

NCI Monograph 24

Tobacco and Alcohol: Understanding Co-Use to Reduce Cancer Incidence and Mortality

Chapter 9

Economic, Environmental, and Policy Factors Related to Tobacco and Alcohol Use

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Chapter 9

Economic, Environmental, and Policy Factors Related to Tobacco and Alcohol Use

Introduction

Tobacco and alcohol initiation, use, reduction, and cessation are strongly influenced by the policies, systems, and environments that shape accessibility, affordability, and marketing of these substances.¹⁻¹¹ Restrictions on locations or times of sales,^{6-8,10,11} increased taxation,^{1,9} and regulation of product marketing^{1-3,12,13} are examples of policies that can reduce tobacco and alcohol use. Policies that influence the purchase or use of tobacco and alcohol have the benefit of directly affecting large portions of the population. However, the aims and evaluations of these approaches often focus only on the targeted substance, such as examining how indoor smokefree policies affect tobacco use and secondhand smoke exposure, or how increases in alcohol purchase age affect alcohol consumption. Lack of evaluation of cross-substance policy effects is a significant limitation in efforts to address co-use of tobacco and alcohol and to fully understand effects of policy choices. In addition, there are some shared policy approaches to reducing tobacco and alcohol use as well as their health and societal consequences (e.g., taxation, limiting retailer density, mass media campaigns for prevention and control). This overlap in context and policy approaches for both substances suggests that it is important to consider whether and how tobacco and alcohol economic, environmental, and policy factors intersect, such as how alcohol policies could affect tobacco consumption.

Focusing on tobacco and alcohol at the macro level, this chapter reviews and synthesizes research about the influence of economic, environmental, and policy factors related to alcohol on tobacco use, including initiation, co-use, reduction, and cessation. The chapter begins with a description of the tobacco and alcohol industries in the United States and economic factors including the retail environment for tobacco and alcohol and trends in the tobacco and alcohol markets. This is followed by a section addressing whether and how the retail environment for alcohol (i.e., quantity, type, and location of alcohol retailers) and the marketing environment of alcohol may influence tobacco use. This section also summarizes research on where the retail environments for tobacco and alcohol intersect, how marketing strategies for tobacco and alcohol intersect, the extent of exposure to marketing for both products, and discusses how these exposures may promote tobacco and alcohol co-use. The policy factors section addresses cross-substance effects of policies, focusing on how alcohol regulations influence tobacco use outcomes, including effects of (1) increasing alcohol tax and price on tobacco use and (2) restricting alcohol availability on tobacco use. Because some settings in which people use alcohol are a focus of tobacco marketing and are also important targets for tobacco control policy, the policy section also considers the impact of smokefree policies on alcohol use, including in substance use treatment settings.

In addition, the chapter notes areas where economic, environmental, and policy factors affect differences in exposures and behavioral outcomes among demographic groups, such as place-based differences in the concentration of tobacco and alcohol outlets and associations between availability and affordability of these products and their use. The primary focus of the chapter is on literature from the United States; however, international evidence is also incorporated, particularly for topics where no U.S. studies were found. The search strategy used to identify literature for this chapter is described in Appendix 9A.

Systems of Influence on Tobacco and Alcohol Use

Understanding the economic, environmental, and policy factors related to tobacco and alcohol depends, in part, on understanding that tobacco and alcohol use occurs in a system of influences and at various levels, from the intrapersonal to the macro-environmental. A systems focus recognizes that efforts to change individuals' behaviors benefit from addressing the social, relational, and institutional forces that help shape individual behavior,¹⁴ and that targeting such forces may help overcome the difficulty of delivering individual-level interventions to the large number of people in need of them.¹⁵ The commercial entities that are part of a system of influences on tobacco and alcohol use include the tobacco and alcohol manufacturers; distributors; retail, bar, and restaurant outlets; and the associated groups that promote sales and consumption of the products.¹⁶⁻²⁰ Multinational tobacco and alcohol companies seek to shape systems to support their business interests.¹⁷ For example, these activities include organizing corporate social responsibility activities, accessing and influencing policymaking, undertaking legal challenges to policies, and funding industry-friendly research.²¹ These corporate entities often use a message frame of cooperation to normalize their role in policymaking and to position themselves as partners in addressing the adverse effects of their products. This positioning can lead to further normalization of their businesses and acceptance of voluntary codes of conduct (e.g., industry marketing codes)²² which have consistently been found to be ineffective at reducing youth exposure to cigarette advertising.^{22,23,24} For alcohol sales, government entities may overlap with commercial ones (e.g., in jurisdictions with state-run liquor outlets).²⁵

Historically, the tobacco and alcohol industries have been closely aligned and shared strategies to further their commercial activity that have shaped tobacco and alcohol use in the United States and globally.²⁶⁻²⁸ There has been cross-ownership of tobacco and alcohol companies, as well as tobacco companies that have also manufactured alcohol products, such as Philip Morris USA's former ownership of Miller Brewing²⁹ and the former ownership of Ste. Michelle Wine Estates business by Altria, the parent company of Philip Morris USA,³⁰ as well as Altria's minority ownership stake in Anheuser-Busch.³⁰ Given the diversification of transnational corporations and the overlap between tobacco and alcohol manufacturers, it is important to continue to understand cross-industry influences and their impact on tobacco and alcohol use and their effect on public health.^{31,32} It is also important to understand that the tobacco and alcohol industries have engaged in similar strategies that may appear in line with public health but primarily serve to further their business interests, such as developing voluntary self-regulation codes, deploying corporate social responsibility programs, and reframing policy debates from industry responsibility toward individual responsibility.^{23,31,33}

Economic Factors

This section provides a brief overview of the tobacco and alcohol industries in the United States and then discusses the retail environment for tobacco and alcohol and trends in the tobacco and alcohol markets. Economic policies such as pricing and taxation are discussed in the “Policy Factors” section of this chapter.

Industry

Manufacturers

The cigarette and beer industries in the United States have been long dominated by several large manufacturers. As of 2022, two cigarette manufacturers hold around 76% of the total U.S. market share—Philip Morris USA, a subsidiary of Altria, holds a market share of 45.5%, followed by R.J. Reynolds, which has a market share of 30.3%.³⁴ Large cigarette manufacturers also have significant control of market share at a global level. In 2017, R.J. Reynolds was acquired by British American Tobacco (BAT),³⁵ bolstering the position of BAT as one of the five leading global tobacco manufacturers, along with Philip Morris International; Japan Tobacco, Inc.; Imperial Brands; and China National Tobacco Corporation.³⁶

Like the tobacco industry, the alcohol industry is also controlled by leading multinational producers, especially in beer and distilled spirits markets. In 2022, approximately 65% of the U.S. beer market was dominated by 2 companies, Anheuser-Busch InBev SA/NV and MillerCoors, that held market shares of 41.1% and 23.4%, respectively.³⁴ In 2017, Anheuser-Busch InBev SA/NV manufactured about 27% of the commercial beer in the world,³⁷ and Diageo—a company based in the United Kingdom—had 20% of the global distilled spirits market.³⁷ The least concentrated segment of the alcohol industry is wine.³⁷ As of 2016, the leading 10 wine manufacturers together produced about 13% of wine in the global market.³⁷ The level of concentration of the U.S. alcohol markets reflects the global dominance of large alcohol companies.

While both the beer^{38,39} and cigarette market over the past decade showed a high degree of concentration, market shares within the e-cigarette and other electronic nicotine delivery systems (ENDS) industry shows greater fluctuation.⁴⁰ Starting in 2012, major cigarette companies entered the U.S. e-cigarette market. In a merging of the ENDS and cigarette industries, cigarette companies have acquired or developed e-cigarette products—Lorillard acquired Blu, Japan Tobacco acquired Logic, R.J. Reynolds developed Vuse, and Philip Morris introduced MarkTen.⁴⁰ By 2022, the tobacco manufacturer Reynolds American Inc. held 35.9% of the U.S. ENDS market, and Juul Labs, a formerly independent company in which Altria acquired a 35% stake in 2018, held a U.S. market share of 32.3%.³⁴

Evolving Tobacco and Alcohol Product Characteristics

When considering economic policies and the retail environment, it is important to consider the variety of products in the tobacco and alcohol categories and changes in the marketplace for both products. This includes new tobacco and alcohol product availability and promotion, particularly as both markets witness the emergence of products with new flavors and increasing potency, such as e-cigarettes and ready-to-drink (RTD) beverages.^{41,42}

Since the 1920s, the U.S. tobacco market has been dominated by cigarettes.⁴³ However, with the introduction and emergence of a wide array of nicotine and tobacco products such as e-cigarettes, heated tobacco products (HTPs), and nicotine pouches, and with declines in cigarette smoking, the landscape of the nicotine and tobacco industry has grown increasingly complex.^{44,45} A total of 7.0% of U.S. adults reported currently using e-cigarettes in 2024,⁴⁶ and 7.8% of U.S. high school students reported currently using e-cigarettes in 2024,⁴⁷ making e-cigarettes the second most used tobacco product among adults and the most used tobacco product among youth.^{48,49} Meanwhile, tobacco companies continue to increase investment in noncigarette tobacco products, including via purchasing and/or launching their own e-cigarettes, smokeless tobacco, nicotine pouch, and HTP brands.⁴⁴ As a result, when evaluating how alcohol policies affect tobacco use, it is important to examine not only cigarette smoking but also the use of e-cigarettes and other tobacco products.

The alcohol market has historically been highly diverse in terms of product types, flavor options, and alcohol concentration and remains so.⁵⁰ This diversity is reflected in a broad spectrum of alcoholic beverage options, including beer, cider, wine, liquor (liqueurs and distilled spirits), RTD beverages, and other subtypes of alcohol-containing beverages.^{37,42} In the last several decades there has been a rapid increase in sales of RTD beverages. The RTD category contains products that are distilled spirit cocktails and are often sweet, flavored, and similar in type and appearance to common nonalcoholic beverages like soda, seltzer, or juice.⁴² According to Euromonitor data, the U.S. retail sales volume of RTD beverages increased from 588 million liters in 2008 to around 2.8 billion liters in 2022, showing a quick growth in sales.³⁴

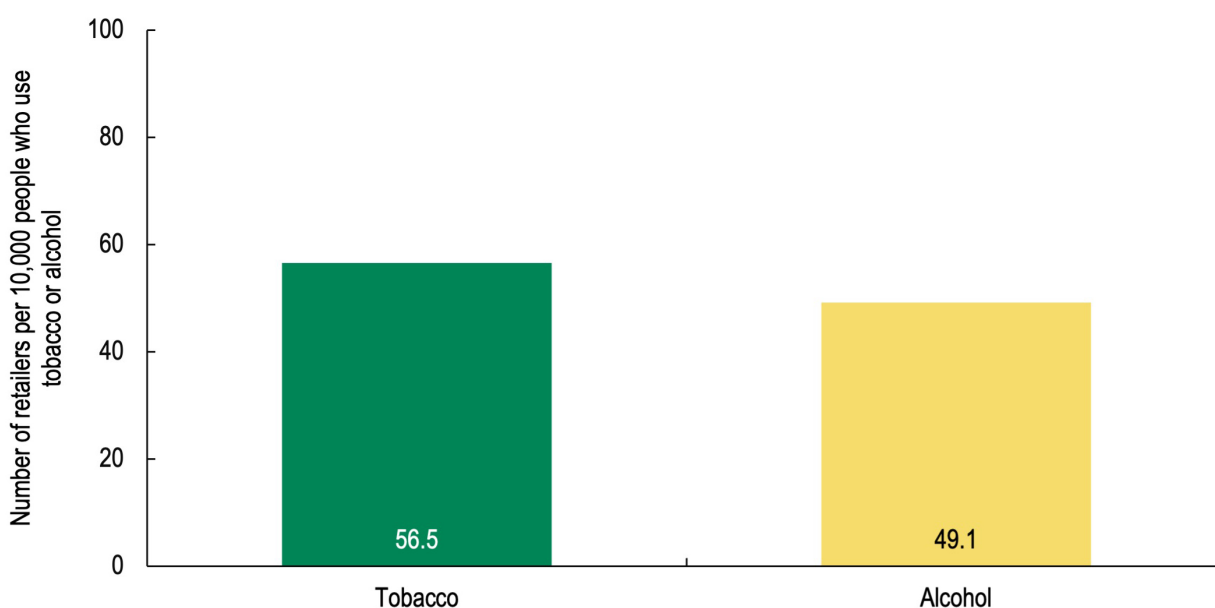
Retailers

Retail environments for tobacco and alcohol encompass on-premise and off-premise use facilities. “Off-premise use” refers to retail outlets where tobacco or alcohol is sold but the outlet is not designed for consumption of the product on site (e.g., a liquor store, a convenience store). In contrast, “on-premise use” refers to retailers where tobacco or alcohol is sold and the outlet is designed for consumption of the product on site (e.g., a hookah lounge, a bar, a casino, a restaurant).^{51,52} In some states, some alcohol retailers are not permitted to sell tobacco (e.g., state-run liquor stores), and some tobacco retailers are not permitted to sell alcohol (e.g., grocery or convenience stores not licensed to sell alcohol).^{53,54} However, a 2014 estimate suggested that 13% of tobacco retailers are off-premise liquor stores,⁵⁵ and many retail locations (e.g., grocery stores, convenience stores) sell both tobacco and alcohol products,^{55,56} indicating overlap of the retail environments for these substances.

Retail environments for tobacco and alcohol are both at least partially characterized by brick-and-mortar retailers that provide off-premise or on-premise use. However, tobacco retailers are dominated by off-premise use, whereas alcohol retailers are composed of a mix of on-premise and off-premise use. Absent a national license requirement for tobacco and alcohol retailers in the United States, common data sources for identifying retailers are state/local licensing and commercial business lists.^{57,58} Using commercial business lists, 1 study estimated that, in 2018, there were 325,884 tobacco retailers in the United States that sold tobacco products for off-premise consumption.⁵⁹ In comparison, there were 652,159 off-premise and on-premise alcohol retailers in the United States in 2019,⁶⁰ or about twice as many physical locations for alcohol retailers as for tobacco retailers. Retail alcohol sales are also characterized by regulations

determining requirements for sales of beer, wine, and spirits; 17 states along with some counties and cities in other states have monopolies on wholesale or retail sales of some or all alcohol-containing beverages.²⁵ Differences in prevalence of alcohol use and tobacco use lead to different relative densities of retail outlets per person who uses tobacco or alcohol. In 2018, there were approximately 57 tobacco retailers per 10,000 adults who reported past-month tobacco use, which is 1.2 times greater than the number of alcohol retailers per 10,000 adults who reported past-month alcohol use (approximately 49 retailers per 10,000; see Figure 9.1). In contrast, there were 115,562 food stores in the United States in 2019, or about 3 grocery/convenience stores per 10,000 people.^{61,62}

Figure 9.1 Retail Outlets for Tobacco and Alcohol, United States, 2018: Number of Retailers per 10,000 People Who Use Tobacco or Alcohol



Note. Alcohol retailers include on- and off-premise retailers. *Alcohol use* is defined as use in the past month by individuals ages 21 and older; *tobacco use* is defined as use in the past month by individuals ages 18 and older.

Source: Beverage Information Group 2019,⁶³ Kong et al. 2022,⁵⁹ SAMHSA 2020.^{64,65}

For both tobacco and alcohol, the legal age of sale or purchase is 21 in the United States; tobacco sale laws prohibit retailers from selling tobacco products to individuals under 21 years of age, and alcohol laws prohibit possession or purchase of alcohol products by individuals under 21 years of age (see chapter 8, “Minimum Legal Drinking Age and Tobacco 21 Laws”). States and localities vary in terms of exemptions and penalties for youth purchase, possession, and use of tobacco and alcohol.⁶⁶⁻⁷¹ Tobacco and alcohol are also sold online, which can facilitate underage access to both products.⁷²⁻⁷⁴ In 2017, 24.8% of people who used e-cigarettes and were younger than the minimum legal age of sale for tobacco products in the United States (then 18 years of age) reported buying their products online.⁷⁵ In 2018, 13.0% of middle and high school students ages 9 to 17 who used tobacco reported buying products on the internet.⁷⁶ In 2022, 9.5% of U.S. youth ages 16 to 19 who reported past-year e-cigarette use purchased e-cigarettes online.⁷⁷ In a 2022 survey conducted in Rhode Island, 7.4% of young adults (ages 18–25) who reported

lifetime drinking purchased alcohol using an application (app) or the internet to obtain their products through home delivery services.⁷⁸ Around 10% of these purchases were made by people who were younger than the minimum legal age for drinking and purchase (21 years old).⁷⁸ The increasing use of home alcohol delivery services in 2020 and 2021, during and post the COVID-19 pandemic, further boosted internet alcohol sales.⁷⁹

Online sales of tobacco and alcohol pose significant regulatory challenges. In 2009, the U.S. Congress passed the Prevent All Cigarette Trafficking (PACT) Act to prohibit cigarettes and smokeless tobacco sales to consumers younger than the legal sales age and to prevent sales that do not collect applicable taxes.⁸⁰ Despite the extension of the PACT Act to cover online e-cigarette sales in 2021, studies find that online e-cigarette vendors often fail to comply with required tax collections and sales bans to minors.⁸¹⁻⁸⁴ Consequently, consumers cite low prices and convenience as the main motivations for purchasing e-cigarettes from the internet.⁸⁵ Similarly, although alcohol online purchase and home delivery should be accompanied by ID verifications to ensure compliance with the National Minimum Drinking Age Act of 1984, which prohibits the purchase or public possession of alcohol by individuals under 21 years old, some states do not have explicit policies for age verification in online purchases and home deliveries of alcohol, suggesting noncompliance,⁸⁶ and successful orders by underage buyers are sometimes delivered without appropriate age verifications.⁷⁸

Environmental Factors: Retail Availability and Marketing Environments

This section begins with a brief description of the cue reactivity literature that may explain why greater availability and marketing of alcohol could contribute to tobacco initiation and use and deter cessation. Cue reactivity refers to a complex neurobiological state where a person has cognitive, psychological, and behavioral reactions in response to substance-related stimuli.⁸⁷ Next, this section reviews research about retail availability for tobacco and alcohol, characterizing where the environments intersect and associations of greater availability with tobacco and alcohol use and other health harms. Finally, this section reviews research on the marketing environments for tobacco and alcohol, compares marketing expenditures, and reviews literature about the comarketing of these substances and effects of exposure to alcohol marketing on tobacco use by youth and adults. Recurrent themes in this section suggest gaps in understanding where the retail environments for tobacco and alcohol intersect, whether alcohol availability influences tobacco use or co-use, and whether exposure to alcohol marketing is associated with tobacco use or co-use.

The substance use literature on cue reactivity provides a theoretical rationale for why and how consumers react to tobacco and alcohol marketing and comarketing, and how cue reactivity plays a role in tobacco and alcohol use. With regard to tobacco and alcohol marketing, studies have demonstrated that certain aspects of the marketing can stimulate and reinforce cognition and neurobiological states (e.g., craving) regarding tobacco or alcohol that can influence use.⁸⁸⁻⁹³ Further, this literature indicates that comarketing of tobacco and alcohol products will likely reinforce the use of both tobacco and alcohol. Tobacco and alcohol marketing frame the product and the behavior in positive ways (e.g., romance, achievement, adventure) without showing the harmful consequences of use.^{23,94,95} This further supports the hypothesis that exposure to alcohol marketing could encourage tobacco use. According to a 2022 systematic review of 37 studies, alcohol cue exposure was found to increase tobacco cravings in 60% of studies and increased ad

libitum smoking in 18%.⁹¹ In an eye tracking study involving people who drink heavily (>7/14 drinks per week for women/men) and smoke cigarettes (>5 cigarettes per day), participants attended more to cigarette and alcohol cues than to water cues when all 3 cues were presented simultaneously.⁹⁶ In the first study to disentangle the separate and combined effects of smoking and alcohol cues, results suggest that both smoking and alcohol cues enhance cue-specific craving and reward value (as measured by spending) for these substances relative to single-substance and neutral cues.⁹⁷ Such findings have important implications for people who use tobacco and alcohol and who are trying to quit or reduce use of either or both substances. Moreover, other psychological theories can also inform understanding of the impact of exposure to marketing and media portrayals of tobacco or alcohol on use by youth and young adults, including social learning and social cognitive theories and the message interpretation processing model.⁹⁸⁻¹⁰⁰ For example, the message interpretation processing model predicts that positive affect evoked by alcohol portrayals is associated with the desire to emulate characters portrayed in alcohol ads, which predicts positive expectancies and liking of/desire for beer-related toys and brands and subsequent alcohol use. To the extent that tobacco and alcohol use co-occur in media portrayals and marketing, the message interpretation processing model would predict an effect of alcohol portrayals and marketing on tobacco-related attitudes and behaviors. Further investigation of cross-cue reactivity and cross-substance effects of marketing exposure is needed. Moreover, given that cross-substance marketing is common (e.g., tobacco marketing includes alcohol-related cues, see the “Marketing Environments for Tobacco and Alcohol” section later in this chapter), whether exposure to alcohol marketing could promote susceptibility to use tobacco, encourage initiation, stimulate craving, increase use frequency, and/or deter cessation warrants investigation.

