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Federal Excise Taxes: Background and General Analysis

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Federal Excise Taxes: Background and General Analysis

In the tax policy context, excise taxes are selective taxes on specific consumption or behavior (in contrast with sales taxes, which tend to apply to all consumption, with some exceptions). Today, federal excise taxes apply to a variety of goods and economic activities, such as alcohol, tobacco, firearms and ammunition, gasoline, airline passenger tickets, and indoor tanning services.

There are four common types of excise taxes:

1. **Sumptuary (or “sin”) taxes:** Historically imposed for moral reasons, but are currently levied, in part, to discourage a specific activity that is thought to have negative spillover effects (or *externalities*) on the consumer and society.
2. **Regulatory taxes:** Imposed to offset external costs associated with regulating public safety or to discourage consumption of a specific commodity that is thought to have negative externalities on society.
3. **Benefit-based taxes (or user charges):** Imposed to charge users of a particular public good (e.g., a highway or national park) for financing and maintenance of that public good.
4. **Luxury taxes:** Often imposed to raise revenue, particularly from higher-income households.

Excise taxes have generally played a diminishing role in financing the federal government since the middle of the 20th century. Congress has taken legislative action to eliminate several categories of excise taxes, such as the luxury taxes on boats, aircraft, jewelry, and furs. Most excise tax rates that remain in statute have declined in value over time, as congressional action to increase rates has not kept pace with inflation. The federal government has also increasingly relied upon other sources of revenue—especially individual income and payroll taxes—to finance public services. In FY1940, federal excise tax revenue comprised 30.2% of federal revenue. In FY2020, federal excise taxes raised 2.5% of total revenue.

Excise taxes tend to be regressive, meaning that households with lower incomes generally pay a larger share of their income in excise taxes than households with higher incomes. Because excise taxes generally increase the price of the taxed commodity, they also tend to lower consumer demand.

Congress has expressed interest in a number of potential modifications to federal excise tax policy. Some long-standing excise tax proposals to correct alleged social costs have resurfaced from time to time in policy discussions. These proposals are sometimes targeted toward specific products or activities (e.g., a sugar-sweetened beverages tax), whereas others would affect a broad range of economic activity and potentially raise a significant amount of revenue (e.g., a carbon tax). There is also interest in reducing current excise tax rates as a means to encourage short-term growth in particular industries.

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Introduction

In the tax policy context, excise taxes are selective taxes on specific consumption or behavior (in contrast with sales taxes, which tend to apply to all consumption, with some exceptions). Today, federal excise taxes apply to a variety of goods and economic activities, such as alcohol, tobacco, firearms and ammunition, gasoline, airline passenger tickets, and indoor tanning services.

There are four common types of excise taxes:¹

1. **Sumptuary (or “sin”) taxes:** Traditionally imposed for moral reasons, but are currently rationalized, in part, to discourage a specific activity that is thought to have negative spillover effects (or *externalities*) on consumers and society.²
2. **Regulatory taxes:** Imposed to offset external costs associated with regulating public safety or to discourage consumption of a specific commodity that is thought to have negative externalities on society.
3. **Benefit-based taxes (or user charges):** Imposed to charge users of a particular public good (e.g., a highway or national park) for financing and maintenance of that public good.
4. **Luxury taxes:** Often imposed to raise revenue, particularly from higher-income households.³

The role of excise taxes has changed over time. Excise taxes narrowly imposed on the consumption of certain products, such as alcohol and tobacco, formed the basis for a significant portion of federal tax revenue until the modern income tax was enacted in the early 20th century. Although excise taxes have played a diminishing role as a federal revenue source over time, there is persistent interest in using excise taxes to raise revenue or discourage behavior that is believed by some to have negative effects on society (e.g., a tax on carbon emissions). There is also interest in reducing current excise tax rates as a means to encourage short-term growth in particular industries.

This report provides an introduction to and general economic and policy analysis of excise taxes. It first provides a brief history of U.S. excise tax policy, and then discusses trends in federal excise tax revenues and the uses of that revenue. The report next describes the various forms of excise taxes and their respective administrative advantages and disadvantages, then analyzes the economic effects of particular types of excise taxes. These effects on consumer behavior and equity among taxpayers may be important issues for assessing current excise tax policy or designing new excise taxes. The **Appendix** provides a list of references to other CRS resources on specific excise taxes.⁴

¹ This list is not exhaustive. For example, rationing taxes have been temporarily levied in order to reduce the consumption of critical supplies during wartime (e.g., rubber) and import duties are basically excise taxes levied on imports. Additionally, this list and, more broadly, this report discuss excise taxes in the economic and policy contexts. Legal analysis of the meaning of the term *excise taxes* and of the different types of excise taxes is beyond the scope of this report.

² Economists also refer to taxes applied to an activity generating negative externalities as a “Pigovian tax.” This type of tax is named after economist Arthur Pigou, who developed the concept of economic externalities. In the United States, sumptuary taxes often refer to taxes on alcohol and tobacco consumption, gambling, and marijuana consumption.

³ Excise taxes were previously imposed on luxury vehicles, furs, yachts, and other luxury goods. However, most of these provisions have either expired or been repealed over the years.

⁴ For a comprehensive list of federal excise taxes and their tax rates (as of 2015), see U.S. Congress, Joint Committee

History of Federal Excise Taxes

Federal excise taxes have had a dynamic role within the U.S. tax system. The history of the federal excise tax system often coincides with wars, when excise taxes have served as an emergency source of funds, or reflects periodic concerns about rising budget deficits.⁵ New excise taxes or changes to existing tax rates have often been used for the control of social costs and as user charges in recent years.

Excise taxes played a key fiscal role in the early history of the United States. The federal government initially relied on customs duties (tariffs) on foreign trade. In 1791, during George Washington's presidency, Secretary of the Treasury Alexander Hamilton implemented the first federal excise tax on whiskey. The whiskey tax was used as a means to fund the fledgling federal government, repay debts from the American Revolution, and help establish federal supremacy over the states.⁶ The burden of the tax was controversial along both geographical (westerners on the frontier tended to both consume more whiskey and use it as a medium of financial exchange) and ideological (Federalists versus Anti-Federalists) divisions. This opposition peaked in the Whiskey Rebellion of 1794 in southwestern Pennsylvania, where President Washington deployed 13,000 troops to suppress an armed rebellion.

Federal excise taxes expanded after the suppression of the Whiskey Rebellion in 1794. Congress passed excise taxes on tobacco, snuff tobacco, sugar, and carriages.⁷ In 1797, a direct tax was imposed on the ownership of houses, land, and slaves as tariff revenue declined during a period when European powers were at war. The taxes' unpopularity contributed to Thomas Jefferson's victory over Federalist Party candidate John Adams during the presidential election of 1800.⁸ All internal excise taxes were repealed in 1802, as the fiscal demand arising from the war in Europe abated.⁹

Federal excise taxes played a significant role in public finances throughout the 1800s. Excise taxes were temporarily reintroduced during the War of 1812, but were repealed from 1817 until the Civil War.¹⁰ Following the onset of the Civil War, Congress passed the Revenue Act of 1861, which restored earlier excise taxes.¹¹ Most of these excise taxes were repealed after the end of the

on Taxation, *Present Law and Background Information on Federal Excise Tax Rates*, JCX-99-15, July 2015, at <https://www.jct.gov/publications/2015/jcx-99-15/>. The JCT study classifies some provisions as "excise taxes," although these provisions are often thought of as "penalties" for certain types of behavior (e.g., the Affordable Care Act's penalty for employers who do not provide "adequate" and "affordable" health care coverage to their employees). Subsequent to that publication, some of the Affordable Care Act taxes were eliminated in 2019: the medical device tax, the tax on certain high-value insurance policies (popularly known as the "Cadillac tax"), and the health insurance industry fee. Alcohol taxes were temporarily reduced, primarily for small producers, in 2017, with the reductions made permanent in 2020. For a current list of alcohol taxes, see <https://www.ttb.gov/tax-audit/tax-and-fee-rates>, on the Department of the Treasury's Alcohol Tax and Trade Bureau's website.

⁵ For an earlier history of federal excise taxes, see Tax Foundation, *Federal Excise Taxes*, June 1, 1956, at <http://taxfoundation.org/article/federal-excise-taxes>.

⁶ Steve Simon, "Alexander Hamilton and the Whiskey Tax," U.S. Department of the Treasury, at <https://www.ttb.gov/public-information/special-feature>.

⁷ Tax Foundation, *Federal Excise Taxes*, June 1, 1956, p.9, at <http://taxfoundation.org/article/federal-excise-taxes>.

⁸ Robert L. Einhorn, *American Taxation, American Slavery* (Chicago, IL: University of Chicago Press, 2008); and Joel S. Newman, "Slave Tax as Sin Tax: 18th and 19th Century Perspectives," *Tax Notes*, November 21, 2003.

