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Alcohol Excise Taxes: Current Law and Economic Analysis

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Summary

The federal excise tax on alcoholic beverages is imposed at the manufacturer and importer level, based on the per unit production or importation of alcoholic beverages (e.g., distilled spirits, wine, and beer) for sale in the U.S. market. When converted to standard drink measures liquor drinks are generally subjected to a federal excise tax of approximately 13 cents per 1.5 ounce shot, wine is taxed at 4 cents per 5 ounce glass, and beer is taxed at 5 cents per 12 ounce can or bottle. Alcohol excise tax collections totaled $10.4 billion in FY2015, with collections from distilled spirits comprising 55.1% of that amount.

Congressional interest in alcohol excise taxes is broad, given a variety of policy motivations and the industry's wide geographic distribution. Since their inception in 1791, federal excise taxes on alcohol have been imposed or increased throughout history primarily to fund emergency spending during wartime or in response to concerns over the growth of budget deficits.

Today, three main approaches drive interest in alcohol taxes: (1) tax rates could be decreased to benefit firms in the industry, (2) excise tax rates could be increased for deficit reduction, or (3) excise tax rates could be increased to discourage the negative spillover effects of alcohol consumption (e.g., drunk driving fatalities, property damage, domestic violence).

This report provides a brief historical overview of alcohol excise tax policy and a description of current law. Next, the report analyzes alcohol excise tax rates based on some of the standard criteria for tax evaluation: revenue, economic efficiency, and equity. Lastly, this report discusses bills introduced in the 114th Congress that would reduce current excise tax rates as well as possible approaches to raising alcohol excise tax rates.

Despite three tax rate increases since 1951 (with the last increase in 1991), alcohol excise taxes have declined in inflation-adjusted value over time. Excise tax reductions would reduce excise tax collections, reduce some of the regressivity in the federal tax code, and provide owners of the affected alcohol producers with a temporary increase in their profits (due to lower tax rates).

Economists typically justify imposing excise taxes on alcohol consumption to better reflect the costs of an individual's consumption of alcohol to society. While there is much debate surrounding the technical measurement of these linkages, most researchers argue that alcohol excise tax rates are set below the economically efficient level to compensate for social costs. One estimate finds the combined federal, state, and local taxes between 25 cents and 29 cents (in 2013 dollars) per ounce of pure alcohol compared with the external cost of $1.02 per ounce.

Analysis suggests that excise tax increases are usually passed forward to consumers through higher prices and are not borne by the owners of alcoholic beverage manufacturers or importers.

Excise taxes are generally regressive, alcohol included. Lower income households tend to spend a higher share of their pre-tax income on alcoholic beverages, but this distribution is not as uneven as spending on non-alcoholic beverages or food. Consumers also pay different amounts of federal excise tax on the same amount of alcohol content, based on the type of alcoholic beverages they purchase. At current rates, the federal tax per ounce of pure alcoholic content for spirits, wine, and beer is 21 cents, 10 cents, and 8 cents, respectively.

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Introduction

The federal government levies an excise tax, at the manufacturer and importer level, based on the per unit production or importation of alcoholic beverages (e.g., distilled spirits, wine, and beer) for sale in the U.S. market. Alcohol excise taxes in the United States have a history almost as old as the federal government itself, as alcohol taxes were among some of the first federal revenue sources in the early republic. For much of U.S. history, alcohol excise taxes have served as one means to help fund emergency levels of spending (such as during wartime) and to reduce rising budget deficits (such as in 1990).

The modern-day interest in alcohol taxes is broad, with arguments presented to either raise or decrease current alcohol excise tax rates. Various approaches could be taken, such as follows:

- Increasing excise taxes could serve as a source of revenue as part of a larger budget deficit reduction package or as an offset,
- Reducing excise taxes could benefit firms in the alcoholic beverage manufacturing industry, or
- Increasing excise taxes could discourage the negative spillover effects associated with alcohol consumption (health, safety, crime, etc.).

First, this report provides a recent history of alcohol excise tax rates and a description of current law. Second, this report provides a revenue analysis, with a particular focus on the effect of inflation on the real, inflation-adjusted value of alcohol excise tax revenue over time. Third, this report provides an overview of the U.S. alcoholic beverage manufacturing industry. Fourth, alcohol excise taxes are analyzed with a particular focus on market structure, the effects of alcohol excise taxes on negative spillover effects from alcohol consumption, and how the distribution of these excise taxes affect various measures of equity in the federal tax code. Lastly, this report briefly summarizes relevant bills introduced in the 114th Congress.

A Brief History of Federal Alcohol Excise Tax Rates

Federal alcohol excise tax policy has largely been driven by periodic demand for additional revenue.[1] Alcohol excise taxes were first introduced in 1791 by Treasury Secretary Alexander Hamilton as a means to fund the early republic, and they were reimposed, raised, and repealed over the next two centuries surrounding periods of wartime. Public sentiment and empirical research that often assert that higher alcohol taxes reduce the negative spillover effects of alcohol consumption on society. However, this public health argument for increasing alcohol taxes has been less prominent in debates to increase taxes on alcohol compared with other "sin taxes" on tobacco.[2]

[1] For a historical account of alcohol excise tax policy prior to 1951, see CRS Report R43189, *Federal Excise Taxes: An Introduction and General Analysis*, by Sean Lowry For a more detailed historical analysis of alcohol excise tax rates, see CRS Report RL30238, *Federal Excise Taxes on Alcoholic Beverages: A Summary of Present Law and a Brief History*, by Thomas B. Ripy.

[2] For example, increases in tobacco taxes have been clearly linked as an offset to expansions in public health spending. See CRS Report R40226, *P.L. 111-3: The Children's Health Insurance Program Reauthorization Act of 2009*, by Evelyne P. Baumrucker, Elicia J. Herz, and Jane G. Gravelle; and CRS Report 94-214, *Cigarette Taxes to Fund Health Care Reform: An Economic Analysis*, by Jane G. Gravelle and Dennis Zimmerman.

Shortly after the end of Prohibition in December 1933, Congress enacted a comprehensive alcohol excise tax system in 1934.[3] These taxes were re-enacted during an era of federal budget deficits brought on by the economic stagnation of the Great Depression and federal spending under the New Deal. Although revenue was a major concern, Congress initially sought to set excise tax rates at a level that would enable legal alcohol producers to be competitive with the underground, bootlegging economy that emerged during Prohibition.[4] Tax rates gradually increased from 1934 to 1951 and helped to fund spending associated with World War II and the Korean War.[5]

Distilled Spirits

The tax rate on distilled spirits remained unchanged from the middle of the Korean War in 1951 to 1985.[6] In October 1985, the rate was raised from $10.50 to $12.50 per proof gallon (ppg).[7] The Deficit Reduction Act of 1984 (P.L. 98-369), enacted on July 18, 1984, increased the rate of tax on distilled spirits from $10.50 to $12.50 ppg, effective October 1, 1985. Under the Omnibus Budget Reconciliation Act of 1990 (OBRA90; P.L. 101-508), the rate was increased by $1.00 to $13.50 ppg, effective January 1, 1991. The legislative history seems to indicate that excise taxes on alcohol (and tobacco) were raised in OBRA 1990 primarily to raise revenue.[8]

Wine

The taxes on wine are levied at a variety of rates. The tax rates that applied to wine had remained unchanged from 1951 until the passage of OBRA90. Pre-OBRA90 tax rates ranged from 17 cents per wine gallon for still wine to $3.40 per wine gallon on sparkling wines.[9] Post-OBRA90, these rates now range from $1.07 per wine gallon to $3.40 per wine gallon. The tax rates on champagne and sparkling wines were not increased. A small domestic wineries credit equal to 90 cents per wine gallon is provided for the first 100,000 gallons of wine production, with a phase-out of the credit for wineries producing between 150,000 and 250,000 wine gallons.

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[3] The Beer-Wine Revenue Act was enacted in March 1933 and permitted the sale of beer and wine with no more than 3.2% alcohol by volume (ABV). This law was one of the laws relaxing Prohibition regulations (which were repealed in December 1933). The Liquor Taxing Act was passed in January 1934. For administrative details, see John E. O'Neill, "Federal Activity in Alcoholic Beverage Control," *Law and Contemporary Problems*, vol. 7 (Fall 1940), pp. 570-599.

[4] The illicit market was still estimated to have supplied 45 million gallons of bootleg liquor to consumers in 1934. This amount represented approximately 66% of the annual, total tax-paid consumption of 68 million distilled spirits. See Tun-Yuan Hu, *The Liquor Tax in the United States, 1791-1947* (New York, NY: Columbia University Graduate School of Business, 1950), p. 86. It was not until the IRS organized a large law enforcement effort in 1934, with over 1,000 agents, did the illicit market for spirits begin to shrink. By 1937, excise taxes on legal distilled spirits nearly doubled from their 1934 levels. See Philip J. Cook, *Paying the Tab* (Princeton, NJ: Princeton University Press, 2007), pp. 30-31.

[5] However, the tax rate on wine was halved in 1936 before it became subject to gradual increases in tax rates through 1951.

[6] Prior tax rates on distilled spirits, wine, and beer were enacted by the Revenue Act of 1951 (P.L. 82-183).

[7] A proof gallon is a combination of alcohol content and volume. A proof gallon is the volume in gallons, multiplied by the percent alcohol, multiplied by two, and divided by 100. A standard 80 proof gallon of spirits is 40% alcohol by volume. For conversions, see Department of the Treasury Alcohol and Tobacco Tax and Trade Bureau, Conversion Tables, at http://www.ttb.gov/spirits/convtbl.shtml.

[8] See "Title XI- Revenue Provisions" in H. Rpt. 101-964, p. 1028.

[9] A wine gallon is a measure of liquid volume without regard to the alcohol content. It contains 231 cubic inches at 60°F.

Beer

The Revenue Act of 1951 increased the tax rate on beer from $8.00 to $9.00 per barrel (a barrel contains 31 gallons). A second, reduced rate structure was enacted in 1977 specifically for small brewers.[10] The regular tax rate on beer remained unchanged until OBRA90, which doubled the existing rate, effective January 1, 1991, to the current rate of $18 per barrel. OBRA90 authorized the Secretary of the Treasury to establish regulations that would prevent larger brewers (who produce more than 2,000,000 barrels of beer per year) from paying lower rates intended for small brewers.[11] The current rate for small brewers, enacted by OBRA90, is $7.00 per barrel for the first 60,000 barrels and the regular rate of $18 for barrels 60,001 to 2,000,000. Any brewer making more than 2,000,000 barrels per year must pay the full tax rate of $18 per barrel on their total annual production.

Current Law

The tax rates that went into effect in 1991 remain current law, as summarized in **Table 1**. In addition to listing the tax per volume, as defined in statute, **Table 1** also shows the Alcohol and Tobacco Tax and Trade Bureau's (TTB, within the Department of the Treasury) conversions of these tax rates into common package measures. For example, the excise tax on a 12 oz. can of beer is approximately $0.05, or $0.30 for a six-pack of beer (at the regular rate).

Table 1. Current Federal Excise Tax Rates on Alcoholic Beverages

Product	Tax Rate and Unit of Taxation	Tax Per Package Equivalents
Distilled Spirits	**Proof Gallon**[a]	**750 ml bottle**
All	$13.50 less any credit for wine and flavor content	$2.14 (at 80 proof)
Beer	**Barrel (31 gallons)**	**12 oz. can**
Regular Rate for Larger Producers	$18	$0.05
Reduced Rate for Smaller Producers who produce no more than 2 million barrels	$7 on first 60,000 barrels $18 per barrel after the first 60,000 barrels	$0.02
Wine	**Wine Gallon (w.g.)**[b]	**750 ml bottle**
Still Wine 14% Alcohol or Less	$1.07[c]	$0.21
Still Wine Over 14% to 21%	$1.57[c]	$0.31
Still Wine Over 21% to 24%	$3.15[c]	$0.62
Naturally Sparkling	$3.40	$0.67
Artificially Carbonated	$3.30[c]	$0.65
Hard Cider	$0.226[c]	$0.04

Source: U.S. Department of the Treasury, Alcohol and Tobacco Tax and Trade Bureau, at http://www.ttb.gov/tax_audit/atftaxes.shtml.

