The Evolution of Wealth Transfer Taxes in the United States

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Abstract

Despite growing wealth inequality, estate, inheritance, and gift taxes have fallen out of favor in the United States. In this paper, I investigate this conundrum by collecting historical statutory tax schedule information at the state and federal level, and examine the politics and history of estate tax policies in the U.S. A qualitative analysis suggests that these taxes were pared back as part of omnibus bills – justified by trickle-down economics and incorrect budget surplus projections – that led to ballooning national debt. I also find that policy inertia plays a significant role in state-level tax policies. I further provide a use-case for statutory tax information by developing a tax accounting approach that pinpoints factors that reduce tax liabilities. Using this framework, I find that the marital deduction plays a more significant role in reducing per-estate liability than tax credits or the ever-increasing exemption threshold.

Keywords: wealth transfer tax, inheritance tax, estate tax, wealth tax, state inheritance tax.

JEL Codes: H24, H71.

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1 Introduction

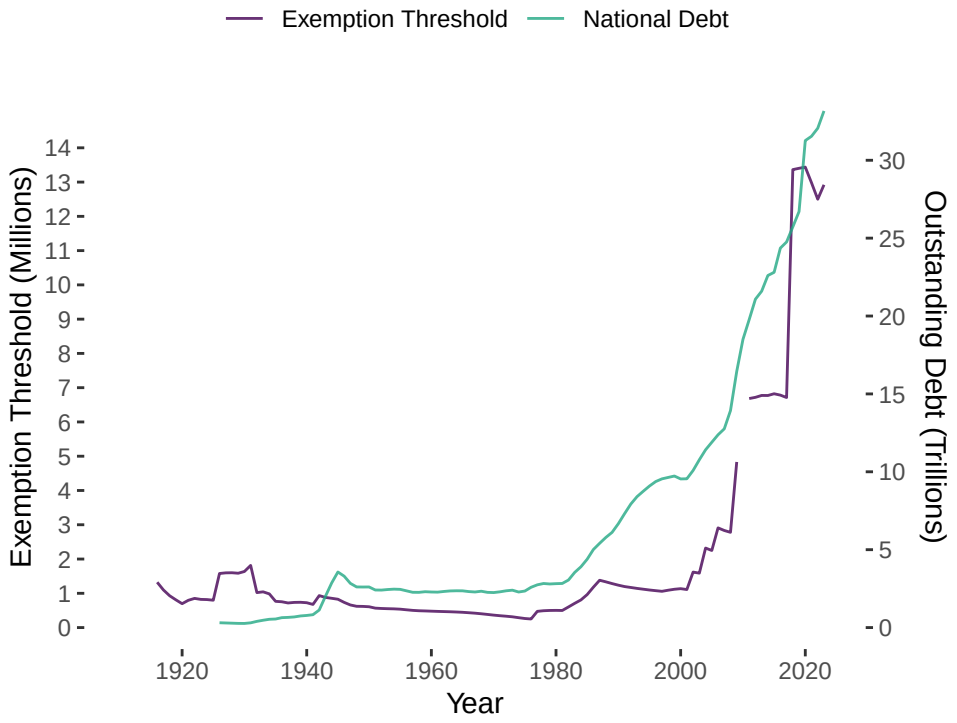
The 2012 U.S. presidential election pales in comparison with many historic milestones and upsets in U.S. electoral history. The 2012 election cycle did, however, bring one seemingly obscure subject to the forefront of the public consciousness: estate taxes. On the topic of estate taxes, the two relatively centrist presidential candidates were on opposite ends of the spectrum. On one hand, incumbent President Barack Obama proposed that the value of estates exempt from the estate tax be lowered – the first decrease since 1926 if it had been implemented – from $5 million to $3.5 million, and the top marginal tax rate be raised by 10% to 45% (Sarji 2011). By stark contrast, Republican candidate Mitt Romney proposed eliminating the estate tax altogether. Moreover, Romney, who was rumored to be worth $250 million at the time (Cohan 2012), was subsequently praised for his estate planning abilities when his strategies to avoid paying $70 million in estate taxes became public knowledge (Goff 2012).

Proponents nicknamed the estate tax the "Paris Hilton tax," while opponents dubbed it the"death" tax and framed the issue as one of widespread double-taxation. The double-taxation narrative gained steam in the general population, despite the tiny number of households – 2 in 1,000 – that would potentially have been subject to the tax at the time, and the even smaller number of households that would be affected by the proposed changes: an additional 1 in every 1,000 estates (CBPP 2018). Support for relaxing (or even abolishing) the estate tax stretched far beyond the realm of those who would have, or even could potentially have, been expected to pay. Opposition for Obama's proposed changes even came from his own party, with Democratic senators citing easily preventable negative consequences as justification (Horsley 2012).

Despite Obama's win in the 2012 election, the current state of the estate tax suggests that either

the Republican framing of the issue carried the day, [1] or that the estate tax debate failed to capture the majority of the public's attention in favor of its own self-interest to an extent that might affect policy. The estate tax was only marginally altered in accordance with Obama's proposal after the election— the top marginal tax rate was increased by 5% to 40% in 2013, alongside a mitigating $250,000 increase in the exemption over 2012 and 2013 (Internal Revenue Service 2013). The current exemption threshold stands at twice the 2013 amount, $11.58 million for individuals ($23.06 million through joint estate planning with married couples), and the top marginal tax rate remains at 40% (Internal Revenue Service 2020).

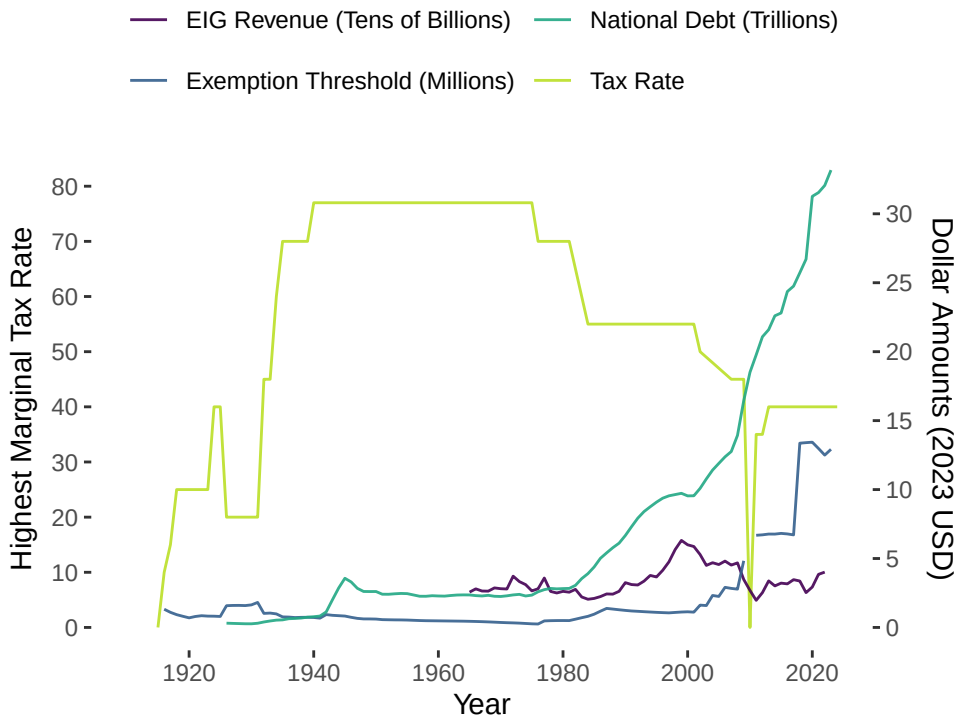
Figure 1: Inflation-Adjusted Exemption Thresholds and National Debt (1913 to Present, 2023 USD)



This is not the first dismantling of the estate tax in the 21st century. Obama's proposal may seem

[1] As evidenced by the use of the "death tax" terminology that still persists with article titles such as"State Death Tax Hikes Loom: Where Not To Die In 2021," "18 States With Scary Death Taxes,""A Guide to Death, Estate, and Inheritance Taxes," and "State Death Tax Chart - Resources," appearing on the first page of Google search results for"state estate and inheritance tax" and "state estate and inheritance tax increases." The only equivalent results indicating a negative bias that appeared for similar searches on income taxes included the term"tax hikes" for potential increases in income taxes, and one article entitled "The price of paradise? Hawaii considers nations highest income tax rate."

Figure 2: Top Marginal Estate Tax Rates and National Debt (1913 to Present, 2023 USD)



radical in light of the Republican framing, but even if they had been enacted in their entirety, the end result would have been a far cry from the magnitude of the estate tax in 2001. As illustrated in Figure 1, at $5.25 million, the 2013 exemption threshold was nearly eight times the 2001 threshold, while the current exemption is twice the 2013 level— a 1,689% increase in the nominal threshold since 2001. Even adjusting for inflation, the 2019 exemption threshold was nearly **12 times** the 2001 threshold— a roughly 1,170% increase in less that two decades. To put the magnitude of the change into context, in the 85 years before 2001 that the modern estate tax was levied, the highest inflation-adjusted exemption ($1.68 million during the Great Depression in 1931) was just under six and a half times the lowest ($269,585 in 1976). This means that the biggest change in real (inflation-adjusted) exemption threshold values prior to the 21st century was a 623% increase over four and a half decades— a 547% lower increase in over twice the amount of time; moreover, the exemption threshold underwent a **4,228% increase** in the last four and a half decades, nearly eight

times the highest increase in the same length of time. These drastic increases are not limited to the exemption threshold— as evidenced in Figure 2, at 40%, the top marginal tax rate since 2013 is 15% lower than in 2001, when it was already 22% lower than it was at its peak just two and a half decades earlier in 1975. The 2013 top marginal rate was, therefore, **nearly half** the 1975 rate.

These cuts to the estate tax cannot be chalked up to a diminishing fiscal need for the resulting revenue. As illustrated in Figures 2 and 1, while the estate parameters were being relaxed, the federal debt (2019 USD) steadily ballooned from $2.79 trillion in 1976, to $8.42 trillion in 2000, all the way to $26.95 trillion in 2020. The estate tax, which at its highest in 1999 contributed $44.15 billion (2019 dollars) to the federal budget, and accounted for 3.029% of the federal budget in 1977 has now been reduced to a contribution of under 1% of the federal budget in 2019 or $19.20 billion.

The loss from not reinvigorating the estate tax has been considerable: the changes proposed by Obama in 2012 were projected to generate $133.6 billion (2019 USD) in revenues within a decade, or 2% of the inflation-adjusted increase in national debt 2012 and 2019 (Bureau of the Fiscal Service 2020; Horsley 2012). Moreover, estimates of the amount of revenue lost between 2018 and 2027 as a result of just the 2017 increase in exemption thresholds range between **$83 billion and $1.9 trillion** (CBPP 2018)— an estimated loss of **0.3% to 7%** of the national debt in 2020 from the 2017 exemption increase alone. Compounding this counterintuitive series of events is the fact that, while 7% of households could have theoretically been subject to the estate tax in 1998, holding the exemption threshold constant and adjusting for inflation, 12% of households would have been theoretically eligible for the estate tax in 2016. This indicates that if the exemption threshold and top marginal tax rate were restored to their 1998 values, the estate tax could have contributed even more to the 2016 federal revenue than it did at its peak of $56.63 billion in 1999.