⁹ Robert L. Einhorn, *American Taxation, American Slavery* (Chicago, IL: University of Chicago Press, 2008); and Joel S. Newman, "Slave Tax as Sin Tax: 18th and 19th Century Perspectives," *Tax Notes*, November 21, 2003.

¹⁰ Tax Foundation, *Federal Excise Taxes*, June 1, 1956, p.9, at <http://taxfoundation.org/article/federal-excise-taxes>.

¹¹ The Revenue Act of 1861 also temporarily imposed the first income tax, which was implemented in 1862. The

Civil War, with taxes on distilled spirits and tobacco remaining in effect. In the decades after the Civil War, excise taxes accounted for between one-third and one-half of all federal revenue.¹² Excise taxes were the single largest source of internal revenue during this era.¹³

During the Spanish-American War (1898), excise tax revenue was a larger source of federal tax collections than customs duties on foreign imports, as revenue from tariffs often declined during wartime. Emergency excise taxes were levied on a variety of items, such as pianos, playing cards, yachts, and billiard tables, to fund military spending. After the war ended, most of these emergency excise taxes were repealed.

Excise taxes were utilized to fund wartime spending during the early 20th century. Temporary excise tax provisions were imposed in the Revenue Act of 1918, passed during World War I, to help fund wartime spending, including the first excise tax on firearms, shells, and cartridges. As a result, excise tax collections quadrupled from 1914 to 1919.¹⁴ Excise tax revenues declined significantly after the beginning of Prohibition (falling to less than half of pre-Prohibition revenue levels by 1930) but rebounded above pre-Prohibition levels after the consumption of alcohol was made legal again after 1933.¹⁵ Existing excise tax rates were increased again virtually across the board around the time of World War II, and new taxes on luxury goods (such as furs) were introduced.¹⁶ Additionally, Congress rejected adopting a general sales tax twice during this era (1932 and 1942), despite critiques that the costs of administering excise taxes to a growing list of products were high and the revenue gained from many excise taxes was small.¹⁷

Excise taxes underwent a time of dynamic reform during the latter half of the 20th century. The Revenue Act of 1951 increased many excise tax rates in existence at the time (such as alcohol and tobacco) and increased the tax base for some user charges. However, the Excise Tax Reduction Act of 1954 (P.L. 83-324) and the Excise Tax Reduction Act of 1965 (P.L. 89-44) reduced the number of provisions and their respective tax rates. In particular, the Excise Tax Reduction Act of 1965 eliminated most federal excise taxes with the goal being to “help sustain economic expansion.”¹⁸

Certain excise taxes were also expanded, in part, to reflect a desire for a wider federal role in domestic affairs.¹⁹ For example, the modern highway system’s development shows this linkage

income tax was repealed in 1872.

¹² By comparison, trade tariffs produced from one-half to two-thirds of all revenue in the decades after the Civil War, whereas proceeds from federal land sales accounted primarily for the remainder of revenue collections. See Lance E. Davis and John Legler, “The Government in the American Economy, 1815-1902: A Quantitative Study,” *The Journal of Economic History*, vol. 26, no. 4 (December 1966), pp. 514-552.

¹³ During parts of this time period, only customs duties outnumbered excise tax collections as the primary source of federal revenue.

¹⁴ Tax Foundation, *Federal Excise Taxes*, June 1, 1956, p.11, at <http://taxfoundation.org/article/federal-excise-taxes>.

¹⁵ See Table 3 in Tax Foundation, *Federal Excise Taxes*, June 1, 1956, p.14, at <http://taxfoundation.org/article/federal-excise-taxes>.

¹⁶ See Revenue Act of 1940 (P.L. 76-656), Revenue Act of 1941 (P.L. 77-250), Revenue Act of 1942 (P.L. 77-753), and Revenue Act of 1943 (P.L. 78-235); and Tax Foundation, *Federal Excise Taxes*, June 1, 1956, p.17, at <http://taxfoundation.org/article/federal-excise-taxes>.

¹⁷ See W.C. Bryant, “Key Republicans Toss Political Dynamite Into Laps of Leaders: Ask Excise Tax Raise,” *Wall Street Journal*, October 21, 1947, p. 5.

¹⁸ U.S. Congress, Senate Committee on Finance, *Senate Report on the Excise Tax Reduction Act of 1965*, 89th Cong., 1st sess., June 14, 1965, S. Rpt. 89-324 (Washington: GPO, 1965), p. 1. Many of the scheduled reductions and taxes repealed by the act were delayed until the late 1960s and early 1970s. See Joseph Pechman, *Federal Tax Policy*, 3rd ed. (Washington, DC: Brookings Institution Press, 1977), p. 189.

¹⁹ See R. Rudy Higgins-Evenson, “Financing for a Second Era of Internal Improvements,” *Social Science History*, vol.

between excise taxes and the expansion of federally provided public goods. The Highway Revenue Act of 1956 (Title II of P.L. 84-627) increased the federal gasoline tax (in effect since 1932) and directed its collections from the Treasury’s General Fund specifically toward funding of public highways.²⁰ Specific excise taxes linked to trust funds related to air travel, mining, waterway travel, oil spills, and other hazardous chemicals (among others) were created in the 1970s and 1980s. A rising budget deficit helped to bring about the excise tax increases in the Omnibus Budget Reconciliation Act of 1990 (OBRA90; P.L. 101-508). OBRA90 increased tax rates on distilled spirits (last increased in 1985), beer and wine (last increased in 1951), tobacco (last increased in 1982), and gasoline (last increased in 1982).

In recent decades, excise taxes have played a diminishing role in the mix of federal revenue sources even as new provisions have been introduced. As discussed in the “Revenue” section, excise tax collections have nominally increased in recent years, but have not changed as much in inflation-adjusted (real) values. Excise taxes have also fallen as a share of overall federal revenue. The excise tax rate on gasoline, the largest federal excise tax by revenue, has remained unchanged and unadjusted for inflation since 1997. The excise tax on tobacco was last increased with the Children’s Health Insurance Program Reauthorization Act of 2009 (P.L. 111-3), but revenue from the tobacco tax has declined over time in part due to decreased demand for tobacco products. Alcohol taxes were reduced, by allowing a reduced rate on lower quantities of production and the provision of credits, temporarily in the 2017 tax law (P.L. 115-97, commonly referred to as the “Tax Cuts and Jobs Act”) and permanently in the Consolidated Appropriations Act, 2021 (P.L. 116-260).

Several new excise taxes were created by the Affordable Care Act (P.L. 111-148 and P.L. 111-152, as amended), enacted in 2010, such as taxes on indoor tanning bed services, medical devices, and certain high-value insurance plans. The taxes on medical devices and certain high-value insurance plans, as well as a health insurance industry fee, were later fully repealed in the Further Consolidated Appropriations Act, 2020 (P.L. 116-94).

The future role of federal excise taxes in federal policy is still unclear. Excise taxes in the form of user charges could continue to play a role in financing public goods and services. Excise taxes could be one tool to raise revenue, particularly in the absence of a general consumption tax at the federal level.²¹ Some long-standing excise tax proposals to correct a perceived social issue have also resurfaced in policy discussions. Some of these proposals could be targeted toward specific products or activities (e.g., a sugar-sweetened beverages tax), whereas others could affect a broad range of economic activity and potentially raise a significant amount of revenue (e.g., a carbon tax).²²

26, no. 4 (Winter 2002), pp. 623-651.

²⁰ For more information on financing public highways, see CRS Report RL30304, *The Federal Excise Tax on Motor Fuels and the Highway Trust Fund: Current Law and Legislative History*, by Sean Lowry.

²¹ Congressional interest in enacting consumption taxes has been low. For example, a type of national consumption tax—a value-added-tax—has been explicitly rejected by Congress in the past. The Senate voted 85-13 on a resolution rejecting a value-added-tax (VAT) in 2010. See S.Amdt. 3724 (111th Cong.).

²² The Congressional Budget Office (CBO) estimated in 2008 that a tax on sugar sweetened beverages set at 3 cents per 12 ounces could raise \$50.4 million in revenue in five years. In 2020, CBO estimated that a tax on greenhouse gas emissions could raise \$1.0 trillion over 10 years. See CBO, *Budget Options Volume 1: Health Care*, December 2008, p. 192, at <http://www.cbo.gov/sites/default/files/cbofiles/ftpdocs/99xx/doc9925/12-18-healthoptions.pdf>; and CBO, *Options for Reducing the Deficit: 2021 to 2030*, at <https://www.cbo.gov/budget-options/56873>.

Revenue

Since the end of World War II, excise taxes have comprised a diminishing portion of federal revenues. At the same time, federal excise tax revenue has fallen as a share of GDP. However, excise taxes have remained important public policy tools as they have increasingly been used as a source of dedicated revenue to directly fund certain federal government programs.