[10] P.L. 94-529, signed into law on October 17, 1976, first established the reduced rate for small brewers.

[11] Section 11201(c)(2)(C) of OBRA90 states: "The Secretary may prescribe such regulations as may be necessary to prevent the reduced rates provided in this paragraph from benefiting any person who produces more than 2,000,000 barrels of beer during a calendar year."

a. A proof gallon is a combination of alcohol content and volume. A proof gallon is the volume in gallons, multiplied by the percent alcohol, multiplied by two, and divided by 100.

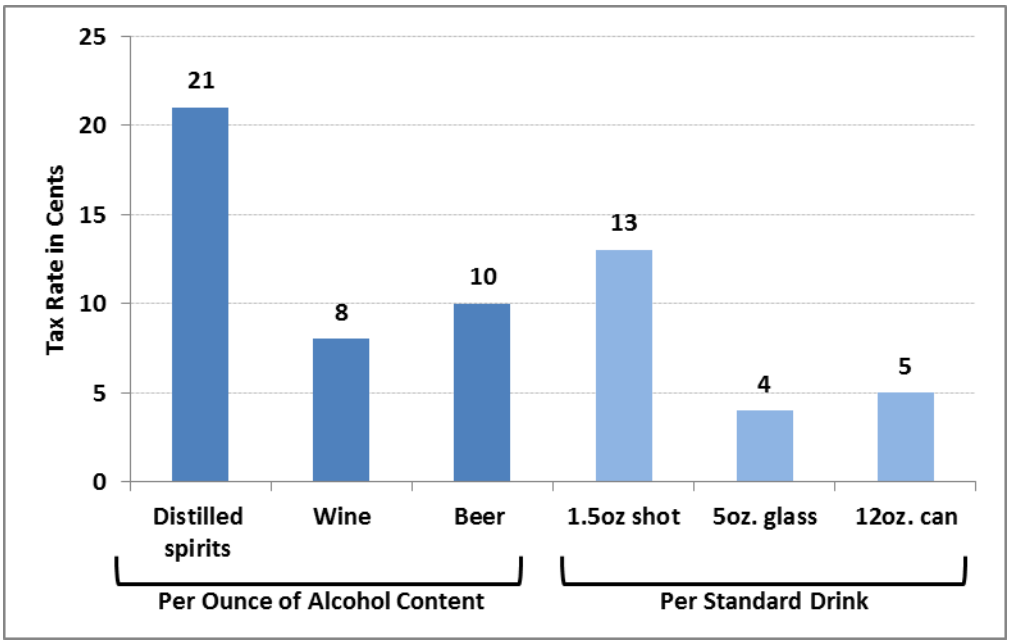
b. A wine gallon is the same volume as a standard, liquid gallon.

c. Up to a $0.90 credit ($0.056 per w.g. for hard cider) may be available for the first 100,000 w.g. removed by winery producing not more than 150,000 w.g. per year. The per w.g. tax credit rate then phases out on production in excess of 150,000 w.g. for wineries producing not more than 250,000 w.g. per year. This small winery credit does not apply to sparkling wine.

The alcohol content of beer and wine is taxed at a lower rate than the alcohol content of distilled spirits when converted to equivalent measures of alcoholic content, as shown in **Figure 1**. The current excise tax levied on those spirits, $13.50 per proof gallon, translates to about 21 cents per ounce of pure alcoholic content. Beer is taxed at $18 per gallon, which translates to about 10 cents per ounce of alcohol (assuming an alcohol content of 4.5%). The current excise tax on wine is $1.07 per wine gallon, or about 8 cents per ounce of alcohol (assuming an average alcohol content of 11%).[12]

Figure 1 also shows that consumers of different types of alcohol also face different tax rates per standard drink, depending on what type of alcohol they consume. When converted to standard drink measures liquor drinks are generally subjected to a federal excise tax of approximately 13 cents per 1.5 ounce shot, wine is taxed at 4 cents per 5 ounce glass, and beer is taxed at 5 cents per 12 ounce can or bottle.

Figure 1. Federal Excise Tax Rates on Alcohol, Converted to Equivalent Measures and Standard Drink Amounts



Source: Congressional Budget Office (CBO), *Reducing the Deficit: Spending and Revenue Options*, March 2011, p. 193, at http://www.cbo.gov/sites/default/files/cbofiles/ftpdocs/120xx/doc12085/03-10-reducingthedeficit.pdf.

[12] These per-ounce tax conversions can be found in Congressional Budget Office (CBO), *Reducing the Deficit: Spending and Revenue Options*, March 2011, p. 193, at http://www.cbo.gov/sites/default/files/cbofiles/ftpdocs/120xx/doc12085/03-10-reducingthedeficit.pdf. This CBO report also estimates that setting all alcohol excise taxes to a rate equivalent to $16 per proof gallon (including beer and wine) would raise $28.5 billion over 10 years (FY2012-FY2016).

Notes: Calculations assume 40% alcohol by volume (ABV), or 80 proof, liquor, wine averaging 11% ABV, and beer averaging 4.5% ABV.

The excise tax is deductible as an ordinary cost of doing business for firms subject to an income tax. In economic terms, a manufacturer or importer's effective tax rate is increased by less than the full magnitude of the tax because they can reduce the amount of their income that is subject to tax (assuming they have income to tax).

Other Former Federal Taxes on the Alcohol Industry

In the past, TTB has enforced two other forms of taxes on the alcohol industry. Neither tax, however, currently applies to the alcoholic beverages industry:

- *Floor stocks tax* is a one-time tax on untaxed, current inventories and is typically imposed as part of legislation that increases excise tax rates. Floor stocks taxes are a transitional measure that prevents taxable entities from stockpiling the product after the announcement of a tax increase, but prior to its effective date, as a means to reduce their exposure to the higher rates.
- *Special occupational tax (SOT)* is a tax that is imposed on manufacturers, importers, wholesalers, and retailers in a certain industry subject to registration and excise taxation under TTB's jurisdiction (e.g., tobacco, firearms). In 2005, Section 11125 of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (P.L. 109-59) permanently repealed the SOT for the business of selling, manufacturing, importing or wholesaling of beverage alcohol products or manufacturing non-beverage alcohol products (effective July 1, 2008).[13] Recordkeeping and registration requirements for these businesses were *not* repealed. These taxes amounted to a relatively small share of TTB's annual tax collections. For example, total SOT collections comprised less than 0.001% in 2007 ($2.8 million).[14]

State and Local Alcohol Excise Tax Rates

In addition to federal excises, all 50 states and some localities levy their own excise taxes on alcoholic beverages. These tax rates vary by state (or locality) and by the type of alcohol.[15] Although some states and localities have increased their alcohol excise tax rates more recently, these policy changes are relatively infrequent.[16] In addition, some states have controlled sales of certain types of alcoholic beverages via state-run retailers. Retail sales in control states typically include some sort of wholesale "markup" in addition to a sales tax.

In general, state and local excise tax rates are also greater on distilled spirits than on beer or wine. States with controlled sales on beer or spirits tend to have higher tax rates than states without

[13] Department of Treasury's Alcohol and Tobacco Tax and Trade Bureau (TTB), "Special (Occupational) Tax Frequently Asked Questions," at http://www.ttb.gov/announcements/041605faqsonsot.pdf.

[14] Department of Treasury's Alcohol and Tobacco Tax and Trade Bureau, "Fiscal Year 2007 Tax Collections," at http://www.ttb.gov/statistics/final07.pdf.

[15] For maps illustrating the differences in state alcohol excise tax rates across state borders, see Tax Foundation, "How High are the Spirits Taxes in Your State?," July 2, 2015, at http://taxfoundation.org/blog/map-state-spirits-excise-tax-rates-2015. Links to similar maps for wine and beer are also available on that page.

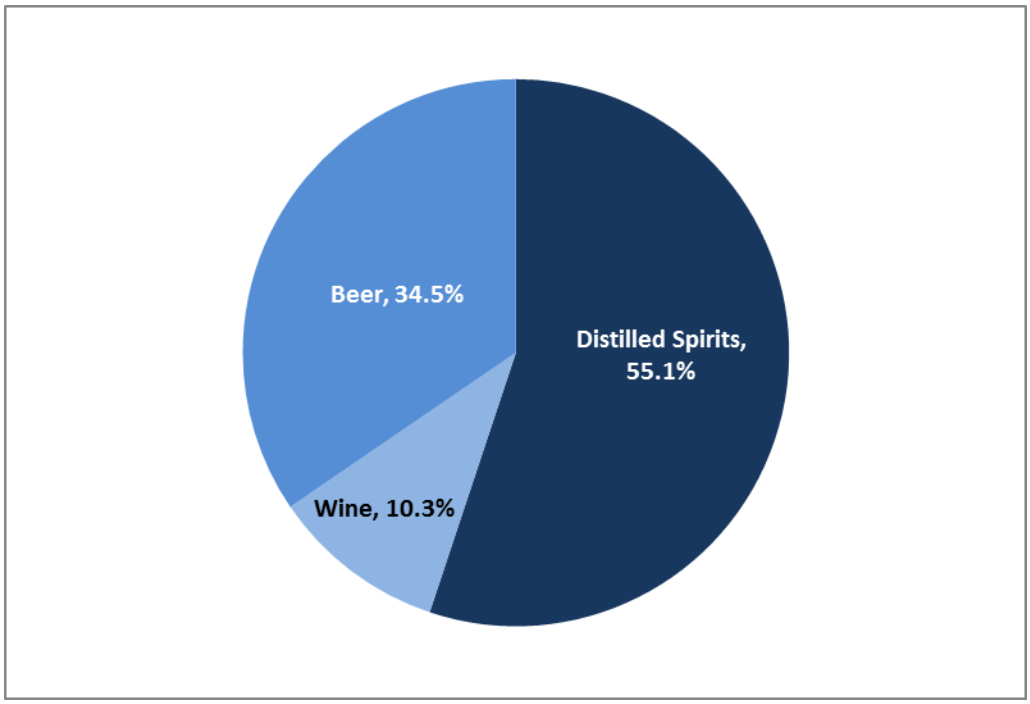
[16] See Xin Xu and Frank J. Chaloupka, "The Effects of Prices on Alcohol Use and Its Consequences," *Alcohol Research & Health*, vol. 34, no. 2 (2011), at http://pubs.niaaa.nih.gov/publications/arh342/236-245.htm.

controlled sales, but this is not always the case. Differences in tax rates between states could lead some consumers to cross state lines to purchase alcoholic beverages.[17]

Revenue

In FY2015, federal excise tax collections on distilled spirits, wine, and beer totaled approximately $10.4 billion.[18] As shown in **Figure 2**, distilled spirits accounted for 55.1% of FY2015 alcohol excise tax collections, beer accounted for 34.5%, and wine accounted for 10.3%.[19]

Figure 2. Components of Alcohol Excise Tax Collections, by Product, FY2015



Source: CRS analysis of Department of the Treasury Alcohol and Tobacco Tax and Trade Bureau, 2015, at http://www.ttb.gov/tax_audit/tax_collections.shtml.