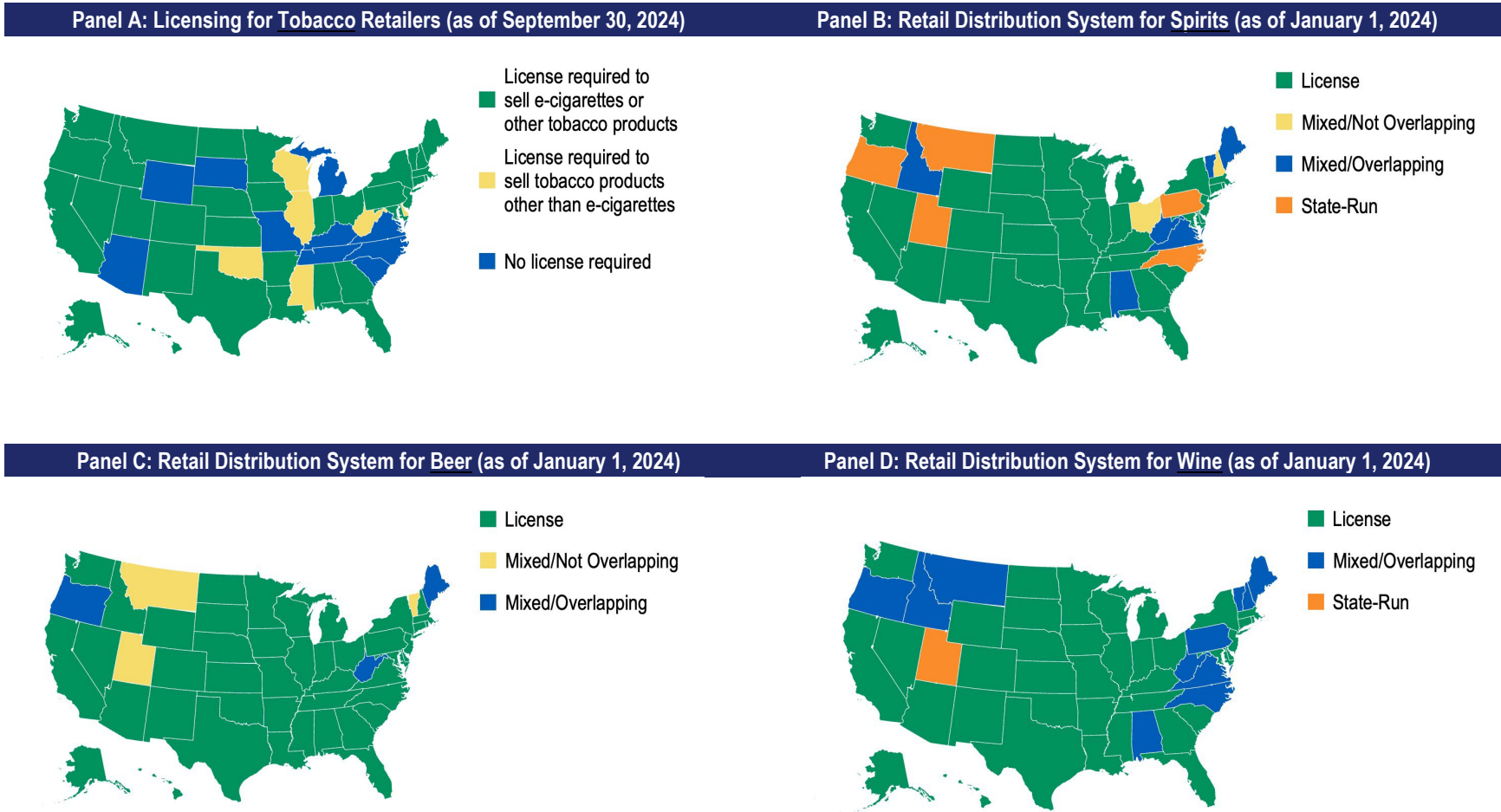
Retail Environment for Tobacco and Alcohol

Availability of Tobacco and Alcohol

Both tobacco and alcohol products are obtained primarily from brick-and-mortar retailers,^{53,86,101-104} yet licensing of these establishments is not required by every state, and there are no standard requirements across state licensing programs.^{67,105-107} No national licensing requirement exists for either tobacco or alcohol retailers. Although the National Academy of Medicine recommends that all U.S. states license retailers that sell tobacco to reduce tobacco sales to minors,¹⁰⁸ not all states require licenses. As shown in Figure 9.2, as of September 30, 2024, the District of Columbia, 40 states, and 6 U.S. territories (American Samoa, Guam, Northern Mariana Islands, Palau, Puerto Rico, Virgin Islands) required tobacco retailers to have a state license; this tobacco licensing requirement encompasses e-cigarette sales in most but not all of these locations, with 6 states and 3 U.S. territories only requiring a license to sell tobacco products other than e-cigarettes.⁶⁷ Of the 40 states that require a state tobacco license, 36 of them have an annual fee associated with acquiring the state license, ranging from \$6 in New Hampshire to \$800 in Connecticut.⁶⁷ Four states require a state license but do not require a state licensing fee for selling tobacco.⁶⁷ Ten states and one U.S. territory did not require a state license for tobacco retailers. In terms of licensing for alcohol sales, as of January 1, 2024, a majority of states license private vendors to sell spirits, wine, and beer (Figure 9.2). Some states use a state-run system or a mix of state-run and licensing systems for the sales of spirits (13 states), beer (6 states), and wine (12 states).¹⁰⁵⁻¹⁰⁷ When states do not use state-run stores or a mix of

state-run stores and licensing systems for sale of all alcohol (or subsets of alcoholic beverages), they require a license for private retail distribution of alcohol.¹⁰⁵⁻¹⁰⁷ Fees for state-based licenses range widely depending on factors such as whether the sale is for on-premise or off-premise consumption, the type of location for on-premise consumption (e.g., restaurant, theater, hotel, club), the size of the venue, and the type of alcohol sold.¹⁰⁹⁻¹¹¹

Figure 9.2 Licensing for Tobacco and Alcohol Sales by State



Note. Definitions of alcohol distribution systems are as follows: A *license* system is a system in which a state licenses private vendors to conduct retail sales. A *state-run* system is a system in which a state has the exclusive authority to set the price of and gain revenue from retail sales. A *mixed/not overlapping* system is a system in which some beverage subtypes are sold at retail through the state-run system, and some subtypes are sold through the license system, but none are sold through both. A *mixed/overlapping* system is a system in which one or more beverage subtypes are sold at retail through both state-run and license systems. Some categories have been combined for presentation, so maps may differ from those presented by NIAAA.¹⁰⁵⁻¹⁰⁷

Source: CDC 2024,⁶⁷ NIAAA 2025.¹⁰⁵⁻¹⁰⁷

Some tobacco and alcohol retailers allow for on-premise use of either or both substances,^{112,113} but the intersection of these retail environments is not well understood. In 2019, 55.8% of all U.S. alcohol retailers allowed on-premise use.⁶⁰ Tobacco retailers that allow for on-premise use are likely to represent a subset of tobacco specialty shops, including hookah lounges, cigar bars, e-cigarette (vape) shops, and smoke shops^{52,53}; these represented an estimated 4.1% of all U.S. tobacco retailers in 2017.⁵³ The ban on tobacco vending machines (excluding adult-only facilities) included in the 2009 Family Smoking Prevention and Tobacco Control Act¹¹⁴ has the potential to reduce the number and proportion of on-premise alcohol retailers that allow sales of tobacco; however, this effect has not been documented. Understanding the impacts of tobacco vending machines and other sales restrictions is important given that on-premise retail sales facilitate product use. Comprehensive smokefree indoor air laws for restaurants and bars may be another potentially useful strategy to reduce on-premise use of tobacco and alcohol, particularly in the 19 U.S. states that, as of 2024, do not have comprehensive laws requiring smokefree restaurants and bars.¹¹⁵ (For more information about state tobacco laws, see the American Lung Association's [State Legislated Actions on Tobacco Issues](#) resource.)

Data about the prevalence and location of U.S. tobacco retailers who also sell alcohol are incomplete. In 2017, 10.7% of U.S. tobacco retailers were classified as alcohol stores, but the total proportion of tobacco retailers that sell alcohol could not be determined.⁵³ In North Carolina, where off-premise sales of liquor are limited to state-controlled stores, 39% of 11,920 tobacco retailers sold alcohol in 2017.¹¹⁶ However, in California, which does not limit sales of alcohol to state-controlled liquor stores, observational data from a statewide random sample of licensed tobacco retailers in 2019 found that 71.6% sold alcohol (L. Henriksen, Ph.D., personal communication, July 2025).¹¹⁷ Apart from liquor stores, alcohol-selling tobacco retailers in California were supermarkets, pharmacies, convenience stores, small markets, discount stores, tobacco stores, gas stations, and unspecified “other” store types.

A study of community pharmacies in Los Angeles found that 87.5% of chain and grocery store pharmacies sell alcohol.¹¹⁸ Studies also indicate that pharmacies sell cigarettes at significantly lower prices and are more likely to advertise cigarette discounts than other tobacco retailers.^{119,120} The sale of tobacco and alcohol in pharmacies is particularly concerning for both tobacco and alcohol availability. Moreover, tobacco and alcohol sales in pharmacies are incompatible with the goals of cancer prevention and health promotion. Research that compared metropolitan areas with high and low density of CVS stores found that the chain's voluntary removal of tobacco sales in 2014 was associated with a significant decline in cigarettes smoked per day among U.S. adults who smoked nondaily, but not among those who smoked daily.¹²¹ In addition, compared to U.S. adults living in counties without CVS stores, those living in counties with CVS stores reported higher odds of quit attempts following the chain's removal of tobacco sales.¹²²

Availability of tobacco and alcohol from the same retail source may facilitate use of both substances.^{6,123,124} Intersecting retail environments also facilitate contemporaneous exposure to tobacco and alcohol marketing, contributing to social norms that may reinforce the acceptability of co-use.¹²⁵⁻¹²⁷ In addition, retail availability of tobacco and alcohol creates opportunities to purchase both products. Among northern California adults who purchased alcohol from a grocery store in the past year, 4.8% also purchased cigarettes from the same store.¹²⁸ However, purchasing patterns might differ for store types other than grocery stores, and this study did not

analyze the proportion of cigarette purchasers who bought alcohol. Data that characterize which products consumers purchase as well as the price paid are needed to better understand simultaneous purchases of tobacco and alcohol in the United States. For example, a study conducted in Finland found that cigarettes were bought more frequently with purchases of beer/hard cider than purchases without alcohol, but the relationship was nonlinear, with the greatest cigarette expenditures in shopping baskets with midprice purchases of beer/hard cider.¹²⁹

Place-Based Disparities in Availability

The geographic distribution of off-premise tobacco and alcohol retailers are both influenced by economic forces that encourage stores to locate near one another or in specific neighborhoods and locations and policy factors, such as zoning laws for commercial land use.¹³⁰⁻¹³⁶ The number of brick-and-mortar tobacco and alcohol retailers demonstrates that both products are highly available and accessible, although retail availability varies by state, locality, and product type.^{6,137}

Like tobacco retailers,^{138,139} off-premise alcohol retailers are concentrated in neighborhoods characterized by greater socioeconomic disadvantage and higher proportions of populations that have experienced discrimination based on race and/or ethnicity.^{140,141} This is particularly true for non-Hispanic Black people^{140,141} despite their lower rates of alcohol use compared with non-Hispanic White people.¹⁴²⁻¹⁴⁴ For example, in Louisiana and Alabama, a higher level of isolation and segregation between White and Black residents was associated with higher alcohol outlet density in counties with some restrictions on alcohol sales.¹⁴⁵

For both tobacco and alcohol outlets, decisions made decades ago regarding neighborhoods are still consequential today, because they are associated with the density of tobacco and alcohol retailers and contribute to differences in health outcomes. Research suggests that redlining (a historical practice of grading neighborhoods based on investment risk for home loans where race and/or ethnicity of the residents was a factor in the assessment) is associated with contemporary differences in the availability of alcohol¹⁴⁶ and tobacco.¹³⁴ Compared to census block groups in a 6-city region of northern California that were historically graded in 1937¹³³ through Federal Home Owners' Loan Corporation designations as A (Green - Best), block groups that were graded B (Blue - Still desirable), C (Yellow - Definitely declining), and D (Red - Hazardous)¹³⁴ had 3.4-, 8.7-, and 9.6-times higher density of off-premise alcohol outlets in 2015, respectively.¹³³ In New York City, block groups that were historically redlined (i.e., Grade D between 1935 and 1940) had significantly greater density of on-premise and off-premise alcohol outlets in 2014–2018 than block groups that were not redlined (i.e., Grades A, B, and C).¹⁴⁷ Similarly, land parcels in Baltimore, Maryland, and Genesee County, Michigan, that were redlined (Grade D designations in the 1930s) had a significantly greater density of alcohol outlets in 2020 (both off-premise and on-premise) than parcels that were not redlined (R. Sadler, Ph.D., personal communication, September 19, 2023).¹⁴⁶ As of 2026, only 1 study investigated whether redlining was related to the distribution of tobacco outlets; in 13 Ohio cities that were redlined, as neighborhood grades decreased from A (Best) to D (Hazardous), tobacco outlet density increased monotonically.¹³⁴

Other studies about the availability of tobacco and alcohol have further identified associations between neighborhood characteristics and retail outlet density. For example, a study in North Carolina found there was a positive association between a tract-level index of neighborhood disadvantage (based on socioeconomic and demographic characteristics) and the density of tobacco retailers and between neighborhood disadvantage and alcohol retailer density, but there was an even stronger positive association between neighborhood disadvantage and retailers that sold both tobacco and alcohol.¹¹⁶ Another North Carolina study found that census tracts with the greatest segregation between non-Hispanic White and non-Hispanic Black residents had 65% more alcohol retailers and 38% more tobacco retailers than tracts with the least segregation.¹⁴⁸ In Worcester, Massachusetts, the number of tobacco outlets and the number of alcohol outlets per 1,000 residents increased as the percent racial minority population increased and as the median household income decreased.¹⁴⁹ In California, census tracts with higher proportions of foreign-born Latino residents had greater tobacco retailer density but lower alcohol retailer density than those with lower proportion of foreign-born Latino residents.¹⁵⁰ Results from studies in Scotland,^{151,152} New Zealand,¹⁵³ and Germany¹⁵⁴ found similar evidence supporting positive associations between the density of tobacco and alcohol retailers and magnitude of neighborhood socioeconomic deprivation.

Evidence suggests that availability of tobacco near schools normalizes use and facilitates youth access.^{3,23} Similarly, availability of alcohol retailers near schools is thought to affect youth access and use.¹⁵⁵ In a 2011–2012 representative survey of U.S. households with youth (ages 13–16), 44.4% attended school within 1,000 feet of a tobacco retailer.¹⁵⁶ No nationally representative comparative data for proximity to alcohol retailers were identified. However, a study of approximately 242 adolescents in a 7-county area of Minneapolis-St. Paul, Minnesota, observed an average of 3.9 off-premise alcohol outlets (range 0–57) within a 3,000 meter (1.86 miles) roadway network distance of home and an average of 5.6 off-premise alcohol outlets (range 0–30) within the same distance from schools.¹⁵⁷ Research published as of 2026 suggests that tobacco retailers cluster near K-12 schools in the United States,¹⁵⁸ and a study in California suggests this pattern of tobacco retail clustering extends to college campuses as well.¹⁵⁹ Structural reasons for such patterns, such as zoning or other economic factors, could be investigated in future research. Parallel analyses for alcohol retailers are also warranted, as well as studies to understand potential associations between retailer density and tobacco and alcohol initiation and use.

Widespread availability of tobacco and alcohol implies that both are highly accessible, but fewer studies measure accessibility (e.g., travel time, travel costs) than availability. From a geographic perspective, availability refers to the supply of tobacco and alcohol within a given area, whereas accessibility refers to the relationship between these available supplies and the location of people who use tobacco and alcohol.¹⁶⁰ For example, 2 tracts could have identical availability of tobacco supplies in terms of total number of outlets and number of outlets per 1,000 people or per square mile, but a tract with a more highly connected space, such as through more direct roads or more extensive and affordable transit options, leading to lower travel times and lower travel costs, would have higher accessibility. According to a 2021 systematic review, only 1 of 40 studies about the tobacco retail environment measured travel time.¹⁶⁰ No comparable systematic review for off-site or on-site alcohol retailers was identified. However, a study conducted in the United States found that in 2013, the average driving time to 1 of the 7 nearest on-premise alcohol outlet was 5.89 minutes and average driving distance was 2.63 miles (about 4.3 kilometers).¹⁶¹ At the

state level, a population-weighted measure of drive time (or distance) to 1 of the 7 nearest on-premise alcohol outlets ranged from 1.67 minutes (or .69 miles) in the District of Columbia to 15.29 minutes (or 7.91 miles) in Arkansas, with a median of 6.67 minutes (or 2.95 miles). Comparable analyses to characterize tobacco accessibility are warranted, and socioeconomic and racial and/or ethnic disparities in accessibility could be examined in future research.

The reviewed evidence suggests that tobacco and alcohol retailers are similarly concentrated in areas characterized by economic disadvantage and a higher proportion of racial and/or ethnic minority residents. However, few studies focused on where tobacco and alcohol sales co-occur; retail outlets that sell both tobacco and alcohol are an understudied source of cues that promote co-use. In addition, no systematic reviews or meta-analysis of place-based disparities in the density or proximity of alcohol retailers were identified.