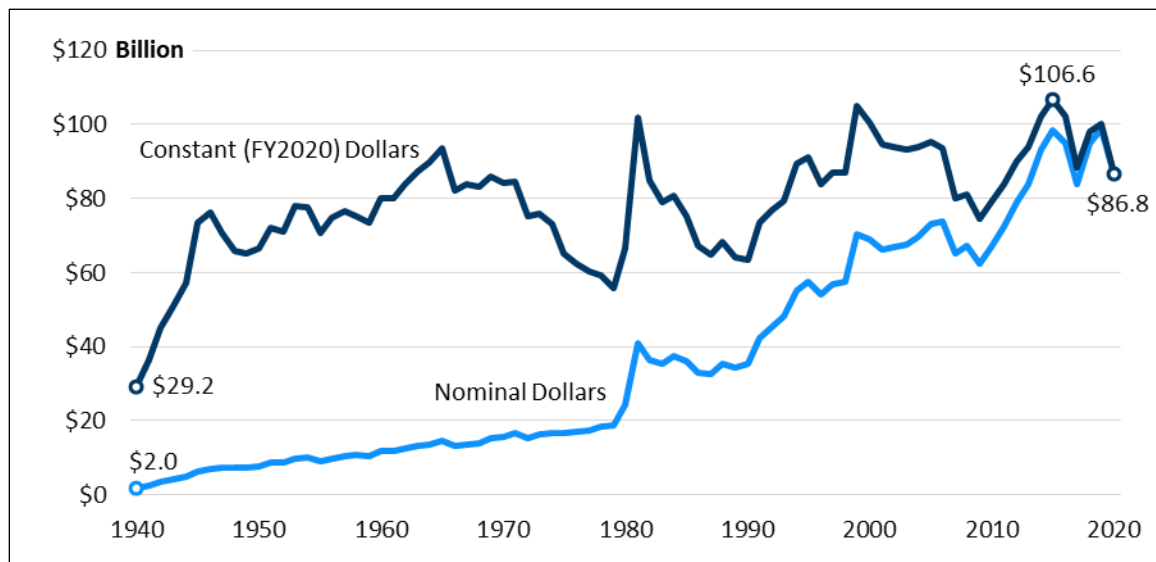
Historical Trends

Excise taxes have had a diminishing role in federal public finance over time. Several forms of data analysis, presented in this section, illustrate this point.

Excise taxes are generally imposed on either a *per-unit* basis, which means the tax rate is applied per individual unit produced, purchased, or sold, or an *ad valorem* basis, which means the tax rate is applied as a percentage of the product's value. One concern with per-unit excise taxes is that they are often set in statute at specific levels, so the inflation-adjusted value, or *real value*, often falls over time.²³ This trend usually continues absent legislative action to increase the statutory rates to reflect the effects of inflation.²⁴ As **Figure 1** shows, federal excise tax collections have generally increased each year in nominal (unadjusted) terms. However, when considering inflation, federal excise tax revenues have been much more volatile, increasing over time but not necessarily each year.

Figure 1. Federal Excise Tax Collections, FY1940 to FY2020

Billions of nominal or constant (FY2020) dollars



Source: Figure created by CRS using data from Office of Management and Budget, Historical Tables 2.1 and 10.1, at <https://www.whitehouse.gov/omb/historical-tables/>.

²³ Because these calculations control for changes in the price level, economists generally compare dollar-denominated amounts over time in real terms, not nominal.

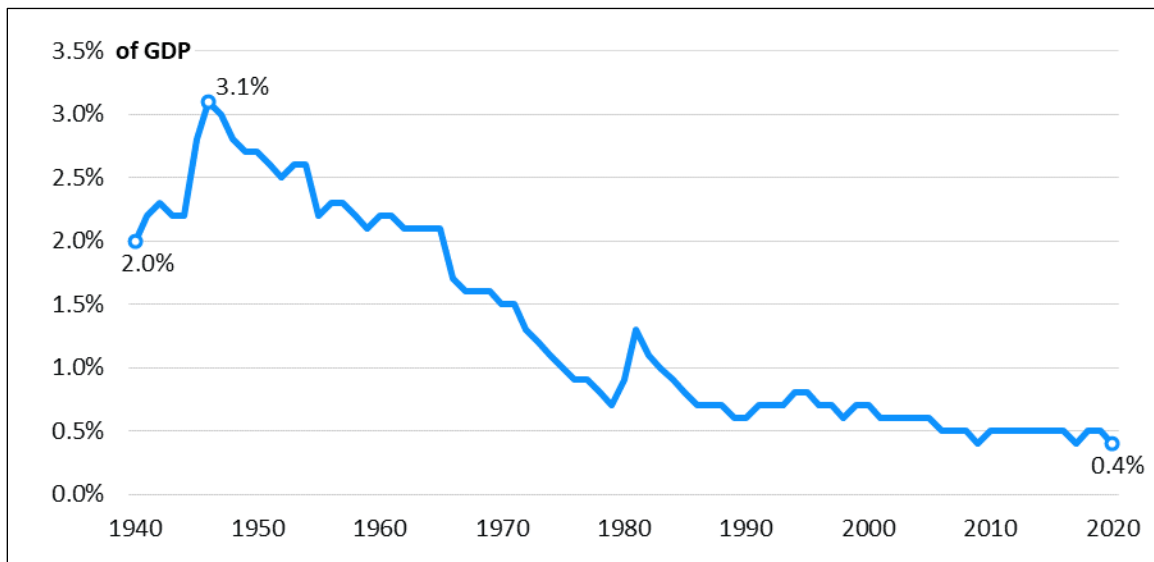
²⁴ For particular federal trust funds that are financed through excise taxes, the decline in the value of excise tax revenue may be a concern. If the growth in spending exceeds revenue, then the trust fund could be depleted over time.

Notes: Data labels shown on both lines for FY1940 and FY2020. The Constant (FY2020) Dollars line additionally shows a data label for FY2015.

Although nominal excise tax collections have increased from \$2.0 billion in FY1940 to \$86.8 billion in FY2020, real excise tax revenue has increased by much less. The brief spike in excise tax collection during the early 1980s was largely due to the enactment of the excise tax on windfall profits in the oil industry, which was phased out by 1993.²⁵ The highest amount of inflation-adjusted revenue raised by federal excise taxes since 1940 was in FY2015, when those taxes raised \$106.6 billion in 2020 dollars. Federal excise tax receipts have fallen since then.

Federal excise tax receipts as a share of gross domestic product (GDP) are lower today than they were in the past. As shown in **Figure 2**, annual excise tax receipts averaged between 2.0% and 2.5% of GDP during the Great Depression, before hitting a peak of 3.1% in FY1946. After the end of World War II, federal excise tax receipts declined as a share of GDP—particularly after the mid-1960s. After a brief spike in the early 1980s, largely due to the enactment of the oil industry windfall profits tax, excise tax revenue as a share of GDP trended back below 1.0% by the end of the 1980s. In FY2020, federal excise tax receipts were 0.4% of GDP.

Figure 2. Federal Excise Tax Receipts as a Share of Gross Domestic Product (GDP), FY1940 to FY2020



Source: Figure created by CRS using data from Office of Management and Budget, Historical Table 2.3, at <https://www.whitehouse.gov/omb/historical-tables/>.

Notes: Data labels are shown for FY1940, FY1946, and FY2020.

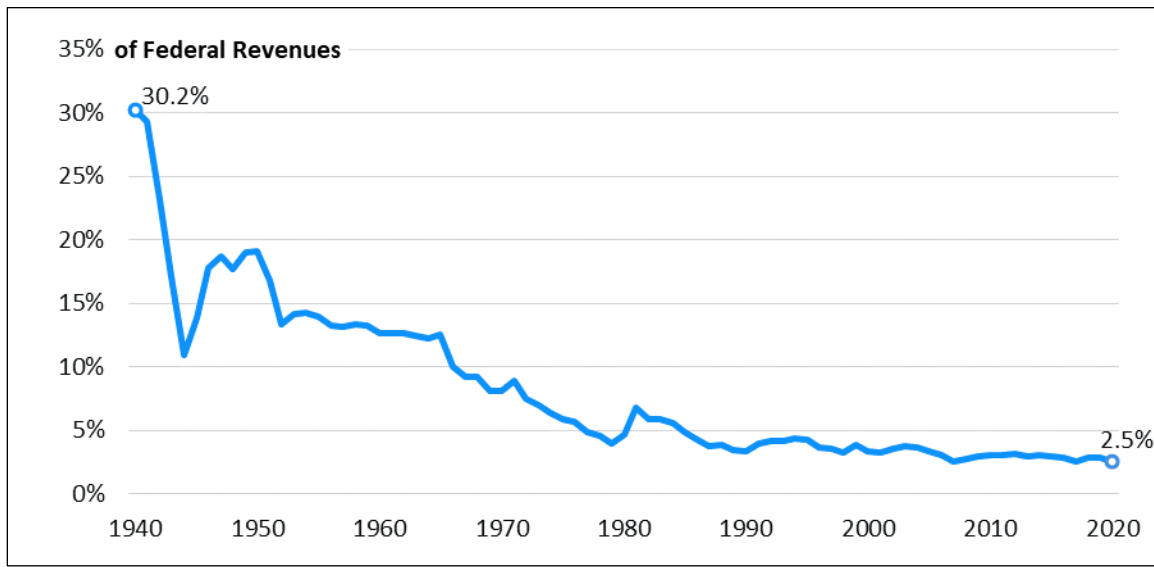
Federal excise taxes have also declined as a share of all federal tax receipts. As shown in **Figure 3**, federal excise taxes comprised 30.2% of all federal tax receipts in FY1940. By the early 1950s, the share of federal tax receipts from excise taxes began a slow decline below 15% to its current share of 2.5% in FY2020.