Note: Special occupational taxes and floor stocks taxes are not included in this analysis.

The majority of alcohol excise taxes are collected on products that were manufactured in the United States, particularly beer. As shown in the tables in the **Appendix**, the historical share of

[17] Researchers that have studied this subject tend to find that the size of this economic activity is generally small in the face of modest tax increases between borders. See Mark Stehr, "The Effect of Sunday Sales Bans and Excise Taxes on Drinking and Cross—Border Shopping for Alcoholic Beverages," *National Tax Journal*, vol. 60, no. 1 (March 2007), pp. 85-105; and T. Randolph Beard, Paula A. Grant, and Richard P. Saba, "Border-Crossing Sales, Tax Avoidance, and State Tax Policies: An Application to Alcohol," *Southern Economic Journal*, vol. 64, no. 1 (July 1997), pp. 293-306.

[18] All references to TTB tax collection data in this report refers to *total* tax collections, not *net* tax collections (i.e., total minus overpayment refunds). TTB publicly releases total overpayment data, but it is not disaggregated at the level of types of alcoholic product.

[19] CRS analysis of Department of Treasury's Alcohol and Tobacco Tax and Trade Bureau data, at http://www.ttb.gov/tax_audit/tax_collections.shtml.

taxes collected on imported alcohol products varies by the type of alcohol: 16%-27% for distilled spirits, 18%-32% for wine, and 5%-16% for beer.

Effects of Inflation on Tax Rates and Revenue

Alcohol excise tax rates are levied on a dollar per unit basis and are not automatically adjusted for inflation. Past increases in alcohol excise tax rates, however, were justified by Congress as a means to partially account for the effects of inflation and to raise general revenue.[20]

Despite periodic increases in the statutory tax rates, the inflation-adjusted values of these tax rates have declined over time.[21] **Table 2** lists the tax rate increases since 1951 in the major product categories and what those rates would be if they were converted to 2015 constant dollars. For example, the distilled spirits tax rate of $10.50 ppg in 1951 would be equivalent to levying a tax of $95.85 ppg in 2015. If the 1991 rate of $13.50 ppg on spirits were adjusted for inflation, then the tax rate would be $23.52 in 2015.

Table 2. Federal Statutory Increases to Excise Tax Rates on Alcohol, Adjusted for Inflation

(inflation-adjusted values are in 2015 dollars)

	Year Adjusted		
Type of Alcohol	**1951**	**1985**	**1991**
Distilled Spirits	$10.50 per proof gallon ($95.85 in 2015 dollars)	$12.50 per proof gallon ($27.57 in 2015 dollars)	$13.50 per proof gallon ($23.52 in 2015 dollars)
Beer (Regular Rate)	$9 per barrel ($82.15 in 2015 dollars)	NA	$18 per barrel ($31.37 in 2015 dollars)
Still Wine (14% ABV or Below)	$0.17 per wine gallon ($1.55 in 2015 dollars)	NA	$1.07 per wine gallon ($1.86 in 2015 dollars)

Source: CRS calculations based on Consumer Price Index for All Urban Consumers (CPI-U) for all items at http://data.bls.gov/cgi-bin/cpicalc.pl (accessed December 15, 2015).

Since the last excise tax rate increase in 1991, the inflation-adjusted value of tax collections on alcohol has declined. The decline in real tax rates on alcohol has been a major factor in the decline in the inflation-adjusted revenue raised by the taxes, since 1991. The last alcohol tax rate increases went into effect on January 1, 1991.

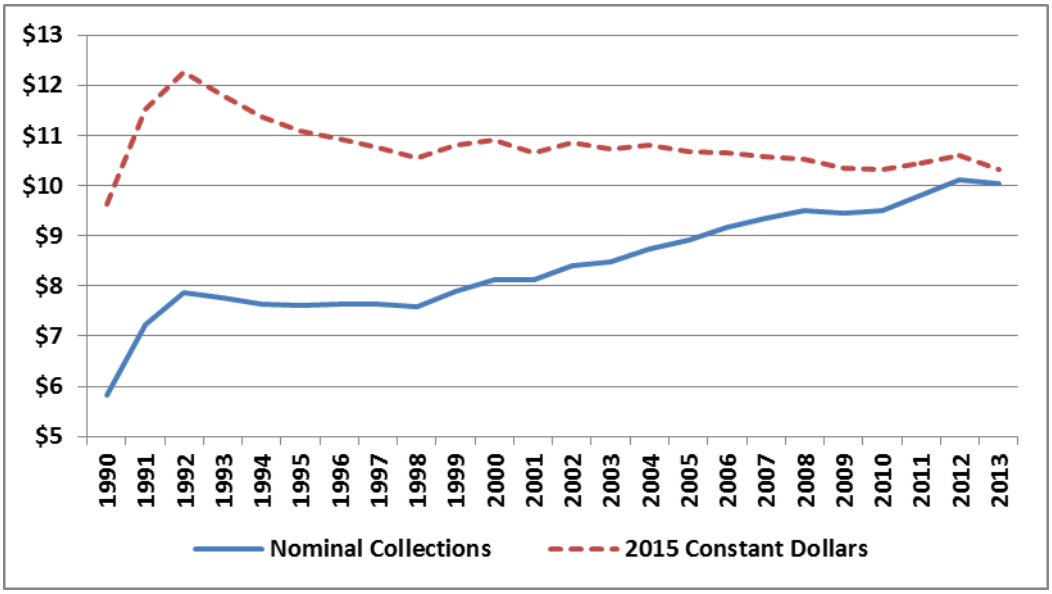
As shown in **Figure 3**, nominal alcohol excise tax collections increased from $7.2 billion in FY1991 to $10.4 billion in FY2015 (an increase of 44.4%). However, after taking inflation into account, real excise tax collections declined by 10.1% over that same time period.

[20] For example, in 1984 the Joint Committee on Taxation (JCT) noted that ... "the [distilled spirits excise] tax is imposed as a flat amount, rather than as a percentage of sales price, [and] the effective level of the tax had declined by more than 70% in constant dollars since that increase. Congress believed, therefore, that a modest adjustment of $2.00, to $12.50 per proof gallon, was appropriate." See U.S. Congress, Joint Committee on Taxation, *General Explanation of the Revenue Provisions of the Deficit Reduction Act of 1984* (H.R. 4170, 98th Congress; P.L. 98-369), JCS-41-84, 98th Cong., 2nd sess. (Washington: GPO, 1984), p. 32.

[21] Historical rates for all alcohol excise taxes can be found at Department of Treasury's Alcohol and Tobacco Tax and Trade Bureau, "Historical Tax Rates," at http://www.ttb.gov/tax_audit/94a01_4.shtml.

Figure 3. Alcohol Excise Tax Collections, Nominal vs. Inflation-Adjusted, FY1990-FY2015

(amounts are in $billions)



Source: CRS analysis of Department of the Treasury Alcohol and Tobacco Tax and Trade Bureau, various years, at http://www.ttb.gov/tax_audit/tax_collections.shtml; and Office of Management and Budget, Budget of the United States - Historical Tables, Table 10.1.

Notes: Special occupational taxes and floor stocks taxes are not included in this analysis.

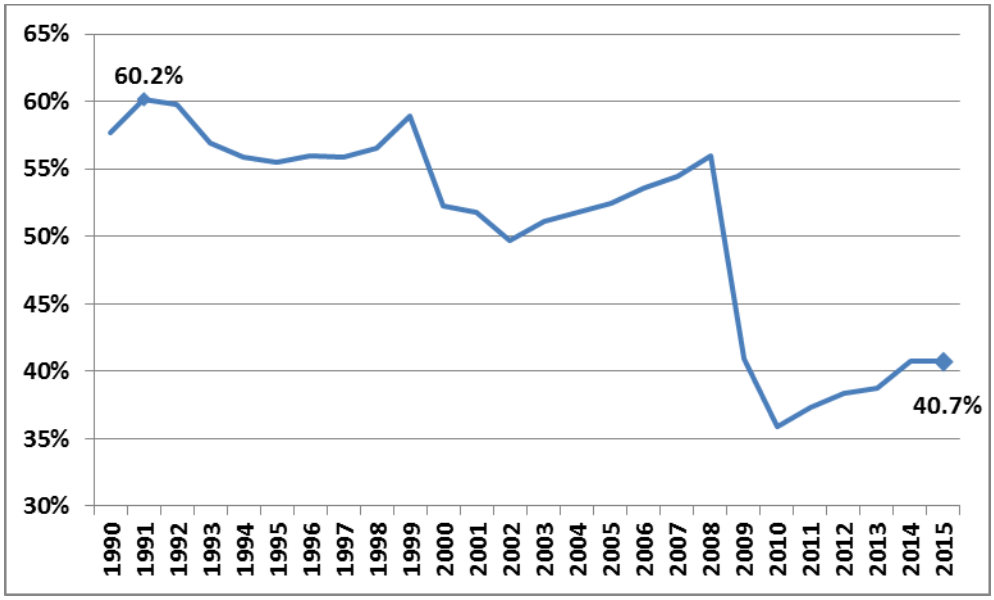
In addition, alcohol excise tax collections have declined as a share of all of TTB's excise tax collections over time, as shown in **Figure 4**. The decline in the share of alcohol excise tax revenue collections as a share of all of TTB's excise tax collections is due to three main factors: (1) the decline in real (inflation-adjusted) value of the alcohol excise tax rate over time, (2) multiple increases in the statutory, per-unit tax rates on tobacco products, and (3) firearms and ammunition tax collections automatically adjust for inflation because they are levied as a percentage of the manufacturer's price (i.e., an ad valorem tax).

As shown in **Figure 4**, alcohol excise tax collections accounted for 57.7% of TTB's excise tax collections in FY1990 and approximately 60% following the tax rate increases in OBRA90. In FY2015, alcohol excise tax collections were 40.7% of all of TTB's excise tax collections. Sharp declines in the share of TTB taxes collected on alcohol were caused, in part, by the increase in taxes on tobacco products in the late 1990s[22] and in 2009.[23]

[22] The Taxpayer Relief Act of 1997 (P.L. 105-34) phased in a 15 cent-per-pack tax increase on cigarettes over five years. See Congressional Budget Office, *An Economic Analysis of the Taxpayer Relief Act of 1997*, April 2000, at http://www.cbo.gov/sites/default/files/cbofiles/ftpdocs/19xx/doc1959/tpra97.pdf.

[23] See Children's Health Insurance Program Reauthorization Act of 2009 (H.R. 2, 111th) and CRS Report RS22681, *The Cigarette Tax Increase to Finance SCHIP*, by Jane G. Gravelle.

Figure 4. Alcohol Excise Tax Collections as a Share of Excises Collected by the Alcohol and Tobacco Trade Bureau (TTB), FY1990-FY2015



Source: CRS analysis of Department of the Treasury Alcohol and Tobacco Tax and Trade Bureau, various years, at http://www.ttb.gov/tax_audit/tax_collections.shtml.

Notes: Special occupational taxes and floor stocks taxes are not included this analysis. TTB collects excise taxes on alcohol, tobacco, firearms, and ammunition.

Summary of the U.S. Alcoholic Beverage Industry

This section provides a brief overview of the U.S. alcoholic beverages industry both at the retail level and the manufacturing level, with the latter being the stage of production that is directly responsible for filing federal excise tax reports to TTB.

According to analysis conducted by S&P Capital IQ ("S&P"), alcoholic beverage sales accounted for $211.6 billion in retail sales in 2014—their highest annual levels to date.[24] As shown in **Table 3**, beer sales accounted for the largest share (48.7%) of alcoholic beverage retail sales in 2014.