The rapid relaxing of the estate tax raises several questions about its contribution to federal revenues: how much revenue has been lost as a result of each relaxation of the tax beginning in 1976? What effect does changing the exemption threshold or top marginal rate on revenue (that is, what is the elasticity of revenue in each parameter)? What is the intended purpose of the estate tax and what changes in the tax structure would optimally serve this purpose? Answers to these questions become extremely tough to pin down when considering dynamic and general equilibrium responses to counterfactual scenarios. Such considerations include the effects of behavioral responses to changes in policies, the hypothetical wealth distribution that would have resulted from persistently high estate taxes, the extent to which the ”value” or price of wealth assets would be altered in the absence of policy changes made over the last several decades, and the interaction between these factors and others. This paper does not attempt to answer all these questions, but it does outline several details that warrant consideration, and attempts to offer simplified estimates with a model that can be expanded to include these complicating details.

The fiscal puzzle of ballooning debt alongside lower estate taxes is not limited to federal policies. While all U.S. states once imposed an estate, inheritance or gift tax in some form, [2] only 17 states and the District of Columbia currently have an estate (or equivalent) tax, down from 19 states and D.C. in 2010, and all 50 states and D.C. in 2001 (Michael 2010). A partial explanation for this drastic change is the repeal of state estate tax credits at the federal level. The state estate tax credit was a dollar-for-dollar credit for state estate taxes of up to a top marginal tax rate of 16%, which formed the basis for the estate and inheritance taxes in 38 states in 2001. EGTRRA gradually revoked this credit, which was completely eliminated in 2005. Since many states had their own estate taxes tied directly to the maximum amount allowed under this credit (known, therefore, as

[2]Together, these form the category of “transfer taxes.” See the next section for definitions.

a “pick-up” tax), estate taxes were effectively revoked by 28 states with the expiry of the credit. Moreover, four additional states repealed their estate taxes.[3] This is a confounding pattern given that several states in dire financial straits did not act to retain an estate or inheritance tax. According to a 2018 survey ranking the economic management of states (Stebbins 2018), the five”worst managed states,” as determined by unemployment, the ratio of funded pensions, one-year GDP growth, poverty rate, and credit rating are West Virginia, Mississippi, Alaska, New Mexico, and Louisiana, none of which have an estate tax. Reinstating the tax with an exemption threshold of $1 million could raise between $10 million (Arkansas) and $60 million (Louisiana) in revenues for these states. Moreover, and reinstating it with a $5.43 million exemption could raise up to $30 million (Louisiana) in tax revenues (McNichol 2018). Moreover, given that the estate tax may be an effective tool to combat inequality (Freund 2016), it is doubly confounding that Louisiana, the third most unequal state (Martin 2018), does not levy an estate tax, regardless of any political or logistical hurdles.

While it is clear that there has been a sharp increase in the federal exemption threshold, the same cannot definitively be said for state estate taxes. The estate tax structure itself does not provide enough information to draw conclusions about the effects of the estate tax on taxpayers. Similarly, several questions about state-level estate tax trends may arise: how high or low are the current estate taxes as compared to previous years? Do states gradually phase out the estate tax before it is repealed? If so, are low estate taxes an indicator of the tax having fallen out of favor? How many of the states with estate taxes at present also levied an estate tax over and above the federal credit prior to its repeal? State-level estate taxes are substantially different as compared to federal estate taxes. The analysis is complicated by the extent to which less prominent tax parameters vary, for

[3]Arizona initially allowed the tax to expire, but subsequently enacted a repeal)

instance, credits and deductions related to specific assets, or when exactly spousal transfers were made exempt from the tax.

This paper contributes to the existing literature by presenting trends discerned from a newly compiled data set of state estate taxes (other similar data are not publicly available and typically not in data set form— see section two for details) and offering insight into the tax parameters that most reduce estate tax liability. The results suggest that while the exemption threshold has been skyrocketing, which undoubtedly erodes the tax base, the unlimited marital deduction is the biggest factor in reducing tax liability for estates. This paper additionally tracks the evolution of estate taxes by detailing the institutional background of estate taxes in the U.S., as well as trends in the tax structure over time. The first section explains the three main types of wealth transfer taxes, including the estate tax. The second section discusses the historical context of state estate taxes in the United States. The third section presents the process of data gathering and the subsequent issues. Section four summarize the newly compiled data. Section five describes a very simplified model for estimating the effects of estate tax parameters on tax liability, and section six details the results from the model.

2 Types of Transfer Taxes

The estate tax is one of three taxes that are commonly levied on property upon its transfer from one person to another (thus known as transfer taxes). Since there are several ways in which property may be transferred, these taxes have grown to become complex and interconnected, partially as a result of policies combatting avoidance measures. The three main types of modern transfer taxes are as follows (please note that these are not set definitions, and are sometimes used interchangeably

for ease and accessibility):

1. Estate Tax: Tax based on the value of an individual's entire estate (contingent on the value of the estate exceeding the exemption threshold) upon death. The estate tax may be levied as a flat tax (one tax rate for estates of all values) or a marginal tax (tax rates increase with the value of the estate).

2. Inheritance Tax: Much like the estate tax, the inheritance tax is imposed upon death. However, the tax is not levied upon an entire estate, but rather on individual recipients. The exemption threshold, therefore, may be defined either by the value of the whole estate, or by an individual's share, depending on the state. Frequently, rates and exemptions are based on the extent of familial ties between the decedent and recipient. Close relatives typically face more lax tax rates and/or exemptions, while unrelated individuals are required to pay more in taxes.

3. Gift Tax: The gift tax is typically imposed upon an "inter-vivos bequest" (transfer during one's lifetime rather than upon the event of one's death) that is valued above a given threshold. Gift exemption thresholds may be determined per "donor" (the individual who relinquishes ownership of the property), recipient, or donor-recipient pair (set amount that a given individual can transfer to another given individual). The exemptions may further apply per bequest, annum, or a given number of years.

    - Unified Transfer Taxes: Gift taxes are said to be "unified" with estate and/or inheritance taxes if the two types of taxes are treated in the same manner with the same rates and exemption thresholds being applied to both types of taxation.

- Integrated Transfer Taxes: Gift taxes are said to be "integrated" with estate and/or inheritance taxes if inter-vivos bequests are included in the evaluation of the estate or inheritance for a given number of years prior to death.

3 Stylized Facts: The Evolution of Transfer Taxes in the United States

3.1 Federal Estate Taxes

3.1.1 Stamp Tax of 1797

The Stamp Tax of 1797 levied taxes on federal stamps that were required to legitimize a wide range of administrative documents such as wills. Inheritances of $50 or more were also taxed, but close relatives were exempt. The tax aimed to raise revenues for a war with France, and was repealed in 1802 (Jacobson, Raub, and Johnson 2007, 119).

3.1.2 Revenue Act of 1862

Stamp duties and transfer taxes were reintroduced in the years leading up to the Civil War. A proportional inheritance tax was levied on all recipients other than spouses, and applied to all estates of over $1,000. The tax rate ranged from 0.75% for close relatives to 5%. Graduated stamp duties were also imposed based on the size of the estate. Transfers of real estate and gifts were also taxed starting in 1864. Higher tax rates ranged between 1 and 6%. After raising roughly $15 million in revenue, the tax and stamp duties were both repealed by 1872 (Jacobson, Raub, and Johnson 2007, 119).

3.1.3 War Revenue Act of 1898

Taxes were once again introduced to fund a war, this time the Spanish-American War. Given that the U.S. did not effectively tax newly wealthy industrialists, the War Revenue Act of 1898 levied inheritances taxes on estates consisting of personal property valued at over $10,000. However, they were repealed soon after in 1902 Tax rates were based on both the degree of relationship between the decedent and the recipient, as well as the size of the estate, and ranged between 0.75 and 15%. The taxes raised about $14 million in revenue, in a much shorter time frame than the 1862 taxes (Jacobson, Raub, and Johnson 2007, 120).

3.1.4 1916 to EGTRRA: The Modern Estate Tax

Intended to address the increasing concentration of corporate wealth, the Revenue Act of 1916 introduced estate taxes in their current form, with exemptions based on estate size and progressive tax rates (Jacobson, Raub, and Johnson 2007, 120). Several changes were made to the estate tax over the 20th century. Select changes are described below.

Gift taxes were introduced in 1924, repealed, and reintroduced in 1932. Numerous changes were made to the tax base, to include life insurance for instance, and changes were made to how estates were valued (Jacobson, Raub, and Johnson 2007, 121).

In 1976, legislation was passed to close two estate tax "loopholes." First, the Generation-Skipping Transfer Tax was introduced, which taxed any trusts that paid income to one's children but were paid out to one's grandchildren upon the death of the children (Jacobson, Raub, and Johnson 2007, 123). Given that gift tax rates were much lower, estates circumvented taxes by making use of inter-vivos transfers (Jacobson, Raub, and Johnson 2007, 122). To combat this, the gift and estate

taxes were "unified" in 1976, so that one total exemption threshold and the same tax rates would be applied to both. The gift exemption of $30,000 and the estate exemption of $60,000 were merged to form a single exemption of $120,667 (Keydel 1982, 22). The top marginal tax rate was reduced from 77% to 70%.

The Economic Recovery Tax Act (ERTA) of 1981, was passed as part of a sweeping tax cut package. The act was fueled by supply-side economics, which argued that tax cuts would spur economic growth (Schweikart, Larry 2023). The act introduced the unlimited marital deduction in 1981, which allowed spouses to transfer property to each other without incurring any estate tax (Jacobson, Raub, and Johnson 2007, 121). A gradual increase of the exemption threshold from $175,625 in 1981 to $600,000 in 1987 was also introduced, alongside a decrease in the top marginal tax rate from 70% to 50% over the same time period (Keydel 1982, 25). However, the top marginal tax rate was fixed at 55% in 1984.

As with ERTA in 1981, EGTRRA was an omnibus bus bill that included sweeping tax cuts. It was introduced because of projected budget surpluses, but marked a turning point after which budget deficits began to balloon (Horton, Emily 2017). EGTRRA rolled back the revenue potential of the federal estate tax in a number of ways. The most significant changes included a gradual exemption increase to $3.5 million alongside a lower top marginal tax, which was to be reduced to 45% by 2009, culminating in no estate taxes for decedents dying in 2010. EGTRRA provisions would then expire after 2010, thus restoring the exemption to $1 million and the highest marginal tax rate to 55% (Jacobson, Raub, and Johnson 2007, 124). Subsequent action was taken to prevent the estate tax from returning to its 2001 level after 2010, which made the reductions permanent.

3.1.5 2010 to Present

The Tax Relief, Unemployment Insurance Reauthorization, and Job Creation Act of 2010 (TRUIR-JCA) retroactively extended the 2009 provisions from 2010 through 2012. The exemption was set as $5 million (annually adjusted for inflation) and the tax rate was set at 35% (Urban-Brookings Tax Policy Center 2024b). The American Taxpayer Relief Act of 2013 (ATRA) made the estate tax permanent with an exemption of $5 million and a top marginal tax rate of 40%. It also permanently eliminated the state estate tax credit (IRS 2013; Urban-Brookings Tax Policy Center 2024c).

The Tax Cuts and Jobs Act (TCJA) was passed in 2017, doubling the estate tax exemption threshold to $11.2 million for single taxpayers, and $22.4 million for married couples (Urban-Brookings Tax Policy Center 2024a). The TCJA raised several concerns ranging from the massive additional loss of revenue (as mentioned in the introduction) to the loss of progressive tax on wealth in a time of increasing wealth concentration (Beebe 2018).