Role of Alcohol Availability in Tobacco Initiation, Use, Cessation, and the Co-Use of Tobacco and Alcohol

Much evidence suggests that greater retail availability of tobacco is associated with greater use, with the caveat that directionality is difficult to disentangle.^{2,160,162} A systematic review of 40 studies about the tobacco retail environment and smoking-related outcomes observed positive associations between retail density and smoking prevalence in 16 out of 21 studies (76.2%), greater tobacco use and smoking initiation in 9 out of 14 studies (64.3%), and lower cessation outcomes in 11 out of 13 studies (84.6%).¹⁶⁰ In addition, findings from a 2022 systematic review and meta-analysis of 37 studies from 8 countries suggest evidence of a positive association between tobacco availability and adult tobacco use.¹⁶² Furthermore, the 2020 U.S. Surgeon General's report, *Smoking Cessation: A Report of the Surgeon General*, concluded that the "evidence is suggestive but not sufficient to infer that decreasing the retail availability of tobacco products and exposure to point-of-sale tobacco marketing and advertising increases smoking cessation".^{2,p.12} This report also highlights that "evidence from alcohol control research indicates that limiting alcohol retail density can reduce excessive alcohol consumption; this relationship may translate to tobacco."^{2,p.12}

Using comparable measures of alcohol availability, a systematic review of 13 studies observed significant positive associations between alcohol availability (retail outlet density) and drinking or heavy drinking in 17 of 34 reported effect estimates.¹⁶³ A scoping review of 34 studies (most published since 2012) concluded that the greater physical availability, as well as temporal availability (i.e., sales and delivery hours), of alcohol can contribute to permissive drinking environments.¹⁶⁴ However, most of these studies were conducted in the United Kingdom, Australia, or South Africa. One study undertook separate systematic reviews of natural experiments in the United States, Canada, Sweden, and Russia about reduction in sales days/hours and alcohol outlet density on alcohol consumption.¹⁶⁵ It concluded that all seven studies restricting temporal availability and three of four studies restricting physical availability reduced per capita alcohol consumption. Although there were too few studies about physical availability for a meta-analysis, the meta-analysis of temporal availability studies found that adding 1 day of sale was associated with a 3.4% increase in per capita consumption of total alcohol.¹⁶⁵

Conclusions from systematic reviews of retail availability of tobacco and youth use indicate inconsistent evidence between availability and use, with more positive associations of youth cigarette smoking with availability near home than near school.¹⁶⁶⁻¹⁶⁹ However, few studies examined availability of both tobacco and alcohol in relation to youth use of these substances. A telephone survey of 1,538 young adults (ages 18–30) from randomly selected households in 24 California cities assessed co-use of alcohol with tobacco or cannabis in places that respondents could recall drinking alcohol in the past 3 months: own home, someone else’s home, bar/restaurant, and outdoor/public places.¹⁷⁰ Overall, 12.5% of events involved simultaneous co-use of tobacco and alcohol, but co-use was unrelated to place; 6.8% of events involved simultaneous use of all 3 substances, and simultaneous polysubstance use was significantly less likely to occur in bars/restaurants than in own/other’s home or outdoor spaces. In a cross-sectional survey of 205 Latino high school students living near the California-Mexico border, proximity (i.e., roadway distance from residence to nearest outlet, a measure of accessibility) to tobacco and alcohol outlets was positively associated with a combined measure of lifetime use of tobacco and alcohol use after controlling for individual characteristics.¹⁷¹

Because tobacco and alcohol use share common risk factors, some studies investigate whether features of the alcohol environment are independently associated with tobacco and alcohol use. For example, in a nationally representative survey of college students, participants attending colleges where a higher percentage of students perceived that alcohol was very easy to obtain had substantially higher odds of both cigarette smoking and binge drinking compared to students at campuses with lower perceived availability, even after controlling for other individual-level factors (e.g., sex, age, race, on- or off-campus residence, individual’s own perception of alcohol availability), campus-level factors (e.g., school-level binge drinking rates), and geographical region.¹⁷² Additional research investigating whether greater alcohol availability promotes urges to smoke and deters smoking cessation, and whether this varies by setting (e.g., home, school, other setting) is needed.

Availability and Affordability

The higher concentration of tobacco retailers and off-premise alcohol retailers in socioeconomically disadvantaged neighborhoods may lead to greater competition between stores, suggesting that neighborhood residents are exposed to greater availability and lower prices for both products, two factors that encourage product use.^{139,173-178} However, more evidence of place-based differences in price has been found for tobacco than for alcohol. For example, a 2020 systematic review of 20 studies found that cigarettes cost significantly less in neighborhoods characterized by lower socioeconomic status (versus higher socioeconomic status) and higher proportions of youth and Black residents (versus neighborhoods with lower proportions of these groups).¹⁷³ Similarly, a study in two Canadian provinces (Ontario and Quebec) found that cigarette prices near secondary schools were significantly lower in neighborhoods with a median household income one standard deviation below the provincial median than one standard deviation above the median.¹⁷⁹ Such findings align with evidence from tobacco industry documents indicating that manufacturers have used race, class, and geography

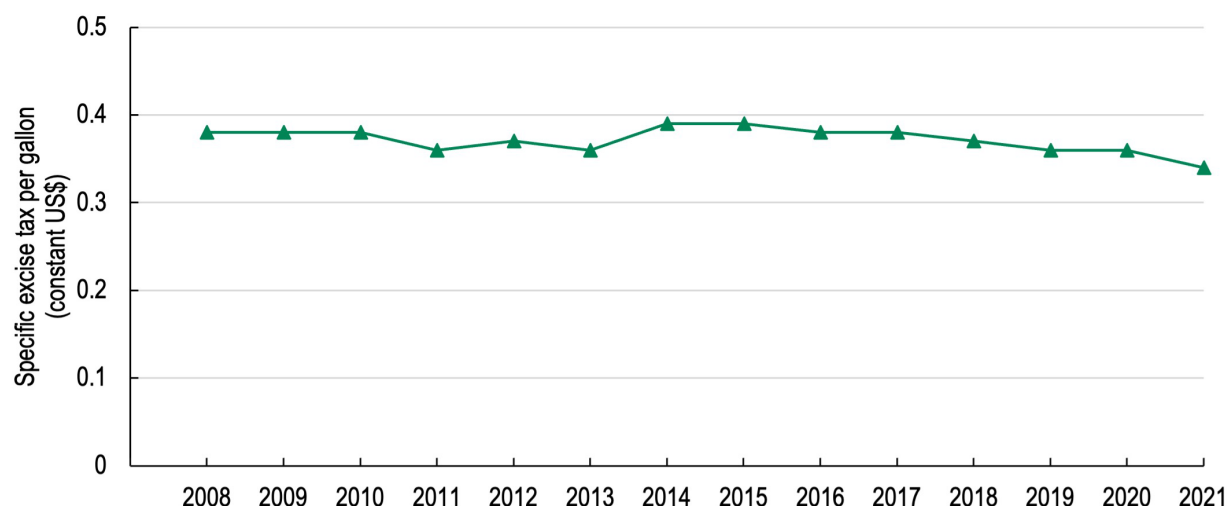
for target marketing of price promotions.^{139,180} Although studies of availability pricing do not control for localized competition (number of tobacco retailers nearby), models typically adjust for store type and neighborhood demographics, such as population density, income and race and/or ethnicity,¹⁸¹ factors that are typically correlated with the number and density of tobacco retailers.^{138,182}

Comparatively fewer studies of place-based differences in alcohol prices were identified. In Australia, a 1 decile increase in an index of socioeconomic advantage was associated with a 1.3% increase in the minimum price for a 750 ml bottle of wine, with lower prices observed in areas with more students. In the United States, a study of alcohol outlets in the year 2000 observed that prices of two leading beer brands were related to neighborhood income and racial composition, but not the proportion of youth in the store neighborhood.¹⁷⁴ However, focusing on two leading brands could miss place-based differences in presence and price of beer sub-brands targeted to audiences defined by economic disadvantage and race and/or ethnicity. No studies were found that compared prices of tobacco and alcohol in the same stores. This is a noteworthy gap in the literature, given the strong association between price and use.

As will be discussed in the section “How Alcohol Tax and Pricing Policies and the Affordability of Alcoholic Beverages Affect Tobacco Use,” price is an important determinant of product use. The price of an alcoholic drink relative to disposable income decreased between 1950 and 2011, making alcohol more affordable.¹⁸³ Beginning in the 1960’s the inflation-adjusted value of state excise taxes on beer, spirits, and wine declined sharply until the early 1980s, and since then have declined slowly or for beer have stayed fairly constant (see Figure 9.3).¹⁸⁴ Declines in state-level beer taxes, combined with the federal tax reduction for beer in 2017, has reduced the overall tax burden on beer, leaving room for the alcohol industry to keep prices stable (see Figure 9.4). In contrast to the largely unchanged average inflation-adjusted price per gallon of beer, the average inflation-adjusted price per pack of cigarettes has increased steadily (see Figure 9.4).

Whether increasing alcohol prices will reduce tobacco use hinges on the economic relationship between the two products. If tobacco and alcohol are economic substitutes, higher alcohol prices will increase tobacco use. In contrast, if tobacco and alcohol are economic complements, increasing alcohol prices will reduce tobacco use. However, the lack of changes in beer prices since 2006 poses challenges in identifying how these prices affect tobacco use. As a result, studies on the economic relationship between tobacco and alcohol using recent data are limited by this constrained variability.

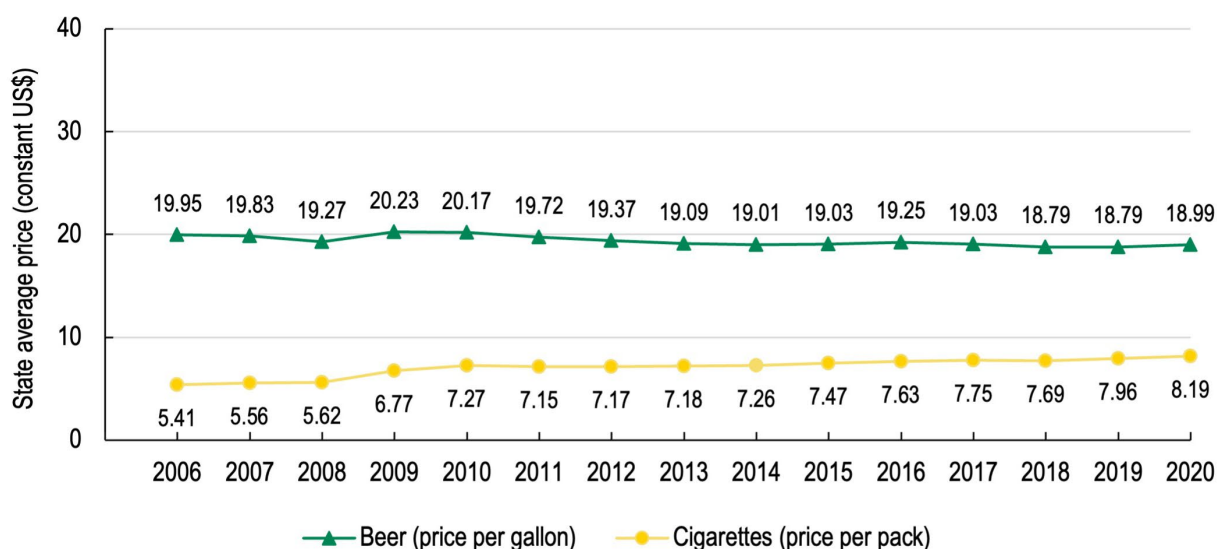
Figure 9.3 Inflation-Adjusted Average State-Level Specific Excise Taxes per Gallon of Beer (5% Alcohol) in the United States, 2008–2021



Note. Specific tax amounts adjusted for inflation using 2022 as the base year. Tax amounts for beer are per gallon (5% alcohol).

Source: NIAAA.^{185,186}

Figure 9.4 Inflation-Adjusted Average State Price per Gallon of Beer and per Pack of 20 Cigarettes in the United States, 2006–2020



Note. Beer prices are based on Heineken beer, which was selected by the Council for Community and Economic Research to consistently measure beer price over time and across locations. Beer price data are derived from the Council for Community and Economic Research. Cigarette price data are derived from the Centers for Disease Control and Prevention State Tobacco Activities Tracking and Evaluation (STATE) system and the Orzechowski and Walker Tax Burden on Tobacco data set.

Source: CDC 2019,¹⁸⁷ Council for Community and Economic Research 2022,¹⁸⁸ Orzechowski and Walker 2021.¹⁸⁹

Summary: Retail Environment for Tobacco and Alcohol

Both tobacco and alcohol products are obtained primarily from brick-and-mortar retailers, but variations in state licensing programs, fees, and on-premise use policies for both products make it difficult to estimate how frequently tobacco and alcohol products are available from the same retail outlet and the impact on co-use. Intersecting retail environments can facilitate exposure to marketing for both products that may normalize co-use and purchase of both products. There is consistent evidence that both tobacco and alcohol retailers are concentrated in neighborhoods with greater socioeconomic disadvantage. Tobacco and alcohol retail availability are both associated with higher rates of tobacco and alcohol use, and some evidence suggests that limiting retail availability can increase smoking cessation or decrease alcohol consumption. Place-based differences in availability may also result in lower prices for tobacco and alcohol in neighborhoods with lower socioeconomic status. Most studies addressing this question have focused on tobacco prices.

Marketing Environments for Tobacco and Alcohol

Although the intersection of tobacco and alcohol in product marketing and other media is widely studied, too little is known about the effects of exposure to alcohol marketing on tobacco use or co-use. This section first compares marketing expenditures for tobacco and alcohol. It then summarizes literature on the comarketing of both substances, tobacco and alcohol brand placement in media, portrayals of tobacco and alcohol use in media, and associations of exposure to alcohol marketing with tobacco use. It is important to note that regulation of tobacco and alcohol marketing differ significantly. Although U.S. federal law bans the advertising of cigarettes, cigars, and smokeless tobacco on television and radio, it allows the advertising of other tobacco products and alcohol products using these channels. A detailed comparison of marketing restrictions for tobacco and alcohol is presented in Appendix 9B.

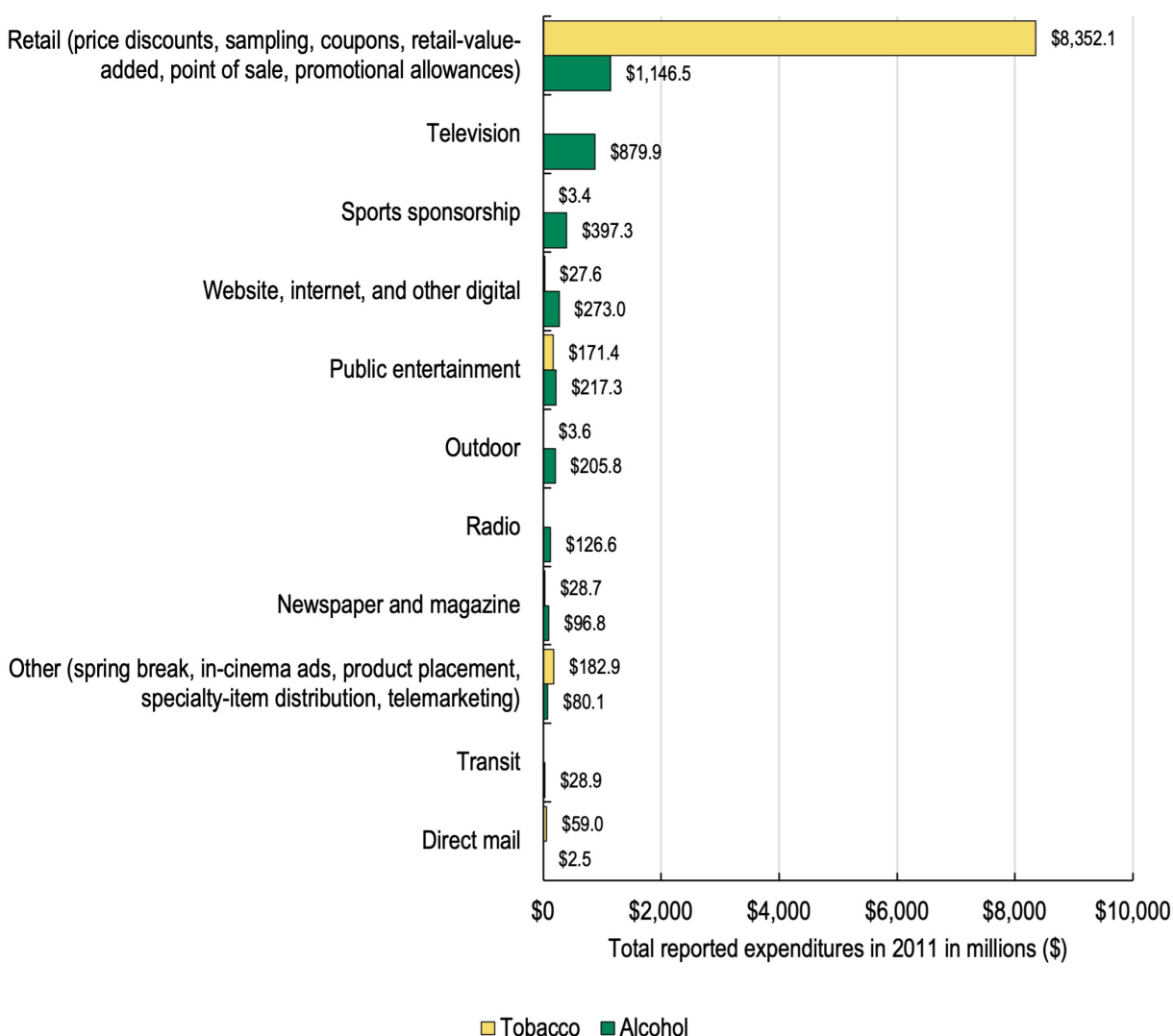
Marketing Expenditures for Tobacco and Alcohol Products

The U.S. Federal Trade Commission (FTC) is a federal agency that protects consumers from unfair or deceptive practices and advertising, including both tobacco and alcohol marketing.¹⁹⁰⁻¹⁹² The agency has reported to Congress on cigarette sales and marketing expenditures for cigarettes since 1967, smokeless tobacco since 1986, and e-cigarettes since 2015.¹⁹³⁻¹⁹⁵ Additionally, the FTC has addressed concerns about the effects of alcohol marketing on youth and has published periodic reports on the status of the alcohol industry's compliance with its own self-regulatory standards.¹⁹⁶⁻¹⁹⁹

In its 2014 alcohol report (the most recent alcohol report available as of 2026), the FTC issued Special Orders to 14 major alcohol companies, which represented 79% of the volume of alcohol sold in the United States. The Special Orders compelled the companies to disclose annual marketing expenditures for 2011. In that year, reported alcohol marketing expenditures totaled about \$3.45 billion.¹⁹⁶ Figure 9.5 compares expenditures from FTC reports on tobacco (cigarettes and smokeless combined), totaling about \$8.83 billion in 2011 (the only year in which both tobacco and alcohol marketing expenditure data are available from FTC). Although reported marketing expenditures were 2.6 times higher for tobacco than alcohol, alcohol companies did not report expenditures related to price discounts,¹⁹⁶ a noteworthy data gap considering that price discounts represented 81.2% of tobacco marketing expenditures in 2011.^{193,194} Price discounts

are paid to retailers or wholesalers in order to reduce the price of cigarettes to consumers; price discounts may include off-invoice discounts, buy-downs, voluntary price reductions, and trade programs.¹⁹³ These primary vehicles for tobacco marketing contribute to tobacco-related health disparities related to socioeconomic status, race and/or ethnicity, and sexual orientation.^{139,200-202}

Figure 9.5 Tobacco and Alcohol Marketing Expenditures in 2011 Reported to the Federal Trade Commission



Note. Marketing expenditures for tobacco include cigarettes and smokeless tobacco. *Price discounts* (under the Retail category) are included for tobacco marketing totals but are not included for alcohol product marketing totals. *Retail-value-added* refers to promotions involving free or discounted products. *Point of sale* expenditures include materials displayed or distributed at retail locations. *Promotional allowances* are paid to retailers, wholesalers, or others to facilitate the sale or placement of products. *Specialty-item distribution* refers to distribution of non-tobacco or alcohol product items, such as coasters, shirts, hats, sunglasses, keychains, and lighters.

