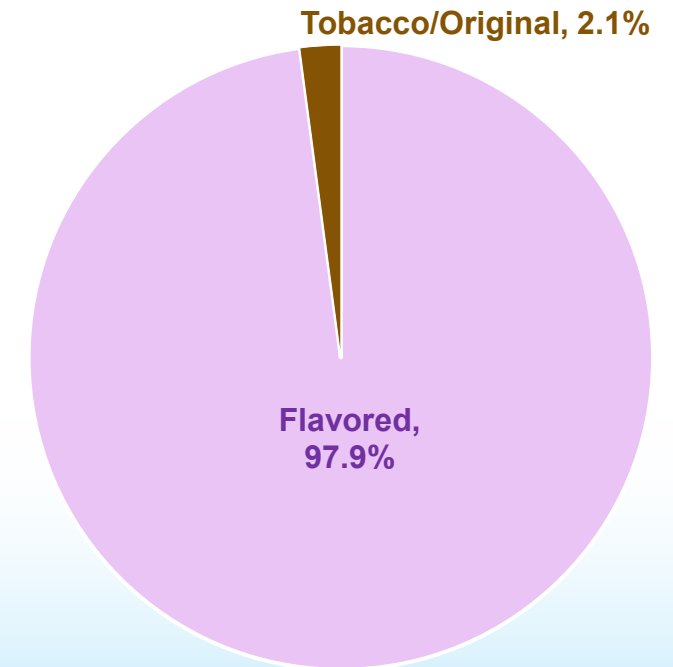


About 1 in 5 of all cigarettes found in CA were menthol or menthol work-arounds, and nearly half of tax-determinable packs were non-CA tax paid

Tax Determinable Packs



Flavored E-Vapor Prevalence



Nearly all e-vapor products were flavored

Source: Study conducted by WSPM Group, project commissioned by Altria. Sample collected May 1–June 28, 2023



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Tax Revenue in Response to Flavor Bans

Tax revenue reports allow for assessment of increases and decreases in tobacco tax income based on locality

Localities with flavor bans experience declines in cigarette tax revenue, while adjacent areas see corresponding increases, **alluding to cross-border activities that circumvent the ban**