3.2 State-Level Estate Taxes

3.2.1 State Transfer Taxes: 1800s to 1920

Beginning in the mid-nineteenth century through the early twentieth century, states introduced transfer taxes. The rationales for levying transfer taxes were wide-ranging, from raising revenue to beliefs of fairness and patriotism. Nevertheless, attempts to levy these taxes were often met with resistance, and tended to spur judicial challenges. Lawsuits would often lead to amended interpretations of the law, or, frequently, the striking down of a law as unconstitutional (Huebner 1904, 529–40). For instance, in 1894, Ohio attempted to pass an inheritance tax for which the amount of tax would be determined by the value of the estate overall, but levied upon individual

heirs; the tax was deemed discriminatory by the courts and voided (Huebner 1904, 536–37). However, legislatures began modeling taxes after structures that proved more successful in other states (Huebner 1904, 538). By 1920, when the federal government levied the estate tax, 45 U.S. states had some transfer tax. More often than not, these were inheritance taxes based on familial relationships (Spencer, Trask & Co. 1920, 1). A rough outline of the evolution of transfer taxes between the late 1800s and the early 1900s is presented in Table 2.

Table 2: Select Features of Historical State Transfer Taxes

Time Period	Characteristics of Corresponding Transfer Taxes
Early to late 1800s (Huebner 1904, 530)	Starting with Pennsylvania is 1826. Generally flat fee or tax on non-lineal relatives. Top rate of 10%.
1880s to 1890s (Huebner 1904, 531)	Rates decreased and more relatives were exempted. More graduated rates based on estate size and familial ties. More judicial challenges and more repeals. Attempts to tax direct descendants and levy progressive taxes (p. 534). Individual exemptions determined by estate size rather than individual share. Top tax rate of 5 per cent (Pennsylvania in 1885, only New York and Connecticut in 1890).
1900s (Huebner 1904, 544)	More states levying transfer taxes. Taxes more progressive and applying to direct descendants. Lower exemptions determined by estate size. Transfer taxes were a growing source of revenue, much higher top rates.
1920s (Spencer, Trask & Co. 1920, 1)	Forty-five states with transfer taxes. Taxes based on relationship and usually progressive. Preferential treatment for surviving wife, parents, and direct descendants.

3.2.2 Modern State Estate Taxes

3.2.2.1 Logistics of Contemporary State-Level Transfer Taxes

State estate taxes are incurred either because property is physically located within the state, or because the decedent (or recipient, in the case of inheritance taxes) was domiciled in the state at the time of death. States tend to provide credit for assets that are taxed in other states (Moretti and Wilson 2019, 7).

Some assets are not subject to taxation, such as transfers to spouses, which have been tax-free in most states since 1976, or charitable bequests. Valuation of certain assets is one way in which estates may appear smaller than the fair market value (expected price of the asset in an open market), especially when privately owned companies and art work, for instance, are concerned (Moretti and Wilson 2019, 8).

3.2.2.2 Federal State Estate Tax Credit

The federal government became involved in state level estate taxes as a result of interstate competition, spurred on by Florida – one of only two states in the country without an estate tax – and its pursuit of wealthy older residents. The federal government thus stepped in a dollar-for-dollar tax credit fixed at 80% of 1926 federal estate tax rates (Table 4). States could either claim this credit by levying a state-level estate or inheritance tax, or leave potential tax revenue on the table, which provided strong incentive to levy a transfer tax. By 1987, all states had transfer taxes that would allow them to claim the federal credit (Lohman 2009).

As demonstrated in Section 5, several states took steps between 1987 and 2000 to directly tie their transfer taxes to federal state credit schedule, including automatic adjustments to exemption thresh-

olds.

However, as indicated in Section 1, EGTRRA gradually revoked the state credit, with no state credit offered for deaths from 2005 onward. Instead, a far less generous state estate tax deduction would be offered. Several states decoupled their estate taxes to make them independent of the federal state transfer tax credit. EGTRRA also stipulated that the estate tax exemption would be increased to $3.5 million with a marginal tax rate of 45% in 2009, then be repealed for decedents dying in 2010. EGTRRA provisions would then expire after 2010, restoring the exemption to $1 million and the highest marginal tax rate to 55%. Given that the EGTRRA provisions had an expiration date, twenty-five states had dormant estate taxes. However, subsequent legislation first extended the EGTRRA provisions through 2012, then eventually made them permanent.

Once it was clear that the provisions would not be expiring, three states, Hawaii, Illinois and Delaware, re-imposed estate taxes for 2010 and 2011. Several states that decoupled their estate taxes from the federal credit added contingencies to their tax policies, in case the EGTRRA provisions expired. Since the credit was never restored, twenty-five states lost their estate taxes. However, five of these twenty-five states kept their inheritance taxes (Francis 2012).

3.2.3 1970s to Present: Expansion and Contraction of State Transfer Taxes

Table 3: 1970s to Present: Expansion and Contraction of State Transfer Taxes

Study	Area of Focus	Relevant Findings
	Period: Post-EGTRRA	

Study	Area of Focus	Relevant Findings
Michael 2003	State Responses to EGTRRA as of December 2002	• 24 states with "pick-up" taxes only passed along EGTRRA's provisions to taxpayers, either by default or formal action. • 6 states with pre-existing additions to "pick-up" taxes ("stand-alone" taxes) allowed the federal changes to flow through; NH rolled back its stand-alone tax, and CT and LA scheduled expiration dates. • 9 states took legislative action to block the EGTRRA reductions; the most common measures were decoupling and allowing higher exemptions.

Study	Area of Focus	Relevant Findings
Michael 2004	State Responses to EGTRRA	EGTRRA triggered major legislative activity. Responses included: • non-response (automatic federal conformity or pre-existing stand-alone laws); • adopting estate-tax laws with automatic federal updates; • adopting laws *without* automatic updates; • fixing conformity to a static federal date; • temporary estate/inheritance taxes with a scheduled repeal; and • outright repeal. Inaction in some states was tied to constitutional-amendment hurdles needed to decouple.

Study	Area of Focus	Relevant Findings
Michael 2006	Status of State Estate, Inheritance, and Gift Taxes Five Years After EGTRRA	• Widespread reduction or repeal of state-level EIG taxes. • Repealed taxes were rarely reinstated (WA voters decisively kept their tax). • Exemption–credit interactions created a spike in the marginal rate just above the exemption. • States without gift taxes developed loopholes. • Repeal of state transfer-tax credits intensified interstate tax competition.
Michael 2009	Survey of Estate and Inheritance Taxes as of 2008	• 14 states + DC had estate taxes only. • 6 states had inheritance taxes only. • 2 states imposed both. • 2 states levied gift taxes. • 4 states had sunset dates after 2008. • 28 states levied no estate or inheritance tax.

Study	Area of Focus	Relevant Findings
Michael 2010	Survey of State Transfer Taxes as of 2010	Changes since 2009: +DE, +HI, –IL, –NC, –VA, –KS, –OK. 11 states + DC had estate taxes; 6 had inheritance taxes; 2 had both.
Post-EGTRRA Extension (TRUIRJCA): Policy Proposals for 2013		
Maguire 2012	Impact of Federal Estate Tax on State Estate Taxes (2011 status)	Changes since 2010: +IL, +ME, +NC (no gift-tax or inheritance-tax changes). 22 states had at least one EIG tax. Post-EGTRRA, extra burdens fell on estate taxpayers, fueling lobbying against state transfer taxes. Exemptions: $338,333–$5,000,000; top marginal rates: 7–19%.
Francis 2012	Fiscal Impacts of EGTRRA and Subsequent Policies	Change since 2011: –OH. 15 states had active estate taxes; 25 had dormant ones. Exemptions: $338,333–$5,000,000; top marginal rates: 7–19%.
Post-ATRA		

Study	Area of Focus	Relevant Findings
ITEP 2014	Survey of Estate and Inheritance Taxes	• 5 states had inheritance taxes only (–IN since 2011). • 25 states had dormant estate taxes. • No estate-tax changes since 2012. • Exemptions: $338,333–$5,000,000; top marginal rates: 7–19%.
Michael 2014, 2015	Survey Update	• 1 state still levied a gift tax (–TN since 2011). • No estate- or inheritance-tax changes relative to 2014.

Post-TCJA

Michael 2018a, 2018b; Burman, McClelland & Lu 2018	Survey Update	• 13 states had estate taxes (–DE, –NJ since 2015). • 5 states had inheritance taxes only (–TN, +NJ since 2015). • No change in state gift taxes.

Study	Area of Focus	Relevant Findings
TPC 2020	Estate-Tax Policy Brief	• 11 states + DC levy estate taxes only (CT, DC, HI, IL, ME, MA, MN, NY, OR, RI, VT, WA). • 5 states levy inheritance taxes only (IA, KY, NE, NJ, PA). • Maryland levies both estate and inheritance taxes. • Connecticut also imposes a stand-alone gift tax.

4 Data Collection and Sources

4.1 Transfer Tax Parameters

4.1.1 2000s and 2010s

In the majority of cases, tax tables for the last decade are available directly through online estate tax forms for each state. However, in some cases, this proves to be a bit more complicated. For instance, New Jersey repealed its estate tax after 2017. However, for 2017, estate taxes were calculated with the use of an excel calculator. To find the underlying calculation in an appropriate manner requires a close reading of the New Jersey tax code and the stipulations provided on the New jersey Division of Taxation website.

State-level data since 2005 is now available through the G.C. Wealth Project (Morelli et al. 2023).

4.1.2 1800s and 1900s

The data collection process was more complicated for older estate tax laws. For some states, several changes have been made to estate taxes, which makes it challenging to track down the original laws for inheritance and estate taxation. Moreover, some states do not have good online records of statutes, while some have none that go further back than the 1990s. In some cases technical briefs and department of revenue (or equivalent departments) documents offer a historic overview of taxes, but these are rarely specific enough to translate into data. In cases where tax forms and laws were unavailable, secondary sources such as research papers from the 1800s contained some spotty information, but occasionally provided remarkable detail for a handful of states. The constant fluctuations with taxes being introduced and subsequently repealed or struck down, however, makes it difficult to be entirely certain. Additionally, with the exception of Utah in 1904[4] and Louisiana from 1828 to 1896 (not including 1878 to 1893),[5] most states retained inheritance taxes until they switched to pick-up taxes and for some time after, so tracking the time-line of these changes can be challenging, especially when the online record-keeping is not thorough (which it tends not to be for the entire time period in question for every state).[6] Moreover, there is substantial variation in how states adapted to the federal tax credit. Some states simply switched from their own transfer taxes to an estate tax that depended entirely on the state credit (pick-up tax), while others retained their own inheritance taxes in addition to a pick-up tax. While most states have shifted away from inheritance taxes over time, six states still have an inheritance tax. Maryland

[4] Utah had an estate tax in 1904.
[5] For this time period, Louisiana had a residence-based inheritance tax, residents were exempt.
[6] Ohio is a notable exception.

levies an estate tax as well as inheritance tax. This is especially worth mentioning because inheritance taxes are significantly more challenging to document. Inheritance categorize recipients of bequests by familial relationship, and the various categories do not necessarily overlap. Typically, the decedent's children and spouse are assigned the lowest rates or are exempt altogether, but this is not always the case. For instance, Delaware in 1904 only taxed bequests to "strangers in blood," which means that if part of an estate was left to an estranged child, it would be subject to taxation (Huebner 1904). Moreover, several states treated adopted children or step-children differently as compared to "lineal descendants (Spencer, Trask & Co. 1920)." Given these discrepancies, any comparisons between more recent estate taxes and inheritance taxes from the late nineteenth and early twentieth centuries must be based on hypothetical projections.

The vast majority of state-level estate taxes are linked to the 1926 federal credit table. As indicated in Table 4, the estate tax brackets start at $40,000, while states have their respective exemption thresholds set at much higher amounts. This may render some of the estate tax brackets futile, depending on how the proportion of the estate taxable within a state is calculated. Moreover, several states that do not make use of this table still utilize some of its elements. Further descriptions of data and are presented in the next section. Since I am only presenting data about estate taxes for the purposes of this paper, the sources are confined to state tax forms and state statutes.