Source: Federal Trade Commission.^{193,194,196}

Marketing of Tobacco and Alcohol

Some tobacco marketing strategies employed in the United States may reinforce co-use of tobacco and alcohol. This potential for synergy is enhanced by co-ownership, such as Altria's approximately 8% ownership of Anheuser-Busch,²⁰³ Philip Morris's former ownership of Miller Brewing, and Altria's former ownership of wineries.^{28,30} Moreover, the potential for synergy is also increased by instances of cooperation between tobacco and alcohol companies. For example, tobacco industry documents indicate that tobacco companies also studied co-use of cigarettes and alcohol and the drinking behaviors of customers who smoked cigarettes.²⁸ To link cigarettes with alcohol, tobacco companies engaged in (1) joint sponsorship with alcohol companies of sporting, art, and other cultural events; (2) joint promotion of cigarette and alcohol products; and (3) development of cigarette promotions featuring alcohol or alcohol paraphernalia and offering cigarette-branded gifts with alcohol purchases.²⁸ A Philip Morris document details a corporate leverage project that analyzed the implications of cross-promoting the brands they owned in 1987 (specifically referring to the operating units of Philip Morris USA, Miller Brewing Company, and General Foods). They concluded that sponsorships "represent an important area for operation units to work together" and identify a "mutual need to capitalize on other operating units' involvement".^{204,p.63} However, they also note that, because of a negative view of cigarettes, an implicit cross-promotion of the brands (e.g., retailer sponsorship event, placing a group of brand-specific advertising for each brand together in one promotional insert) involved less risk of reducing a favorable view of the brands than explicit association methods (e.g., "cross-ruff" coupons or placing coupons for cigarettes on beer products).²⁰⁴ This document also noted that promotion directors "believe capitalizing on joint arrangements or programs can assist in achieving specific operating unit consumer promotion goals or objectives" and specifically identified consumer promotion, event marketing, and materials purchasing as potential opportunities for joint activities.^{204,p.22-24}

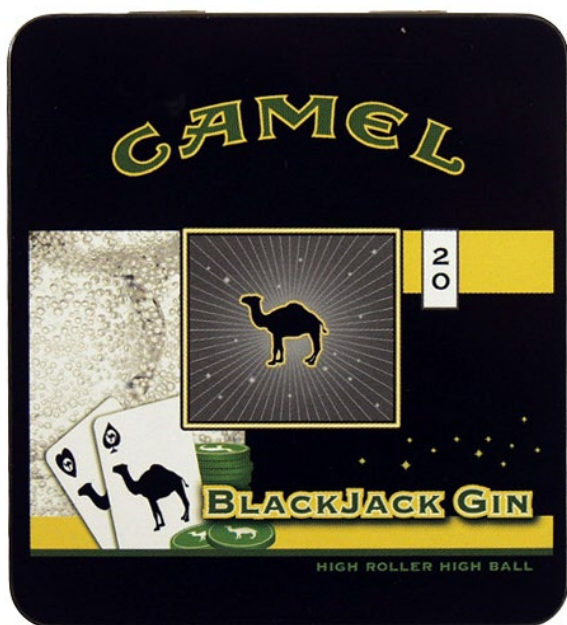
The Role of Alcohol in Marketing Tobacco Products. Tobacco industry documents describe the development of alcohol-flavored tobacco products, emphasizing the overlap of tobacco and alcohol in product use. These efforts to develop and market alcohol-flavored tobacco products include Lorillard's proposal to develop crème de menthe flavored cigarettes (which was not implemented) and R.J. Reynolds' effort to test brandy-flavored cigarette prototypes, called Project Prestige Family.²⁰⁵ Prior to the enactment of the 2009 U.S. Family Smoking Prevention and Tobacco Control Act, which banned non-menthol characterizing flavors, including alcohol-flavors, in cigarettes,²⁰⁶ R.J. Reynolds marketed alcohol-flavored Exotic Camel cigarette varieties under names like Margarita Mixer and Kauai Kolada.²⁰⁵

Industry development of alcohol-flavored tobacco products was not unique to cigarettes (see Figure 9.6). Although Brown & Williamson abandoned an effort to develop bourbon-flavored snuff,²⁰⁷ examples of alcohol-flavored chewing tobacco that have been sold in the United States include Stoker's Moonshine (National Tobacco Company)²⁰⁸ and bourbon-flavored Copenhagen Black (U.S. Smokeless Tobacco Company).²⁰⁹ Between 2016 and 2019, sales of alcohol-flavored cigarillos decreased from 8.0% to 5.9% of total unit sales, but sales of alcohol-flavored large cigars increased from 2.6% to 4.6% of total unit sales over the same period.²¹⁰ Across cigar categories, alcohol-flavored products ranked fourth in sales, less frequently purchased than tobacco, fruit, and candy/sweet flavors, but more frequently purchased than menthol, coffee, and other flavors.²¹⁰ Between 2009 and 2020, the market share for wine-flavored cigars in

U.S. convenience stores ranged from a high of 19.5% in 2010 to 9.0% in 2020.²¹¹ As of 2026, the sale of alcohol-flavored cigars continues²¹²; examples include Banana Daiquiri, Blackberry Mojito, Boozy Watermelon, Coastal Cocktail, Hard Lemonade, and Irish Cream.²¹³ A 2018–2019 study of tobacco retailers in Washington, DC, found that stores in census tracts with the highest (versus lowest) percentage of Black residents had more products with alcohol flavor descriptors; a majority of the flavored tobacco products identified in this study were cigars.²¹⁴

Figure 9.6 Examples of Tobacco Products with Alcohol Flavorings

Panel A: Camel Blackjack Gin Cigarettes



A) Pack of flavored cigarettes called “Blackjack Gin”, introduced in 2005 by R.J. Reynolds Tobacco Company; the product is now discontinued.²¹⁵

Panel B: MarkTen Bourbon Blend



B) Image from a 2017 email advertising the sale of a bourbon-flavored cartridge for the MarkTen e-cigarette from Altria, the parent company of Philip Morris USA; the product is now discontinued.²¹⁶

Source: Reproduced with permission from [Trinkets & Trash](#).^{215,216}

Tobacco companies also continue to market alcohol-flavored tobacco in other forms. In a convenience sample of more than 8,000 noncigarette tobacco products available from online retailers, Morris and Fiala (2015)²¹⁷ reported that liquor-flavored tobacco products were available for all 13 tobacco product categories examined, except for dissolvable and roll-your-own tobacco.²¹⁷ In a 2018 study of online searches for the top 20 brands in the cigar/cigarillo and e-cigarette categories, 48 types of alcohol-flavored tobacco products marketed by 409 brands of cigars/cigarillos and e-cigarettes were identified.²¹⁸ Alcohol-flavored tobacco products were categorized predominately as mixed drinks (52%), followed by spirits (23%), liqueurs (15%), and wine or beer (10%). To characterize e-cigarette flavors, Krüsemann and colleagues²¹⁹ reviewed 28 articles and proposed an e-liquid flavor wheel of 13 main flavor categories, one of which was alcohol. A content analysis of 59 e-cigarette websites in 2011 showed that alcohol-flavored e-cigarettes were featured on 10% of 59 e-cigarette websites.²²⁰ Of 14,477 e-liquids available for sale online in 2021, 2,433 (16.8% of total) were alcohol-flavored, almost double the number of tobacco-flavored e-liquids.²²¹ In addition, the U.S. Food and Drug Administration (FDA) has issued warning letters to online retailers for selling unauthorized e-cigarettes, including those with packaging that imitates bottles of alcohol.²²² The marketing and availability of alcohol-flavored tobacco products, including e-cigarettes, are concerning because alcohol flavors in tobacco products are shown to be associated with both tobacco product preference and alcohol use among U.S. youth.^{100,218,221} However, among adults, a volumetric choice experiment survey (where respondents are presented with an array of units of a good or service and choose how much to select)²²³ conducted among 181 people who currently used cigarettes, e-cigarettes, and alcohol suggested that availability of alcohol flavors in e-cigarettes would not significantly affect alcohol, cigarette, or e-cigarette purchases.²²⁴

Several studies document the use of alcohol cues to promote tobacco products (see examples in Figure 9.7). A content analysis of social media accounts for 47 premium cigar brands identified references to alcohol (predominately bourbon, whiskey, and gin) in 12.8% of social media posts.²²⁵ In premium cigar magazines, alcohol use was mentioned in 40% of articles and depicted in 27.6% of advertisements.²²⁶ As of 2026, comarketing of tobacco and alcohol is not unique to cigar products. Several studies document the use of alcohol cues to promote tobacco products. For example, marketing for ZYN and Velo nicotine pouches portrays product use with alcohol in bars or clubs.²²⁷ Lifestyle magazines (*Unlimited*, *All Woman*, *CML*, *Pleasure Scene [P.S.]*, *Real Edge*, and *Flair*; 1996–2007, as available) produced by tobacco companies featured alcohol on the cover of 19% of 73 issues, and alcohol appeared in 27% of tobacco advertisements but only 8% of nontobacco advertisements.²²⁸ In addition, a content analysis of cigarette and alcohol advertisements in young-adult magazines (2003–2004) observed that 28% of 114 cigarette advertisements contained a written or visual reference to alcohol, and such advertisements were more likely than other cigarette advertisements to portray smoking.²²⁹ Notably, none of the 317 alcohol advertisements referenced cigarettes, suggesting that the comarketing of tobacco and alcohol is predominately initiated by tobacco companies as a tobacco marketing appeal. Globally, tobacco and alcohol companies also similarly market their products to population subgroups defined by age, education, and race and/or ethnicity,²³⁰ which may increase the use and co-use of tobacco and alcohol among targeted groups.

Figure 9.7 Examples of Tobacco Product Advertisements that Include Alcohol

Panel A: Cheyenne Cigars Instagram Post



A) A 2019 Instagram post from a cigar brand's account featuring a pack of cigars and beers on a table, captioned "Cheers to it being National Beer Day!"

Panel B: Skoal Magazine Advertisement



B) A 2020–2022 magazine advertisement for Skoal smokeless tobacco (from Altria, parent company of U.S. Smokeless Tobacco Company), featuring a smokeless tobacco tin and alcohol on a table, captioned with the phrase "A pinch better together."

Source: Reproduced with permission from [Trinkets & Trash](#).^{231,232}

The Role of Tobacco in Marketing Alcohol Products. Tobacco-flavored alcoholic beverages are also marketed in the United States. For example, Perique liqueur is derived from and named for a rare variety of tobacco grown primarily in Louisiana.²³³ The distilled spirit was first released in 2006 and is predominately sold in specialty shops.^{234,235} Consumers may associate the liqueur with Natural American Spirit's Perique blend cigarettes,²³⁶ which is concerning because studies show that U.S. adolescents and adults perceive Natural American Spirit cigarettes to be less harmful than other brands.^{237,238} Tobacco is also used as an ingredient to develop tinctures, bitters, and infusions for cocktails.²³⁹ For example, "nicotini" products, which are derived from tobacco-infused vodka without distillation, may contain high concentrations of nicotine.²⁴⁰ However, little is known about the composition and toxicity of such products, bartenders' and customers' use of alcohol with tobacco ingredients, and awareness of potential health harms.

Tobacco and Alcohol Brand Placement in Media

As discussed previously, the literature on cross-cue reactivity indicates the potential for cross-substance effects of exposure to alcohol marketing on tobacco use and vice versa. One marketing strategy to consider is brand placement in various media channels. Although the 1998 Master Settlement Agreement eliminated paid cigarette and smokeless tobacco brand placement in U.S. films and television,²⁴¹ the practice of unpaid tobacco brand appearances persists (especially evident in social media)^{242,243} alongside continued alcohol brand placement (paid and unpaid).²⁴⁴ For example, a content analysis of the 100 highest grossing movies from 1996 through 2009 observed 2,433 alcohol brand appearances and 500 tobacco brand appearances.²⁴⁴ These results are concerning because tobacco and alcohol brand recognition and exposure to brand placement can influence tobacco use, alcohol use initiation, and drinking behavior among adolescents.²⁴⁵⁻²⁴⁸ Tobacco and alcohol brand placement and exposure to tobacco and alcohol imagery exist in myriad channels beyond movies, including popular music lyrics,²⁴⁹ music videos,^{250,251} and television programs,^{247,252} many of which are now available on apps and streaming platforms.²⁵³

Like tobacco advertising,²³ alcohol advertising contains framing that may appeal to youth, such as depictions of positive emotional experiences, camaraderie, achievement/success, social positioning, adventure/spontaneity, romantic and sexual connotations, humor, and animations,²⁵⁴ magnifying public health concerns about the effects of exposure to alcohol marketing and potential effects on co-use of tobacco and alcohol. A review of 47 studies of alcohol marketing online identified content that featured strategies that could appeal to young audiences (e.g., interviews with celebrities; free downloads of content such as music, pictures, and messaging accessories; free applications for entertainment, hangover advice, and alcohol intake monitoring) and that exposure was positively associated with alcohol use.²⁵⁵ Also concerning is evidence of direct advertising of alcohol to youth,²⁵⁶ in violation of the alcohol industry's self-regulation codes related to digital marketing.²⁵⁷⁻²⁵⁹ A 2016 study created profiles for fictitious underage and of-age youth on Twitter (now X) and Instagram and found that all user profiles, regardless of age, could view and interact with (e.g., comment, like, share) alcohol content, and that on Instagram, all users could follow official alcohol brand pages and received alcohol advertisements.²⁵⁶

In 2010, 23.7% of alcohol television advertisements in the 25 largest U.S. television markets were placed during programs for which >30% of the audience was between ages 2–20, exceeding the threshold for youth audience established in the alcohol industry’s 2003 self-regulatory codes.²⁶⁰ From 2001 to 2011, youths were overexposed to alcohol magazine advertising relative to adults around 73% of the time.²⁶¹ It is not known whether exposure to such targeted marketing for alcohol stimulates tobacco initiation and whether it exacerbates disparities in tobacco use. However, these studies provide additional evidence that voluntary advertising regulation strategies are ineffective at protecting youth from exposure to alcohol advertising.

A comprehensive assessment of tobacco and alcohol marketing exposure could include billboards, which youth report as a source of exposure to marketing for alcohol²⁶² and e-cigarettes.^{263,264} An analysis of marketing expenditures suggests that billboards are a likely source of exposure to marketing for nicotine pouches, as well.²⁶⁵ There is also evidence of a disproportionate presence of alcohol billboards in neighborhoods with a higher proportion of African American and Hispanic residents.^{266,267} Future research could consider whether exposure to alcohol billboards is associated with tobacco-related outcomes, such as cravings and urges to smoke.

In 2021, exposure to marketing or advertising for any tobacco product was reported by 75.7% of U.S. middle and high school students who reported any potential route of exposure (e.g., going to a convenience store, supermarket, or gas station; using the internet; watching television or streaming services or going to the movies; reading newspapers or magazines).²⁶⁸ A figure comparing U.S. youth and young adult exposure to tobacco and alcohol marketing would be informative, but comparative data (measured the same way in the same instrument or across surveys) were not identified.

Tobacco and Alcohol Use Depictions in Media

Content analyses that report on both tobacco and alcohol portrayals (or mentions) have examined various media: video-on-demand platforms, social media, television shows, movies, and music videos. As is true of tobacco depictions,²³ alcohol depictions in popular media rarely portray harmful consequences of its use.²⁶⁹ A 2019 analysis of Twitter (now X) content on tobacco use in the context of intoxication observed that 75% of tweets were favorable toward co-use of tobacco and alcohol, 10% reported increased susceptibility to use tobacco when intoxicated, and only 2% mentioned alcohol undermining tobacco cessation attempts.²⁷⁰ A 2018 study of popular/trending content on video-on-demand platforms (e.g., Netflix, Videoland, YouTube) in the Netherlands found that nearly one-half (45.4%) of 529 programs portrayed alcohol use and 21.9% portrayed tobacco use.²⁶⁹ Notably, 32.9% of programs containing alcohol use also portrayed tobacco use, more than any other risk behavior examined (drug use, barrierless sex, reckless behavior such as driving under the influence, intentional self-harm), suggesting that these programs reinforce co-use of alcohol with tobacco over other substances (e.g., cannabis, opioids).

Among 163 teenage characters in 81 top-grossing films for teen audiences (2007–2009), 20.9% drank alcohol and 5% smoked cigarettes.²⁷¹ Of the 19 teenage characters who were offered alcohol, only 2 refused. In Oscar-nominated films (2008–2011), a total of 515 substance use incidents were depicted, with nearly as many for tobacco (44.8%) as for alcohol (50.1%).²⁷² In a sample of male adolescents' favorite television shows (2015–2016), the number of visual or verbal displays for alcohol dwarfed those for tobacco (756 versus 49), and the incident rate was approximately 10 alcohol portrayals every hour compared to 1 tobacco portrayal every 2 hours.²⁷³

References to using tobacco and drinking alcohol are also present in books adolescents read, in music they hear, and music videos they watch. In a sample of 40 novels popular with teens in June to July 2008, 357 instances of substance use occurred at a rate of once every 39 pages, with alcohol (67.2%) and tobacco (22.1%) most frequently mentioned.²⁷⁴ Among the most popular songs from *Billboard Magazine* year-end charts (2009–2011) in 4 genres—country, pop, urban, and rap—23% mentioned alcohol and 6.4% contained brand-specific references.²⁴⁹ In addition, mentions of alcohol in popular music have increased over time. Between 1968 and 2008, the percentage of top-100 songs with any reference to alcohol (settings, use, or brands) increased nearly 4-fold, from 5% to 19%.²⁷⁵ In a content analysis of music videos on YouTube for Billboard top-100 songs (2014–2020), alcohol appeared in 81.6%, cigarettes/cigars in 19.3%, e-cigarettes in 4.8%, and hookah in 3.3%.²⁷⁶ In addition, alcohol was the most frequently branded substance in music videos (37 brands), followed by cigarettes/cigars (2 brands). However, this study did not report the co-occurrence of tobacco and alcohol use within the instances of brand appearance. Longitudinal studies that investigate the prevalence of tobacco and alcohol co-use depictions, trends in these portrayals, and associations with co-use behavior would be informative.

Some content analyses indicate that depictions of tobacco and alcohol use occur more frequently among cast members or characters of certain racial and/or ethnic groups. An analysis of MTV reality television shows (2004–2011) described the behaviors of 622 characters, all of whom were young adults or high-school aged youth.²⁷⁷ A majority of cast members were shown drinking alcohol (63.7%), including 69.2% of young adults and 12.2% of high-school age youth. The prevalence of cast members shown drinking alcohol was 55.7% for non-Hispanic White cast members, 62.2% for Black cast members, 76.9% for Hispanic/Latino cast members, and 75.0% for mixed race cast members. Only 10.3% of cast members were shown smoking, but this was lowest for non-Hispanic White cast members (9.0%), compared with 13.3% for Black, 23.1% for Hispanic/Latino, and 30.0% for mixed race cast members; no high-school age youth were depicted smoking.

Associations of Exposure to Alcohol Marketing and Tobacco Use

The causal association between exposure to tobacco marketing and initiation and use of tobacco by youth and young adults has now been well documented.^{1,23} Robust evidence also supports a causal effect of alcohol marketing on youth alcohol use.^{12,127} Indeed, a synthesis of 11 narrative and systematic reviews of exposure to alcohol marketing and youth drinking found evidence for all nine Bradford Hill causality criteria (biological plausibility, experimental evidence, coherence

with other knowledge of the health risk, analogous causal relationships with similar exposures and outcomes, and evidence for the strength, consistency, specificity, temporality, and dose-response nature of the association).¹² In addition, 24 of 25 longitudinal studies investigating the relationship between exposure to alcohol advertising and drinking initiation found supporting evidence that greater exposure was associated with increased odds of initiation.¹²⁷

One cross-sectional survey in 1995 investigated whether recognition and liking of advertisements for cigarettes and alcohol are associated with susceptibility to use these substances (separately).²⁷⁸ The study was conducted among 386 eighth grade students, more than one-half of whom were classified as “nonsusceptible nonusers” or “susceptible nonusers.” The study defined nonsusceptible nonusers as those who responded “no, definitely not” to questions regarding smoking and drinking intentions in the next 2 months; susceptible nonusers were those who gave any other response to smoking and drinking intentions questions.²⁷⁸ After exposure to masked advertisements (brand names removed) for cigarettes and alcohol, a survey assessed whether students could correctly identify the brand name (brand recognition), liking, and intention to try the product. The relationship between liking and use status differed for tobacco and alcohol. Susceptible students who never smoked liked cigarette advertisements as much as those who currently smoked and more than nonsusceptible students who never smoked. For alcohol advertisements, liking scores increased monotonically, with lowest scores for nonsusceptible students who never drank, followed by susceptible students who never drank, and highest scores for those who ever drank. For both tobacco and alcohol, the most frequently recognized advertisements were not always the most liked,²⁷⁸ perhaps indicating evidence of wear out (decreased liking with repeated exposure) even among a young audience. Because the study predates the 1998 Master Settlement Agreement, which placed restrictions on cigarette advertising, further research that examines whether recognition or liking of alcohol advertisements predicts susceptibility to tobacco and alcohol use is warranted.