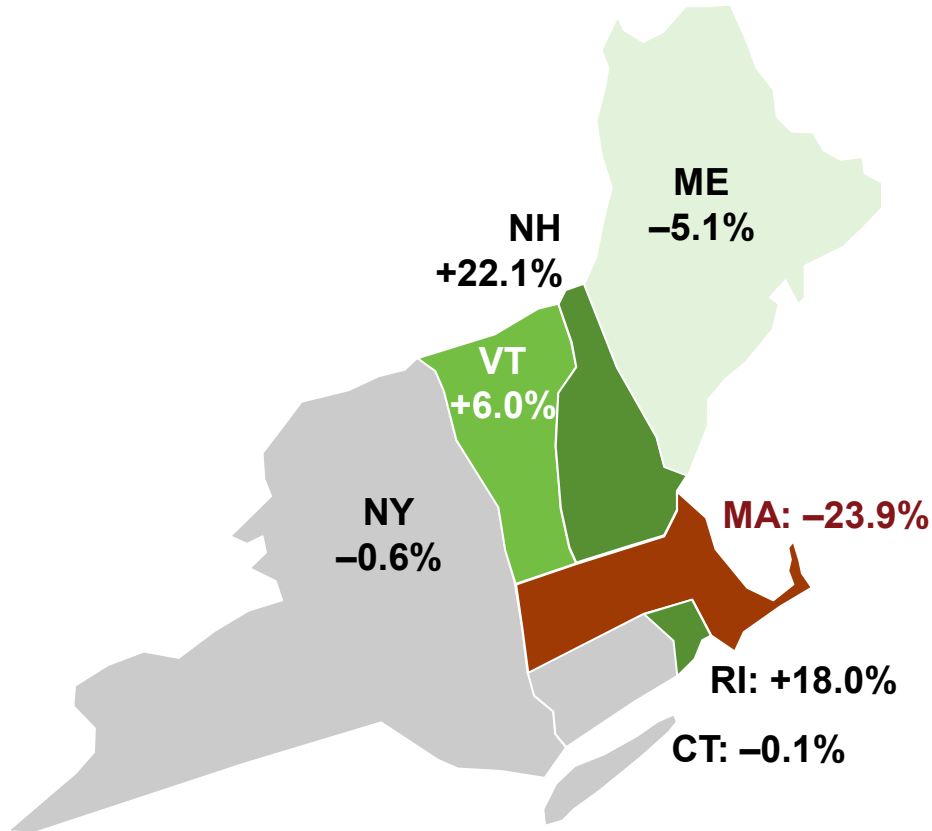


Massachusetts Tax Revenue Lost, Bordering States Benefited

ECONOMIC IMPACT

Total Cigarette Tax Paid Sales Change

June 2020–May 2021 Tax Paid Sales
vs. Same Period One Year Before



State Cigarette Excise Tax Revenue Change

June 2020–May 2021 vs. Same Period One Year Before

State	Tax Paid Sales Change (In Packs)	Revenue Change	Percent Change
Massachusetts	-33,076,000	(\$116,096,760)	-23.9%
New Hampshire	+23,380,000	+\$41,616,400	+22.1%
Rhode Island	+5,355,000	+\$22,758,750	+18.0%
Vermont	+1,143,000	+\$3,520,440	+6.0%
Connecticut	-104,000	(\$452,400)	-0.1%
New York	-1,760,000	(\$5,698,500)	-0.6%
Maine	-3,081,000	(\$6,162,000)	-5.1%

- MA lost 33.1 million taxed packs
- NH, RI, and VT gained 29.9 million
- **That's 90% of what MA lost, in just those three states**