The declining share of federal tax receipts collected from excise taxes corresponded with an increase in the role of other sources of tax receipts, notably the individual income and payroll taxes. In FY1940, individual income taxes amounted to 13.6% of all federal tax receipts and

²⁵ Crude Oil Windfall Profit Tax Act of 1980 (P.L. 96-223).

applied primarily to a narrow tax base.²⁶ During World War II, the individual tax code supplanted excise taxes as being the primary source of federal revenue, as income taxes accounted for 45.0% of all tax receipts in FY1944 (compared with 10.9% from excise taxes).²⁷ Receipts from payroll taxes,²⁸ which fund various social insurance programs, have also increased over time and are now a significant portion of federal receipts. In FY2020, individual income taxes comprised 47.0% and payroll taxes 38.3% of federal tax receipts, compared with 2.5% from federal excise taxes.²⁹

Figure 3. Federal Excise Taxes as a Share of Federal Revenues, FY1940 to FY2020



Source: Figure created by CRS using data from Office of Management and Budget, Historical Table 2.2, at <https://www.whitehouse.gov/omb/historical-tables/>.

Notes: Data labels are shown for FY1940 and FY2020.

Revenue by Major Types of Excise Taxes

Federal excise taxes cover a broad range of economic activity, as shown by **Figure 4**. The largest set of taxes relates to surface transportation, accounting for 45% of total excise tax revenue in FY2020. These excise taxes are dedicated for the Highway Trust Fund, including the gasoline and diesel motor fuel taxes, a sales tax on heavy vehicles, and an annual heavy vehicle use tax. The next largest source of federal excise tax revenues, accounting for 16% of the total, is the tax on

²⁶ Office of Management and Budget, *Historical Tables*, Table 2.2, at <https://www.whitehouse.gov/omb/historical-tables/>.

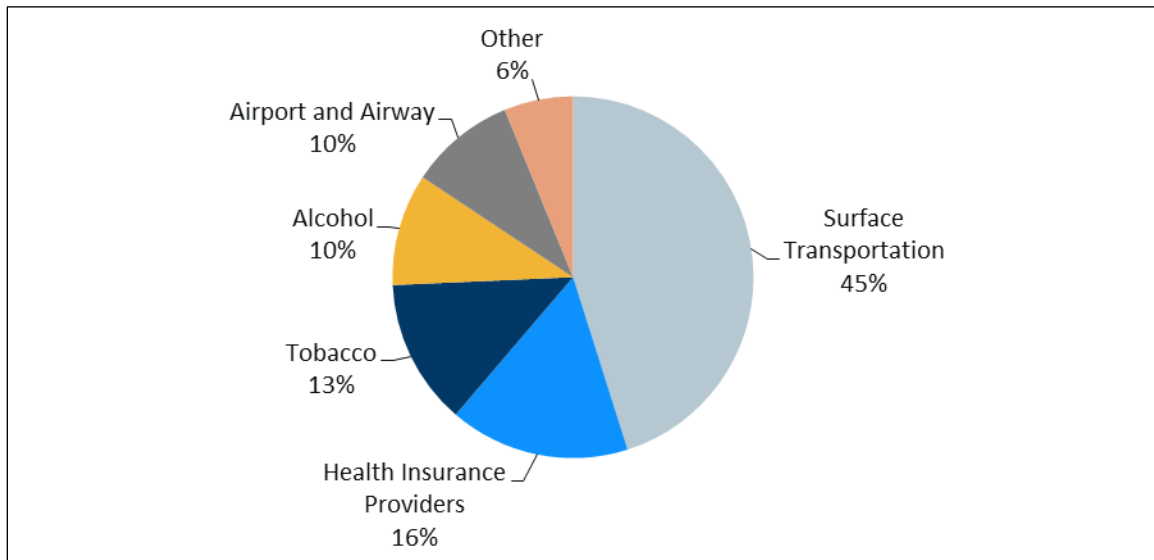
²⁷ The rise in income tax receipts during World War II was largely due to the enactment of the “Victory Tax” under the Revenue Act of 1942 (P.L. 77-753). The Victory Tax was a flat 5% tax (lowered to 3% in 1943) on net income over \$624, with few deductions. The Individual Income Tax Act of 1944 (P.L. 78-315) repealed the Victory Tax but also raised the marginal tax rates set in statute under the individual income tax code. For more information, see Roy G. Blakey and Gladys C. Blakey, “The Federal Revenue Act of 1942,” *American Political Science Review*, vol. 36, no. 6 (December 1942), pp. 1069-1082; Roy G. Blakey and Gladys C. Blakey, “Federal Revenue Legislation, 1943-1944,” *American Political Science Review*, vol. 38, no. 2 (April 1944), pp. 325-330; and Paul G. Kauper, “Significant Developments in the Law of Federal Taxation, 1941-1947: I,” *Michigan Law Review*, vol. 45, no. 6 (April 1947), pp. 659-678.

²⁸ The largest payroll taxes, by revenue, are the Social Security and hospital insurance (Medicare Part A) taxes.

²⁹ Office of Management and Budget, *Historical Tables*, Table 2.2, at <https://www.whitehouse.gov/omb/historical-tables/>.

health insurance providers created by the Affordable Care Act (P.L. 111-148 and P.L. 111-152, as amended). This tax was fully repealed in the Further Consolidated Appropriations Act, 2020 (P.L. 116-94). Federal excise taxes on tobacco and alcohol accounted for an additional 13% and 10% of revenues, respectively. Airport and airway excise taxes were 10% of federal excise tax receipts in FY2020 and are dedicated to the Airport and Airway Trust Fund. These taxes include taxes on air passenger tickets and air cargo fares, as well as aviation fuels. The remaining 6% of revenues come from a wide variety of other federal excise taxes, such as the taxes on firearms and ammunition and the net investment income of private foundations. For more detail about each federal excise tax, see the CRS resources listed in the **Appendix**.

Figure 4. Federal Excise Tax Revenue by Major Type, FY2020



Source: Figure created by CRS using data from Office of Management and Budget, Historical Table 2.4, at <https://www.whitehouse.gov/omb/historical-tables/>.

Notes: Excludes categories with negative receipts (meaning refunds exceed receipts).

Dedicated Excise Tax Revenue

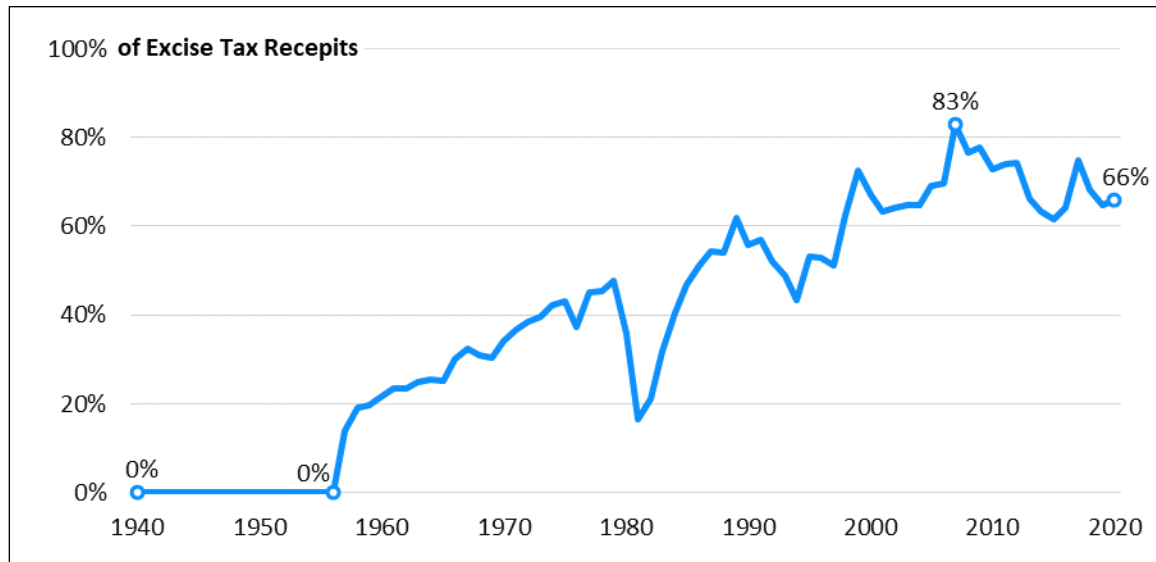
One of the most important changes in federal excise tax policy over the past several decades has been the increasing dedication of specific excise tax revenues to various trust funds and programs. The first dedicated federal excise tax revenues were collected in FY1957. The Federal-Aid Highway Act of 1956 (P.L. 84-627) increased the already-existing federal gasoline tax and dedicated revenues from the tax to the newly created Highway Trust Fund. Since then, Congress has created new and expanded existing excise taxes that are dedicated for trust funds.