A 2018 study compared attitudes toward full-page magazine advertisements for alcohol, tobacco (cigarettes, e-cigarettes, and smokeless tobacco), and nonalcoholic beverages among 1,220 adolescent boys (ages 11–16) from urban and rural Appalachian counties.²⁷⁹ Ten-point Likert scale ratings of each advertisement (enjoyable, likeable, and appealing) were dichotomized to compare any favorable (nonzero) response with zero, finding a significantly greater percent of nonzero ratings for alcoholic and nonalcoholic beverages than for tobacco. Controlling for ever use of tobacco, adolescent boys whose peers used tobacco had significantly greater odds of favorable responses to all three categories of ads, including those for alcohol. However, this study did not assess alcohol use.²⁷⁹ Indeed, one challenge to studying the cross-substance effects of exposure to tobacco and alcohol marketing on tobacco and alcohol use is to disentangle the separate and combined effects of exposure on susceptibility, initiation, use, and cessation. In addition, comparative studies of responses to tobacco and alcohol marketing are needed to keep pace with the rapidly changing landscape for tobacco products and social norms about their use,^{280,281} as well as the changing landscape for marketing with the advent of algorithmically targeted programmatic advertising.^{282,283}

Summary: Marketing Environments for Tobacco and Alcohol

The marketing environment for tobacco and alcohol products exerts a substantial influence on product use. Tobacco and alcohol products are subject to different marketing restrictions (see Appendix 9B) as well as different requirements for disclosure of marketing expenditures. Tobacco companies are required to regularly disclose annual sales and marketing expenditures for cigarettes, smokeless tobacco, and e-cigarettes to the FTC. No similar annual marketing expenditure disclosure requirement exists for alcohol companies.

The literature on cross-cue reactivity indicates that comarketing of tobacco and alcohol products may contribute to reinforcing tobacco and alcohol use. The enactment of the Family Smoking Prevention and Tobacco Control Act banned the sale of cigarettes in flavors other than menthol, including alcohol-flavored cigarettes, but this restriction did not extend to other tobacco products. As a result, tobacco companies continue to manufacture alcohol-flavored tobacco products, including cigars and e-cigarettes. Similarly, tobacco-flavored alcohol products are also available. In addition, tobacco advertising sometimes includes alcohol cues in the form of written or visual references to alcohol products. These explicit comarketing strategies may influence tobacco and alcohol use and co-use patterns.

The 1998 Master Settlement Agreement ended the use of paid tobacco brand placement in U.S. films. Nonetheless, unpaid tobacco brand placement continues, as does paid and unpaid alcohol brand placement in films, as well as in channels other than films, including music videos and television programs. Although federal law prohibits the advertising of cigarettes, little cigars, and smokeless tobacco on television and radio, alcohol advertising in these media channels is subject only to voluntary self-regulation. As a result, youth and adults are exposed to alcohol advertising in these and other media channels. In addition, depictions of tobacco use, alcohol use, and their co-use are common in various media channels, including television, movies, social media, and music videos, as well as in books including those read by adolescents. Depictions of tobacco and alcohol in films and other media are often framed in positive ways (e.g., romance, achievement, adventure) and only rarely show the harmful consequences of tobacco or alcohol use.

Tobacco marketing is causally associated with initiation and use of tobacco products by youth and young adults. Similarly, robust evidence supports a causal association between alcohol marketing and youth alcohol use.

Policy Factors

Policy approaches, such as taxation, warning labels, sales restrictions, and restrictions related to on- and off-premise use are applicable to both tobacco and alcohol but are often designed or implemented differently for the two types of products (see Table 9.1). Identifying cross-substance policy effects, such as how alcohol regulations may influence tobacco use, is critical for the development of cohesive and optimal regulatory systems that benefit public health.²⁸⁴⁻²⁸⁷ For example, increasing taxes on alcohol may influence the consumption of tobacco and vice versa. In the United States, the National Institute on Alcohol Abuse and Alcoholism Alcohol Policy Information System is a key resource for obtaining information about state and federal laws related to alcohol and recreational use of cannabis.²⁸⁸

Table 9.1 Selected Federal Laws Pertaining to Tobacco and Alcohol

Relevant U.S. federal law (year passed)	Summary
Tobacco	
Federal excise taxes on tobacco ²⁸⁹⁻²⁹² • Cigars, chewing tobacco, snuff: 1862 • Cigarettes: 1864 • Pipe tobacco: 1989 • Roll-your-own tobacco: 2000	Tax levied on tobacco products. Listed below are 2025 tobacco-specific federal excise taxes on the following tobacco products: • Small cigarettes and small cigars: \$1.01 per pack of 20 • Large cigarettes: \$2.11 per pack of 20 • Large cigars: 52.75% of sale price (cap: \$0.4026 each) • Pipe tobacco: \$0.1769 per 1 oz tin or pouch • Chewing tobacco: \$0.0315 per 1 oz tin or pouch • Snuff: \$0.0944 per 1 oz tin or pouch • Roll-your-own tobacco: \$1.5488 per 1 oz tin or pouch
Synar Amendment (1992) ²⁹³	Requires all U.S. states and territories to implement laws setting the minimum sale age for tobacco products to at least 18 in order to receive full Substance Use Prevention, Treatment, and Recovery Services Block Grant awards. Superseded in 2019 by Tobacco 21 legislation.
Family Smoking Prevention and Tobacco Control Act (FSPTCA) (2009) ^{206,294}	Provides FDA with authority to regulate the manufacture, marketing, sale, and distribution of tobacco products, including conducting public education campaigns, monitoring compliance with federal tobacco laws and regulations, establishing tobacco product standards, and conducting research to support regulation.
Preventing All Cigarette Trafficking (PACT) Act (2010) ^{80,295,296}	Requires distributors of cigarettes, ENDS, and other smokeless tobacco products who sell or advertise in interstate commerce to register with and report to the Bureau of Alcohol, Tobacco, Firearms, and Explosives; broadly bans mailing of these tobacco products through the U.S. Postal Service; requires age verification at the points of purchase and delivery
Tobacco 21 (2019) ²⁹⁷	Raises the federal legal age for sale of tobacco products, including ENDS, from 18 to 21 years of age. Starting September 30, 2024, tobacco retailers are required to use photo identification to verify the age of purchasers <30 years old, and tobacco products may not be sold through vending machines in facilities where individuals <21 years old are present or permitted to enter.
Alcohol	
Federal excise taxes on alcoholic beverages (1791) ²⁹⁸	Tax levied on alcohol products. Federal excise taxes on alcoholic beverages vary based on quantity of alcohol produced by a brewer, distilled spirits producer, or wine producers and the specific alcohol products. Listed below are approximations of 2025 federal excise taxes for alcoholic beverages for large producers: • Beer: \$0.05 per 12 oz can or bottle (\$0.09 per oz of pure alcohol content) • Wine: \$0.04 per 5 oz glass (\$0.06 per oz of pure alcohol content) • Spirits: \$0.13 per 1.5 oz shot (\$0.21 per oz of pure alcohol content)
18th Amendment to the U.S. Constitution (1919) ²⁹⁹	Prohibited the production, transport, or sale of alcohol in the United States
21st Amendment to the U.S. Constitution (1933) ^{300,301}	Repealed the 18th Amendment, permitting the production, transport, and sale of alcohol in the United States and granting states power to regulate alcoholic beverages
National Minimum Drinking Age Act (1984) ³⁰²	Requires states to prohibit the purchase or public possession of alcohol by anyone under 21 years of age as a condition of receiving state highway funds

Note. Discussion of some of these laws and policies is covered in chapter 8, including the Synar Amendment, the National Minimum Drinking Age Act, and Tobacco 21. oz = ounce; ENDS = electronic nicotine delivery system; FDA = U.S. Food and Drug Administration.

This section summarizes studies of the cross-substance impact of regulating alcohol products (e.g., tax, minimum price floors, alcohol content), their temporal availability (e.g., sales hours), physical availability (e.g., restrictions on retailer locations), affordability and acceptability (e.g., packaging and warning labels or marketing restrictions such as advertising and display bans) to understand whether and how alcohol policies affect tobacco use. Because bars and restaurants are both common on-premise settings for alcohol use and a target for smokefree policies, this section also considers how smokefree policies affect alcohol use in on-premise use venues. Finally, the impact of smokefree policies in alcohol and other substance use treatment settings on patients' use behavior is also discussed.

The World Health Organization's (WHO) "best buys" for reducing noncommunicable diseases specify different long-term objectives to reduce tobacco use and to reduce harmful alcohol use (i.e., alcohol use that causes detrimental health and social consequences, and alcohol use patterns associated with increased risk of adverse health outcomes).^{303,304} WHO provides recommendations to reduce both tobacco and alcohol by increasing taxes (thereby reducing affordability) and restricting marketing (see Table 9.2). Notably, "best buys" to reduce retail availability are limited to alcohol and focus on reducing sales hours, based on cost-effectiveness analyses indicating a cost-effectiveness ratio of \$100 or more per healthy life year gained. To reduce the harmful use of alcohol, WHO also recommends interventions to reduce retailer density, enact and enforce a minimum age of purchase or consumption, and restrict or ban promotions targeting young people. However, these interventions are not considered "best buys" due to the lack of cost-effectiveness evidence.³⁰⁴ Overall, the WHO best buys do not directly address co-use of tobacco and alcohol, although the evidence summarized in this chapter suggests some of these policies could have cross-substance effects.

Table 9.2 World Health Organization's "Best Buys" for Tackling Noncommunicable Diseases

Reduce tobacco use	Reduce harmful alcohol use
• Increase excise taxes and prices on tobacco products. • Implement large graphic health warnings on all tobacco packages, accompanied by plain/standardized packaging.^a • Enact and enforce comprehensive bans on tobacco advertising, promotion, and sponsorship.^a • Eliminate exposure to secondhand tobacco smoke in all indoor workplaces, public places, and public transport.^a • Implement effective mass media campaigns that educate the public about the harms of smoking/tobacco use and secondhand smoke and encourage behavior change.^a • Provide cost-covered, effective, population-wide support (including brief advice, national toll-free quitline services, and text-message cessation programs) for tobacco cessation for all tobacco users.^b	• Increase excise taxes on alcoholic beverages.^c • Enact and enforce bans or comprehensive restrictions on exposure to alcohol advertising (across multiple types of media).^a • Enact and enforce restrictions on the physical availability of retailed alcohol (via reduced hours of sale).

Note. "Best Buys" are defined as the most cost-effective and feasible interventions for implementation by countries in all settings, with an average cost-effectiveness ratio greater than or equal to \$100 per healthy life years gained in low-income and lower middle-income countries.

^aRequires capacity for implementing and enforcing regulation and legislation. ^bRequires trained providers in sufficient numbers and an effective health system. ^cShould be combined with other price measures, such as bans on discounts or promotions.

Source: Adapted from World Health Organization 2024.³⁰⁴

Table 9.3 summarizes a subset of the Healthy People 2030 objectives for tobacco and a similar subset of the Healthy People 2030 targets for alcohol.³⁰⁵⁻³⁰⁷ The Healthy People project, an initiative of the U.S. Department of Health and Human Services Office of Disease Prevention and Health Promotion, identifies public health priorities that will improve health and well-being in the United States. It includes priority areas specific to tobacco and alcohol use. The associated objectives and targets are updated every 10 years, with its first iteration released in 1980, for Healthy People 1990.³⁰⁸ The Healthy People 2030 objectives target 11.3% prevalence of past-month tobacco use for adolescents and an even lower prevalence (6.3%) of past-month alcohol use for adolescents.^{309,310} Healthy People 2030 also includes policy-related objectives that address tobacco use, such as increasing taxes on cigarettes, increasing Medicaid coverage of evidence-based tobacco cessation treatments, and increasing the number of states and territories that have smokefree policies that apply to all indoor areas of worksites, restaurants, and bars.

Table 9.3 Selected Healthy People 2030 Objectives for Tobacco and Alcohol

Healthy People 2030 objective	Most recent statistic ^a	Healthy People 2030 target
Tobacco (subset)		
Reduce the lung cancer death rate	29.5 lung cancer deaths per 100,000 population ^b	25.1 lung cancer deaths per 100,000 population ^b
Reduce current tobacco use in adults	20.2% ^b	17.4% ^b
Reduce current cigarette smoking in adults	10.1% ^b	6.1% ^b
Reduce the proportion of people who don't smoke but are exposed to secondhand smoke	24.1% ^b	17.4% ^b
Reduce current tobacco use in adolescents (grades 6–12)	23.0%	11.3%
Reduce current e-cigarette use in adolescents (grades 6–12)	13.1%	10.5%
Reduce current use of flavored tobacco products in adolescents (grades 6–12) who use tobacco	77.5%	73.2%
Increase abstinence from cigarette smoking among pregnant women	97.0%	95.7%
Increase Medicaid coverage of evidence-based treatment to help people quit using tobacco	22 states (not including Washington, DC)	51 states (including Washington, DC)
Increase the national average tax on cigarettes	\$2.16	\$2.60
Increase the proportion of smokefree homes	90.0%	92.9%
Increase the number of states, territories, and DC that prohibit smoking in worksites, restaurants, and bars	33 states (including Washington, DC, and some territories)	58 states (including Washington, DC, and territories)
Alcohol (subset)		
Reduce cirrhosis deaths	13.0 deaths per 100,000 population ^b	10.9 deaths per 100,000 population ^b
Reduce the proportion of people (aged 12 and older) who had alcohol use disorder in the past year	10.5%	9.9%

Table 9.3 (continued)

Healthy People 2030 objective	Most recent statistic ^a	Healthy People 2030 target
Reduce the proportion of adolescents (ages 12–17) who drank alcohol in the past month	6.8%	4.8%
Reduce the proportion of people aged 21 years and over who engaged in binge drinking in the past month	23.8%	22.7%
Reduce the proportion of people under 21 years (ages 12–20) who engaged in binge drinking in the past month	8.2%	6.0%
Increase abstinence from alcohol among pregnant women (ages 15–44)	90.3%	92.2%

^aMost recent available statistics were accessed in April 2026. ^bAge adjusted to the year 2000 standard population.
Source: Adapted from Office of Disease Prevention and Health Promotion.³¹¹

How Alcohol Tax and Pricing Policies and the Affordability of Alcoholic Beverages Affect Tobacco Use

As evidence-based policy interventions, pricing policies that reduce product affordability are among the most effective strategies to reduce tobacco use and alcohol consumption.^{312,313}

Excise taxes are the most important component of pricing policies, which are specifically designed to target commercial products that harm human health (e.g., alcohol, tobacco, sugar-sweetened beverages, cannabis).^{314,315} Excise taxes also generate revenues that can be spent on public goods and other government initiatives, providing incentives for policymakers to view excise taxes as a win-win strategy for both public health and finance. Therefore, excise taxes are generally considered to be policies that are both effective and cost-effective in advancing public health goals.^{313,316,317}

The literatures investigating the impact of pricing policies on tobacco and alcohol use have largely developed in parallel, with most studies focusing on the estimation of the own-price elasticities of each product. However, several studies examine cross-substance effects of pricing policies, including how alcohol prices affect or are associated with cigarette smoking in the United States.^{224,318–325} In this context, increasing alcohol prices could be associated with decreased cigarette smoking (i.e., cigarettes and alcohol are economic complements), increased cigarette smoking (i.e., cigarettes and alcohol are economic substitutes), or have no significant association with cigarette smoking (i.e., cigarettes and alcohol are independent).

A targeted literature search of Web of Science and PubMed identified 9 U.S.-based studies published since 2000 that examined cross-substance or cross-price effects between tobacco and alcohol and explicitly assessed the impacts of alcohol prices or taxes on cigarette smoking (Appendix 9C). Three studies analyzing state-level data or adult and household surveys concluded that increasing alcohol prices will reduce cigarette smoking (i.e., cigarettes and alcohol are economic complements). Using state-level data, Goel and colleagues (2016)³²² found that a 10% increase in beer taxes decreased the consumption of cigarettes by 0.3%–0.4%. Decker and Schwartz (2000)³²⁰ found larger cross-price elasticities using individual data from the 1985 and 1993 Behavioral Risk Factor Surveillance System surveys. Their results suggest that a 10% increase in beer prices was associated with a 1.4% decrease in adult cigarette

consumption,³²⁰ with the possibility that the long-run effect of alcohol price on cigarette consumption is greater than the short-run effect.³²² Koxsal and Wohlgenant (2016)³²³ analyzed 2002–2008 household consumer expenditure surveys and estimated that the long-run cross-price impact for alcohol on smoking could be as large as -0.723 , suggesting that a 10% increase in alcohol prices will lead to a 7.2% decrease in cigarette smoking. In contrast to the studies conducted by Goel and colleagues (2016)³²² and Decker and Schwartz (2000)³²⁰, which analyzed the effects of beer prices, this study³²³ used a composite price index of several alcoholic beverages.

Three studies using macro or adult data have found that alcohol prices have no significant impact on cigarette smoking. Frye (2020)³²¹ conducted a hypothetical purchase task to assess the economic relationship between cigarettes and alcohol and found these two products to be independent. Using state-level sales data from 1980 to 2007, Bates and colleagues (2015)³¹⁹ found that beer taxes were not significantly associated with cigarette sales per capita. Petry (2001)³²⁵ conducted a hypothetical purchase task among 53 adults who primarily use alcohol but also concurrently use multiple substances and found their cigarette purchasing was not responsive to alcohol prices. However, a limitation of this analysis, in so far as it provides cross-price elasticity estimates for cigarettes and alcohol, is that participants were not required to be people who smoke cigarettes; rather, participants were required to use at least three other substances (cannabis, opioids, cocaine, and/or sedatives) in addition to alcohol.

One volumetric choice experiment conducted in 2020–2021 examined the effect of alcohol prices (via tax increases) on cigarette and e-cigarette consumption among adults who reported past 30 day alcohol use and reported current cigarette smoking or having smoked within the previous 60 days, and starting to use e-cigarettes or reinitiating use in the past 30 days.²²⁴ In this study, hypothetical increases in beer and liquor/wine prices did not have a significant effect on the hypothetical cigarette consumption. However, increasing alcohol prices had a significant effect on hypothetical e-cigarette consumption, with a 10% increase in beer prices raising hypothetical e-cigarette consumption by 1.25% and a 10% in liquor/wine prices increasing hypothetical e-cigarette consumption by 0.5%, suggesting that e-cigarettes and alcohol are economic substitutes among people who co-use cigarettes, e-cigarettes, and alcohol. However, this study included only people who started or re-initiated e-cigarette use within the past 30 days; further studies are needed to determine the relationship between alcohol prices and tobacco consumption at the population level.

Studies analyzing youth data are also inconclusive regarding how alcohol prices or taxes affect youth cigarette smoking. Markowitz and Tauras (2009)³²⁴ examined the economic relationship between substances using panel data from 1997–2001 from the National Longitudinal Survey of Youth 1997 cohort. In that study, the cross-price effect for beer on cigarette smoking was nonsignificant or negative, depending on different model specifications.³²⁴ Therefore, the authors could not draw conclusions on how beer pricing affects smoking. A separate study constructed a structural model of youth substance use using the National Longitudinal Survey of Youth 1979 cohort and found mixed results.³¹⁸ When a specified functional form was used for policy simulation, cigarettes and alcohol appeared to be substitutes and higher beer prices increased smoking participation. However, when conducting a survival analysis, beer prices had no significant impact on quitting duration.

Taken together, the U.S.-based studies find mixed evidence on the nature of the relationship between alcohol pricing policies and cigarette outcomes, likely due to different study designs and populations. The limited evidence from international studies of the effect of alcohol tax/price changes on tobacco use suggests a similar conclusion, although much of this evidence is based on cross-sectional data.³²⁶⁻³³⁰ Nonetheless, evidence from Spain,³²⁸ Australia,³³¹ Italy,³²⁷ and Sweden³³⁰ point to tobacco and alcohol being complements rather than substitutes, showing the potential of using alcohol taxes and prices to curb tobacco use. Importantly, given that the majority of U.S. studies indicate that cigarettes and alcohol are either independent or are economic complements (rather than substitutes), increasing alcohol taxes and prices is unlikely to increase cigarette smoking and may actually decrease cigarette smoking.