Table 3. Alcoholic Beverage Retail Sales, 2014

Category	Retail Sales	
	In $ Billions	Market Share
Distilled Spirits	$77.5	36.6%
Wine	$30.9	14.6%
Beer	$103.2	48.7%
Total	$211.6	100.0%

Source: Joseph Agnese, "Industry Surveys: Beverages," S&P Capital IQ, November 2015.

The alcoholic beverage manufacturing industry can be summarized by two characteristics: (1) a large degree of market sales concentration either by firm (as in the case of distilled spirits and

[24] Joseph Agnese, "Industry Surveys: Beverages," S&P Capital IQ, November 2015, p. 33.

beer) or geography (as in the case of wine); and (2) a rapid rate of new entrants at the craft distilling/brewing/winemaking market.

Data on the number of alcoholic beverage manufacturers is dynamic, given the flux in the craft market.[25] It is easier to count and estimate sales statistics in the alcoholic beverage manufacturing industry than it is to count or estimate the net growth of firms in the industry. The Department of the Treasury's Alcohol and Tobacco Tax and Trade Bureau (TTB) publishes the number of firms holding permits to manufacture, import, or wholesale alcoholic beverages, but much of this data is available only via a Freedom of Information Act (FOIA) request.[26] Quantifying the exact, economic scale of the alcoholic beverage manufacturing industry is further complicated by the rapid rise of craft manufacturers in addition to particular classification issues that arise within each category of alcohol.[27] Given the limitations of government data sources, industry trade associations provide an alternative estimate of the number of firms operating in the industry, as their member rosters and directories are typically updated more frequently than publicly available government data.

Table 4 illustrates the geographic concentration of alcoholic beverage manufacturers in the United States, by product category. California tops each product category list, and has a particularly large concentration of U.S. wineries (47%). By comparison, distilleries and beer breweries and brewpubs are more evenly distributed across the nation (beer more than spirits). In summary, alcoholic beverage production tends to be concentrated in some states more than others (e.g., California, Washington, New York, Oregon). Alcoholic beverage manufacturers are more dispersed across the states compared to cigarettes, which tends to be more geographically concentrated in states such as Virginia and North Carolina.

Table 4. States with the Most Alcoholic Beverage Manufacturers, 2015

Rank/Category	Distilleries and Bottlers	Wineries[a]	Breweries and Brewpubs[b]
1	California	California[c]	California
2	Washington	Washington	Washington

[25] Marketers differ from manufacturers in that a single marketer could advertise a variety of products derived from multiple manufacturers.

[26] According to TTB: "The Internal Revenue Code (Section 6103) protects taxpayer records from public disclosure, so we do not publish lists of brewers, industrial alcohol producers and users, and tobacco permit holders, or provide any other protected information concerning these types of businesses." See Department of the Treasury, Alcohol and Tobacco Tax and Trade Bureau, "Freedom of Information Act," at http://www.ttb.gov/foia/frl.shtml.

[27] For example, breweries have their own industry classification category in government databases, but brewpubs (which brew their own beer but also have a restaurant component to the business) are usually categorized under "full-service restaurants." In the case of brewpubs, servers could be employed by a beer manufacturer, but not directly involved in the actual beer manufacturing process. Wineries also have their own industry classification category, but this category does not include winemakers that do not grow their own grapes.

Rank/Category	Distilleries and Bottlers	Wineries[a]	Breweries and Brewpubs[b]
3	New York	Oregon	Colorado
4	Texas	New York	Oregon
5	Colorado	Virginia	Michigan
Share of Total	38%	70%	36%
Total	1,809	8,393	4,161

Source: Distilleries and bottlers: Department of Treasury, Alcohol and Tobacco Tax and Trade Bureau, as of December 15, 2015, at http://www.ttb.gov/foia/xls/frl-spirits-producers-and-bottlers.htm; Wineries: Wines & Vines, "Wine Industry Metrics – Winery Database," as of July 2015, at http://www.winesandvines.com/template.cfm?section=widc&widcDomain=home; and Breweries: data (current as of December 9, 2015) provided to CRS from the Brewers' Association on December 21, 2015.

Notes: Due to new entrants and exits from the industry, the numbers in this table are meant to be illustrative and might not reflect the most recent data available.

a. Does not include winemakers that do not grow their own grapes (i.e., produce wine using grapes or juice purchased from a secondary source).

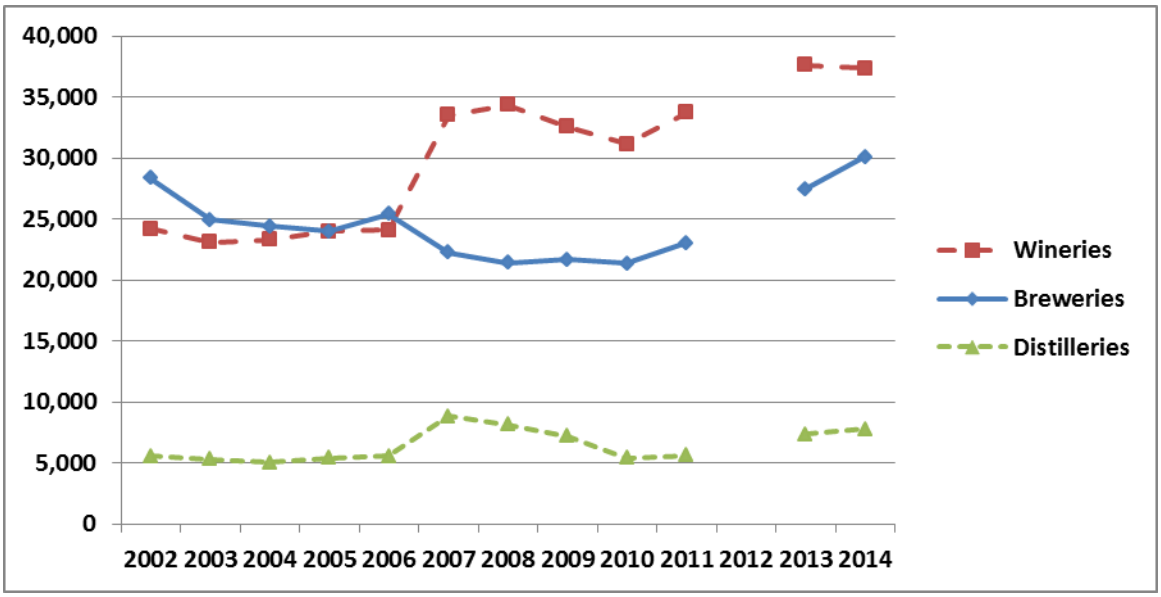
b. Includes active brewpubs, microbreweries, regional craft breweries, and large breweries.

c. California accounts for 47% of U.S. wineries. By comparison, Washington accounts for 8% of U.S. wineries.

Analysis of employment in the alcoholic beverage manufacturing industry is also limited by similar methodological issues that affect analysis of the number of manufacturers as well as a lack of data on alcoholic beverage importers. **Figure 5** illustrates a simplified analysis of employment in the alcoholic beverage manufacturing industry, from 2002 to 2014. Total employment in alcoholic beverage manufacturing categories was 75,247 in 2014 according to the U.S. Census Bureau's Annual Survey of Manufactures (ASM). In the aggregate, alcoholic beverage manufacturing accounted for less than 1% of total U.S. employment in manufacturing in 2014.[28] **Figure 5** suggests that net employment in breweries and distilleries has been relatively flat (or negative) over the period observed, despite the rapid entry rate of craft manufacturers, and employment levels have increased among wineries.

[28] According to the U.S. Census Bureau's 2014 *Annual Survey of Manufactures*, there were 11,021,476 employees in manufacturing (NAICS 31-33).

Figure 5. Employment in Alcoholic Beverage Manufacturing, 2002-2014



Source: U.S. Census Bureau, *Annual Survey of Manufactures* (ASM), 2014, at http://www.census.gov/manufacturing/asm/;

Notes: There is no ASM data for 2012 because Census does not conduct the survey in years ending in 2 or 7. Employment is calculated using data only in the following North American Industrial Classification System (NAICS) categories: distilleries (312140), wineries (312130), and breweries (312120). Because some employees of alcoholic beverage manufacturers might be classified under other NAICS categories (e.g., brewpubs being listed under 722110: full-service restaurants), the Census data, above could undercount the number of employees directly involved in alcoholic beverage manufacturing. However, incorporating NAICS codes beyond the three categories, above, could overcount employment in the industry by including employees that are not directly involved in manufacturing (e.g., servers in a brewpub). See footnote 27 for more details.

Economic Analysis

In addition to the issue of revenue adequacy, discussed previously, efforts to increase or decrease alcohol excise taxes have generally involved the following three issues:

1. What effect, if any, do excise taxes have on supply and demand conditions in the alcoholic beverage manufacturing industry and the consumer market?
2. From an economist's perspective, is the current alcohol excise tax rate justified by the estimated social costs (i.e., spillover effects) of alcohol consumption?
3. Are taxpayers bearing a disproportionate share of the alcohol excise tax, based on their income level or their choice in the type of alcoholic beverages they purchase (or don't purchase)?

This section of the report analyzes each of these issues in detail.

Supply and Demand Responses to Changes in Alcohol Tax Rates

Advocates of reducing alcohol excise taxes (or not adjusting them for inflation) often claim that higher tax rates will lead to contractionary supply and demand conditions and job losses in the industry. Sometimes these claims are backed with historical examples of job losses in the alcohol industry following past increases in excise tax rates, although there are few academic studies of

this potential effect.[29] However, these claims have been criticized both based on expectations of behavior under economic theory and empirical analysis of past alcohol excise tax increases.[30]

Economic theory suggests that excise tax increases could be borne by producers or consumers in the short run, but are generally passed on to the consumer in the long run. For competitive markets with constant marginal costs of production, excise taxes are predicted to be fully passed through to prices, but in imperfectly competitive markets a one-cent increase in taxes may increase prices by less than or more than one cent, depending on the responsiveness of producers and consumers.[31] Multiple empirical studies suggest that previous alcohol excise tax increases are usually passed along to consumers at least in full (and sometimes more) and within a relatively short timeframe.[32]

Past analyses suggest that even if producers bear some of the economic burden of the tax in the short run, it is unlikely that this cost would be sufficiently large to result in employment losses in the industry, much less on a macroeconomic level.[33] Recent history also suggests that past changes in excise tax rates do not have a clear relationship with employment levels in the alcoholic beverage manufacturing industry. A significant decline in the number of employees in the industry began in the mid-1980s and only began to reverse in the mid-1990s. An increase in the spirits tax rate and a doubling of the rate on wine and beer in the Revenue Reconciliation Act of 1990 (P.L. 101-508) does not appear to have had a clear effect on these pre-existing trends. The decline of industry employment in the 1980s could have been due to a general slowdown in the

[29] For example, see Beer Institute, *Beer Tax Facts: The Economic and Societal Impacts of State and Federal Taxes on Beer*, 2013, p.4, at http://www.beerinstitute.org/assets/uploads/BeerTaxFacts_2013.pdf.

[30] For a more technical discussion of the economic effects of excise taxes, see the appendix in CRS Report R43342, *The Medical Device Excise Tax: Economic Analysis*, by Jane G. Gravelle and Sean Lowry.

[31] An important element of any economic analysis of changes in tax rates is the assumed responsiveness of producers and consumers to tax-induced changes in price. The responsiveness measures, or elasticities, are typically based on past observations in supply and demand to price. Researchers have produced several meta-analyses of numerous studies (ranging from local studies to international cases) on alcohol supply and demand to determine an average elasticity for spirits, wine, beer, and alcoholic beverages as a whole. Findings from these studies are reported in **Table A-1** in the **Appendix** of this report. In short, these studies all indicate that there is an inverse relationship between the price of alcohol and demand, as is the case in most products. However, the average elasticity ratings vary based on the studies (although demand for beer tends to be more inelastic than spirits or wine). As a result, any quantitative estimates of changes to supply and demand are sensitive to elasticity assumptions.