In contrast, excise taxes for general revenue have largely stagnated. In recent years, the medical devices excise tax and the health insurance industry fee were both permanently repealed. Recent cuts to the alcohol excise tax were made permanent. Another general fund excise tax—the tax on local telephone, typewriter, and local-service only prepaid phone cards—has been shrinking as its taxable base has largely vanished.

The portion of federal excise tax revenue dedicated for trust funds rapidly increased from the late 1950s to about 2000, as shown by **Figure 5**. Since then, the exact share has varied slightly but has consistently been above 60%. In FY2020, 66% of federal excise tax revenue was dedicated for trust funds.

The trust funds that receive revenue from excise taxes support a variety of federal programs. The largest, by far, is the Highway Trust Fund, which provides federal funding for highways and mass transit.³⁰ The next largest is the Airport and Airway Trust Fund, which helps fund the Federal Aviation Administration’s operations and investments in airports and related facilities.³¹ For more on these trust funds and others funded by federal excise taxes, see the resources listed in the **Appendix**.

Figure 5. Share of Federal Excise Tax Revenue Dedicated to Trust Funds, FY1940 to FY2020



Source: Figure created by CRS using data from Office of Management and Budget, Historical Table 2.4, at <https://www.whitehouse.gov/omb/historical-tables/>.

Notes: Data labels are shown for FY1940, FY1956, FY2007, and FY2020.

Interactions with State and Local Excise Taxes

Every state and many localities levy excise taxes. Some of the most popular goods to tax are the same as with the federal government: every state and Washington, DC, levies excise taxes on gasoline, alcohol, and tobacco.³² For most states, like the federal government, excise taxes comprise a relatively small portion of total tax revenue. Across all states, excise taxes on motor fuels, alcoholic beverages, and tobacco products comprised an average of 7% of state tax revenue in 2019.³³

³⁰ Joseph Kile, “Testimony on Addressing the Long-Term Solvency of the Highway Trust Fund,” Congressional Budget Office, April 14, 2021, at <https://www.cbo.gov/publication/57138>.

³¹ Federal Aviation Administration, “Airport & Airway Trust Fund (AATF),” at <https://www.faa.gov/about/budget/aatf/>

³² For more information on state gasoline taxes, see National Conference of State Legislatures, “Variable Rate Gas Taxes,” July 14, 2021, at <https://www.ncsl.org/research/transportation/variable-rate-gas-taxes.aspx>. For more information on alcohol and tobacco taxes, see The Pew Charitable Trusts, “Are Sin Taxes Healthy for State Budgets?” July 2018, at <https://www.pewtrusts.org/en/research-and-analysis/reports/2018/07/19/are-sin-taxes-healthy-for-state-budgets>.

³³ U.S. Census Bureau, “2019 Annual Survey of State and Local Government Finances,” at <https://www.census.gov/programs-surveys/gov-finances.html>. State governments have other sources of excise tax revenue besides these three.

Changes in the consumption of a taxed good depend, in part, on the interaction of federal, state, and local excise taxes levied on that good. Economists would predict that the relative changes in quantities of a good consumed given a federal tax change would differ based on state and local taxes on that good. Likewise, federal revenues may change, even if the federal tax rate does not change, if states and localities change how they tax certain goods.

Unlike the federal government, several states automatically adjust their gas taxes for inflation each year.³⁴ This potentially provides more consistent revenue across years. Many states, like the federal government, set their alcohol and tobacco tax rates in statute. Some states that do not regularly increase these rates—especially for tobacco, with generally falling consumption—have been experiencing falling collections from these taxes.³⁵

Administration

All forms of excise tax use some sort of physical control or measurement by tax authorities to determine tax liability and ensure compliance with the law.³⁶ This section of the report describes the different ways that excise taxes are structured, and the advantages and disadvantages of each model.

Setting the Tax Rate

For excise taxes intended to compensate for the social costs of certain activities, economic theory suggests that the excise tax rate should be set at a level that offsets the negative costs of that consumption to society.³⁷

In general, an excise tax rate can be applied in one of two ways:

- *Per unit*, where the tax rate is applied per individual unit produced, purchased, or sold. For example, different per-unit rates are levied on tobacco products based on the product type: 1,000 units of cigarettes or one pound of pipe tobacco.
- *Ad valorem*, where the tax rate is applied as a percentage of the value of the product, based on the manufacturer's wholesale or retail price. For example, the excise tax on firearms and ammunition is set at 10% of the sale price for pistols and revolvers and 11% for other firearms as well as shells and cartridges.³⁸

Economists generally prefer per-unit excise taxes when marginal consumption of the targeted commodity is deleterious. For example, cigarette taxes are levied per unit sold because the alleged spillover effects of smoking (e.g., second-hand smoking) occur with every cigarette smoked. The excise tax on gasoline is levied per gallon of gasoline sold because the amount of

³⁴ National Conference of State Legislatures, "Variable Rate Gas Taxes," July 14, 2021, at <https://www.ncsl.org/research/transportation/variable-rate-gas-taxes.aspx>.

³⁵ The Pew Charitable Trusts, "Are Sin Taxes Healthy for State Budgets?" July 2018, at <https://www.pewtrusts.org/en/research-and-analysis/reports/2018/07/19/are-sin-taxes-healthy-for-state-budgets>.

³⁶ Sijbren Cnossen, *Excise Systems: A Global Study of the Selective Taxation of Goods and Services* (Baltimore, MD: Johns Hopkins University Press, 1977), p. 10.

³⁷ If taxes are used this way to reflect the full cost of a particular type of economic activity to society, then excise taxes can lead to a more efficient allocation of resources. This concept is discussed in more detail in the "Efficiency" section of this report.

³⁸ For more information on excise taxes on firearms and ammunition see CRS Report R45123, *Guns, Excise Taxes, Wildlife Restoration, and the National Firearms Act*, by R. Eliot Crafton, Jane G. Gravelle, and William J. Krouse.

gasoline consumed was (in the past) a rough approximation of how much wear and tear a driver would impose on federally managed highways.

Per-unit taxes can invite issues with both horizontal and vertical equity, as explained below in the section on “Equity.” Also, because per-unit taxes are often set at static rates in statute, these rates often fall in inflation-adjusted (or real) terms.³⁹ For example, the statutory federal excise tax rate on distilled spirits in 1951 was set to \$10.50 per proof gallon (ppg).⁴⁰ The statutory tax rate was increased from \$10.50 to \$12.50 ppg in 1985, and again in 1991 from \$12.50 to \$13.50 ppg. The highest excise tax rate on distilled spirits still remains at the 1991 level of \$13.50 ppg, or \$2.14 per 750ml bottle (a “fifth”) of 80-proof liquor.⁴¹ If the 1951 tax rate was indexed for inflation, it would be \$87.71 ppg in 2020 dollars, or approximately \$13.90 per 750ml bottle of 80-proof liquor.⁴²

In contrast, ad valorem tax rates largely avoid a real decline in value because they are applied based on the price of a commodity or activity rather than the quantity consumed or produced. Ad valorem rates can also be more progressive (meaning people with higher incomes pay a higher share of their income in taxes than people with lower incomes) than per-unit rates in certain circumstances. For example, if people with higher incomes are more likely to buy expensive distilled spirits, then an ad valorem tax would cause them to pay more tax relative to cheaper spirits than a per-unit tax would. However, ad valorem rates may be regressive (meaning people with lower incomes pay a higher share of their income in taxes than people with higher incomes) if the consumers of the commodity are not limited to those at the upper end of the income distribution.

Choosing the Stage of Production to Levy the Tax

An excise tax can be levied at different stages along a commodity’s production and distribution chain:⁴³

- **Production level:** Tax is collected on sales by producers to wholesalers, retailers, or other producers. Transactions prior to the sale by the last producer are often partially exempted or taxed at reduced rates.
- **Manufacturing level:** Tax is collected on sales by manufacturers to wholesalers or retailers, including the occasional direct sale to consumers.
- **Wholesale level:** Tax is collected on sales by the last wholesaler or manufacturer to retailers, including the occasional direct sale to consumers.