Finally, little research has addressed other tobacco products. Although it is encouraging that alcohol policies, such as beer taxes, have been controlled for in some studies that investigate e-cigarette use outcomes, these studies in general did not explicitly report the effects of alcohol policies on tobacco use and none were powered to examine such effects.³³²⁻³³⁵

Effects of Policies to Reduce Alcohol Availability on Tobacco Use

Studies have evaluated the effect of policies that reduce the availability of either tobacco or alcohol.^{336,337} Given the large proportion of retailers that sell both tobacco and alcohol, cross-substance effects of policies to reduce availability of alcohol on tobacco use and co-use are plausible. However, no studies were identified that evaluated an ancillary impact of reducing alcohol availability on tobacco use (or vice versa).

Sales bans. Studies have considered the effects of sales bans, both real and hypothetical, on tobacco and alcohol consumption.³³⁸ Several studies investigated the impact of hypothetical policies to restrict sales of tobacco to off-premise alcohol outlets (i.e., stores that sell alcohol for use off-site). In Scotland, such a policy was estimated to yield a 94.1% reduction in the number of tobacco retailers and a mean reduction of 85.9% in tobacco retail density, but would also be expected to exacerbate existing socioeconomic inequalities of exposure to tobacco retailers.³³⁹ In New Zealand, such a policy was estimated to reduce the number of tobacco retailers by 83.4%, reduce density from 1 tobacco retailer per 115 adults (age 15 and older) who smoke cigarettes to 1 per 692, and dramatically reduce the presence of tobacco retailers near schools.³⁴⁰ Although the existence of an integrated licensing scheme for tobacco and alcohol could be advantageous for enforcement of sales and marketing regulations, the study authors acknowledged that such a policy would undermine a public health goal of decoupling tobacco and alcohol sales in the retail environment.³⁴⁰

In New Zealand, modeling to inform tobacco endgame legislation (policies with a goal of phasing out tobacco sales and use) considered a strategy of permitting tobacco to be sold only in 50% of liquor stores and in no other locations.³⁴¹ The study estimated cigarette cost (pack price plus travel costs) and use prevalence relative to other tobacco retail reduction strategies. Compared to the other strategies considered, this hypothetical policy was associated with the highest pack costs and the lowest estimated smoking prevalence (9.1%), at 0.8 percentage points less than business-as-usual (9.9%) within 10 years. Similar modeling studies could be used to examine how limiting tobacco sales to off-premise alcohol retailers would affect tobacco use and co-use in the United States.

One study considered the impact of a hypothetical policy to achieve a dramatic reduction in tobacco retail availability by limiting tobacco sales to state-controlled liquor stores in the subset of U.S. states where these exist.¹²⁴ A potential positive consequence of a dramatic reduction in the large number of tobacco retailers was offset by concerns about potential negative consequences, including risk for relapse to drinking among people who smoke daily who also have a history of alcohol use disorder, especially for women and people with lower levels of education.¹²⁴ However, these concerns were based on secondary analyses of the subset of respondents to the 2014–2015 and 2019–2020 U.S. National Alcohol Surveys who lived in the 12 states with state-controlled alcohol stores. A second study exploring the idea of transitioning tobacco sales to state-controlled alcohol stores as a way to reduce tobacco product availability was published in 2024.¹²⁶ This study utilized interviews with 103 tobacco control advocates, public health officials, alcohol policy experts, and alcohol control system representatives from 10 states with alcoholic beverage control systems. The study identified potential benefits related to reduced access and exposure to advertising particularly among racial and/or ethnic minorities, but it also raised concerns about focusing on revenue generation, increasing power of the tobacco and alcohol industries, and creating difficulty for those in recovery. A third study on this topic, published in 2025, examined travel time to the nearest tobacco retailer in 10 states with state-controlled alcohol stores.³⁴² The authors concluded that transitioning tobacco sales to state-controlled stores would increase mean driving time from residents' homes to the nearest tobacco retailer by 119%, or 5.4 minutes. In seven states, estimated increases in travel time were larger for Black and/or Hispanic or Latino people (compared with White people) and people with incomes below the poverty line (compared with those at or above the poverty line).

During the COVID-19 lockdown period in 2020, South Africa enacted temporary (20 week) sales bans on nonessential items, including tobacco and alcohol, to limit the spread of COVID-19 and reduce the burden on the health care system. The tobacco and alcohol sales bans during this period were associated with reduced consumption of these products, despite the presence of illicit sales.^{338,343-346} However, the evidence for reduced alcohol use in the context of South Africa's sales bans is limited to 2 studies, a cohort of 61 patients who were in treatment for tuberculosis³³⁸ and a convenience sample of 798 participants in a Facebook survey,³⁴⁵ and therefore not generalizable to the population level. In addition, the context of simultaneous bans made it difficult to isolate any effects of alcohol sales restrictions on tobacco use.

Restricting temporal availability. In contrast to tobacco control strategies, state and local alcohol policies often involve regulating temporal availability, either by limiting hours of sale or days of sale. Typically, these policies have been justified as needed to address public health and safety concerns associated with heavy alcohol consumption (e.g., risk of violent crime, alcohol-impaired driving, and unintentional injuries).^{347,348} Additionally, some U.S. policies have their origins in religious reasons (e.g., to promote church attendance). In a systematic review, 19 of 24 studies evaluated the effects of increasing temporal availability (e.g., removing Sunday sales bans) on alcohol-related harms, with 10 of 19 studies finding that increases in days or hours of alcohol sales were associated with increases in alcohol-related harms, including motor vehicle accidents, casualties and fatalities, violent incidents, assaults, and other crime.³⁴⁹ However, none of the studies assessed the impact of such laws on tobacco sales or use.³⁴⁹

Effects of Smokefree Bar/Restaurant Laws on Alcohol Use

This chapter primarily considers whether and how alcohol policy influences tobacco use. However, smokefree laws are often implemented in venues where alcohol is consumed, such as bars and restaurants, providing the opportunity to explore cross-substance policy effects. As briefly described here, research has evaluated the effect of indoor smokefree restaurant and bar laws and found cross-substance policy effects. Three prospective studies were identified. Linking state-level policy data to longitudinal data from the 2001–2002 and 2004–2005 National Epidemiologic Survey on Alcohol-Related Conditions (NESARC), one study observed that smokefree restaurant and bar laws were associated with a 6% higher probability of quitting smoking among men with an alcohol use disorder compared to those in states without such laws.³⁵⁰ In a separate study using 2001–2002 and 2004–2005 NESARC data, protective effects of smokefree restaurant and bar laws (i.e., an association with lower risk of alcohol use disorder onset) were observed in the overall sample of people who reported drinking in public at least once per month in the past year and among all population subgroups except participants ages 40 or older.³⁵¹ In addition, smokefree restaurant and bar laws were associated with (1) greater likelihood of remission from alcohol use disorder overall among individuals who reported any alcohol use at baseline, as well as among men, young adults (ages 18–29), and adults ages 50 and older; and (2) greater likelihood of remission from an alcohol use disorder among the subset of participants who drank alcohol in public at least once per month.³⁵¹

In a longitudinal analysis of the 2005, 2007, and 2008 four-country International Tobacco Control Survey (Australia, Canada, United Kingdom, and United States), neither overall changes in frequency and amount of alcohol consumption nor overall changes in frequency of binge drinking were associated with the implementation of smokefree bar laws.³⁵² However, among adults who reported hazardous drinking (>7/14 drinks per week among women/men and/or drinking >4/5 drinks within a 2-hour period among women/men) or heavy smoking (heaviness of smoking index score of 3 or greater), those who frequented bars that became or remained smokefree reported a significantly larger reduction in the amount of alcohol typically consumed compared to those who frequented bars that continued to allow smoking.

Cross-sectional studies have also examined the relationship between smokefree restaurant and bar laws and tobacco use. A cross-sectional analysis of data from the 2009 U.S. National Health Interview Survey linked with state-level policy data found that stronger smokefree bar laws were associated with lower odds of current smoking among all adults and those who reported alcohol use, regardless of subgroup (e.g., any past-month use, any binge drinking).³⁵³ A 2020–2021 volumetric choice experiment survey of 181 adults who reported use of cigarettes, e-cigarettes, and alcohol found that hypothetical bans on smoking or vaping in bars and restaurants would have no significant effect on alcohol consumption.²²⁴ However, more longitudinal cohort studies are needed to evaluate the cross-substance effects of smokefree bar/restaurant policies on alcohol use as well as co-use of tobacco and alcohol.

Effects of Smokefree Policies in Substance Use Treatment Settings on Tobacco and Alcohol Use

Substance use treatment settings are another important setting in which to consider cross-substance policy effects on tobacco and alcohol use, as many people who seek substance use treatment for alcohol and/or other drugs also use tobacco products.³⁵⁴ There remains a misconception that people with substance use disorders (SUDs) (and other behavioral health

conditions) do not want to quit tobacco use, are not able to quit tobacco use, and that smokefree policies in SUD treatment facilities, as well as providing treatment for tobacco use while in treatment, might undermine successful treatment for SUD.² As discussed in chapter 7, incorporating smoking cessation treatment into alcohol use treatment does not adversely affect the success of the alcohol use treatment. Furthermore, smokefree policies are effective in increasing smoking cessation, including among individuals in substance use treatment.^{2,355-357} Notably, “the tobacco industry has opposed smokefree policies in psychiatric hospitals, donated cigarettes to mental health facilities, and funded research suggesting that patients with psychiatric illnesses need tobacco for self-medication”.^{2,p.602} Furthermore, “in the past, many behavioral health clinicians believed that treating nicotine dependence and tobacco cessation jeopardize sobriety or mental health recovery... a misconception that has been actively fostered by the tobacco industry”.^{2,p.602} However, efforts to integrate behavioral health care with primary health care, along with the recognition that people dealing with behavioral health conditions are disproportionately likely to prematurely die of a disease caused by smoking, have led to policy changes at substance use treatment settings and at the state level.² As of February 2026, 18 states require tobacco-free grounds for most mental health facilities, and 19 states require tobacco-free grounds for most substance use treatment facilities.³⁵⁸ In the 2024 National Substance Use and Mental Health Services Survey, 36.7% of 15,919 U.S. substance use treatment facilities reported 100% smokefree grounds policies (smoking policies in which smoking is not permitted anywhere outside or within any building).³⁵⁹ More than one-half of substance use treatment facilities (57.6%) had policies that banned smoking indoors but permitted smoking in designated outdoor areas.³⁵⁹ In addition, as of September 2024, nine states require that substance use treatment facilities include treatment for tobacco use.³⁶⁰ In 2024, a majority of substance use treatment facilities reported screening for tobacco use (83.9%) and providing smoking/tobacco cessation counseling (72.6%), while a smaller number reported providing nicotine replacement therapy (43.2%) or non-nicotine cessation medications (39.1%).³⁶¹

A 2022 systematic review concluded that, although smokefree policies alone in mental health and substance use treatment settings do not affect smoking cessation outcomes, the use of smokefree policies in combination with multicomponent interventions and continued support after discharge does support cessation.³⁶² However, studies primarily represented mental health treatment facilities and included only a small number of studies conducted in substance use treatment facilities. Further, this review focused only on post-discharge smoking cessation outcomes and changes in smoking behaviors post-discharge.

Implementation of tobacco-free policies in substance use treatment facilities has been associated with increased positive beliefs among staff about treating tobacco use,³⁶³ increased tobacco use assessment,³⁶⁴⁻³⁶⁹ and increased provision of tobacco treatment services.^{355,356,363,365,367,370-374} Most studies have observed decreased cigarettes smoked per day^{355,373,375} or decreased smoking prevalence^{355-357,363,372,373,375,376} among clients and/or staff after implementation of tobacco-free policies. In New York, for example, there was a small but significant decrease in client smoking prevalence from 69.4% to 62.8% 1 year after the implementation of a statewide tobacco-free services regulation in state-certified addiction treatment programs,³⁷⁷ although this change was not sustained 5 years after implementation.³⁷⁸ In California, a state-sponsored initiative to promote tobacco-free grounds and increase smoking cessation services in residential SUD treatment programs was associated with a 27.6 percentage point reduction in smoking prevalence in the first cohort of participating programs (preintervention: 54.2%, 15 months

post-intervention: 26.6%, adjusted odds ratio [aOR] = 0.25, 95% confidence interval [CI] = 0.13–0.45)³⁷² and a 19.8 percentage point reduction in smoking prevalence in a replication cohort (preintervention: 60.3%, 18 months post-intervention: 40.5%, aOR = 0.46, 95% CI = 0.27–0.78).³⁵⁶ However, implementation was inconsistent, with only 8 out of 11 participating programs in the first cohort adopting policies.

No studies were identified that reported the effects of smokefree policies in substance use treatment facilities specifically on alcohol use outcomes. However, most studies have found that smokefree policies are associated with no change in patient census, admissions, irregular discharges, or treatment completion,^{357,364,369,379-381} indicating that smokefree policies do not appear to deter people from receiving or completing treatment for substance use.

Effects of Pictorial Warning Labels on Knowledge and Risk Perceptions of Tobacco and Alcohol

A strong evidence base exists for the effectiveness of large pictorial warning messages on tobacco products. The National Cancer Institute’s 2016 Tobacco Control Monograph 21, *The Economics of Tobacco and Tobacco Control*, concluded that “large pictorial health warning labels on tobacco packages are effective in increasing smokers’ knowledge, stimulating their interest in quitting, and reducing smoking prevalence.”^{313,p.303} The 2024 Surgeon General’s report, *Eliminating Tobacco-Related Disease and Death: Addressing Disparities*, states that “requiring pictorial health warnings on cigarette packages and advertisements increases both understanding of the harms of smoking and intention to quit among different population groups,”^{139,p.589} and the 2020 Surgeon General’s report concluded that “the evidence is sufficient to infer that large, pictorial health warnings increase smokers’ knowledge about the health harms of smoking, interest in quitting, and quit attempts and decrease smoking prevalence.”^{2,p.12} The 2009 Family Smoking Prevention and Tobacco Control Act directed the FDA to “issue regulations requiring color graphics depicting the negative health consequences of smoking” to accompany new textual warning statements and require cigarette packages and advertisements to include new warnings.^{206,382} As of 2026, the pictorial warning labels proposed by FDA remain the subject of litigation.³⁸²

Warning labels for tobacco products, including pictorial warning labels, are also recommended by the guidelines for implementation of Article 11 of WHO’s Framework Convention on Tobacco Control (an international treaty that aims to reduce demand for and supply of tobacco products).³⁸³ According to WHO, health warnings on alcoholic beverages also increase awareness of the risks associated with drinking, but the evidence is less robust for whether health warnings reduce alcohol consumption or change behavior.³⁸⁴ The discrepant findings may be due in part to the more limited implementation of pictorial warnings for alcohol than for tobacco. Indeed, at least three times as many countries mandate pictorial warning labels for tobacco than for alcohol. By 2021, 134 countries/jurisdictions mandated pictorial cigarette warnings covering more than half the pack³⁸⁵ (see example warnings in Figure 9.8, Panel A). A total of 55 countries reported using alcohol warning labels in 2019,³⁸⁶ but pictorial warnings are not widely adopted.^{387,388} As is true for pictorial warning labels for cigarettes, exposure to pictorial warning labels for alcohol is associated with greater awareness of the health harms of alcohol use, including cancer.^{389,390}

In the United States, inconspicuous text-only alcohol warning labels caution about the risk of alcohol use during pregnancy and the dangers of drinking and driving. The 2024 Surgeon General's Advisory, *Alcohol and Cancer Risk*, recommends “an update to the Surgeon General's warning label for alcohol-containing beverages to include a cancer risk warning.”^{391,p.17}

This advisory also recognizes that “prominent, pictorial, and rotating messages, compared to less conspicuous, text-only, and static messages, are more effective for influencing awareness and behavior.”^{391,p.17} A study using 2024 data from the Health Information Trends National Survey found substantial support for warning labels in the United States, with 61.6% of respondents expressing support for cancer-related warning labels and 29.6% neither supporting nor opposing labels.³⁹²

In 2025, the Alaska state legislature passed a bill that included a provision to require warning signs where alcohol is sold indicating that “alcohol use can cause cancer, including breast and colon cancers.”^{393,394} The requirement went into effect for bars, restaurants, and liquor stores on August 1, 2025. Legislation passed in Ireland requires all alcohol products sold to include a warning reading “There is a direct link between alcohol and fatal cancers” starting in May 2026.^{395,396}

In Yukon, Canada, researchers examined the effects of alcohol warning labels featuring a cancer warning, national drinking guidelines, or standard drink information (see Figure 9.8, Panel B).³⁹⁷ In a quasi-experimental study that compared participants in an alcohol warning label-exposed intervention site to an unexposed control site over multiple timepoints, intervention-site participants were significantly more likely than control-site participants to recall and support the standard drink warning label. Intervention participants were also significantly less likely than control-site participants to report intentions to use the standard drink warning label information to purchase higher strength alcohol for a lower cost (thereby avoiding a potential unintended consequence of this intervention). An interrupted time-series analysis of per-capita alcohol sales in Yukon and in neighboring regions where alcohol warning labels did not change found decreases in alcohol sales in the intervention site of Yukon relative to the comparison sites.³⁹⁸

Figure 9.8 Examples of Cigarette and Alcohol Warning Labels in Canada

Panel A: Example Cigarette Warning Labels in Canada, 2023–Present



Panel B: Alcohol Warning Labels in Yukon, Canada, 2017–2018



Note. For additional examples of pictorial health warnings, visit the World Health Organization's [pictorial health warnings on tobacco products database](https://www.who.int/databases/whodoc/pictorial-health-warnings-on-tobacco-products-database).

Source: Health Canada 2025,^{399,400} Schoueri-Mychasiw et al. 2021.³⁹⁷ Cigarette warning labels reproduced with the permission of the Minister of Health (Canada), 2025. Alcohol warning labels reproduced with permission of the National Cancer Institute, from "Use as directed: do standard drink labels on alcohol containers help consumers drink (ir)responsibly? Real-world evidence from a quasi-experimental study in Yukon, Canada," Schoueri-Mychasiw et al., *Drug and Alcohol Review*, volume 40, issue 2, Copyright © 2020 Her Majesty the Queen in Right of Canada. Drug and Alcohol Review © 2020 Australasian Professional Society on Alcohol and other Drugs; permission conveyed through Copyright Clearance Center, Inc.