4.2 Transfer Tax Revenues

There are two main measures of revenue for three units of government presented in this paper. The two measures are estate and gift tax revenue in U.S. dollars, and percentage of total tax revenue (for the specified unit of government) coming from estate and gift taxes. The three units of government

Table 4: Federal Credit for State-Level EIG Taxes: Full Schedule

(1)	(2)	(3)	(4)
Adjusted Taxable Estate...		Maximum Credit...	
Over...	But Not Over...	Credit on Amount in (1)	Rate on Amount Over (1)
$0	$40,000	$0	0.0%
40,000	90,000	0	0.8%
90,000	140,000	400	1.6%
140,000	240,000	1,200	2.4%
240,000	440,000	3,600	3.2%
440,000	640,000	10,000	4.0%
640,000	840,000	18,000	4.8%
840,000	1,040,000	27,600	5.6%
1,040,000	1,540,000	38,800	6.4%
1,540,000	2,040,000	70,800	7.2%
2,040,000	2,540,000	106,800	8.0%
2,540,000	3,040,000	146,800	8.8%
3,040,000	3,540,000	190,800	9.6%
3,540,000	4,040,000	238,800	10.4%
4,040,000	5,040,000	290,800	11.2%
5,040,000	6,040,000	402,800	12.0%
6,040,000	7,040,000	522,800	12.8%
7,040,000	8,040,000	650,800	13.6%
8,040,000	9,040,000	786,800	14.4%
9,040,000	10,040,000	930,800	15.2%
10,040,000		1,082,800	16.0%

are federal, state-level, and all levels.

The federal revenue figures for 1974 onward are from the Organisation for Economic Co-operation and Development's (OECD's) database of revenue statistics, as are the aggregate state revenue figures after 1964. The OECD revenue data for recent years is collected on an "accrual basis" (the

year in which the tax is incurred), while earlier data (pre-1990) is on a"cash basis," which implies that the revenue is recorded for the year in which it was collected. Refunds are deducted from gross collection amounts. The federal revenue figures before 1974 were obtained using the IRS's Statistics of Income (SOI) Annual Report Archive. The OECD's federal revenue value is replicated by taking the Gross Collections for Estate and Gift Taxes and subtracting the annual Estate and Gift Tax refunds (minus interest paid on refunds).[7] [8] Federal revenue amounts before 1935 are gross amounts that do not account for refunds.[9] For most years refunds amounted to less than 12% of the gross collections with four outliers of up to 30% between 1935 and 1973.

The aggregate state revenue statistics for all states for 1972 and before, as well as the revenue figures for individual states are from the U.S. Census Bureau's historical data from the Annual Survey of State Government Tax Collections (STC) for the years 1913-2019. The OECD data for states is additionally used to supplement gaps in the STC survey. The data includes revenue data by state by source. Data from all years that include estate and gift tax revenue as a source[10] is included. The data from the STC for total revenue from all state governments is within $0.01 billion of the OECD data. There is no obvious explanation. However, one possibility is a difference in the definition of the variables between the two databases. The sub-sector of government in the OECD data that most closely replicated the desired state-level government data is the unit called "state/regional governments." The OECD defines this as any unit of government that exercises authority at a level below that of, and substantially independent from, the central or federal government (the OECD appears to define this based on geographic domain, ex. states or provinces being a subset of a country, as

[7]The reason for this exclusion is unclear

[8]This calculation was verified for the years 1974 through 1976.

[9]Refunds by source not specified in the annual report before 1935.

[10]Called "Death and Gift Tax" in the database, code T50.

opposed to political subservience) while still encompassing smaller sub-units or localities (OECD 2020b). This includes D.C. and U.S. territories, while data from the STC only includes official U.S. states. The database does, however, include some data for territories that were admitted to the Union during the years spanned by the database, typically for a few years leading up to the territory's admittance.

It is worth noting, however, that the percentage of total aggregate state-level tax revenue coming from estate and gift taxes from the OECD data did not match up with the values resulting from calculations on the STC data. In order to add this data, the values will need to be compared after adjusting for differences in definition between the two datasets.[11] Revenue data for all levels of government between 1927 and 1960 are also from the Census Bureau's Governments Division as presented in (United States Advisory Commission on Intergovernmental Relations 1961). The share of revenue at various levels of government is calculated using data from the previously mentioned sources.

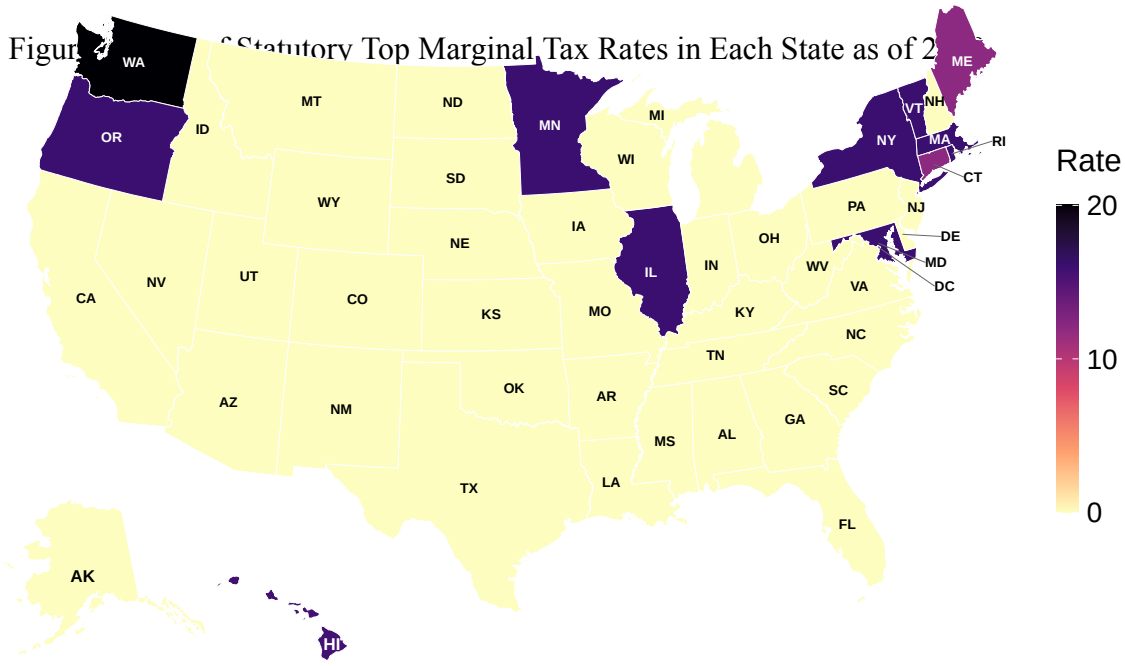
5 Transfer Tax Trends

5.1 State-Level Trends

Changes in estate tax rates and thresholds have been varied among states. Estate taxes started off generously with few people crossing the exemption threshold. While the expectation might be that estate tax rates have fallen post-EGTRRA, this is not always the case. In fact, some states have enacted more stringent estate taxes in recent years. In several cases the data includes information

[11] The most straightforward way to harmonize the datasets will be to add data for D.C. and U.S. territories to the STC dataset.

Figur[illegible] Statutory Top Marginal Tax Rates in Each State as of 2[illegible]



for all years in which states levied estate taxes. However, the data below does not include any prior or concurrent state inheritance taxes.

As mentioned in the last section, the state transfer credit rates had not changed since they were first implemented in 1926 until they were eliminated in 2004. Therefore, with inflation, the rates are bound to be more progressive over time. Given this, the exemption thresholds and the post-EGTRRA period are perhaps more indicative of the legislative intents behind the state of the estate taxes.[12] As was the situation before 1926, it is likely that states feel competitive pressure from lower estate taxes in other states. However, as mentioned previously, estate taxes are a political issue. Right and right-leaning states are more unlikely to have retained the estate taxes in the first place, and left and left-leaning states tend to impose higher taxes. Therefore, the desire to be competitive is likely in tension with the left-leaning ideology of states that have retained the estate tax. As a result, the reactions of states post-EGTRRA may also signal the priorities of the legislatures,

[12]It is, however, not necessarily the case that pickup taxes are based solely on the federal credit table, as is the case with Ohio.

as well as the populations of the states. For instance, states that are more left-leaning will likely have populations that are younger, while states that want to be competitive are likely to have older, wealthier populations. Both are likely to have populations with higher educational achievement. Moreover, given the discussion in the previous section about states doing away with estate taxes as a result of lobbying, high inequality may also further indicated an increased incentive for the rich to lobby legislatures to repeal estate taxes. By the same token, however, higher inequality may also signal to lawmakers that more stringent estate tax systems are required.

Two out of the three states that have either maintained or strengthened their estate taxes since 2000 appear to have done so predominantly through policy inertia, as opposed to active legislative changes: both Massachusetts and Oregon decoupled their exemptions from the federal exemption before the major decreases in EGTRRA. The notable exception is Washington, which initially allowed its exemption threshold to increase in accordance with the federal credit, but subsequently decreased it to the inflation-adjusted 2000 level by 2014. Since then, however, it has only been adjusted for inflation, further signalling a degree of policy inertia. Washington also increased it top marginal tax rate from 16% in 2001 to 20% by 2014.

Crucially, income and wealth are not the same. State demographics may also substantially interact with wealth. For instance, research has indicated that there is a substantial gap in home ownership rates between White populations and Black populations in the United States. White populations between the ages of 18 and 34 are also more likely to own homes as compared to the same ages of Black, Hispanic, and Other populations. The evidence also suggests that this disparity is, in part, the result of ancestral home ownership and the inheritance of homes from one generation to the next (Choi, McCargo, and Goodman 2019; Choi and Goodman 2018). It is, therefore, possible that

the racial composition of a state, insofar as it captures some aspect of wealth that is not reflected in income, may explain a state's response to EGTRRA. However, it is also possible that states with more homogeneous populations are likely to be less hostile towards redistribution and welfare policies, as might be the case with relatively White, median income states such as Minnesota and Oregon, as detailed below.

The rest of this section summarizes estate taxes by state for all states that have levied estate taxes since 2010. Each state has two accompanying graphs displaying estate tax thresholds (vertical lines) and the statutory marginal tax rate schedules (horizontal lines for flat tax rates or step functions otherwise); the graphs display this information for three points in time: (1) the first year for which estate tax information is available for the state (frequently the year in which estate taxes were first enacted), (2) the year 2000 to illustrate the tax structure before EGTRRA was enacted, and (3) the year 2018. For states that have repealed the estate tax, the graphs also include the thresholds and rate schedules for the last year in which the estate was levied.

A summary of the changes in estate tax rates and thresholds, as well as state demographic data is presented in Table 5. Median income, racial composition, and education are from the Census Bureau for 2013 to 2017, and median age, and Gini coefficient are from Data USA for 2017 (Census, n.d.; Data USA, n.d.).[13]

5.1.1 Connecticut

Connecticut switched to the estate tax in 1931. From 1931 until EGTRRA, Connecticut had a pick-up tax. Connecticut's estate tax rates and exemption thresholds appear to be less progressive

[13]All data pertaining to estate tax figures for states has been obtained from state tax forms and the relevant state's laws from publicly available statutes.

since EGTRRA (Figure 12a) and the inflation adjusted rates tell a similar story (Figure 12b). In Connecticut's case, the estate taxes have, in fact, been lowered after EGTRRA.