[32] For example, see Alexander C. Wagenaar, Matthew J. Salois, and Kelli A. Komro, "Effects of beverage alcohol price and tax levels on drinking: a meta-analysis of 1003 estimates from 112 studies," *Addiction*, vol. 104 (2009), pp. 179-190; Donald S. Kenkel, "Are Alcohol Tax Hikes Fully Passed Through to Prices? Evidence from Alaska," *American Economic Review*, vol. 95, no. 2 (2005), pp. 273-277; Douglas J. Young and Agnieszka Bielinska-Kwapisz, "Alcohol Taxes and Beverage Prices," *National Tax Journal*, vol. LV, no. 1 (March 2002), pp. 57-73; and Philip J. Cook, "The Effect of Liquor Taxes on Drinking, Cirrhosis, and Auto Fatalities," in *Alcohol and Public Policy: Beyond the Shadow of Prohibition*, ed. Mark Moore and Dean Gerstein (Washington, DC: National Academy of Sciences, 1981), pp. 255-285.

[33] If manufacturers are unable to adjust their pricing structures to pass the tax in full to consumers in the short run, then firms bear any remaining tax in the form of lower *profits* to their owners (and shareholders, if a publicly-traded company). Employment decisions are typically based on the ability to sell their products and other demand-based conditions. See U.S. Congress, Senate Committee on the Budget, Statement of Douglas W. Elmendorf, Director of the Congressional Budget Office, Policies for Increasing Economic Growth and Employment in 2012 and 2013, 112th Cong., November 15, 2011, p. 33, at http://www.cbo.gov/sites/default/files/cbofiles/attachments/11-15-Outlook_Stimulus_Testimony.pdf. Even if firms responded to an increase in the excise tax by reducing their employment, any jobs lost (created) in the alcoholic beverage industry are usually balanced by jobs created (lost) in other industries, such as non-alcoholic beverage manufacturing, with no net effect on the national level of employment in the long-run. Macroeconomic labor market conditions are driven more by the overall size of the population, the participation rate of eligible workers, and business cycles.

overall economy, but it is also unclear to what extent technological advances contributed to these trends (i.e., "labor-saving" increases in productivity).[34]

Spillover Effects from Alcohol Consumption

Some economists justify the imposition of taxes and regulations on alcohol consumption based on the principle of economic efficiency, because alcohol consumption has negative spillover effects on society. Economists call these spillover effects, "externalities." Products with positive externalities (i.e., spillover benefits to society) tend to be undersupplied in the market while products with negative externalities (i.e., spillover costs to society) tend to be oversupplied, from a societal perspective, in the market—absent policies that adjust individual prices to reflect these spillover effects.

The negative externalities associated with alcohol consumption has been studied by researchers in a variety of fields, including economics, health, and public safety and crime. Examples of the externalities most often featured in studies include the effects of alcohol consumption on: motor vehicle crashes, public health, domestic violence, and other crimes. In addition, many researchers have studied these effects among youth, as some of these effects are disproportionately concentrated among younger consumers of alcohol (e.g., involvement in motor vehicle crashes and violent crime).

Understanding the externalities is important because of the possible social cost of alcohol consumption that is not accounted for in the market. Some economists concluded that excise tax collections on individual alcohol consumers are less than the total external costs alcohol imposes on society.[35] This is not to say that researchers are unanimous in advocating for higher alcohol excise taxes; the findings of a wide range of studies indicate that the social issues related to alcohol consumption are quite complex from a public policy perspective. This section of the report attempts to highlight several of the key findings and debates.

One of the most prominent studies on the *external* costs associated with alcohol consumption was conducted by Manning et al. (1991), and is hereafter referred to as the "Manning study."[36] Unlike many other studies estimating the "total costs" of alcohol consumption, the Manning study focused solely on *external* costs, and also incorporated some offsets against some of these costs that are associated with excessive drinking (defined as averaging more than two drinks per day).[37]

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[34] Some of this analysis is also suggested in Philip J. Cook, *Paying the Tab* (Princeton, NJ: Princeton University Press, 2007), p. 71.

[35] The exact degree to which external costs exceed collections is difficult to measure, however, as many research methodologies are limited by incomplete methodologies. The most common methodological issue is that many of these studies combine both internal and external costs into a single, "total cost" of alcohol consumption. According to economic theory, individual consumers with perfect information should take internal costs (e.g., increased risk of cirrhosis, lost time at work due to excess drinking, possible fines for being convicted of drinking while intoxicated) into account before determining their demand for alcohol. In contrast, individual consumers might not take into account the costs of their drinking to others (e.g., causing bodily harm or property damage to others while driving while intoxicated). While these studies are useful to understand both the individual and social costs of alcohol consumption, economists are less concerned with the internal costs because they are assumed to be "internalized" in the decision-making process of rational individuals. From the perspective of excise taxation, conflating internal and external costs of alcohol consumption could lead policymakers to conclude that the economically-appropriate level of taxation should be higher than theory would suggest.

[36] See Willard G. Manning et al., *The Costs of Poor Health Habits* (Cambridge, MA: Harvard University Press, 1991); and Willard G. Manning et al., "The Taxes of Sin: Do Smokers and Drinkers Pay Their Way?," *Journal of the American Medical Association*, vol. 261, no. 11 (March 17, 1989), pp. 1604-1609.

[37] For federal government definitions of "excessive drinking" see U.S. Department of Agriculture and U.S. Department

The Manning study acknowledges that most of these costs could be due to heavy drinkers, but they also understand that it is difficult to differentiate between excessive and non-excessive drinking for any one individual. Thus, the Manning study averages the external costs over all alcohol consumption to arrive at an estimate of 48 cents per ounce (in 1986 dollars) of alcohol consumed.

Even if it is accepted that more could be done to compensate for the social costs of alcohol consumption, some might be skeptical as to whether across-the-board increases in federal excise tax rates are the most appropriate remedy.

For example, some could argue that casual drinkers rarely impose the types of negative externalities tabulated by Manning et al., and thus efforts should be targeted toward prevention and treatment of alcohol abuse. To some extent, this notion is supported in the research.[38] Studies from Columbia University's National Center on Addiction and Substance Abuse find that over half of inmates in prison for either committing a violent crime or for property damage had a history of alcohol treatment or had an alcohol-use disorder.[39] Still, researchers have not come to the consensus that heavy drinkers are the primary source of these negative externalities.[40]

In addition, non-tax alternatives could mitigate some of these externalities. In the past, many of these non-tax alternatives have been implemented at the state and local level. For example, changes to state-based minimum legal drinking age laws have been credited with reducing youth-related incidents related to alcohol abuse.[41] Similarly, some researchers have found that severe legal deterrents and fines have reduced drunk driving.[42] Overall though, empirical evaluations of

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of Health and Human Services, *Dietary Guidelines for Americans*, 2010. Chapter 3 – Foods and Food Components to Reduce, 7th Edition, Washington, DC: US Government Printing Office, 2010, pp. 30-32, at http://www.cnpp.usda.gov/Publications/DietaryGuidelines/2010/PolicyDoc/Chapter3.pdf. Most of the offsets in the Manning study are related to findings that heavy drinking shortens life expectancy. For example, individuals that die earlier because of alcohol-related incidents (e.g., car crashes) or diseases (e.g., cirrhosis of the liver) reduce outlays of any pensions or government benefit payments. According to the Manning study, the net external costs of drinking are greater than smoking, in part, because smoking tends to reduce life expectancy more than heavy drinking, thus leading to a higher budgetary offset from smoking than drinking.

[38] According to one study, the heaviest 2.5 percentile of drinkers account for about 50% of all type of alcohol consumed in hazardous amounts. See John D. Rogers and Thomas K. Greenfield, "Beer Drinking Accounts for Most of the Hazardous Alcohol Consumption Reported in the United States," *Journal of Studies on Alcohol and Drugs*, vol. 60, no. 6 (1999), p. 735. Another study indicates that heavy drinkers are less responsive to price increases than non-heavy drinkers. In other words, higher prices reduce drinking among the group *less* likely to cause negative externalities. See Padmaja Ayyagari et al., *Sin Taxes: Do Heterogeneous Responses Undercut Their Value?*, National Bureau of Economic Research, Working Paper 15124, July 2009, at http://www.nber.org/papers/w15124.pdf.

[39] See The National Center on Addiction and Substance Abuse at Columbia University, *Behind Bars II: Substance Abuse and America's Prison Population*, New York, NY, February 2010, p. 2, at http://www.casacolumbia.org/articlefiles/575-report2010behindbars2.pdf; and *Behind Bars: Substance Abuse and America's Prison Population*, New York, NY, January 1998, at http://www.casacolumbia.org/articlefiles/379-Behind%20Bars.pdf.

[40] The Manning study discusses the difficulty of targeting policies to heavy drinkers as a means to reduce negative externalities. See Willard G. Manning et al., *The Costs of Poor Health Habits* (Cambridge, MA: Harvard University Press, 1991), p. 10. According to results from the 2012 National Survey on Drug Use and Health (NSDUH), "heavy-use" drinking (defined as drinking five or more drinks on at least 5 days in the past 30 days) was reported by 6.5% of the population aged 12 or older, or 17.0 million people, while an estimated 11.2% of persons aged 12 or older, or 29.1 million people, drove under the influence of alcohol at least once in the past year. U.S. Department of Health and Human Services, *Results from the 2012 National Survey on Drug Use and Health: Summary of Findings*, at http://www.samhsa.gov/data/NSDUH/2012SummNatFindDetTables/NationalFindings/NSDUHresults2012.htm.

[41] See Alexander C. Wagenaar and Traci L. Toomey, "Effects of Minimum Drinking Age Laws: Review and Analyses of the Literature from 1960 to 2000," *Journal of Studies on Alcohol and Drugs*, September 14, 2002.

[42] For example, see Frank J. Chalopka et al., "Alcohol-Control Policies and Motor Vehicle Fatalities," *Journal of Legal Studies*, vol. 22, no. 1 (1993), pp. 161-186.

some non-tax alternatives to address specific externalities are subject to some debate among researchers.

In contrast to policies that try to reduce specific externalities (e.g., drunk driving), research indicates that increases in tax rates have the broadest ability to affect the negative externalities of alcohol consumption mostly because changes in taxes affect the widest range of alcohol consumers.[43] Elasticity measures of changes in the symptoms of alcohol dependence and abuse in response to changes in price are generally high enough (generally more than one in value) in the literature to suggest that alcohol price increases provide a significant reduction on the societal effects of problematic drinking (even amongst youth and underage drinkers).[44] Federal rate increases could be preferable to state increases as the former reduces opportunities for consumers to seek across-the-border purchases as a means to reduce their exposure to the tax.

Some could argue that alcohol taxes should be increased at different levels across alcoholic beverage categories, based on their respective contributions to overall social costs. According to this logic, beer would bear the largest share of any excise tax increases as research indicates that it is most linked with various outcomes related to excessive drinking.[45] There could be diminishing returns to such a policy if consumers adjust their preferences to substitute spirits and wine for beer. Beer is often linked to excessive drinking because of its lower price, relative to wine and distilled spirits. Beer also generally accounts for the largest share of alcoholic sales in the United States, as shown in **Table 3**.[46]

Equity

Economists generally measure tax equity using two criteria: vertical equity and horizontal equity. Vertical equity generally implies that households with a greater ability to pay the tax (i.e., a higher income) pay a greater share of their household income in taxes than households with a lesser ability to pay the tax. A tax system is progressive if higher-income households pay a greater share of their income in tax than lower-income households, whereas the converse is true in a regressive tax system. Horizontal equity indicates that households with similar abilities to pay actually pay similar amounts in tax. For example, all households earning a particular amount of income would pay the same amount in taxes in a tax system with perfect horizontal equity.