One online experiment made a cross-substance comparison, exposing adult participants to a warning label on a hypothetical brand of alcohol, cigarettes, and sugar-sweetened beverages in random order.⁴⁰¹ Across all substances, participants were randomly assigned to view (1) text-only warnings without efficacy information to increase consumers' confidence in their ability to stop using the product, (2) text-only warnings with efficacy information, (3) pictorial warnings without efficacy information, or (4) pictorial warnings with efficacy information. Compared to text-only warnings, pictorial warnings led to greater fear, more thinking about the harms of consumption, and lower product appeal for the product in the warning. This was true across all three product categories, suggesting that the evidence base supporting cigarette pictorial warnings is relevant to alcohol warning labels.⁴⁰¹

In addition to pictorial warning labels, the use of “plain packaging” has been explored for tobacco and alcohol.^{2,402} Plain packaging, or standardized packaging, does not have additional logos, fonts, colors, images, or text that one might associate with a specific brand. Instead, product type is identified in a fixed font, size, and location on packaging that is otherwise identical across different tobacco or alcohol products. Plain packaging for tobacco reduces the appeal of tobacco products, makes health warnings on packages more salient and effective, limits misunderstandings of tobacco harms, and may decrease tobacco use.^{2,313} As of 2023, 25 countries/territories had adopted plain packaging for cigarettes, and 14 countries/territories were considering its implementation.⁴⁰³ As of 2026, plain packaging for alcohol has not been adopted in any country, and research on its potential effects is therefore limited. One online experiment comparing alcohol plain packaging with branded alcohol packaging found that plain packaging decreased ratings of product-based characteristics (e.g., attractiveness, popularity) and consumer-based characteristics (e.g., a consumer of this product is trendy, successful), but it did not significantly affect ratings of how boring the bottle was.⁴⁰²

Effects of Tobacco Display Bans on Alcohol Use

Restrictions on retail displays of tobacco products are another strategy to limit exposure to tobacco marketing.³ A database of tobacco control laws from 212 countries compiled by Campaign for Tobacco-Free Kids found that 37 countries, as of 2026, have adopted total bans on retail displays of tobacco products and 49 countries either have adopted some restrictions on retail displays or have adopted bans that allow exemptions for tobacco displays, such as in duty-free stores or tobacco specialty shops.⁴⁰⁴ In the United States, where retail tobacco displays are not restricted, a tobacco “powerwall”, a prominent display of many cigarette and other tobacco products, typically dominates the retail space behind the cash register, and warning statements are often not visible to retail customers.^{405,406} A study of point-of-sale marketing in California in 2002 found that retailers displayed an average of 124 cigarette pack facings on the front row of stores shelves and displays.⁴⁰⁷ The literature search conducted for this chapter identified 26 studies of tobacco display bans.⁴⁰⁸⁻⁴³³ After a tobacco display ban was implemented in England in 2015, children ages 11–15 had reduced odds of exposure to cigarettes in stores, regardless of alcohol use status (ever alcohol use: aOR 0.59, 95% CI = 0.47–0.75; never alcohol use: aOR 0.57, 95% CI = 0.48–0.67).⁴²⁴ However, none of the identified studies of tobacco display bans evaluated effects on alcohol perceptions or use.

Summary: Policy Factors

Both tobacco and alcohol products are subject to federal, state, and local regulations on their use, sale, purchase, promotion, taxation, marketing, and temporal and geographic retail availability. Findings on cross-substance effects of alcohol taxation suggest that for adults, increasing alcohol prices either decreases cigarette smoking or has no discernable effect on cigarette smoking. This suggests that these products are economic complements and not economic substitutes, and that increasing alcohol taxes and prices is unlikely to increase cigarette smoking. However, the evidence for cross-substance effects of alcohol taxation were less clear among youth, a particularly price-sensitive population. Researchers have examined restrictions on the temporal or geographic sale or use of alcohol on cigarette smoking largely through hypothetical modeling or relatively unique sample populations. However, research has shown that implementation of smokefree policies in bars/restaurants is associated with decreased alcohol use. Further, implementation of smokefree policies in SUD treatment facilities does not interfere with SUD treatment outcomes and may support smoking cessation, especially when paired with smoking cessation treatment. Pictorial warnings, plain packaging, and retail display restrictions are effective tobacco control policies, and some evidence shows the effectiveness of these policies to address alcohol use; however, little to no research exists on their cross-substance effects. Understanding the effects of substance-specific policies on both tobacco and alcohol use is an important area for future research.

Chapter Summary

This chapter underscores important commonalities in the contextual factors influencing tobacco and alcohol use. These include product diversity, use of appealing flavors, likeness to other consumer products, and extensive marketing in various venues, such as brick and mortar stores, as well as several media channels, such as social media. The availability, accessibility and marketing of tobacco products have significant effects on tobacco use, and the availability, accessibility and marketing of alcohol products have significant effects on alcohol use, clearly indicating the need to consider cross-substance effects.

Both tobacco and alcohol products are obtained primarily from brick-and-mortar retailers. Marketing of both products in shared retail environments can facilitate exposure to marketing for both products that may normalize co-use and purchase of both products. Tobacco and alcohol retail availability are both associated with higher rates of tobacco and alcohol use and some evidence suggests that limiting retail availability can increase smoking cessation or decrease alcohol consumption.

Similar to the retail environment, the marketing environment for tobacco and alcohol products exerts a substantial influence on product use. The literature on cross-cue reactivity indicates that comarketing of tobacco and alcohol products may reinforce tobacco and alcohol use. Tobacco advertising sometimes includes alcohol cues in the form of alcohol imagery and written references to alcohol products. Further, tobacco companies continue to market alcohol-flavored tobacco products, including cigars, e-cigarettes, and nicotine pouches, and conversely, alcohol companies market tobacco-flavored alcohol products. Youth and adults are exposed to tobacco

and alcohol advertising and depictions of tobacco and alcohol use in various media channels including television, movies, social media, and music videos, which are often framed in positive ways (e.g., romance, achievement, adventure). Tobacco marketing is causally associated with initiation and use of tobacco products by youth and young adults. Similarly, robust evidence supports a causal association between alcohol marketing and youth alcohol use.

Both tobacco and alcohol products are subject to federal, state, and local policies and regulations. These policies address their use, sale, purchase, promotion, taxation, marketing, and temporal and geographic retail availability. However, few types of policies have been studied in the cross-substance context. With regard to taxation, research suggests that increasing alcohol prices either decreases cigarette smoking or has no effect on cigarette smoking, indicating that cigarettes and alcohol are economic complements, rather than economic substitute, and that increasing alcohol taxes and prices is unlikely to increase cigarette smoking. With regard to smokefree policies, implementation of smokefree policies in bars/restaurants is associated with decreased alcohol use. Further, implementation of smokefree policies in substance use treatment facilities does not interfere with substance use treatment outcomes and may support smoking cessation, especially when paired with smoking cessation treatment. Studies of the cross-substance effects of other policies, such as pictorial warnings, plain packaging, and retail display restrictions, are needed.

The existing literature on policies related to tobacco and alcohol predominantly focuses on two products: beer and cigarettes. This focus likely reflects prevalence of use for each of these substances. Despite consistent declines in prevalence of cigarette smoking, cigarettes remain the most used tobacco product among adults in the United States, with 9.9% of U.S. adults reporting current cigarette smoking in 2024.⁴³⁴ The declines in cigarette smoking are somewhat offset by the increasing prevalence of e-cigarette use, up to 7.0% of U.S. adults in 2024.⁴⁶ Patterns in alcoholic beverage consumption have also changed. Since 1977, beer had been the alcoholic beverage with the highest per capita ethanol consumption in the United States.⁴³⁵ However, in 2022, spirits surpassed beer to become the alcoholic beverage with the highest per capita ethanol consumption.⁴³⁵ Thus, the last several decades reflect significant changes in the types of tobacco and alcohol products available in the market as well as shifts in the relative prevalence of competing products. New products (e.g., ready-to-drink hard seltzers, e-cigarettes, and nicotine pouches) continue to be developed, manufactured and marketed with flavors that are attractive to youth (including alcohol-flavored tobacco products).

This chapter's review of how alcohol availability, marketing, and policies affect tobacco consumption in the United States underscores many important research gaps. An overarching theme is evidence of many parallels in tobacco and alcohol research, but too few studies have examined the effects of alcohol environmental and policy factors on tobacco use. It is theoretically possible that reducing alcohol affordability, reducing alcohol availability, and restricting alcohol marketing have the potential to reduce tobacco use as well as co-use of tobacco and alcohol. However, few studies are designed to test cross-substance impacts of alcohol availability, marketing, or policies on tobacco use and co-use of tobacco and alcohol. Instead, many studies test how alcohol availability, marketing, and regulations affect alcohol consumption (e.g., how alcohol availability and price affect drinking), without considering potential effects on tobacco use. The parallel findings for alcohol policy and tobacco control research suggest that cross-substance policy impact research is feasible.

Research Needs

Systems approaches are needed to conduct additional research on the cross-substance effects of alcohol-related economic, environmental, and policy factors on tobacco use.

Systems approaches explicitly incorporate efforts to understand how factors from multiple levels and domains interact to influence outcomes of interest. Systems approaches require collaboration across different disciplines and are particularly important where individual, social, and economic factors interact. For example, tobacco researchers could collaborate with alcohol policy researchers in geospatial studies of outlet density, and alcohol researchers may harness tobacco control experience in social media studies of marketing effects and in industry document research. In addition, a comparative review of place-based disparities in the retail environment for tobacco and alcohol could inform strategies to reduce their availability and help to inform environmental-related health disparities. Leveraging these collaborations could advance both tobacco and alcohol research fields and produce a unified tobacco-alcohol research agenda.

Further economic studies of patterns of aggregate consumption (e.g., total spending on tobacco and alcohol products) in combination with individual-level cross-sectional studies of use, and longitudinal studies of use over time, are needed to understand how tobacco and alcohol use may be affected by shared influences. To the extent that alcohol consumption and cigarette smoking share many of the same risk and protective factors, an integrative model addressing both tobacco and alcohol use could illustrate connections between individual and macro-level causes of their use as well as racial and/or ethnic and social and/or economic differences in use. A systems perspective may also prove useful to motivate and guide the design of such analyses and modeling. For instance, causal loop modeling could help identify whether and how the effects of alcohol availability, marketing, price, and policies influence tobacco susceptibility, initiation, use, and cessation.⁴³⁶

More theoretical and theoretically-informed research on how alcohol marketing may influence tobacco use and vice versa is needed. Several psychological theories can inform understanding of the impact of exposure to marketing and media portrayals of substance use on tobacco or alcohol use by youth and young adults, including social learning and social cognitive theories and the message interpretation processing model.⁹⁸⁻¹⁰⁰ In addition, a social ecological framework underlies much of the research on the effects of retail availability on tobacco and alcohol use. Further research is needed to understand how aggregate social forces influence contextual factors (such as retailers' locations) and how these and other environmental characteristics influence how and where individuals use tobacco and alcohol. One challenge to studying the cross-substance effects of exposure to tobacco and alcohol marketing on tobacco and alcohol use is to disentangle the separate and combined effects of exposure on susceptibility, initiation, use, and cessation. In addition, comparative studies of responses to tobacco and alcohol marketing are needed to keep pace with the rapidly changing landscape for tobacco products and social norms about their use,^{280,281} as well as the changing landscape for marketing with the advent of algorithmically targeted programmatic advertising.^{282,283}

More research to ascertain whether higher alcohol taxes or prices reduce or increase tobacco consumption is needed, including attention to study design and quality. The majority of studies find that cigarette consumption and alcohol are independent or are economic complements, rather than economic substitutes. This suggests that increasing alcohol taxes and prices is unlikely to influence cigarette smoking. Additional research could lead to a high return on investment by informing policy design related to pricing and taxation applicable to multiple substances, including within product classes. Analyses of the variety and development of tobacco and alcohol products is needed. Overall, these studies could help address the important question of how alcohol-related economic factors affect tobacco use.

Additional research is needed to better understand the effects of retail availability on co-use of tobacco and alcohol. Multiple questions are not fully answered in the literature, such as (1) Is greater retail availability of alcohol products associated with increased tobacco use and co-use? (2) Do online sales/delivery of alcohol influence tobacco use (e.g., increase frequency of tobacco use and/or inhibit cessation)? (3) What are the determinants and characteristics of the locations of retail outlets selling both tobacco and alcohol? An important gap in the data needed to address these cross-substance retail research questions is the actual number and location of tobacco retail establishments that sell alcohol. Further research on tobacco-free pharmacy policies, such as CVS' national policy of eliminating tobacco sales, could inform an understanding of cross-substance effects of tobacco and alcohol retail availability. In addition, future research that utilizes hypothetical purchase tasks or other experimental methods may be useful to assess behavioral responses to sales restrictions that limit tobacco sales to liquor stores.

Further analysis and systematic review of the spatial distribution of tobacco and alcohol retailers in relation to neighborhood demographics (e.g., socioeconomic status and race and/or ethnicity) and individual behavior (e.g., initiation and cessation for alcohol and tobacco) are needed. Although there is rich literature on the retail availability of tobacco and alcohol, their impacts on behaviors and health disparities are understudied, especially in the cross-substance context. For example, studies of the association between retail availability and use that investigate the moderating effects of sociodemographic characteristics are needed to understand subgroup differences, including potential tobacco and alcohol disparities by neighborhood characteristics. Further research is needed to tease apart the detailed causal pathways involved in the association between tobacco and alcohol retail outlet density and neighborhood characteristics. This work could benefit from greater application of multilevel models addressing state, county, and individual characteristics as well as more research on factors influencing choices by companies and individuals concerning store locations.

The assessment of environmental factors further calls for research on the place-based pricing of alcohol along with comparisons to existing information on tobacco pricing both within and between retail outlets.^{173,179} Such evidence could better inform an understanding of environmental disparities in the price of tobacco and alcohol and inform recommendations for policies to regulate the retail environment, including restrictions on licensing, retail availability, temporal availability, discounts, and minimum price.

Studies of cross-substance effects of tobacco and alcohol policies (in addition to taxation and pricing) on tobacco and alcohol use or co-use are lacking. With regard to packaging, further research is needed to investigate the effects of plain packaging of alcohol products on perceptions of tobacco and alcohol, tobacco and alcohol purchasing, and consumption behaviors. With regard to tobacco display bans, no studies examined the effects on alcohol use. However, studies about tobacco display bans may have collected data on alcohol use, which would present opportunities to investigate cross-substance effects of such policies on alcohol use with secondary analyses of existing data.

Both secondary data analyses and original research that investigate the cross-substance impacts of alcohol availability, affordability, marketing and counter-marketing, and alcohol policies (e.g., pricing) on tobacco use and co-use of tobacco and alcohol are needed to understand how alcohol policies could complement existing efforts to reduce tobacco use. Data sources that could be leveraged include proprietary sales data about tobacco and alcohol, particularly market basket data that characterize which products are purchased by whom. Future research could continue to leverage ongoing natural experiments that alter the retail landscape for tobacco and alcohol. For example, when Maryland amended its smokefree air law in 2024 to prohibit vaping in certain indoor areas, it required a study about issuing alcohol licenses to tobacconists and prohibited the issuance of alcoholic beverage licenses to tobacconists for the following two years, until July 1, 2026.⁴³⁷ Also of interest is whether and how the expansion of off-premise and on-premise alcohol outlets that follows privatization may affect tobacco use in addition to alcohol use.⁴³⁸ Tobacco and alcohol companies operate in overlapping marketplaces and often market their products in the same retail establishments, in the same media channels and market their products in similar ways, such as targeting specific populations, and attempting to limit tax increases and other policies that reduce the consumption of their products. Recognizing these commonalities could help generate research that captures the potential cross-substance impacts of policies. Leveraging these strengths could help further unify a tobacco-alcohol research agenda.

More research is needed to understand the effect of smokefree policies on smoking and alcohol co-use. More longitudinal cohort studies are needed to evaluate the cross-substance effects of smokefree bar/restaurant policies on alcohol use as well as co-use of tobacco and alcohol. In substance use treatment settings, smokefree policies have been associated with smoking cessation and existing evidence indicates that these policies do not harm alcohol (or other substance use) treatment outcomes, though more research is needed to examine these effects. Further research exploring the specific effects of smokefree policies within treatment settings on tobacco and alcohol use outcomes, and identification of necessary support (e.g., behavioral therapies, continued nicotine replacement therapy provision) would provide valuable insights. Additional research examining the effects of smokefree policies on smoking cessation during and after alcohol use treatment specifically is also warranted.

In sum, there are many parallels in tobacco and alcohol research, but more studies are needed to understand the cross-substance impact of alcohol economic, environmental, and policy factors on tobacco use.

Conclusions

1. **Co-exposure to tobacco and alcohol marketing and product availability is common, suggesting the potential for cross-product effects.** There is substantial spending by the tobacco and alcohol industries on marketing and advertising, and research has documented tobacco and alcohol co-marketing and media placement, with high levels of exposure reported by young people and by both youth and adults who co-use tobacco and alcohol.
2. **Both tobacco and alcohol retail outlets tend to be concentrated in neighborhoods characterized by greater socioeconomic disadvantage.** These findings exacerbate the adverse effects of geographic segmentation by race and/or ethnicity, socioeconomic disadvantage, and poor environmental conditions on health.
3. **Greater retail availability of tobacco is associated with greater tobacco use among adults, and some evidence shows that greater availability of alcohol is associated with greater alcohol use among adults.** Evidence that greater retail availability of tobacco and alcohol is associated with increased use of those products among youth is less consistent. No studies as of 2026 have considered whether greater availability of alcohol is associated with increased tobacco use among youth or adults.
4. **Smokefree bar laws are associated with cross-substance effects.** Evidence from a small body of literature finds that smokefree laws are associated with reductions in risk for alcohol use disorder and less frequent alcohol use among people who smoke heavily and report hazardous alcohol use.
5. **Smokefree policies in mental health and substance use treatment settings do not undermine effectiveness of substance use treatment.** Further, these policies can aid in smoking cessation, especially when paired with evidence-based smoking cessation treatment.

Appendix 9A Literature Search Strategy

To gather evidence pertaining to the economic, environmental, and policy factors that could provide insights into the potential effects of alcohol policies on tobacco, customized search strings were developed for PubMed and Web of Science. Product search terms included [“tobacco” OR “smoke*” OR “cigar*” OR “e-cigarette*” OR “electronic cigarette*” OR “electronic nicotine delivery*” OR “electronic nicotine device*” OR “vape” OR “vaping” OR “e-liquid” OR “hookah” OR “water pipe” OR “nicotine pouch*” OR “smokeless tobacco” OR “snus” OR “snuff” OR “loose leaf” OR “dissolvable tobacco”] AND [“drink*” OR “beer*” OR “wine*” OR “spirit*” OR “alcohol*” OR “liquor*” OR “ethanol*”]. The literature search was conducted between August and December 2023, focusing on English-language literature published at any time, and prioritizing studies published since the Master Settlement Agreement in 1998, with a few exceptions. In this chapter, summaries of evidence also prioritized systematic reviews and meta-analyses and more recent evidence not included in those publications. Additional studies published after 2023 were incorporated into the chapter based on their relevance.

Appendix 9B Marketing Restrictions for Tobacco and Alcohol Products

Restriction	Description of tobacco marketing restrictions ^a	Relevant federal regulation(s) for tobacco ^b	Description of alcohol marketing restrictions ^c	Relevant federal regulation or self-regulatory codes ^b for alcohol
Advertising (direct)				
Television and radio	<i>Federal-level:</i> Television and radio advertising is prohibited for cigarettes, little cigars, and smokeless tobacco. <i>State-level:</i> States may enact restrictions regarding place and manner of advertising.	PHCSA 1969 ; LCA 1973 ; CSTHEA 1986	<i>Federal-level:</i> Television and radio advertising allowed. <i>Voluntary self-regulation:</i> Self-regulatory codes require that more than 70% of the audience for advertisements (71.6% for spirits; 73.8% for wine and beer advertisements) be expected to consist of people ages 21 or older. <i>State-level:</i> States may enact restrictions regarding place and manner of advertising.	BI , DISCUS , WI codes
Magazines and newspapers	<i>Federal-level:</i> Cigarette and smokeless tobacco companies are prohibited from targeting youth in advertising, which includes advertising in magazines with large youth readerships. <i>State-level:</i> States may enact restrictions regarding place and manner of advertising.	MSA ; STMSA	<i>Federal-level:</i> Magazine and newspaper advertising allowed. <i>Voluntary self-regulation:</i> Self-regulatory codes require that more than 70% of the audience for advertisements (71.6% for spirits; 73.8% for wine and beer advertisements) be expected to consist of people ages 21 or older. <i>State-level:</i> States may enact restrictions regarding place and manner of advertising.	BI , DISCUS , WI codes
Outdoor and transit	<i>Federal-level:</i> Billboards and transit advertisements for cigarettes and smokeless tobacco are prohibited. Outdoor advertising in certain locations (retail outlets, events sponsored by the tobacco industry) is allowed. <i>State-level:</i> States may enact restrictions regarding place and manner of advertising.	MSA ; STMSA	<i>Federal-level:</i> Outdoor and transit advertising allowed. <i>Voluntary self-regulation:</i> Self-regulatory codes require that outdoor stationary advertisements be placed no closer than 500 feet from any elementary or secondary school or place of worship, except on a licensed premise. The Beer Institute's code further restricts advertising within 500 feet of public playgrounds, fields, or sports facilities intended primarily for youth athletics. <i>State-level:</i> States may enact restrictions regarding place and manner of advertising.	BI , DISCUS , WI codes
Direct mail	<i>Federal-level:</i> Direct mail advertising allowed. <i>State-level:</i> States may enact restrictions regarding place and manner of advertising.	FSPTCA	Direct mail advertising allowed. <i>State-level:</i> States may enact restrictions regarding place and manner of advertising.	
Point-of-sale advertising and displays	<i>Federal-level:</i> Point-of-sale advertising and displays allowed. <i>State-level:</i> States may enact restrictions regarding point-of-sale advertising and displays.	FSPTCA	<i>Federal-level:</i> Point-of-sale advertising and displays allowed. <i>State-level:</i> States may enact restrictions regarding point-of-sale advertising and displays.	