Even adjusting for inflation, both the threshold and the brackets, while tightened with the state tax credit, have been relaxed over time. This aligns with my initial assertions: For 2013 to 2017, Connecticut had a median income of $73,781, with 38.4% of persons with a Bachelor's degree or higher (Census, n.d.). Moreover, in 2017, Connecticut had a wage Gini[14] of 0.498, 66.5% of the state was non-Hispanic White, and the median age was 40.9, which are all relatively high.

5.1.2 Washington, D.C.

Unlike Connecticut, District of Columbia's estate taxes appear to have gotten more progressive since EGTRRA (Figure 12c), which is confirmed by the inflation-adjusted rates (Figure 12d). However, it is also necessary to note that the exemption thresholds have also increased by a substantial amount.

The lowest threshold for D.C. occurred in 2000, just before the state credits were revoked. This discrepancy, to some extent, is explained by the fact that D.C. has a median income of $77,649 and a wage gini of 0.465, but with 56.6% population with a bachelor's degree or higher, a non-Hispanic White population of 37.1%, and a median age of only 34. That is, D.C.'s population is young, diverse, and educated, but also richer and unequal.

5.1.3 Delaware

While Delaware's estate tax rates had increased and its exemption threshold had decreased for 2017 (Figures 13a and 13b), Delaware repealed the estate tax for 2018. Delaware adopted estate taxes in

[14] An inequality scale according to which 0 is perfect equality and 1 is perfect inequality.

the 1930s, retroactively applying them to all deaths in and after 1926. It was one of the few states that did not change its rates several years post-EGTRRA, however, it is crucial to note that, as stated in the previous section, Delaware allowed its estate taxes to expire after 2005, only reviving them once it had been established that the EGTRRA provisions would not expire after 2010. Delaware has a median income of $63,036, a median age of 40.1, a wage gini of 0.477, and 31% of Delware's population has a Bechelor's degree or higher. Therefore, while Delaware's population is not richer than D.C.'s or Connecticut's, it is substantially older than D.C.'s and almost as old as Connecticut's.

5.1.4 Hawaii

Hawaii adopted the estate tax in 1983, and, much like Delaware, the state also allowed its estate taxes to expire in 2005, but revived them in 2012. Hawaii's estate tax rates appear to be roughly the same since, post-inflation adjustment, they are slightly lower near the threshold and at the highest tax bracket, but slightly higher in between (Figure 13d). The exemption threshold, however, has increased substantially. This is in keeping with the state's median income of $74,923 (on the higher side), and median age of 39.2. Hawaii also has a wage Gini of 0.428, 32% of the population has a Bachelor's degree or higher, and the state has the lowest population of people identifying as non-Hispanic White at 21.8%.

However, it is worth noting that much of the property in Hawaii is owned by on-residents, which likely means that the demographics are not entirely indicative.

5.1.5 Illinois

Illinois adopted the estate tax in 1949. While on paper it appears that the estate tax rates for Illinois have not changed between then and now, Illinois has a complicated calculation method that

renders this untrue. Illinois' estate tax calculation require an iterative process such that the amount ultimately paid in estate taxes (derived from the 1926 state tax credit table) also be equal to the amount of credit given per estate, which substantially reduces the estate tax amount paid.

Figure **??** indicates, however, that the statutory tax rates and threshold have both increased since EGTRRA. This is in keeping with the lower state median income of $61,229, and the median age of 38, as well as the higher Gini coefficient of 0.482.

5.1.6 Indiana

Indiana allowed its estate tax to expire along with the federal credit in 2005. The state's standalone inheritance tax persisted until 2013, when it was repealed.

5.1.7 Iowa

Iowa's inheritance tax was gradually repealed starting in 2021, which was subsequently repealed for death occurring in and after 2025.

5.1.8 Massachusetts

Massachusetts has one of the more stringent estate tax systems. It adopted estate taxes in 1976 and the rates are still the same as the state credit table in 1926. The tax threshold for the state and not substantially increased since 2000, and the estate tax rates have increased (Figure 14d).

While the state's median income is $74,167, the proportion of population identifying as non-Hispanic White is 71.4%, and the median age is 39.5, among the states discussed so far, the proportion of Massachusetts' population with a Bachelor's degree or higher is only lower than

D.C.'s at 42.1%.

5.1.9 Maine

Maine's statutory rates have declined substantially since EGTRRA. Moreover, Maine's current estate tax rates are even lower than when the tax was adopted in 1983. The exemption threshold in the state has also increased significantly (Figure 15b).

This is entirely in keeping with Maine's median age of 44.6, the oldest among the states discussed so far, as well as the very high proportion of people identifying as non-Hispanic White alone (93.1%), and the relatively low Gini coefficient of 0.434. It is more out-of-step, however, with the median income of $53,024.

5.1.10 Maryland

Maryland's estate tax rates have not deviated from the rates prior to 2000. Therefore, the rates are effectively higher since the passage of EGTRRA. The exemption threshold, however, has increased substantially (Figure 15d).

The higher rates are in keeping with the proportion of Maryland's population with a Bachelor's degree or higher (39.0%), as well as the relatively lower proportion of population that is classified as non-Hispanic White (50.5%). Meanwhile, the high threshold may reflect the state's high median income ($78,916).

5.1.11 Minnesota

Minnesota's estate tax rates have increased since the passage of EGTRRA, while the threshold has only increased moderately. Moreover, the tax rates are higher than they were when the state adopted the estate tax in 1985, while the threshold is comparatively lower (Figure 16b).

Minnesota's stringent estate tax rates reflect the state's moderate median income of $69,699, the population's education (34.8% with Bachelor's degrees or higher). The increase in the threshold may be explained by the state's relatively high non-Hispanic White population.

5.1.12 North Carolina

While North Carolina's estate tax rates had increased for 2012 post-EGTRRA, the exemption threshold had also increased. Moreover, the state repealed the tax after 2012. The indicators that most align with this outcome are North Carolina's relatively high non-Hispanic White population (62.8%) and the state population's proportion of people with Bachelor's degrees or higher (29.9%).

5.1.13 New Jersey

Like North Carolina, New Jersey also repealed the estate tax. The tax was repealed for the year 2018. In the time that estate taxes were present, the rates did not change from the time the state adopted the estate tax in 1935, until it was repealed. However, the state's inheritance tax is still in place. The state's repeal may be a reflection of the relatively high median income ($76,475) and relatively older median age of 39.1.

5.1.14 New York

The changes in New York's rates over time are mixed. The rates are higher above the threshold, but decrease as the brackets approach $4 million, after which they are lower than when the state first adopted the estate tax in 1959. However, the rates are still higher than they were in 2000. The exemption threshold, however, has increased substantially.

The increase in rates is in keeping with the state's moderate median income ($62,765), moderately high education level (35.3% with Bachelor's degrees or higher), and the relatively small non-Hispanic White population (55.4%). New York, however, has a high Gini coefficient (0.497).

5.1.15 Ohio

In keeping with some of the aforementioned states, Ohio repealed its estate taxes after 2012. While Ohio did not follow the estate tax rates set up by the federal state tax table, it did have a pick-up tax with its own rates that had not changed since Ohio first adopted the estate tax in 1969. The tax rates were somewhat more progressive after EGTRRA, but the exemption threshold was also moderately higher.

The repeal of Ohio's estate tax is reflective of the state's relatively high non-Hispanic White population (78.7%), combined with the low median income of $52,407, low education level (27.2% with Bachelor's degrees or higher), and relatively low wage Gini coefficient of 0.457.

5.1.16 Oregon

Oregon is another state with a somewhat stringent estate tax system (albeit less so than Massachusetts). The rates have increased since 2000, and the exemption threshold has not changed

too substantially.

Oregon has a moderate median income and education level ($56,119 and 32.3% with Bachelor's degrees or higher) that make it especially comparable to Minnesota, another state with increasing estate tax rates and an increasing exemption threshold.

5.1.17 Rhode Island

Both the estate tax rates and the exemption threshold for Rhode Island have increased after EGTRRA. However, the exemption threshold has increased moderately as compared to other states. Rhode Island is another state that utilizes the state transfer tax credit table from 1926.

Rhode Island's demographics further indicate that it might be comparable to Minnesota and Oregon given that the population is similarly White and educated with a comparable income.

5.1.18 Tennessee

Tennessee is yet another state that repealed the estate tax in the aftermath of EGTRRA. The estate tax rates were substantially lower post-EGTRRA and prior to the repeal in 2016. The exemption threshold was also higher. Tennessee's demographics suggest that is perhaps most comparable to Ohio, another state that repealed estate tax, since it has similar levels of education, non-Hispanic, White population, income, and age.

5.1.19 Vermont

Estate tax rates in Vermont, as well as the exemption threshold seem to have increased substantially since 2000 (Figure 20b). Vermont's median age and non-Hispanic white population are only com-

parable to Maine's, which also substantially increased its exemption threshold, but decreased its tax rates. However, Vermont's income and education levels suggest that it might also be comparable to Minnesota, Oregon, and Rhode Island.

5.1.20 Washington

In Washington, estate tax rates have increased significantly since EGTRRA, while the exemption threshold has not increased by a substantial amount (Figure 20d). This response to EGTRRA is perhaps closest to that of Massachusetts. While Washington's demographics do suggest that it is somewhat comparable to Massachusetts, its education levels, age, and racial composition suggest that is also comparable to Vermont and Rhode Island.

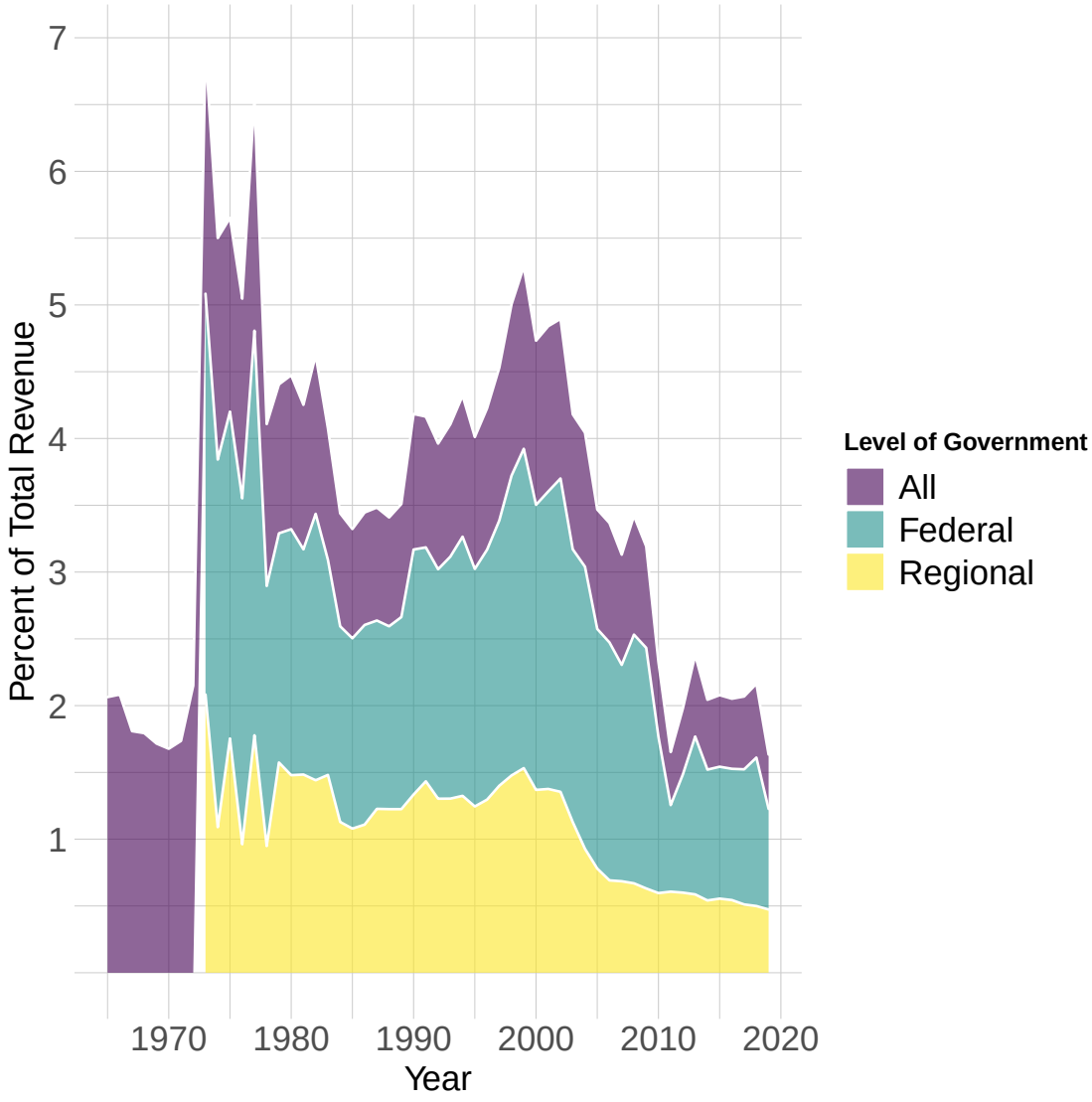
Table 5: State Demographics by State Responses Post-EGTRRA