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[43] See Xin Xu and Frank J. Chaloupka, "The Effects of Prices on Alcohol Use and Its Consequences," *Alcohol Research & Health*, vol. 34, no. 2 (2011), at http://pubs.niaaa.nih.gov/publications/arh342/236-245.htm.

[44] Ibid.

[45] Rogers and Greenfield (1999) found that adult drinkers that have consumed five or more drinks in one day in the past year drink 80% beer, 16% distilled spirits, and 4% wine (using data compiled in 1989, 1990, 1992, and 1993). See Thomas K. Greenfield and John D. Rogers, "Who Drinks Most of the Alcohol in the U.S.? The Policy Implications," *Journal of Studies on Alcohol*, vol. 60, no. 1 (January 1999), pp. 78-89. Alcohol consumption patterns for all underage drinkers are more similar to patterns amongst adult drinkers that have consumed five or more drinks in one day in the past year (compared to all adults) based on the findings of Susan E. Foster et al., "Alcohol Consumption and Expenditures for Underage Drinking and Adult Excess Drinking," *Journal of the American Medical Association*, vol. 289, no. 8 (February 26, 2003), pp. 989-995. In particular, research on youth-related negative externalities as well as drunk-driving (generally) has focused on the sensitivity of these outcomes to beer prices, given that beer is most strongly linked to these particular negative externalities. See Philip J. Cook, *Paying the Tab* (Princeton, NJ: Princeton University Press, 2007), pp. 78 and 100.

[46] Foster et al. (2003) find that the heaviest, adult drinkers and underage drinkers tend to purchase beer because they are more sensitive to price than other drinkers; moderate drinkers drink 67% beer, 20% distilled spirits, and 13% wine.

Vertical Equity

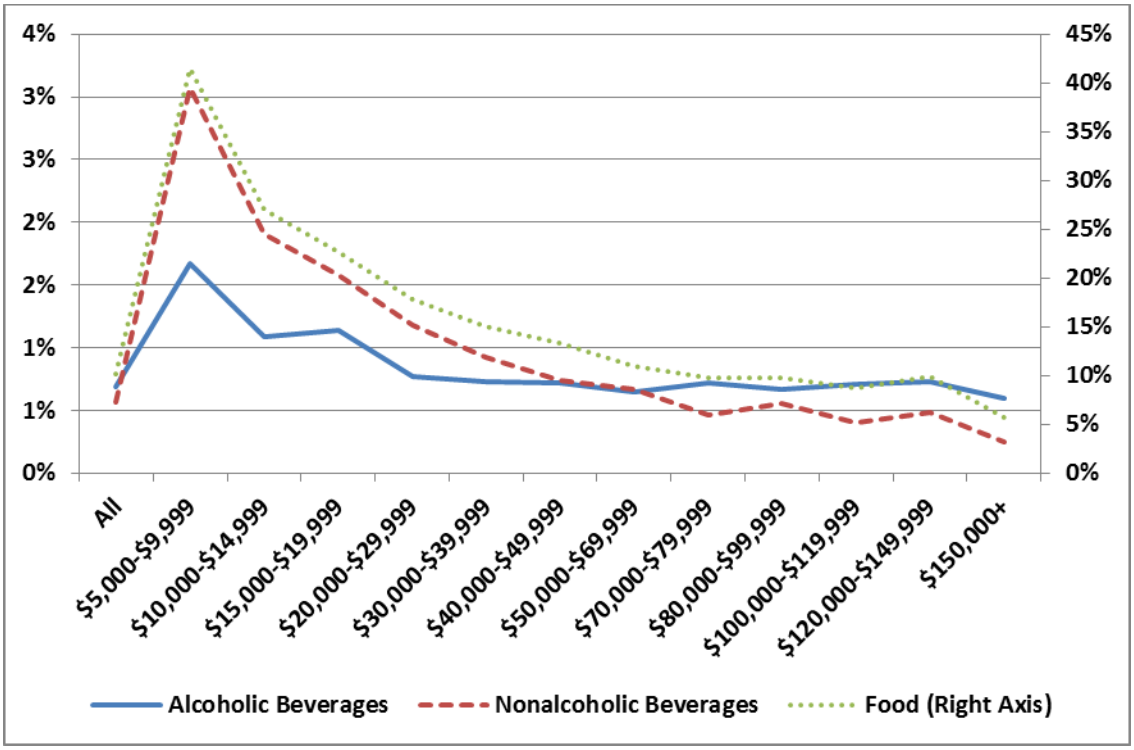
Excise taxes are generally regressive, as lower-income households tend to pay a higher share of their income in tax than higher-income households.[47] Alcohol excise taxes are no exception to this general trend. Because alcohol excise taxes are levied on manufacturers, and not consumers, TTB does not collect data on the amount of excise taxes paid by individual consumers based on their income level. Thus, consumption data on alcoholic beverages, as shown in **Figure 6**, serves as an indirect measurement of the regressivity of alcoholic beverage taxes. Although lower-income households tend to spend a higher share of their pre-tax income on alcoholic beverages, average household spending on alcoholic beverages is more evenly distributed than spending on non-alcoholic beverages or food.[48] The actual excise tax is likely to be more regressive than spending because higher-income consumers are likely to buy more expensive forms of alcohol where the tax is a smaller component of price. Still, alcohol excise taxes appear to be less regressive than taxes on tobacco.[49]

[47] The horizontal distribution of excise taxes is discussed more in CRS Report R43189, *Federal Excise Taxes: An Introduction and General Analysis*, by Sean Lowry. See also Congressional Budget Office, *The Distribution of Household Income and Federal Taxes, 2010*, December 2013, p. 9, at http://www.cbo.gov/sites/default/files/cbofiles/attachments/44604-AverageTaxRates.pdf.

[48] CRS analysis of data from U.S. Census Bureau, Consumer Expenditure Survey, 2014, at http://www.bls.gov/cex/2014/combined/income.pdf and http://www.bls.gov/cex/2014/combined/higherincome.pdf.

[49] Ibid. For more information on cigarette taxes and horizontal equity, see Dahlia K. Remler, "Poor Smokers, Poor Quitters, and Cigarette Tax Regressivity," *American Journal of Public Health*, vol. 94, no. 2 (February 2004), pp. 225-229.

Figure 6. Distribution of Average Spending on Alcoholic Beverages, as a Share of Pre-Tax Income, 2014



Source: CRS analysis of data from U.S. Census Bureau, Consumer Expenditure Survey, 2014, at http://www.bls.gov/cex/2014/combined/income.pdf and http://www.bls.gov/cex/2014/combined/higherincome.pdf.

Notes: Columns represent the average, annual spending divided by the average, annual income before tax. Observations for consumers with less than $5,000 in annual income were dropped due to negative consumption values (due to negative, average income).

Horizontal Equity

Consumers pay different amounts of federal excise tax on the same amount of alcohol content, based on the type of alcoholic beverages they purchase.[50] At current rates, distilled spirits are taxed at about 21 cents per ounce of alcohol, whereas wine and beer are taxed at 8 cents and 10 cents per ounce of alcohol, respectively.[51] When converted to standard drink measures (each containing 0.6 oz. of alcoholic content), liquor drinks are subjected to a federal excise tax of 13 cents per 1.5 oz. shot, wine is taxed at 4 cents per 5 oz. glass, and beer is taxed at 5 cents per can.[52]

[50] Obviously, the tax also imposes differential tax burdens on households with similar abilities to pay the tax simply based on whether or not they chose to drink. Roughly one-third of Americans do not drink. See National Institute for Health (NIH), National Institute on Alcohol Abuse and Alcoholism, *Drinking Statistics*, at http://www.niaaa.nih.gov/alcohol-health/overview-alcohol-consumption/drinking-statistics; and Lydia Saad, "Majority in U.S. Drink Alcohol, Averaging Four Drinks a Week," Gallup, August 17, 2012, at http://www.gallup.com/poll/156770/majority-drink-alcohol-averaging-four-drinks-week.aspx.

[51] Congressional Budget Office, *Options for Reducing the Deficit: 2014 to 2023*, November 2013, p. 170, at http://www.cbo.gov/sites/default/files/cbofiles/attachments/44715-OptionsForReducingDeficit.pdf.

[52] Current tax rates per drink were calculated as follows: (1 bottle of liquor at 750ml)*(25.3605oz./1 bottle)*(1 liquor drink/1.5oz.) = 16.907 drinks/bottle. $2.14 (tax per 750ml bottle of liquor) ÷ 16.907 drinks = $0.13 tax per liquor drink;

Legislative Activity

113th Congress

BEER Act

The Brewers Excise and Economic Relief Act of 2013 (S. 958, H.R. 1918), or BEER Act would have reduced tax rates on both small and large breweries. Under the BEER Act, small brewers (producing 2 million barrels or fewer annually) would have paid no federal excise tax on the first 15,000 barrels; $3.50 on barrels 15,001 to 60,000; and $9 per barrel for every barrel over 60,000 and up to 2 million barrels. For brewers producing more than 2 million barrels annually and for all beer importers, regardless of size, the federal excise tax rate would have been reduced from $18 to $9 per barrel for every barrel.

Small BREW Act

The Small Brewer Reinvestment and Expanding Workforce Act of 2013 (S. 917, H.R. 494), or Small BREW Act, would have modified the existing beer excise tax regime. The rate for the smallest brewers would have been reduced from $7 to $3.50 per barrel on the first 60,000 barrels. For production between 60,001 and 2 million barrels the rate would have been $16.00 per barrel. Any brewer that exceeded 2 million barrels would have begun paying the full $18 rate. Breweries with an annual production of more than 6 million barrels would have not qualified for these reduced tax rates.

CIDER Act

The Cider Investment and Development through Excise Tax Reduction (CIDER) Act (H.R. 2921; S. 1531) would maintain the $0.226 rate on hard cider, but reduce the likelihood that some products marketed as "ciders" would face higher tax rates due to their alcohol and carbonation content. Critics of the status quo taxation of hard cider argue that producers have a difficult time predicting what their tax burden will be in future years because variations in the sugar content of the fruit fermented into cider affects the alcohol content of the final product.[53] In addition, "over-carbonating" could lead to additional layers of taxation on cider products. The CIDER Act would enable products taxed as "hard ciders" to contain up to 8.5% ABV and carbonation up to 6.4 grams per liter.

Distilled Spirits

Several bills have been introduced recently in Congress to reduce the excise tax rate on "small distillers." For example, the Distillery Excise Tax Reform Act of 2013 (H.R. 1806) would lower the excise tax rate from $13.50 to $2.70 per proof gallon for those distillers or controlled groups that produce 60,000 proof gallons or less of distilled spirits annually.[54] Proponents of the bill

(1 bottle of wine at 750ml)*(25.3605oz./1 bottle)*(1 glass of wine/5oz.) = $0.04 tax per glass of wine, and; (1 can of 12oz. of beer) = $0.05 tax per can. These calculations assume an 80 proof liquor (40% ABV), still wine ≤14% ABV, and beer taxed at the regular rate.

[53] See Sen. Charles Schumer (NY), "Schumer launces plan to create boon for NY apple producers," press release, at March 13, 2013, http://www.schumer.senate.gov/record.cfm?id=341010.