³⁹ The decline in the real value of per-unit taxes is due, in part, to increasing real prices of the taxed commodity or activity over time.

⁴⁰ A proof gallon is a combination of alcohol content and volume. A proof gallon is the volume in gallons, multiplied by the percentage of alcohol, multiplied by two, and divided by 100.

⁴¹ U.S. Department of the Treasury, Alcohol and Tobacco Tax and Trade Bureau, “Tax Rates,” at http://www.ttb.gov/tax_audit/atftaxes.shtml. The 2017 tax revision (P.L. 115-97) enacted the Craft Beverage Modernization and Tax Reform (Subpart A of Part IX), which created a three-tier system for distilled spirits starting in 2018. The \$13.50 ppg rate is only faced by the largest domestic producers (over 22,130,000 ppg annually), as well as certain importers.

⁴² CRS calculations based on Office of Management and Budget GDP deflator, Historical Table 10.1, at <https://www.whitehouse.gov/omb/historical-tables/>.

⁴³ Sijbren Cnossen, *Excise Systems: A Global Study of the Selective Taxation of Goods and Services* (Baltimore, MD: Johns Hopkins University Press, 1977), p. 15.

- **Retail level:** Tax is collected on sales by retailers to final consumers, including wholesalers or manufacturers selling occasionally to consumers.
- **Turnover taxes:** Tax is collected on sales at all or nearly all stages; also known as “cascade taxes” on account of their cumulative effects.

Generally, an excise tax levied at earlier stages in the production process has lower administrative costs and fewer opportunities for tax evasion. In most situations, consumers vastly outnumber producers. Therefore, implementing an excise tax at the level of the consumer retail outlet often results in a duplication of bureaucratic processes compared with a tax on manufacturers. For example, about 249 billion cigarettes were purchased across the United States in 2017, but 92% of these cigarettes were manufactured by four companies.⁴⁴ However, ad valorem taxes imposed at the manufacturer’s level could provide an incentive for value-added options to be ordered further down the supply chain in an attempt to minimize the tax burden. The manufacturer tax on firearms, for instance, is levied on the assembly of a complete rifle, but any add-ons or modification kits are not taxed.⁴⁵

Taxes imposed at the manufacturing level could lead to an effective tax rate that is higher than the statutory tax rate. This outcome occurs because some manufactured goods have a long inventory life, and a considerable time period may elapse between when the tax is paid (when the good leaves the manufacturer’s premises) and the date that the good is sold. In effect, the manufacturer incurs an interest cost to borrow the money to pay the tax.⁴⁶

An advantage of imposing a tax at the retail level is that it can more easily exclude certain consumers from an excise tax’s revenue base, if desired. For example, farmers can receive an excise tax credit for certain fuel purchased for farm use, as this activity generally has a minimal effect on the quality of interstate highways.⁴⁷ On the other hand, exemptions could diminish the tax’s effect on its original goal. An exemption, in the form of a refund, can be implemented through a manufacturer’s tax, although this might require additional administrative resources. In the case of federal motor fuel taxes, this is done by the consumer filing Form 4136 (“Credit for Federal Tax Paid on Fuels”) to claim a credit against annual income taxes.⁴⁸

Transition Issues

Special rules are sometimes used to accompany the imposition of a new excise tax or increases in any existing tax rates to prevent tax avoidance. If an excise tax is announced effective as of a specific date in the future, then individuals might stockpile the taxed commodity. One policy to prevent this behavior is a floor stocks tax, or an excise tax on all existing inventory as of a particular date. The floor stocks tax is usually imposed on the date a new tax takes effect or the

⁴⁴ Centers for Disease Control and Prevention, “Economic Trends in Tobacco,” at http://www.cdc.gov/tobacco/data_statistics/fact_sheets/economics/econ_facts/.

⁴⁵ For more information, see CRS Report R42992, *Guns, Excise Taxes, and Wildlife Restoration*, by R. Eliot Crafton and Jane G. Gravelle.

⁴⁶ Alternatively, the manufacturer could have invested the money used to pay the tax and earned a market rate of return during the period between when it paid the tax and when the good is sold along the next step of the production chain.

⁴⁷ For more information, see “Chapter 14—Fuel Excise Tax Credits and Refunds” in Internal Revenue Service, *Farmer’s Tax Guide* (Publication 225), at <https://www.irs.gov/publications/p225>.

⁴⁸ Internal Revenue Service, “About Form 4136, Credit for Federal Tax Paid on Fuels,” at <https://www.irs.gov/forms-pubs/about-form-4136>.

date after a tax-rate increase takes effect; all new inventory subject to tax that is acquired after the new tax becomes effective is then subject to the new tax.

Reporting

Tax liability for most federal excise taxes is reported on IRS Form 720, Quarterly Federal Excise Tax Return. This form is generally due at the end of April, July, October, and January, and reports taxes due the preceding quarter ending March, June, September, and December, respectively.⁴⁹ Most of the excise taxpayers using Form 720 must deposit the tax owed before filing the form with the IRS. Several excise taxes trigger a requirement to file a form in addition to Form 720 (e.g., Form 6197 [Gas Guzzler Tax] and Form 6627 [Environmental Taxes]). Excise taxes on alcohol, tobacco, firearms, and ammunition are filed with the Alcohol and Tobacco Tax and Trade Bureau.⁵⁰

Equity

Economists generally assess tax equity using two measures: vertical equity and horizontal equity. Vertical equity holds that households with a greater ability to pay the tax (i.e., with a higher income) should 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 should actually pay similar amounts in tax. For example, all households earning a particular amount of income would pay the same amount in taxes, regardless of the income's form, in a tax system with perfect horizontal equity.

Note that the excise tax rate on a particular good does not reflect its effects on equity. Even if all consumers are subject to the same tax rate of \$1.00 per unit, the tax cannot be immediately deemed as “equitable” from an economic perspective. The tax’s effects on equity will ultimately be a function of who bears the tax’s burden.

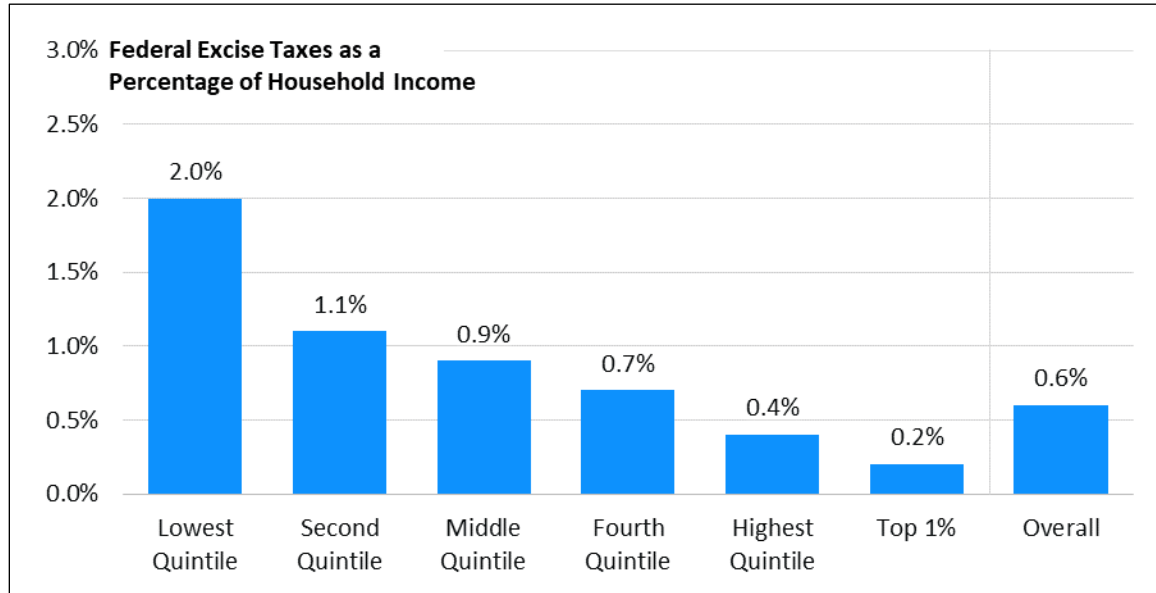
Figure 6 shows the distribution of excise taxes paid in 2018, by average tax rates, as calculated by the Congressional Budget Office (CBO). Average tax rates represent the share of excise taxes paid as a share of pretax income.

⁴⁹ Internal Revenue Service, “Instructions for Form 720,” at <https://www.irs.gov/instructions/i720>.

⁵⁰ See <https://www.ttb.gov/forms> on the Alcohol and Tobacco Tax and Trade Bureau website for forms.

Figure 6. Average Federal Excise Tax Rate by Income Group, 2018

Federal excise taxes as a share of household income before taxes and transfers



Source: Figure created by CRS using data from Congressional Budget Office, *The Distribution of Household Income, 2018*, (published August 4, 2021), at <https://www.cbo.gov/publication/57061>.