State	Changes (2000 to 2018 or 2019, post-Inflation)		Demographics				
	Rates	Threshold	Median Income	% with Bachelor's Degree or Higher	Wage Gini	Median Age	Non-Hispanic White
CT	Decreased	+$1,592,342	$73,781	38.4%	0.498	40.9	66.5%
D.C.	Increased	+$4,936,170	$77,649	56.6%	0.465	34	37.1%
DE	Repealed		$63,036	31%	0.477	40.1	61.9%
HI	Equal	+$4,556,984	$74,923	32%	0.428	39.2	21.8%
IL	Increased	+$2,992,342	$61,229	33.4%	0.482	38	61.0%
MA	Increased	+$8,823	$74,167	42.1%	0.484	39.5	71.4%
ME	Decreased	+$4,768,012	$53,024	30.3%	0.434	44.6	93.1%
MD	Increased	+$3,993,453	$78,916	39.0%	0.461	38.7	50.5%
MN	Increased	+$1,466,984	$69,699	34.8%	0.468	37.9	79.5%
NC	Repealed		$50,320	29.9%	0.473	38.8	62.8%
NJ	Repealed		$76,475	38.1%	0.493	39.1	54.9%
NY	Mixed	+$3,781,590	$62,765	35.3%	0.497	38.7	55.4%
OH	Repealed		$52,407	27.2%	0.457	39.3	78.7%
OR	Increased	$1,18,954	$56,119	32.3%	0.459	39.3	75.3%
RI	Increased	$619,899	$61,043	33.0%	0.462	39.5	72.0%
TN	Repealed		$48,708	26.01%	0.466	38.6	73.7%
VT	Increased	$1,832,244	$57,808	36.8%	0.445	42.6	92.5%
WA	Increased	$82,243	$66,174	34.5%	0.466	37.7	68.0%

5.2 Federal Trends

The graphs in Figures 4 and 5 show the two aforementioned measures of revenue for the three units of government. The graph in Figure 5 shows the inflation-adjusted estate and gift tax revenue for all units of government.

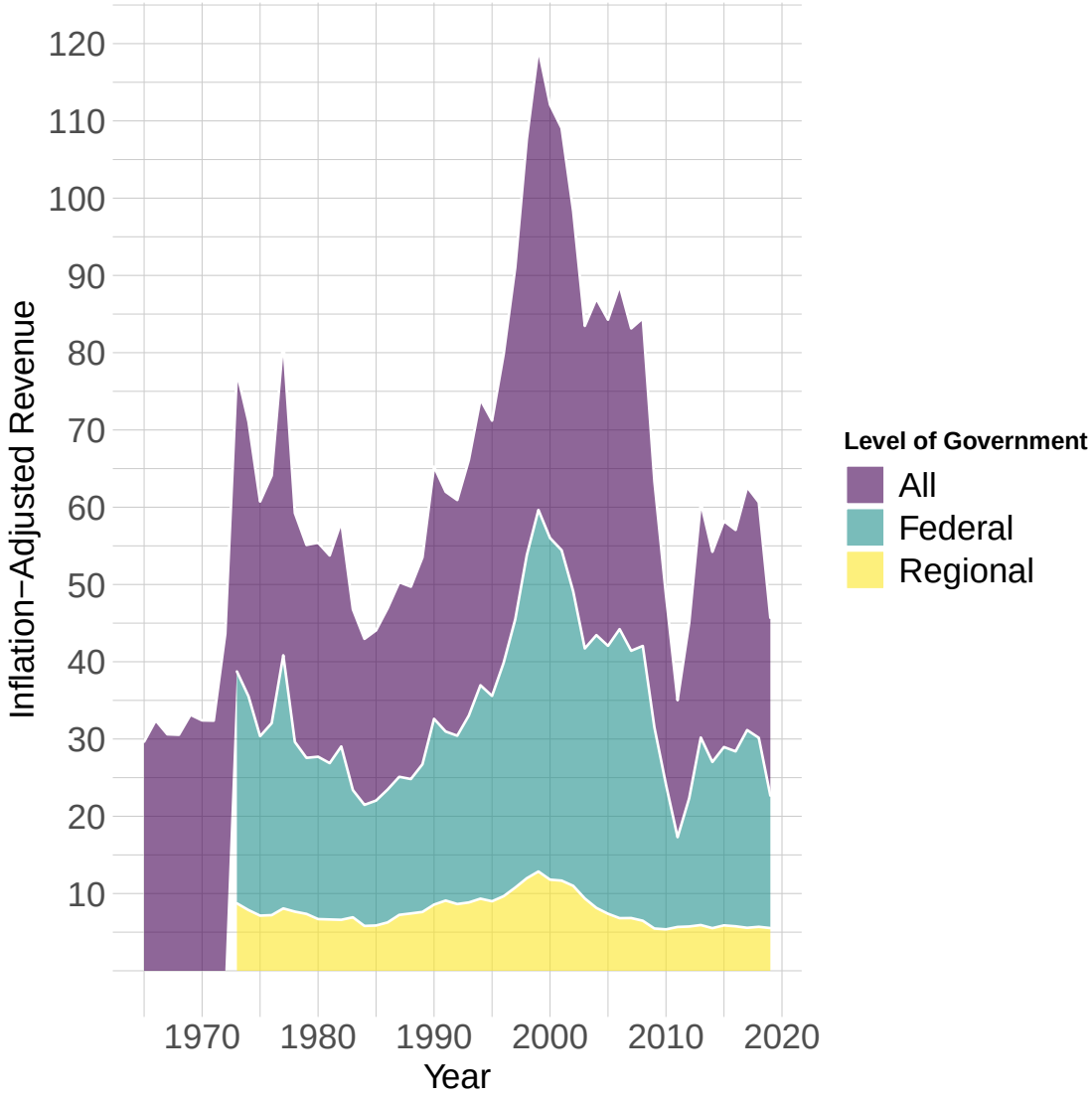
Figure 4: Estate and Gift Tax Revenues as a Percentage of Total Revenue



5.2.1 1930s to 1976

As seen in Figure 5, the federal estate tax revenue steadily increased between 1930 and 1971, when it peaked at $34.31 billion (2019 dollars). Top statutory rates for estate taxes increased steadily between 1930 and 1941 going from a top rate of 20% to 77%. The top rate remained constant at 77% between 1941 and 1975.

Figure 5: Inflation-Adjusted Estate and Gift Tax Revenues Over Time



The nominal exemption threshold was decreased from $100,000 (the threshold since 1926) to $50,000 in 1932, and further to $40,000 in 1935. It was then increased to $60,000 in between 1943 and 1976. Adjusting for inflation, however, the threshold effectively decreased from $886,672 in 1943 to $269,586 in 1976 (just over a third of its 1943 value).

5.2.2 1976 to 1984

Federal revenues from estate taxes then fell to $21.91 billion in 1975, briefly rebounded to $30.91 billion in 1977, and subsequently steadily decreased to $14.79 billion in 1984. It is important to note here that this steady drop began occurring about 2 years after major changes (detailed below) were enacted to the estate tax law by the U.S. Congress. The lag prior to the drop is consistent with the changes for two reasons. First because the changes did not apply until January 1, 1977, and second because estate taxes need not be filed immediately after death, the current deadline for filing estate taxes is 9 months after the decedent's death. The following were among the changes enacted by the Tax Reform Act of 1976 (Jacobson, Raub, and Johnson 2007):

1. The top marginal estate was lowered from 77% to 70%.

2. The nominal exemption threshold remained constant between was doubled from $60,000 to $120,000 effective in 1977. The act further stipulated annual increases to $134,000, $147,000, $161,000 and $175,000 in 1978, 1979, 1980 and 1981, respectively (increasing by $13,000-$14,000 annually).

3. Estate and gift taxes were unified. This meant that gifts (taxed since 1924, but at significantly lower rates) would be included in the calculation of the overall estate value, further making gifts subject to the same rates and brackets as estates. Since 1932, individuals were allowed

to gift up to $50,000 over their lifetimes through an exemption of gifts valued up to $500 per recipient per year. An annual exemption of $3,000 per recipient was retained, and the act stipulated that the gift tax due on an amount less than the lifetime gift exclusion (to the extent that it was unused in life) could be used as a credit against the final estate tax liability. The maximum credit amount that can be claimed through this exclusion is known as the "unified transfer tax credit" and was set at $30,000 in 1977. This effectively unified the gift and estate tax exemption thresholds, which was the aforementioned threshold of $120,000 and now effectively included a lifetime gift exclusion amount.

4. The marital deduction limit was increased.

5. Other stipulations were enacted that reduced tax liabilities by making allowances for valuations of certain kinds of assets, orphans, *etc*.

6. The Generation Skipping Trust Tax was introduced in response to families avoiding estate and gift tax liabilities by skipping a generation in transfers. That is, grandparents transferring property directly to grandchildren (or great grandchildren), which reduced the overall estate tax liability on the property. The tax introduced an additional layer of taxation when property is transferred to recipients two or more generations younger than the initial owner. The law allowed for an exemption of $1 million, and the highest marginal rate (70%) was applied to any amount above this exemption. While this tax is still in effect, it only brings in a small proportion of the (already small) gift tax revenue (Tax Policy Center 2020).

Given the resulting drop in revenue, it appears that creating stipulations to combat against some tax avoidance measures was not enough to offset the loss in revenue potentially resulting from the higher exemptions and lower top marginal tax rate. However, the reasons for the drop may

be far more complex, including (but not limited to) more extreme tax avoidance behaviors, thus necessitating further study.

Moreover, further changes were made in Economic Recovery Tax Act (ERTA) of 1981. Some of these are as follows:

1. The nominal exemption was increased to $225,000 effective in 1982. The act further stipulated its increase to $275,000 and $325,000 in 1983 and 1984, respectively.

2. The marital deduction was extended to some property transfers for which the surviving spouse did not have the authority to assign beneficiaries upon their own death (i.e. properties in which the surviving spouse did not have a "terminable interest"), as long as the surviving spouse was, in life, the sole beneficiary of all income (payable at least annually) and the property was part of the surviving spouse's estate. This is known as"qualified terminable interest property" (QTIP).