[54] In the 112th Congress, the Small Distillery Excise Tax Act of 2011 (H.R. 777) would have allowed small distillers a

argue that it would create "parity" with current reduced excise tiers for small beer and wine producers.[55]

114th Congress

Several bills from the 113th Congress have been reintroduced, with modifications, in the 114th Congress. As described below, support from many of these different alcoholic beverage interests eventually converged behind one legislative proposal. Changes to other provisions related to alcohol excise taxes were also enacted in broader tax and budget legislation.

Proposed Beer Excise Tax Reductions (Fair BEER and Small BREW Acts)

As seen during the 113th Congress, alcohol excise tax reduction bills were introduced in the 114th Congress that represented a divide between small and large beer producers. The Small Brewer Reinvestment and Expanding Workforce Act (Small BREW Act; H.R. 232; S. 375) would modify the reduced rate for small brewers so that it would have a graduated rate structure. It would also raise the cap on producers eligible for the reduced rate. Under the Small BREW Act, qualified small brewers would be taxed $3.50 per barrel on the first 60,000 barrels of production and $16 per barrel on barrels 60,001 to 2,000,000. Barrels number 2,000,000 to 6,000,000 would be taxed at the current law rate of $18 per barrel. Once a producer hits 6,000,001 barrels, then all barrels would be taxed at the current law rate of $18 per barrel.

In contrast, the Fair Brewers Excise and Economic Relief Act (Fair BEER Act; H.R. 767; S. 807) would modify the current excise tax rate structure by eliminating the reduced rate for small brewers and creating a new, graduated excise tax rate structure for all brewers: $0 on barrels 0 to 7,143; $3.50 on barrels 7,144 to 60,000; $16 on barrels 60,001 to 2,000,000; and $18 on barrels 2,000,001 and above.

Proposed Distilled Spirits Excise Tax Reductions

The Distillery Excise Tax Reform Act of 2015 (H.R. 1172; S. 1444) would reduce the current law excise tax rate of $13.50 per proof gallon to $2.70 per proof gallon on the first 100,000 proof gallons produced by a distillers under a common control group in a given year. This tax rate structure would apply to all distillers, regardless of their total annual production.

Similarly, the Distillery Innovation and Excise Tax Reform Act (H.R. 2520) would also impose an excise tax rate of $2.70 on the first 100,000 proof gallons produced by distillers under a common control group, but would also reduce the tax rate on production greater than 100,000 proof gallons from $13.50 to $9.00 per proof gallon.

Hard Cider Definitions

The CIDER Act was also reintroduced in the 114th Congress. One version of the CIDER Act (H.R. 600; S. 1459) was the same legislative text as the versions introduced in the 113th Congress, while another version of the bill in the Senate (S. 906) added a Medicare-related provision (not

credit against the excise tax on distilled spirits equal to 80% of the otherwise applicable tax on the first 65,000 of proof gallons of distilled spirits produced in or imported into the United States. This bill defined a "small distilled spirits producer" as any person who produces not more than 100,000 proof gallons of distilled spirits.

[55] See American Craft Distillers Association (ACDA), "FET," at http://www.americancraftdistillers.org/f-e-t.html.

pertaining to alcohol excise taxes) to the same hard cider taxation reform proposals in the other bills.[56]

The hard cider definitions found in the versions of the CIDER Act were eventually enacted as Section 335 of Protecting Americans from Tax Hikes (PATH) Act of 2015 (P.L. 114-113).

Craft Beverage Modernization and Tax Reform Act of 2015

In June 2015, legislators struck a compromise to benefit both small and large beer producers, as well as other alcoholic beverage interests, in the legislative text of the Craft Beverage Modernization and Tax Reform Act of 2015 (H.R. 2903; S. 1562). Provisions were included that reduce excise tax rates for both large and small producers of different types of alcoholic beverages are included in the bill:

- For beer, the bill would repeal the reduced rate for small brewers and create a three-tier excise tax rate schedule for all brewers: $3.50 per barrel on the first 60,000 barrels produced annually, barrels 60,001 to 2,000,000 would be subject to a tax rate of $16 per barrel, and barrels greater than 2,000,000 would be subject to the current law rate of $18 per barrel.
- For wine, the existing credit for qualified small wineries would be amended such that the first 30,000 wine gallons produced annually would be eligible for a credit against excise tax liability of up to a $1.00 per wine gallon, and wine gallons 30,001 to 130,000 would be eligible for a credit up to a $0.90 per wine gallon.[57]
- For distilled spirits, the two-tier excise tax rate schedule in the Distillery Excise Tax Reform Act of 2015 would be imposed: $2.70 per proof gallon on the first 100,000 proof gallons produced annually and the current law rate of $13.50 per proof gallon on all units produced in excess of 100,000 proof gallons.

Other excise-tax related provisions in the Craft Beverage Modernization and Tax Reform Act of 2015 include:

- Expansion of the definition of the hard cider category to include products with higher levels of alcohol and carbonation and to include products made from apple or pear juice or concentrate. These provisions were included in the versions of the CIDER Act.
- Removal of bonding requirements for beer, wine, and spirits producers with limited excise tax liability, such that they could choose to file their excise payments quarterly, rather than semi-monthly. These provisions, which were previously introduced as part of the Craft Beverage Bond Simplification Act of 2015 (H.R. 2238; S. 904), would reduce administrative burdens on smaller alcoholic beverage producers and excise tax administrators.

Tax Extenders and the Rum Excise Tax Cover-Over

The rum "cover-over" extends as far back as 1917 for Puerto Rico and 1954 for the U.S. Virgin Islands.[58] Both territories receive transfers from the federal government based on excise tax

[56] Specifically, S. 906 would increase from 30% to 35% the rate of the continuous levy on payments to Medicare providers or suppliers for unpaid taxes.

[57] See **Table 1** for current law wine excise tax rates and credits.

[58] For more background information, see CRS Report R41028, *The Rum Excise Tax Cover-Over: Legislative History and Current Issues*, by Steven Maguire.

revenue collected on rum. The law does not impose any restrictions on how Puerto Rico or the U.S. Virgin Islands can use the transferred revenues. Both territories use some portion of the revenue to promote and assist the rum industry.

On December 18, 2015, President Obama signed the Protecting Americans from Tax Hikes (PATH) Act of 2015 (P.L. 114-113), which made many tax extender provisions permanent and temporarily extend others. Among the provisions in the law, the rum cover-over to Puerto Rico and the U.S. Virgin Islands was extended through 2017 at the temporary rate of $13.50 per proof gallon.

Potential Approaches to Increasing Alcohol Excise Tax Rates

Most of the legislation introduced in the 114th Congress, described above, would reduce tax rates on alcoholic beverages. However, if either raising revenue or reducing negative externalities is the main policy goal, then potential approaches to increase alcohol excise tax rates could be proposed. This is not meant to be an exhaustive list of approaches and multiple options could also be combined. This section of the report discusses these approaches in descending order, based on their respective magnitude of increases to current rates.

Policymakers could also increase the tax rate commensurate with the estimated costs of alcohol consumption to society, and possibly increase economic efficiency. Based on estimates of the combined government tax rates at the federal, state, and local level are less than the level that could account for all external economic costs of alcohol consumption. After adjusting for inflation and assuming that these costs remain constant over time, Manning's 1986 estimate of 48 cents per ounce of alcohol would equal $1.02 in 2013 dollars.[59] A rough estimate in the **Appendix** of this report measures the combined federal, state, and local taxes between 25 cents and 28 cents per ounce (in 2013 dollars) of alcohol compared with Manning's inflation-adjusted rate of $1.02 per ounce (in 2013 dollars). In other words, current combined taxes on alcohol are roughly one-quarter of the Manning study's calculations of the external costs of alcohol consumption (adjusted for inflation).

As one option to raise revenue and address concerns over horizontal equity, the Congressional Budget Office (CBO) has regularly included an option to equalize alcohol tax rates in its periodically-published report on deficit reduction. CBO estimated in 2013 that increasing all taxes on alcoholic beverages to a $16 per proof gallon equivalent (or 25 cents per ounce of alcohol) would raise $64 billion in revenue over 10 years. **Table 5** illustrates how this option would affect per-unit prices, based on the type of alcoholic beverage.

[59] CRS calculations based on data from U.S. Census Bureau, Consumer Price Index for All Urban Consumers (CPI-U), accessed 12/16/2015, at http://data.bls.gov/cgi-bin/cpicalc.pl. Some researchers could argue that this inflation-adjustment calculation could be conservative, as some of the components of the external costs of alcohol consumption have increased at a faster rate than overall inflation (e.g., health care services). See Henrick J. Harwood, *Updating Estimates of the Economic Costs of Alcohol Abuse in the United States: Estimates, Update Methods, and Data*, Report prepared by the Lewin Group for the National Institute on Alcohol Abuse and Alcoholism, 2000, p. 3, at http://pubs.niaaa.nih.gov/publications/economic-2000/alcoholcost.PDF.

Table 5. Option to Equalize Tax Rates Across Alcoholic Beverages

Increase and Equalize All Alcohol Taxes to $16 per Proof Gallon (25 Cents per Ounce of Alcohol)				
Product	**Current Tax Rate Per Ounce of Alcohol**	**Current Tax Rate Per Unit**	**$16 ppg Equivalent Tax Rate Per Unit**	**Difference in Current vs. Equalized Rates**
Distilled Spirits (80 proof)	$0.21	$2.14 Per 750ml bottle	$2.54 Per 750ml bottle	+18.7%
Wine (Still wine, ≤14% ABV)	$0.08	$0.21 Per 750ml bottle	$0.70 Per 750ml bottle	+333.3%
Beer (Regular rate)	$0.10	$0.33 Per six-pack	$0.81 Per six-pack	+245.5%

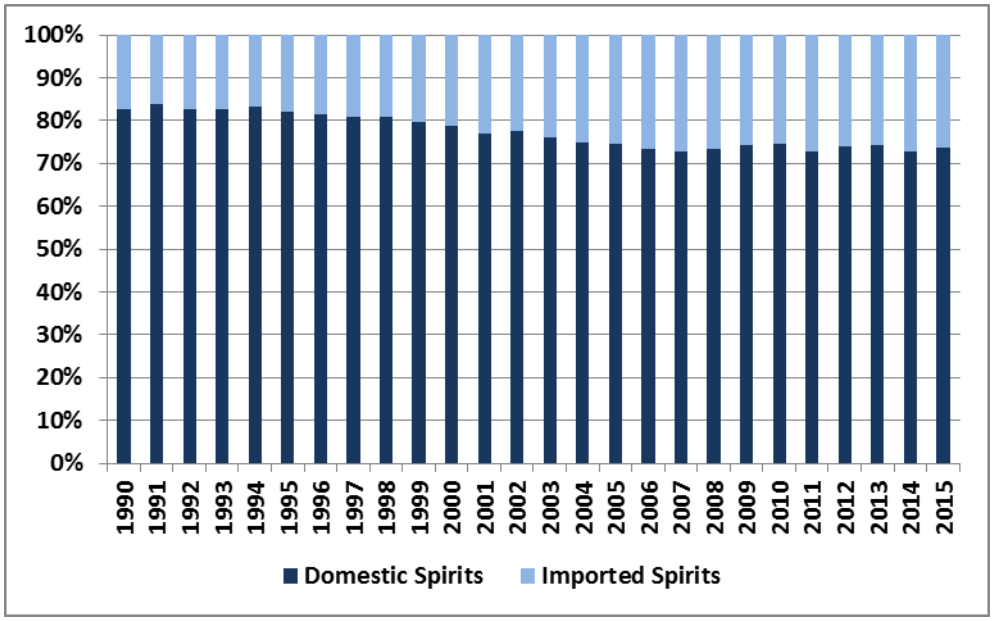
Source: CRS analysis of tax rates in Congressional Budget Office, *Options for Reducing the Deficit: 2014 to 2023*, November 2013, p. 170, at http://www.cbo.gov/sites/default/files/cbofiles/attachments/44715-OptionsForReducingDeficit.pdf.