Source: State depts. of revenue, collected by Orzechowski & Walker



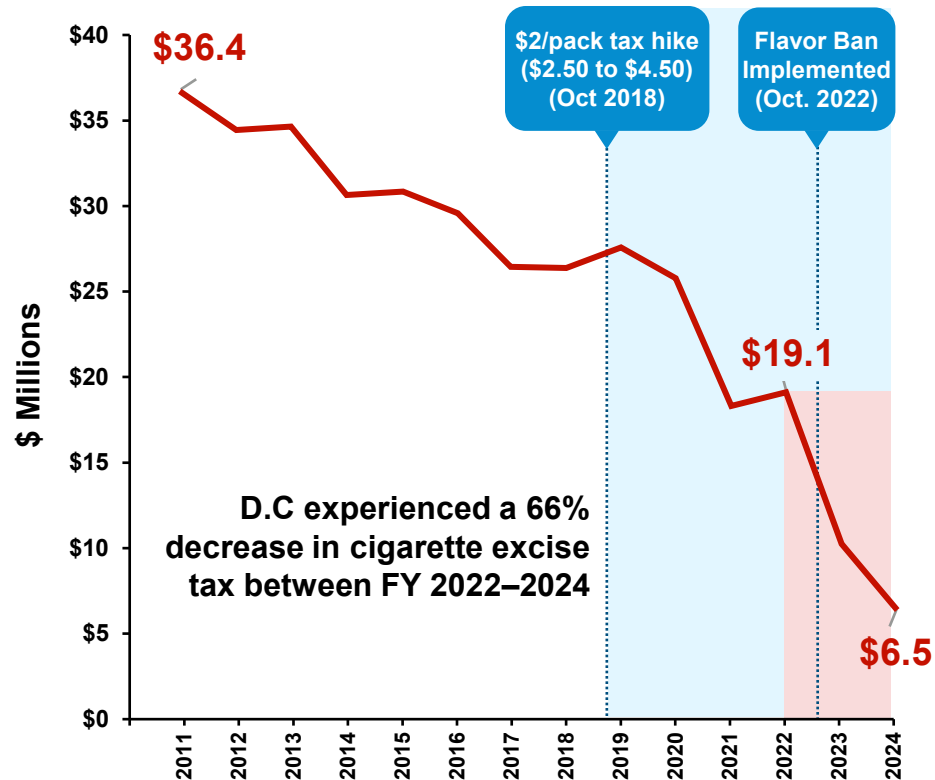
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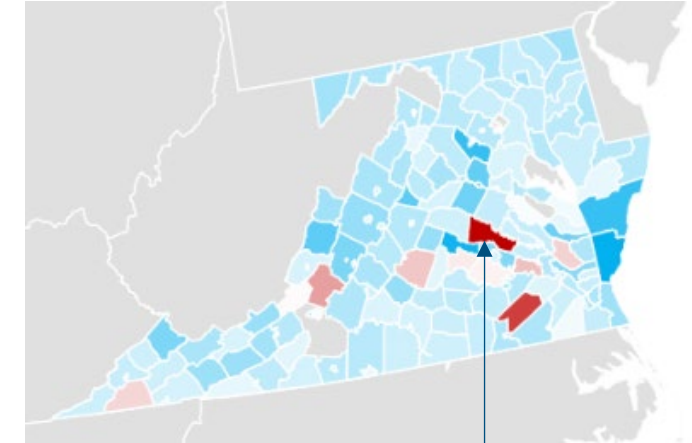
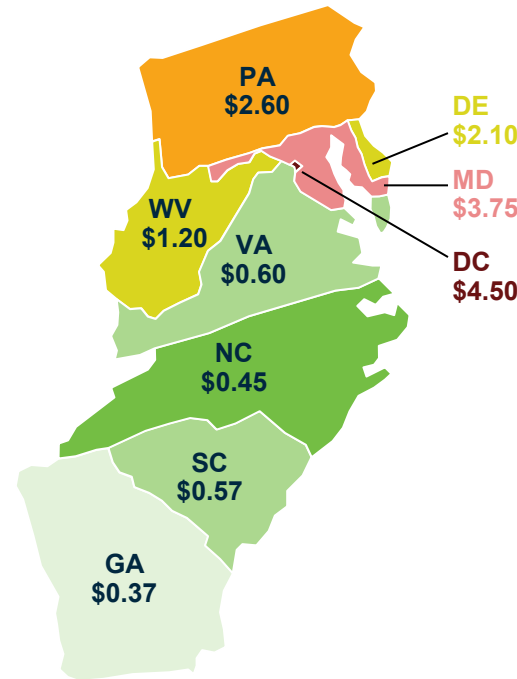
DC Tax Revenue Declined as Sales Shifted to Smuggling from Neighboring States

ECONOMIC IMPACT

**Cigarette Excise Tax Collections
Washington, DC (2011–2024)**



**State Cigarette Excise Taxes
2024 (per 20-pack)**



One Year Post-Ban: **Hanover County, VA**
30% Menthol Sales INCREASE
(853,856 packs)

Pre-Ban: DC sold 937,571 menthol packs

This single county accounts for ~91% of DC's lost packs

Source: Orzechowski & Walker, Tax Burden on Tobacco, FY 2024 ed.

Source: Management Science Associates Inc.



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What is the Impact of Flavor Bans in the U.S.?

Overall adult smoking, cessation, and menthol use **was unaffected**

- Flavor bans **were not associated with greater reductions in adult smoking or increases in cessation** than comparison states
- **Substantial menthol use** persisted years after implementation
- **Unintended adverse effects** for young adults and Hispanic individuals

Underage smoking and cessation **was unaffected**

- Flavor bans in MA **did not produce greater reductions in underage smoking or increases in cessation** than comparison states

Illicit and cross-border **products flourish**

- Discarded pack studies show **widespread use of banned and outsourced products**
- **Cross-border purchasing and non-tax-paid products** undermined policy effectiveness and reduced tax revenues

Flavor bans have not delivered clear reductions in smoking

Illicit markets & cross-border activity substantially blunt policy impact



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