3. Eliminated all limits to the value of marital deductions that could be claimed.

4. Increased the annual gift tax exemption to $10,000 per recipient. It also stipulated the increase of the unified transfer tax credit from $47,000 to $192,800 between 1981 and 1987. This effectively increased the exemption threshold from $175,625 to $600,000 (this is know as the "exemption equivalent"). However, because this figure includes the unified transfer tax credit, which is crucially not a deduction, it denotes (in the absence of other deductions) the value of an estate that would effectively be tax-free. This means that the lowest possible tax rate on any estate with a tax liability is 37%, even though the tax schedules technically ranges from 18% to 55%. The structuring of this amount as a credit rather than a deduc-

tion, therefore, may have important implications for revenues that need to be investigated, potentially through analyzing the revenue data in conjunction with a time series of the lowest possible applicable marginal estate tax rates, which increased from 32% in 1981 to 34% in 1983, and to 37% in 1986.

5.2.3 1984 to 1999

The revenue then increases again until 1999 when it reaches an all-time high of $56.33 billion. Why this increase in revenue begins in 1984 is not immediately clear since the next major estate tax policy changes after 1981 did not occur until 1993, if that. The exemption threshold was increased to $325,0000 in 1985, $400,000 in 1986, $500,000 in 1986, and $600,000 in 1987. Adjusting for inflation, the exemption was around $500,000 between 1977 and 1981, and was then increased to roughly $600,000 in 1982, $700,000 in 1983, $800,000 in 1984 and $950,000 in 1985. Taking the initial increase as a given, however, the continuing increase in revenues between 1987 and 1997 can be explained to some extent by the changes (or lack thereof) to the tax structure. The top marginal rate was decreased from 70% in 1985 to 55% in 1986, but did not drop any further until 2001. The nominal exemption threshold remained at $600,000 from 1987 to 1997. Adjusting for inflation, the exemption was increased to roughly $1.16 million in 1986 and then to $1.35 million in 1987, after which is steadily declined (due only to inflation) to $955,727 (2019 dollars) in 1997.

One possible explanation for the precipitous rise in revenues in this period is increasing wealth concentration in this period. As illustrated in Figure 3, the proportion of estates that would incur an estate tax varies greatly over time. For instance, based on wealth distribution data for 1983 from the Survey of Consumer Finances, the top 7% of families owned wealth valued in excess of the

estate tax exemption equivalent. The lowest applicable tax rate for these families was 34%, and a family in the top wealth distribution percentile just over the top percentile threshold (roughly $3.32 million) would face a top marginal rate of 43%. That is, the lowest maximum rate that a family in the top percentile of wealth owners would have to pay on their estate would have been 43% (the highest rate per the tax law was 70%).

Similarly, for the years 1989, 1992, and 1995, the estates of roughly 5% of families would have incurred a wealth tax with a lowest applicable rate of 37% and a lowest possible rate maximum rate for a family in the top wealth percentile would have been 49%, 6% higher than the same rate in 1983. In 1998, this expanded significantly (possibly due to the dot com bubble) with the wealth of about 7% of families eligible for the estate tax, a minimum applicable rate of 37%, and the lowest possible maximum rate for a family in the top 1% of wealth owners at 55%. This could explain the all-time high federal estate tax revenues in 1999. Given that the dot com bubble makes this year an outlier, it might initially seem that the estate tax would be unlikely to reach that level of revenue generation again. However, wealth has grown significantly more concentrated in the aftermath of the Great Recession with middle class wealth portfolios that consisted primarily of home taking much longer to recover their value as compared to wealthier portfolios that consisted primarily of stocks and other financial instruments, which rebounded far more quickly. To see this, suppose we retained the tax structure as it was in 1998 in 2016, adjusting the tax brackets and exemption threshold for inflation only. The exemption threshold for 2016 would be $920,272 and the 12% of wealth owning families would have estates that qualified for the estate tax. The lowest possible maximum rate for the top 2% of wealth owners would be 55%. Instead, only 2% of families would have incurred an estate tax liability within the actual tax structure in 2016, with the lowest possible

maximum rate for the top 2% of wealth owners at 40% (McKernan et al. 2017). Of course, this is for illustration only, and there are several caveats to this like assuming no joint property ownership, no credits or deductions, all familial wealth ownership concentrated with one family member, *etc.*

5.2.4 2000 to 2019

The 1999 peak was immediately prior to the passage of the Economic Growth and Tax Reconciliation Relief Act of 2001 (EGTRRA), which revoked the state estate tax credit and temporarily phased out the estate tax by 2010. EGTRRA gradually lowered the top marginal tax rate from 55% to 45% in 2007 and increased the exemption threshold from $675,000 to $3,500,000 by 2009.

The revenue then decreases again through 2011 when it fell to $15.67 billion. EGTRRA stipulated that the estate tax be temporarily revoked in 2010 and restored to the 2001 structure in 2011, but legislators acted to lower the top rate to 35% and $5,000,000 2010 onwards.

As of 2018 and 2019, the estate tax brought in $23.29 billion and $19.20 billion, respectively (OECD 2020a).

As is depicted in Figure 1, at its largest share of federal tax revenue in 1977, estate and gift taxes accounted for 3.029% of the federal government's total revenue. Estate and gift taxes also accounted for a maximum of 2.083% of total revenue for all state government, and 2.15% of total revenues at all levels in the U.S. in 1972. At the highest share for any individual state, the estate tax accounted for 20.20% of Delaware's total revenue in 1946 (U.S. Census Bureau 2020).

Both the estate tax exemption threshold as well as the top estate tax rate exhibit a pattern of income and wealth inequality that has been observed in the U.S., as well as other rich economies (Piketty and Zucman 2015). Specifically, both parameters have been relaxed significantly beginning in the

mid-1970s (Figures 2 and 1).

The effect of decreased progressiveness of the estate tax on the increasing proportion of wealth owned by the top of the wealth distribution since the mid-1970s has yet to be causally examined. However, it is worth noting that the initial upward tick in wealth concentration occurs at around the same time as TCJA lowered the estate tax exemption from $5.49 million to $11.18 million (Figure 1). This, of course, is not enough to establish causality.

6 Analysis

6.1 IRS Data

The Statistics of Income (SOI) division of the IRS provides aggregate estate tax tables, which aggregate annual data by estate components and associate number of estates with non-zero values for each component (IRS 2023). This section examines how this aggregate data reflects federal policy changes. I first describe the tax base — how many estates file returns and owe tax — and how deductions and credits affect tax liabilities, using raw IRS data from 1995–2021. This leads to two testable hypotheses.

I then turn to the models used in the analysis, describing how they are developed based on tax calculations, and the robustness checks used to ensure that they correctly pinpoint the effects of the policy components in question.

6.1.1 Data Availability and Analytical Framework

The first aim is to identify policy parameters that have heavily contributed to the decline in estate tax liability. The analysis will use the aggregate tables for estate taxes released by the IRS each year (year-of-filing tables). These are only available since 1995, but they contain detailed information about estate tax returns in the filing year. This includes the number and aggregate values of estates filed broken down by bracketed value (lowest value is typically up to the exemption threshold in the previous year), as well as a corresponding breakdown of assets, deductions, credits and actual taxes paid. The ranges of these brackets are as indicated in Table 12. While the lowest bracket ranges greatly from less than $1 million to $10 million between 1995 and 2021, the highest brackets include estates over $20 to $50 million. The data is additionally stratified by taxed and untaxed estates (IRS 2023).[15]

The analysis uses intensive tax decomposition by relating the variables in the IRS tables to statutory tax calculations. This process is aided by the detailed data on tax brackets from the G.C. Wealth Project, including statutory brackets, marginal tax rates, and adjustments for previous bracket (Morelli et al. 2023). Matching these two data sources by bracket, I am able to take a tax accounting view of the data. By taking all the parameters involved in tax calculations into account, I can conduct robustness checks where straightforward coefficients should equal 1 if correctly accounted for, and coefficients that should be equivalent to tax rates (typically top marginal tax rates, given the size of very large estates). By using these as robustness checks, I can then measure the exact effect that deduction and credits have on overall tax liability precisely and in detail.

A second portion of the analysis focuses on the two components that are typically highlighted

[15]Some state-level data is also available. Year-of-death tables are also available and may be more appropriate for further analysis.

in wealth transfer tax elasticity literature: the top marginal tax rate and exemption thresholds. I run a straightforward time series analysis to gauge the short-run impacts that these two policy components have on federal estate and gift tax revenues.

6.2 Models for Credits and Deductions

6.2.1 Policy Components and Descriptive Statistics

While other factors may be at play, the effect of recent estate and gift tax policy changes is noticeable in Figure 22. Federal wealth transfer tax revenues have fallen from a peak of over $40 billion to roughly $22 billion in recent years. Figure 24 indicates that the proportion of taxed estates varies considerably over time. Between 1995 and 2000, depending on bracket, roughly 35% (in lower brackets) up to over 80% (in the highest bracket) of estates that filed returns actually owed tax. By 2021, however, well under 55% of filing estates had any estate tax liability.

Figure 25 shows the extent to which the brackets included in the year-of-filing tables from the IRS vary over time. The average gross estate for the highest bracket significantly dwarfs all averages for the lowest brackets, hovering in the neighborhood of $75 million before 2013, when it consisted of estates valued at over $20 million. Since 2013 the lower bound for the highest estate is $50 million, and the average gross estate is over $140 million. This suggests that the estimates below are likely to be skewed toward the top bracket.

Estates must file a return if the gross value of an estate exceeds the exemption (as clarified below),

but the gross value is reduced before the tax is actually calculated (Internal Revenue Service 2019):

$$Gross\ Estate\ for\ Tax\ Purposes = Gross\ Estate\ Value - Allowable\ Reductions\ in\ Value\ for Certain\ Types\ of\ Assets \tag{1}$$

Figure 26 shows the taxable portion of average gross estates for the highest and lowest brackets. The taxable fraction of an estate for the lowest bracket is lower than the highest bracket for both taxed and untaxed estates.