Notes: Income groups are created by ranking households by income before taxes and transfers after adjusting for household size. Income includes labor, business, capital, retirement, and other sources of income, as well as the employer portion of payroll taxes. It also includes social insurance benefits, such as Social Security, Medicare, unemployment insurance, and worker’s compensation benefits.

With regard to vertical equity, excise taxes tend to be regressive. The lowest income quintile of taxpayers paid, on average, 2.0% of their income on excise taxes in 2018, whereas the highest quintile of taxpayers paid 0.4% of their income in excise taxes.

The distribution burden of individual excise taxes varies considerably. For example, tobacco taxes are considered to be more regressive because smoking is most common among people with lower income.⁵¹ The federal excise tax on air passenger tickets is less regressive because people with higher incomes are more likely to fly.⁵²

A luxury tax may be less regressive than other forms of excise taxes, but it could be difficult to isolate the burden of such a tax to upper-income households. Middle-income consumers might purchase goods classified as luxuries, such as jewelry or watches. The definition of “luxury” also changes over time. For example, a federal excise tax on telephone calls was first introduced in 1892 as a luxury tax to help finance the Spanish-American War. After several instances of repeal and reauthorization throughout the early 20th century, the tax remained part of the permanent tax

⁵¹ Centers for Disease Control and Prevention, “Cigarette Smoking and Tobacco Use Among People of Low Socioeconomic Status,” 2019, at <https://www.cdc.gov/tobacco/disparities/low-ses/index.htm>.

⁵² Airlines for America, “Air Travel More Accessible in 2017, According to Latest Air Travelers in America Report,” 2018, at <https://www.airlines.org/news/air-travel-more-accessible-in-2017-according-to-latest-air-travelers-in-america-report/>.

code from 1947 until 2006.⁵³ Although one could make the argument in 1892 that telephone calls were luxury services, this was certainly not the case by the latter half of the 20th century.

With regard to horizontal equity, excise taxes have different effects on households with the same level of income. Households that consume the taxed good pay a larger share of taxes out of their current income than households that do not consume the taxed good. Excise taxes can also create horizontal inequities across consumers of a taxed product if unequal tax rates are applied to various forms of that product (e.g., beer vs. wine vs. distilled spirits).

Efficiency

Some excise taxes are intended to affect consumer choices. As such, they reduce economic efficiency by distorting what economists characterize as economically optimal consumer behavior. This distortion could be justified, in economic terms, if there is some sort of market failure whereby the consumer's price does not capture the effect of spillover effects to society that result from consumption of the good or service. Individual consumption of certain goods and services might have negative spillover effects, or externalities, on society. For excise taxes that are intended to compensate for the social costs of certain types of consumption (such as the airplane passenger "September 11 Security Fee," which offsets some costs of Transportation Security Administration security measures), economic theory suggests that the excise tax rate should be set at a level that offsets the negative costs of that consumption to society. If taxes are used this way to reflect the full cost of a particular type of economic activity to society, then excise taxes can lead to a more efficient allocation of resources.

General Behavioral Effects

All types of excise tax have some similar economic effects in a competitive industry.⁵⁴ In the short run, an excise tax increases the price of the taxed product (by some fraction of the tax amount), and the tax burden is shared by producers and consumers. Next, the quantity of the product demanded is reduced. Lastly, the price received by producers for the product is also reduced (i.e., producers receive less for the product posttax compared with pretax).

The exact effect depends on the responsiveness, or elasticities, of demand and supply for the product (i.e., the percentage change in quantity demanded or supplied, respectively, divided by the percentage change in price). The increase in retail price resulting from the tax will be greater as the elasticity of supply increases and the elasticity of demand falls. The effect on quantity will be greater as both the elasticity of demand and the elasticity of supply increase.

⁵³ The federal tax on telephone calls was imposed temporarily from 1892 to 1902 to raise revenue to help finance the Spanish-American War. The telephone tax was temporarily imposed again from 1917 to 1924 to help finance U.S. efforts in World War I. The tax was reintroduced temporarily in 1932 to finance the government during the recovery from the Great Depression, and was temporarily extended until its permanent authorization from 1947 until 2006. For a history of the telephone tax, see Joseph J. Thorndike, "The Phone Tax: Gone but Never Forgotten," *Tax Notes*, June 1, 2006.

⁵⁴ J. Fred Giertz, "Excise Taxes," in *Encyclopedia of Taxation and Tax Policy*, ed. Joseph J. Cordes, Robert D. Ebel, and Jane G. Gravelle, 2nd ed. (Urban Institute Press, 2000). Economists also refer to competitive markets as exhibiting "pure competition," where no single participant (buyer or seller) has enough power to affect the market price of a product. In contrast, sellers in markets characterized by a single or small group of sellers with enough power to affect prices (i.e., a monopoly or oligopoly) may be able to pass more of the cost of the tax along to consumers in the form of higher prices.

In regard to sharing the price burden, the more inelastic the demand is, the larger the share of the tax generally borne by consumers. The more inelastic the supply is, the larger the share generally borne by producers. In cases on either extreme, consumers could bear the full burden if demand is completely inelastic, whereas producers could bear the full price burden if supply is completely inelastic. Put differently, an excise tax on a product with a relatively inelastic demand will have less of an effect on consumption.⁵⁵

Luxury Taxes

Luxury taxes are usually levied to increase progressivity in the tax system or to increase revenue, not on the basis of improving economic efficiency.

A common case study cited in the analysis of luxury taxes discusses the luxury boat industry during the early 1990s. Opponents of the luxury tax argued that the yacht industry experienced drastic reductions in sales following the enactment of a 10% ad valorem luxury tax in the Omnibus Budget Reconciliation Act of 1990 (OBRA90). According to this logic, the imposition of the excise tax was largely to blame for the decline in sales and rise in unemployment in the industry. However, economic analysis indicates that yacht sales were beginning to decline from their peak in 1988 (before the tax), and that sales of yachts were more sensitive to changes in personal disposable income and corporate profits after tax rather than price changes due to the tax.⁵⁶ In any case, the tax was repealed in the Omnibus Budget Reconciliation Act of 1993 (P.L. 103-66).

Sumptuary Taxes

Sumptuary, or sin, tax increases are often based on market failures, relating to *externalized* costs of individual behavior associated with public health, public safety, and additional financial burdens placed on publically financed health services.⁵⁷ In short, studies measuring the respective size of the externalities for alcohol and tobacco involve complicated technical calculations of lifetime external costs and savings associated with alcohol and tobacco consumption that are often subject to controversy and methodological scrutiny. An advanced review of this literature is beyond the scope of this report. Still, studies suggest that the current per-unit tax rates on cigarettes exceed the magnitude of the estimated net externalities, whereas the opposite could be true for alcohol taxes.⁵⁸

⁵⁵ The magnitude of the elasticity is sometimes reported and the negative sign omitted because consumer demand is often negatively correlated with prices. The important factor is if the elasticity is less than or greater than 1. Consumer goods with an elasticity greater than 1 are considered price elastic; less than 1, price inelastic. The elasticity of demand is not necessarily constant along all price points. Economic theory indicates that consumer demand is relatively more inelastic in the short run and with larger changes in price than with smaller changes in price. In the long run, however, elasticity of demand for a product is relatively elastic as consumers adjust their behavior to changes in prices.

⁵⁶ This analysis is contained in out-of-print CRS Report 92-149, *The Effect of the Luxury Excise Tax on the Sale of Luxury Boats*, by Dennis Zimmerman. This 1992 report is available to congressional clients upon request from the author of this report.

⁵⁷ With regard to correcting for negative externalities, regulation can also serve as an alternative (or complementary) policy to taxation.

⁵⁸ For the most comprehensive summary of this analysis, see archived CRS Report 94-214, *Cigarette Taxes to Fund Health Care Reform: An Economic Analysis*, particularly pp. 3-6. The analysis in this CRS report is largely based on the findings of a study commissioned by the RAND Corporation. See Willard G. Manning et al., *The Costs of Poor Health Habits* (Cambridge, MA: Harvard University Press, 1991). For additional information, see Congressional Budget Office, *Federal Taxation of Tobacco, Alcoholic Beverages, and Motor Fuels*, August 1990, p. 47, at <http://www.cbo.gov/sites/default/files/cbofiles/ftpdocs/79xx/doc7951/90-cbo-039.pdf>. These studies were conducted

Behavioral responses to sumptuary taxes vary by consumption good. Demand for beer is not particularly responsive to changes in price (e.g., demand is inelastic). Meta-analyses tend to find the demand for beer is more inelastic (i.e., less responsive) to changes in price than demand for either wine or distilled spirits. However, studies diverge on the question of whether demand for wine is more or less elastic than distilled spirits.⁵⁹ In comparison, CBO estimates the price elasticity of demand for cigarettes to be between 0.3 and 0.7, and that the average elasticity of the number of smokers is 0.3. In other words, a 1% increase in the price of cigarettes results in between a 0.3% and a 0.7% decrease in demand and roughly a 0.3% decrease in the number of smokers.⁶⁰

Compared with a sumptuary tax on a product that is relatively elastic, a tax on a product that is relatively inelastic often results in a higher tax burden on lower-income households (due to the regressive nature of the tax) with a smaller degree of change in consumption.