Appendix 9B (continued)

Restriction	Description of tobacco marketing restrictions ^a	Relevant federal regulation(s) for tobacco ^b	Description of alcohol marketing restrictions ^c	Relevant federal regulation or self-regulatory codes ^b for alcohol
Internet and social media	<i>Federal-level:</i> Social media posts must include required health warnings. Paid posts by bloggers or social media influencers must be disclosed. <i>State-level:</i> States may enact restrictions regarding place and manner of advertising. <i>Social media platform policies:</i> Platforms may enact policies that prohibit paid advertising for tobacco products or prohibit sponsored content promoting tobacco.	FSPTCA ; FDA rule (21 CFR 1100 , 21 CFR 1140 , 21 CFR 1143); FTC Endorsement Guides (16 CFR 255)	<i>Federal-level:</i> Posts made by paid or otherwise compensated users are considered advertisements and must contain mandatory statements applied to other forms of alcohol advertising. <i>Voluntary self-regulation:</i> Self-regulatory codes require that more than 70% of the audience for advertisements (71.6% for spirits; 73.8% for wine and beer advertisements) be expected to consist of people ages 21 or older. Self-regulatory codes also require associated webpages to have individuals to verify that they are 21 years old or older. <i>State-level:</i> States may enact additional restrictions regarding place and manner of advertising.	CFR Title 27, Chapter I, Subchapter A ; BI , DISCUS , WI codes
Advertising (indirect)				
Paid product placement in movies and television	<i>Federal-level:</i> Paid product placement is prohibited for cigarettes and smokeless tobacco brands.	MSA ; STMSA	<i>Federal-level:</i> Paid product placement allowed. <i>Voluntary self-regulation:</i> Self-regulatory codes recommend that product placements be guided by code principles (e.g., refrain from depicting underage drinking or drinking and driving) and be considered on a case-by-case basis.	BI , DISCUS , WI codes
Branded merchandise	<i>Federal-level:</i> Branded merchandise for cigarettes and smokeless tobacco products is prohibited.	MSA ; STMSA ; FSPTCA ; FDA rule (21 CFR 1140)	<i>Federal-level:</i> Consumer specialty items (e.g., t-shirts, hats, magnets) must have the company name of the responsible advertiser or the brand name of the product. <i>Voluntary self-regulation:</i> Self-regulatory codes do not allow logos, trademarks, or brand names to be used on clothing, toys, games, equipment, or other materials to be used primarily by individuals below the legal purchasing age.	BI , DISCUS , WI codes
Free distribution	<i>Federal-level:</i> Free distribution is prohibited for all tobacco products except for smokeless tobacco products distributed in a “qualified adult-only facility.” <i>State-level:</i> States may prohibit or otherwise restrict distribution of free samples of smokeless tobacco.	MSA ; STMSA ; FSPTCA ; FDA rule (21 CFR 1140)	<i>Federal-level:</i> All states prohibit providing alcohol to individuals under 21. <i>State-level:</i> States may enact restrictions regarding free goods and services.	-

Appendix 9B (continued)

Restriction	Description of tobacco marketing restrictions ^a	Relevant federal regulation(s) for tobacco ^b	Description of alcohol marketing restrictions ^c	Relevant federal regulation or self-regulatory codes ^b for alcohol
Other marketing activities				
Promotional discounts and coupons	<i>Federal-level:</i> Promotional discounts and coupons allowed. <i>State-level:</i> States may enact restrictions regarding tobacco product pricing and coupons.	FSPTCA	<i>Federal-level:</i> Promotional discounts and coupons allowed. <i>State-level:</i> States may enact restrictions regarding alcohol pricing and coupons, including restrictions on drink specials (e.g., happy hours) at on-premise retailers and distribution of giveaways as a reward for purchasing a producer's or distributor's products.	-
Sponsored events	<i>Federal-level:</i> Sponsorship in the brand name of cigarettes or smokeless tobacco products is prohibited for athletic, musical, artistic, or other social and cultural events, and teams or entries in events. Sponsorship in a corporate name is allowed.	MSA ; STMSA ; FSPTCA ; FDA rule (21 CFR 1140)	<i>Federal-level:</i> Sponsored events allowed. <i>Voluntary self-regulation:</i> Sponsorships are subject to self-regulatory code provisions related to advertising placement and content. Codes do not allow for marketing at events where most attendees are below the legal purchasing age. <i>State-level:</i> States may enact restrictions regarding alcohol industry sponsorship of events, including college and school events.	BI , DISCUS , WI codes
Advertising content				
Cartoon characters in advertisements	<i>Federal-level:</i> Cartoons in advertisements for cigarettes and smokeless tobacco are prohibited.	MSA ; STMSA	<i>Federal-level:</i> Cartoon characters in advertisements allowed. <i>Voluntary self-regulation:</i> Self-regulatory codes do not allow advertisements to depict cartoon characters, Santa Claus, or other images or figures that primarily appeal to people below the legal purchasing age.	BI , DISCUS , WI codes
Health warnings in advertisements	<i>Federal-level:</i> Advertisements for tobacco products are required to include a statement regarding the addictiveness of nicotine: "WARNING: This product contains nicotine. Nicotine is an addictive chemical."	FDA rule (21 CFR 1100 , 21 CFR 1140 , 21 CFR 1143)	<i>Federal-level:</i> Advertisements may not make false or misleading health-related statements. Advertisements for distilled spirits must include the alcohol content as a percentage by volume. There is no regulation requiring health warnings in alcohol advertisements.	FAA Act and 27 CFR 4.64 , 27 CFR 5.235 , 27 CFR 7.235

Note. BI = Beer Institute; CFR = Code of Federal Regulations; CSTHEA = Comprehensive Smokeless Tobacco Health Education Act; DISCUS = Distilled Spirits Council of the United States; FAA = Federal Alcohol Administration; FDA = U.S. Food and Drug Administration; FSPTCA = Family Smoking Prevention and Tobacco Control Act; FTC = Federal Trade Commission; LCA = Little Cigar Act; MSA = Master Settlement Agreement; PHCSA = Public Health Cigarette Smoking Act; STMSA = Smokeless Tobacco Master Settlement Agreement; WI = Wine Institute.

^aAdvertisements for cigarettes, smokeless tobacco, and other covered tobacco products must include required warning statements. The Tobacco Control Act (2009) affirms the authority of state, local, territorial, and Tribal governments to further regulate access to and advertising of tobacco products to individuals of any age. ^bAdditional sources of information on federal- and state-level restrictions are listed in the table sources below. ^cAlcohol advertisements must include contact information on the responsible advertiser and the class, type, or distinctive designation to which the product belongs. Spirits must also include alcohol content as percent alcohol by volume.

Additional sources. Alcohol and Tobacco Tax and Trade Bureau 2023, 2024,⁴³⁹⁻⁴⁴¹ Beer Institute 2023,²⁵⁷ Campaign for Tobacco-Free Kids 2017,⁴⁴² Center on Alcohol Marketing and Youth 2012,⁴⁴³ CDC 2024,⁴⁴⁴ Counter Tools 2024,⁴⁴⁵ Distilled Spirits Council of the United States 2022,²⁵⁸ FTC 2023,⁴⁴⁶ NIAAA 2025,⁴⁴⁷ FDA 2010, 2020,^{115,448} Kong et al. 2024,⁴⁴⁹ Henriksen 2012,⁴⁵⁰ MSA,²⁴¹ NIAAA,⁴⁵¹ Public Health Law Center 2022,⁴⁵² STMSA,⁴⁵³ Tobacco Control Legal Consortium 2011,⁴⁵⁴ Wine Institute 2024.²⁵⁹

Appendix 9C Studies That Assess the Relationship Between Alcohol Taxes and Prices on Tobacco Outcomes in the United States

Study	Study design	Time period	Study sample <i>N</i>	Alcohol measure	Tobacco product analyzed	Tobacco use measure	Economic relationship	Notes
Asarkaya 2010 ³¹⁸	A 10% permanent increase in the price of alcohol is simulated. Projections are based on a structural model that draws on panel data from the National Longitudinal Survey of Youth (1979), a survey of youth ages 14–22 in 1979. These data are merged with city-level alcohol price data, which are aggregated up to the state and region levels (south, west, northeast, north-central).	1979–1994	Respondents are ages 14–22 in 1979 and ages 29–37 in 1994. <i>N</i> = 1,030	Real city-level price of a can of beer averaged at the region level	Cigarettes	Participation in cigarette consumption: Dichotomous indicator that equals 1 for respondents who indicated that they smoked in the last 30 days before the interview and 0 otherwise. Quitting smoking: Exiting a cigarette consumption state.	Inconclusive Substitutes: No elasticities are reported. A table of the simulated percentage change in cigarette consumption following a 10% permanent increase in the price of alcohol is shown. This increase in alcohol price increases cigarette consumption by 1 percentage point in the first period and later periods (time between surveys). Independent: No effect. Beer price has no significant relationship with quitting smoking.	The authors also estimate that a 10% increase in the price of cigarettes increases past 30-day alcohol use by 0.5 percentage point in the first period and by similar amounts in later periods. These findings imply that alcohol is a substitute for cigarettes.

Appendix 9C (continued)

Study	Study design	Time period	Study sample <i>N</i>	Alcohol measure	Tobacco product analyzed	Tobacco use measure	Economic relationship	Notes
Bates et al. 2015 ³¹⁹	Estimation of cross-price elasticities using state-level panel data	1980–2007	Data from individuals in 48 U.S. states (excluding Alaska and Hawaii) constructed from multiple sources <i>N</i> = 1,344	Real sum of federal and state beer excise taxes	Cigarettes	Per capita cigarette sales (10-pack). Authors do not specify whether measure is of total or adult per capita sales.	Independent: Elasticity = –0.122; not statistically significant	The authors also find a negative and statistically significant cross-price elasticity estimate on the (log of) cigarette excise tax in the beer demand equation, suggesting that the 2 goods are complements. The implication is that people who drink beer consider the price of cigarettes when deciding how much beer to drink, whereas people who smoke cigarettes are indifferent to the price of beer.

Appendix 9C (continued)

Study	Study design	Time period	Study sample <i>N</i>	Alcohol measure	Tobacco product analyzed	Tobacco use measure	Economic relationship	Notes
Decker & Schwartz 2000 ³²⁰	Estimation of cross-price elasticities using cross-sectional, individual-level data from BRFSS. These data are representative at state-level and are merged with the city-level price data.	1985–1993	Adults ages 18 and older from 45 states <i>N</i> = 474,096 (men = 203,338, women = 270,758)	Beer price: City-level price of a 6-pack of beer, aggregated at the state-level	Cigarettes	Smoking participation (smoking prevalence), cigarette consumption (cigarettes per day), and smoking intensity (cigarettes per day among people who smoke)	Complements (smoking participation, cigarette consumption) and substitutes (smoking intensity) Pooled sample (women and men): Smoking participation: complements (elasticity = –0.19). Cigarette consumption: complements (elasticity = –0.14). Smoking intensity: substitutes (elasticity = 0.04). Women only: Smoking participation: complements (elasticity = –0.22). Cigarette consumption: complements (elasticity = –0.16). Smoking intensity: substitutes (elasticity = 0.04). Men only: Smoking participation: complements (elasticity = –0.12). Cigarette consumption: complements (elasticity = –0.09). Smoking intensity: substitutes (elasticity = 0.04).	The authors conclude that “most of the price response derives from changes in smoking participation, rather than changes in consumption among those who continue to smoke and drink.” In pooled regression models that have drinking participation and drinking intensity as the dependent variables, and cigarette prices as controls, the authors find that cigarettes and alcohol substitutes in consumption.

Appendix 9C (continued)

Study	Study design	Time period	Study sample <i>N</i>	Alcohol measure	Tobacco product analyzed	Tobacco use measure	Economic relationship	Notes
Frye 2020 ³²¹	Experimental, income-compensated, cross-price purchase task. Data collected via Amazon Mechanical Turk.	Not reported	Inclusion criteria: ages 21 or older, smoked tobacco products for longer than 3 months, smoked cigarettes each day in the past week, smoked more than 10 cigarettes in a day, drank more than 4 drinks in the past 30 days (female participants), drank 5 or more drinks in the past 30 days (male participants) <i>N</i> = 75	Hypothetical alcohol price: a ticket worth 1 alcoholic beverage at baseline. Alcoholic beverages were increased to 2 tickets per drink and then were increased again to 4 tickets per drink in the next condition (mini packs of cigarettes were 1 ticket per pack in both conditions).	Cigarettes	Cigarette purchases (mini packs of 2 cigarettes per pack)	Independent	"For the vast majority of participants, in each condition, the goods were independent of one another (i.e., a cross-price elasticity score of zero was predominant)... logistic regression models indicated that a cross-price elasticity score of zero was significantly more likely than a non-zero score."
Goel et al. 2016 ³²²	Estimation of price elasticities using panel, state-level data from multiple sources	2005–2014	48 states (excludes Alaska and Hawaii) <i>N</i> = 480	Real state beer tax (dollars/gallon) and real beer taxes in border states	Cigarettes	State-level cigarette sales per capita (20-packs). Authors do not specify whether these are total or adult per capita sales.	Complement (elasticity ranging from –0.035 to –0.031 depending on model specifications, $p < .05$)	Findings also indicate that higher beer prices in bordering states increase a state's cigarette sales (elasticity = 0.247, $p < .01$).

Appendix 9C (continued)

Study	Study design	Time period	Study sample <i>N</i>	Alcohol measure	Tobacco product analyzed	Tobacco use measure	Economic relationship	Notes
Koksal & Wohlgenant 2016 ³²³	Estimation of cross-price elasticities using repeated cross-sections of household consumer expenditure survey diary data from the Consumer Expenditure Survey, analyzed with pseudo-panel estimation technique.	2002–2008	12 cohorts over 28 quarters. Cohorts were defined by the interaction of 3 generations (born before 1950, born between 1950 and 1964, born in 1965 or later), and 4 geographic regions (Northeast, Midwest, South, West). <i>N</i> = 336	Real prices of beer, wine, and spirits—Lewbel price indices calculated from restaurant and at home expenditures of each consumer unit for the 3 different subcategories of alcoholic beverages.	Cigarettes	Average weekly cigarette consumption (weekly cigarette expenditures divided cigarette price)	Complement (long-run elasticity = -0.723 , $p < .1$)	The paper also found that the long-run cross-price elasticity of alcohol with respect to cigarette price is positive, but insignificant. Taken together, the findings suggest that “increasing alcohol prices would decrease cigarette consumption, while increasing cigarette prices does not have the same effect on alcohol consumption.”

Appendix 9C (continued)

Study	Study design	Time period	Study sample <i>N</i>	Alcohol measure	Tobacco product analyzed	Tobacco use measure	Economic relationship	Notes
Ma et al.2025 ²²⁴	Estimation of own- and cross-price elasticities for beer, liquor/wine, and cigarettes using data from an online volumetric choice experiment conducted among people who smoke and use e-cigarettes and alcohol.	2020–2021	Inclusion criteria: ages 21 or older; started using e-cigarettes or re-initiated e-cigarette use within the past 30 days; have smoked at least 100 cigarettes in lifetime; currently smoke cigarettes every day or some days, or smoked within the past 60 days; drank alcohol within the past 30 days <i>N</i> = 169	Price of beer (per 12 ounce can or bottle) or table wine or distilled liquor (per 5-ounce glass), with 0%, 25%, 50%, or 75% tax burden based on retail prices estimated using the 2019 Economist Intelligence Unit city-level price data	Cigarettes and closed system e-cigarettes	Consumption of cigarettes and e-cigarettes: Hypothetical cigarette and e-cigarette purchases (for consumption in 1 week)	Independent (cigarettes) and substitutes (e-cigarettes) Cigarette consumption in response to beer price: independent (elasticity = -0.025; not statistically significant) Cigarette consumption in response to liquor/wine price: independent (elasticity = -0.013; not statistically significant) E-cigarette consumption in response to beer price: substitutes (elasticity = 0.125, $p < .05$) E-cigarette consumption in response to liquor/wine price: substitutes (elasticity = 0.050, $p < .05$)	The sample included only people who currently smoked and started or re-initiated e-cigarette use within the past 30 days. They also needed to report alcohol drinking in the past 30 days.

Appendix 9C (continued)

Study	Study design	Time period	Study sample <i>N</i>	Alcohol measure	Tobacco product analyzed	Tobacco use measure	Economic relationship	Notes
Markowitz & Tauras 2009 ³²⁴	Estimation of cross-price elasticities using longitudinal, individual-level data from the National Longitudinal Survey of Youth 1997. These data are merged with city-level beer prices.	1997–2001	Youths ages 12–16 as of December 31, 1996 <i>N</i> = 25,954 (male participants = 13,443; female participants = 12,511)	Real city-level price of a six-pack of beer aggregated at a county-level and core based statistical area level.	Cigarettes	Smoking participation: Participation in current smoking is represented by a dichotomous indicator that equals 1 for respondents who indicated that they smoked cigarettes in the 30 days prior to the survey and is equal to 0 otherwise.	Depends on the regression specification and sub-sample analyzed Pooled regression (both male and female participants): Complements (elasticity = -0.24, $p < .1$) in the region fixed-effects model and substitutes (elasticity = 0.11, insignificant) in the individual-level fixed effect model Male participants only: Complements (raw coefficient = -0.025, insignificant) in the region fixed-effects model and complements (raw coefficient = -0.009, insignificant) in the individual-level fixed effect model Female participants only: Complements (raw coefficients = -0.012, insignificant) in the region fixed-effects model and substitutes (raw coefficients = 0.030, insignificant) in the individual-level fixed effect model	In a pooled sample regression that has alcohol participation as the dependent variable, the authors find alcohol to be a substitute for cigarettes in both the regional- and individual-effects models (regional effects: elasticity = 0.008, insignificant; individual-effects: elasticity = 0.13, $p < .1$).

Appendix 9C (continued)

Study	Study design	Time period	Study sample <i>N</i>	Alcohol measure	Tobacco product analyzed	Tobacco use measure	Economic relationship	Notes
Petry 2001 ³²⁵	Experimental cross-price purchase task. Data collected via in-person interview.	Not specified	Eligibility criteria included alcohol abuse or dependence and a history of using at least 3 other types of substances: cannabis, opioids, cocaine, and sedatives. <i>N</i> = 53	Hypothetical alcohol price. Participants were given \$35 of imitation money. At baseline, alcohol was \$1 per drink, and cigarettes were \$2 per 20-pack. The price of alcohol was then varied from \$0.50, \$1, \$2.50, and \$5 per drink, while all other substance prices remained constant. Participants were required to report the types and quantities of other substances they would purchase under each alcohol price change scenario.	Cigarettes	Purchases of cigarettes (in packs of 20)	Independent (elasticity = -0.03, not statistically significant)	This study was not exclusively focused on the cross-price elasticity between cigarettes and alcohol. A limitation of this purchase task study as it pertains to assessing the responsiveness of cigarette consumption to alcohol prices is that the recruited participants were not required to currently smoke cigarettes, they only needed to have sampled ≥3 other substances (the study investigated substitutability in people who reported polysubstance use).

Note. BRFSS = Behavioral Risk Factor Surveillance System.

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