The differences in tax rates on beer and wine under this option would be quite large, in percentage terms. However, consumers could interpret these excise tax increases differently based on the product. Although there are bottles of wine that are priced comparatively to a six-pack of beer, many bottles of wine are priced much higher than a six-pack of beer. Put differently, a 48 cent-price increase (33 cents to 81 cents) is generally a larger price markup on a six-pack of beer than a 49 cent-price increase (21 cents to 70 cents) is on a bottle of wine.

Appendix. Historical Tax Rates, Supplemental Figures, Technical Calculations

Alcohol Excise Tax Collections, Imports vs. Exports, FY1990-FY2015

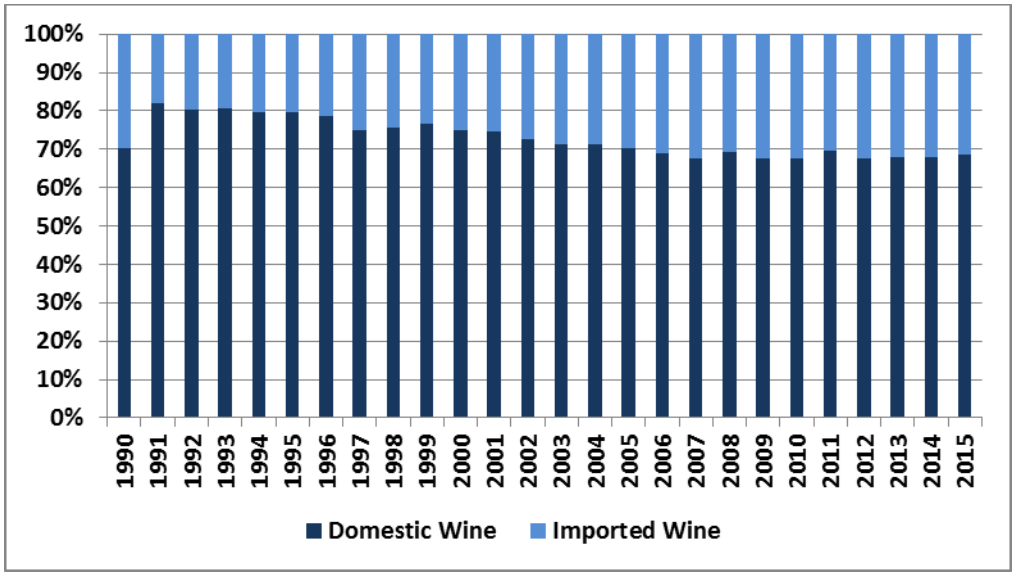
Figure A-1. Alcohol Excise Tax Collections on Distilled Spirits, Domestic vs. Import, FY1990-FY2015



Source: CRS analysis of Department of the Treasury Alcohol and Tobacco Tax and Trade Bureau, various years, at http://www.ttb.gov/tax_audit/tax_collections.shtml.

Note: Special occupational taxes and floor stocks taxes are not included in this analysis.

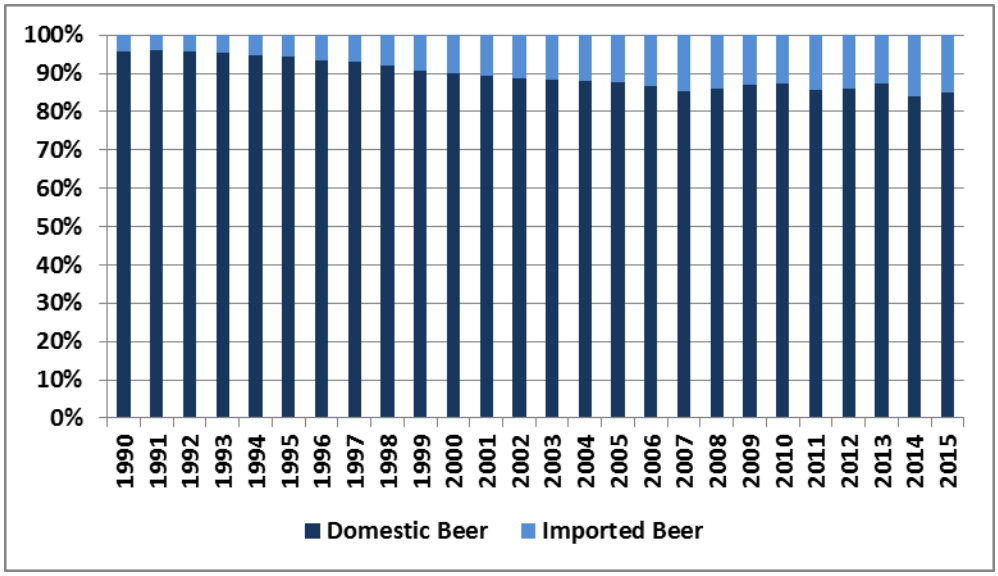
Figure A-2. Alcohol Excise Tax Collections on Wine, Domestic vs. Import, FY1990-FY2015



Source: CRS analysis of Department of the Treasury Alcohol and Tobacco Tax and Trade Bureau, various years, at http://www.ttb.gov/tax_audit/tax_collections.shtml.

Note: Special occupational taxes and floor stocks taxes are not included in this analysis.

Figure A-3. Alcohol Excise Tax Collections on Beer, Domestic vs. Import, FY1990-FY2015



Source: CRS analysis of Department of the Treasury Alcohol and Tobacco Tax and Trade Bureau, various years, at http://www.ttb.gov/tax_audit/tax_collections.shtml.

Note: Special occupational taxes and floor stocks taxes are not included in this analysis.

Review of Price Elasticities of Demand for Alcohol

Table A-1. Price Elasticities of Demand for Various Alcoholic Beverages

		Category		
Study	**Scope**	**Spirits**	**Wine**	**Beer**
Fogarty 2010	31-40 studies in the United States	0.60	0.55	0.52
Wagenaar et al. 2009	112 studies over 18 countries	0.80	0.69	0.46
Gallet 2007	132 studies over 24 countries	1.09	1.11	0.83
CBO 1990	3 studies surveying additional studies	0.60-1.00	1.0+	0.30-0.70

Source: Alexander C. Wagenaar, Matthew J. Salois, and Kelli A. Komro, "Effects of beverage alcohol price and tax levels on drinking: a meta-analysis of 1003 estimates from 112 studies," *Addiction*, vol. 104 (2009), pp. 179-190; James L. Fogarty, "The Demand for Beer, Wine and Spirits: A Survey of the Literature," *Journal of Economic Surverys*, vol. 24, no. 3 (2010), pp. 428-478; Craig A. Gallet, "The Demand for Alcohol: A Meta-Analysis of Elasticities," *Australian Journal of Agricultural and Resource Economics*, vol. 51, no. 2 (June 2007), pp. 121-135; and Congressional Budget Office, *Federal Taxation of Tobacco, Alcoholic Beverages, and Motor Fuels*, August 1990, p. 72, at http://www.cbo.gov/sites/default/files/cbofiles/ftpdocs/79xx/doc7951/90-cbo-039.pdf.

Note: All elasticities are negative, but are reported in absolute value terms for simplification.

The price elasticities are interpreted in the following manner (using Fogarty's findings): "a 1% increase in the price of spirits results in a 0.60% decrease in the demand for spirits, a 1% increase in the price of wine results in a 0.55% decrease in the demand for wine, and a 1% increase in the price of beer results in a 0.52% decrease in the demand for beer." These price elasticities do not control for changes in price of other categories of alcoholic beverages.

As shown in in **Table A-1**, beer tends to be more inelastic than either wine or spirits, meaning that increases in beer prices tend to correspond with smaller changes in demand than either wine or spirits. Variations in elasticities depend on the number of studies analyzed in each meta-analysis, the countries studies (if cross-national), and the time periods studied.[60]

Calculation of Average, Combined (Federal, State, and Local) Tax Rate on Alcohol

This section estimates current average combined excise tax rates on alcohol so that these levels can be compared with the level of taxation needed to correct for external costs of alcohol consumption, according to Manning et al. (1991).

First, the average federal tax rate weighted by product is equal to 15 cents per ounce of alcohol, as derived in **Table A-2**.

[60] Fogarty (2010) finds that the demand for alcoholic beverages has become more elastic, partially due to more substitutes, since the mid-1950s.

Table A-2. Calculation of the Average Tax Rate Per Ounce of Alcohol, 2015

Category	Average Tax Rate Per Ounce of Alcohol[a]	Federal Excise Tax Collections	Share of Federal Excise Tax Collections	Average Tax Rate Per Ounce of Alcohol (Weighted by Tax Collections)
Distilled Spirits	$0.21	$5,301,709,000	54.0%	$0.11
Wine	$0.10	$1,017,636,000	10.4%	$0.01
Beer	$0.08	$3,506,542,000	35.7%	$0.03
Total	-	$9,825,887,000	100.0%	$0.15

Source: CRS analysis of data from the Congressional Budget Office, and Department of the Treasury Alcohol and Tobacco Tax and Trade Bureau, 2015, at http://www.ttb.gov/tax_audit/tax_collections.shtml.

a. This refers to alcoholic content, not the amount of liquid in a standard drink. Each standard drink contains approximately 0.6 oz. of alcoholic content. For tax rates, see CBO, *Options for Reducing the Deficit: 2014 to 2023*, November 2013, p. 170, at http://www.cbo.gov/sites/default/files/cbofiles/attachments/44715-OptionsForReducingDeficit.pdf.

Next, the average state and local tax rate per ounce of alcohol can be calculated using the following Census Bureau data.

Table A-3. State and Local Tax Collections on Alcoholic Beverage Sales, 2013

Collection Type	Collections	Ratio of State and Local Collections to Federal Tax Collections[a]
Excise Taxes	$6,618,673,000	63.8%
Taxes Plus Net Revenue from Liquor Stores	$8,631,024,000	83.3%

Source: CRS analysis of data from U.S. Census Bureau, *State and Local Government Finances Summary: 2013*, at http://www.census.gov/govs/local/.

a. Based on TTB's total alcohol excise tax collections in **Table A-2**.

By multiplying the ratios of state and local tax collections to federal tax collections in **Table A-3** by the average weighted federal tax rate per ounce of alcohol of $0.15, the average state and local tax rate per ounce of alcohol can be calculated as

- 10 cents using only collections from state and local excise taxes, and
- 13 cents when adding the net revenue from state-run liquor stores.[61]

The U.S. Census Bureau data does not disaggregate these collections based on the type of alcoholic beverage that they were collected from (i.e., TTB's revenue reports). The methodology used, above, thus serves as an approximate estimate of the state and local average tax rate.

[61] State-run monopolies on liquor sales are sometimes viewed as an "implicit tax" on alcohol consumption because the prices in these stores tend to be higher than in states that allow private stores to sell liquor. For the purposes of this report, the analysis is simplified and does not take into account the price effects of different alcohol sales regimes across states. For more information, see Bruce L. Benson, David W. Rasmussen, and Paul R. Zimmerman, "Implicit Taxes Collected by State Liquor Monopolies," *Public Choice*, vol. 115, no. 3/4 (June 2003), pp. 313-331.

By combining the average weighted federal tax rate with the state and local rates, the combined, average tax rate per ounce of alcohol can be calculated as

- 25 cents when only using excise taxes, and
- 29 cents when incorporating net revenue from state-run liquor stores.

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