Benefit-Based Taxes

If properly structured, benefit-based taxes may enhance economic efficiency by reducing the difference between private and social costs. Economic inefficiency often arises because private markets tend to overproduce economic activities that lead to negative social externalities and under produce economic activities that lead to positive externalities, absent government intervention. Economic theory suggests that government intervention can better incorporate social costs into the prices perceived by any one individual. However, it is often difficult to derive the “correct” tax rate that precisely accounts for the marginal social effects of an economic activity.⁶¹

Benefit-based taxes can affect consumer demand for public goods if the link between the tax and the use of the public good is clearly apparent. A lack of a direct link between the tax and the use of the public good could lead to declining revenues available for upkeep and maintenance of the public good. For example, one could argue that the purchase of gasoline does not necessarily lead to wear and tear on federal highways; some of this fuel could be used by drivers who only commute along local roads. Thus, many benefit-based taxes are levied on rough proxies that affect forms of consumption unrelated to the ultimate policy goal.

An alternative policy could include more direct forms of benefit-based taxation, but there could be a trade-off between the targeting precision of a tax and its administrative costs. For example, although a retail tax on gasoline sales might be an imperfect proxy for highway usage, it is less complicated than administering an excise tax based on the weight and mileage of every motor

before further increases in federal, state, and local excise taxes on cigarettes and the 1998 settlements between the major tobacco companies and the states and territories.

⁵⁹ For two examples of studies that indicate that distilled spirits are more elastic than wine, see James Fogarty, “The Demand for Beer, Wine and Spirits: A Survey of the Literature,” *Journal of Economic Surveys*, vol. 24, no. 3 (2010), pp. 428-478; and 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, no. 2 (2009), pp. 179-190. For an example of a study that indicates that wine is more elastic than distilled spirits, see Craig A. Gallet, “The Demand for Alcohol: A Meta-Analysis of Elasticities,” *The 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>.

⁶⁰ Congressional Budget Office, *Raising the Excise Tax on Cigarettes: Effects on Health and the Federal Budget*, June 2012, p. vi, at <http://www.cbo.gov/publication/43319>.

⁶¹ For more discussion of these issues, see Harvey S. Rosen, *Public Finance*, 7th ed. (New York, NY: McGraw-Hill, 2005), p. 93.

vehicle using a federal highway. The costs of the latter form of tax administration might exceed the benefits.

Regulatory and Environmental Taxes

Much like benefit-based taxes, regulatory and environmental taxes are typically imposed on economic activities that generate externalities.⁶² Whereas benefit-based taxes are concerned with an underproduction of some positive externality (e.g., a public good), regulatory and environmental taxes are usually concerned with the overproduction of some negative externality (e.g., pollution). These negative externalities could include losses from damage to plants and animals and to their habitats, rapid deterioration to physical infrastructure, and various harmful effects on human health and mortality. Economic theory indicates that a tax on the marginal production of these negative externalities could be used as a disincentive for harmful production processes and as a means of compensating society for the cleanup and mitigation of those externalities.

In the choice between a tax on pollution (or the regulation of some other activity with negative spillover effects on society) and a total ban on its production, economists generally prefer a tax.⁶³ From an economic perspective, a society's optimum level of pollution is usually not zero; instead, economists look to minimize total costs. For waste disposal, these costs could include residual waste or by-product recycling, input switching to safer materials, production modification, or other technology adoption. Marginal waste disposal pollution costs generally increase with increased waste disposal activities as greater investment in more advanced (and more costly) cleanup technologies and mitigation strategies becomes necessary. Put differently, there may be a point where the cost of eliminating a particular unit of pollution may exceed the benefit. The tax increases the private cost of pollution to reduce the difference between private and social costs.

To achieve optimum economic efficiency, the excise tax rate should be set at a level so that the marginal, private cost of pollution is equal to the marginal, social benefits of production. Economic theory suggests that the tax should be imposed directly upon the activity which gives rise to the negative externality.⁶⁴ The statutory incidence (or burden) of the tax may differ from the economic incidence, because the latter is affected by elasticities. Thus, consumers may bear some or all of the tax through higher prices.⁶⁵

⁶² For more background on environmental taxes, see Maureen L. Cropper and Wallace E. Oates, "Environmental Economics: A Survey," *Journal of Economic Literature*, vol. 30, no. 2 (June 1992), pp. 675-740.

⁶³ In theory, negative environmental and regulatory externalities could be mitigated with policies other than a tax, such as production quotas or tradable permits. Each policy option has its own advantages and disadvantages, particularly with regard to setting the price of the tax or permit or the level of the quota. For a more in-depth comparison of these policies, see A. Lans Bovenberg and Lawrence H. Goulder, *Environmental Taxation and Regulation*, National Bureau of Economic Research, NBER Working Paper 8458, September 2001, at <http://www.nber.org/papers/w8458.pdf>; and Don Fullerton, Andrew Leicester, and Stephen Smith, *Environmental Taxes*, National Bureau of Economic Research, NBER Working Paper 14197, July 2008, at <http://www.nber.org/papers/w14197.pdf>.

⁶⁴ For more information, see Thomas A. Barthold, "Issues in the Design of Environmental Excise Taxes," *The Journal of Economic Perspectives*, vol. 8, no. 1 (Winter 1994), pp. 133-151.

⁶⁵ A more elastic demand (supply) indicates that consumers (producers) are more responsive to changes in price. Consumers absorb a larger share of the tax when producer supply is more elastic than consumer demand.

Appendix. Select CRS Resources on Excise Taxes

Affordable Care Act Taxes

- * CRS In Focus IF10591, *Taxes and Fees Enacted as Part of the Affordable Care Act*, by Sean Lowry
 - CRS Report R44159, *The Excise Tax on High-Cost Employer-Sponsored Health Insurance: Estimated Economic and Market Effects*, by Jane G. Gravelle
 - CRS Report R43342, *The Medical Device Excise Tax: Economic Analysis*, by Jane G. Gravelle and Sean Lowry
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Alcohol

- * CRS Report R43350, *Alcohol Excise Taxes: Current Law and Economic Analysis*, by Sean Lowry
 - CRS In Focus IF10973, *Craft Alcoholic Beverage Industry: Overview and Regulation*, by Renée Johnson and Anthony A. Cilluffo
-

Aviation

- CRS Report R44749, *The Airport and Airway Trust Fund (AATF): An Overview*, by Rachel Y. Tang and Bart Elias
-

Carbon Tax

- CRS Report R45625, *Attaching a Price to Greenhouse Gas Emissions with a Carbon Tax or Emissions Fee: Considerations and Potential Impacts*, by Jonathan L. Ramseur and Jane A. Leggett
-

Coal

- CRS Report R45261, *The Black Lung Program, the Black Lung Disability Trust Fund, and the Excise Tax on Coal: Background and Policy Options*, by Scott D. Szymendera and Molly F. Sherlock
-

Gasoline and Diesel

- * CRS Report RL30304, *The Federal Excise Tax on Motor Fuels and the Highway Trust Fund: Current Law and Legislative History*, by Sean Lowry
 - CRS Report R40808, *The Role of Federal Gasoline Excise Taxes in Public Policy*, by Robert Pirog
-

Guns and Ammunition

- CRS Report R45123, *Guns, Excise Taxes, Wildlife Restoration, and the National Firearms Act*, by R. Eliot Crafton, Jane G. Gravelle, and William J. Krouse
-

Marijuana

- CRS Report R43785, *Federal Proposals to Tax Marijuana: An Economic Analysis*, by Jane G. Gravelle and Sean Lowry
-

Oil Industry

- CRS In Focus IF11160, *The Oil Spill Liability Trust Fund Tax: Background and Reauthorization Issues in the 116th Congress*, by Jonathan L. Ramseur
-

Sea Commerce, Harbor Maintenance, Boating, and Inland Waterways

- CRS In Focus IF11645, *Distribution of Harbor Maintenance Trust Fund Expenditures*, by John Frittelli and Nicole T. Carter
 - * CRS Report RS22060, *The Sport Fish Restoration and Boating Trust Fund*, by Harold F. Upton and M. Lynne Corn
-

Tobacco

- * CRS Report RS22681, *The Cigarette Tax Increase to Finance SCHIP*, by Jane G. Gravelle
 - CRS In Focus IF11941, *Proposed Tobacco Excise Tax Changes in H.R. 5376, the Reconciliation Bill*, by Anthony A. Cilluffo
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