The adjusted taxable estate is the basis upon which the tax is calculated, as follows (Internal Revenue Service 2019):

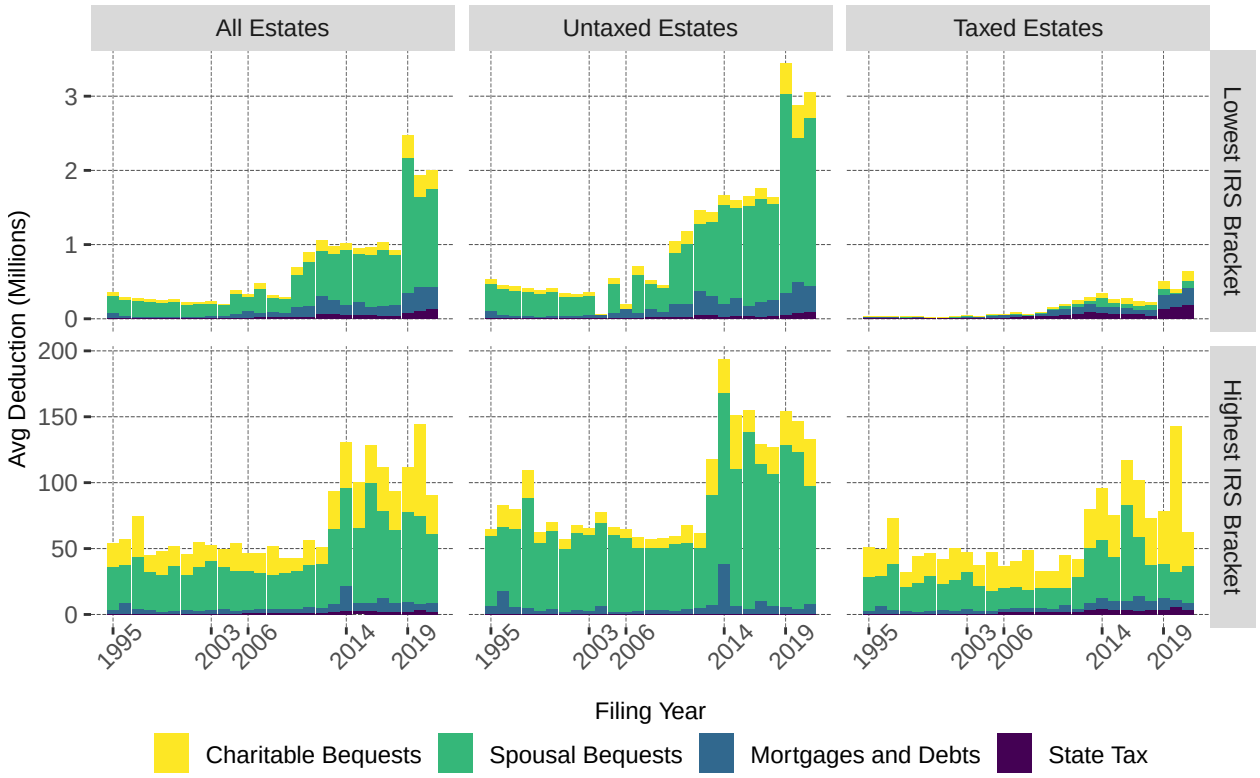
$$Adjusted\ Taxable\ Estate = Taxable\ Estate + Adjusted\ Taxable\ Gifts \tag{2}$$

The only addition made here is the value of adjusted taxable gifts. Figure 29 indicates that gifts appear to play a much larger role in taxed estates, although the value of gifts for both taxed and untaxed estates is very low until at least 2010.[16] Figure 29 further suggests that as the size of the estate increases, the value of gifts also increases. This is especially true for the highest bracket.

Turning now toward the policy components analyzed in this paper, note that there are two ways to reduce the proportion of an estate that is taxable. The first is through deductions, which directly reduce the taxable estate value, and the second is through credits, which reduce tax liabilities.

[16]While gifts count towards the exemption threshold, there is an annual exemption (currently $15,000) per donor and recipient,[17] which can be used to avoid a certain amount of tax, though the overall savings are quite modest unless the number of recipients is large.

Figure 6: Deductions as Portions of Gross Estate Value for the Highest and Lowest IRS Brackets by Year

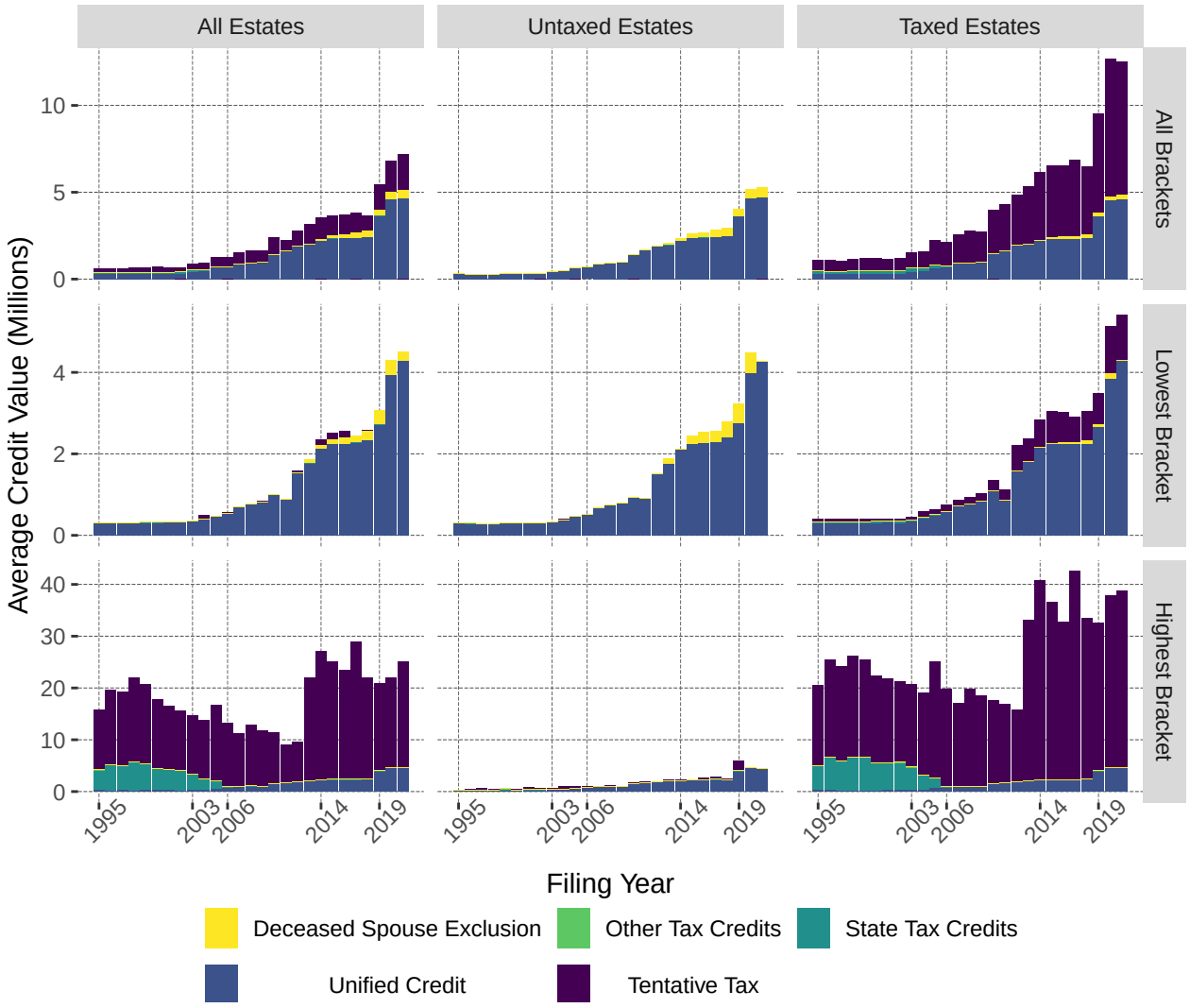


1. Data is obtained from IRS public use estate tax tables for the year in which the returns are filed. The majority of estates filed in a given year likely belonged to decedents who passed away in the year prior.
2. Data is adjusted to 2022 USD using the World Inequality Database's inflation index.
3. Values (typically spousal bequests and deceased spousal unused exclusion) with insufficient numbers of returns are excluded from IRS tables, which leads to missing observations for the figures for taxed and untaxed estates, and are therefore set to zero for the purposes of data visualization only. These values are included in totals for all (taxed and untaxed) estates.
4. The lowest bracket ranges from less than $1 million to $10 million. The highest bracket is over $20 million between 1995 and 2012, and over $50 million between 2013 and 2021

As indicated in Figure 6, deductions for untaxed estates are dominated by spousal bequests, which are worth about $100 million on average for the highest bracket since 2014. For taxed estates in the highest bracket, charitable deductions can also be very large, but are generally smaller than spousal bequests. Debts and mortgages also play a (much smaller) role. State tax deductions also appear to play a larger role for taxed estates in the lowest bracket.

Figure 7 indicates that unified credits and (to a much smaller degree) deceased spousal unused

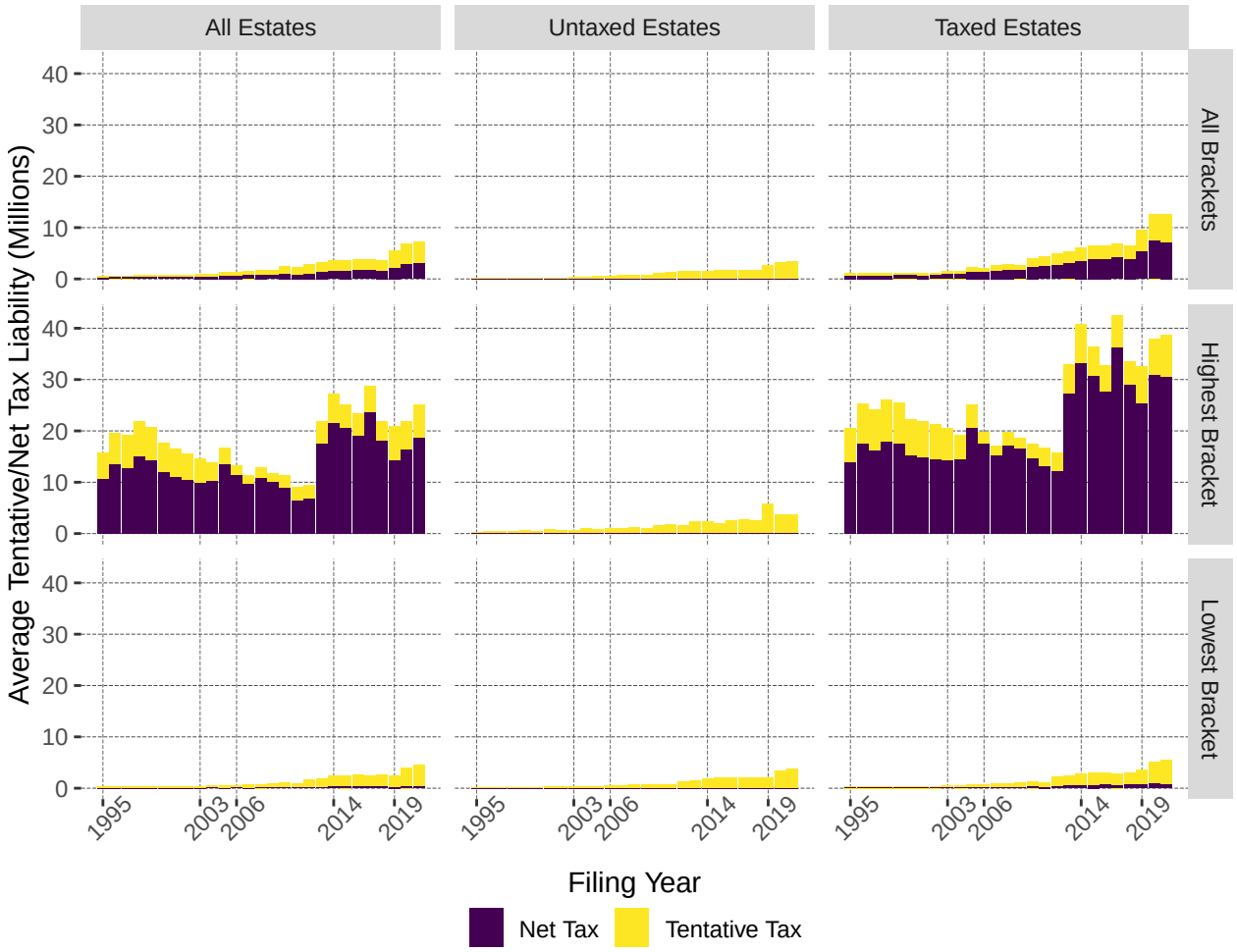
Figure 7: Various Tax Credits as a Portion of Tentative Tax Liability Across the Highest and Lowest IRS Brackets as Well as All Brackets, by Year and Tax Status



1. Data is obtained from IRS public use estate tax tables for the year in which the returns are filed. The majority of estates filed in a given year likely belonged to decedents who passed away in the year prior.
2. Data is adjusted to 2022 USD using the World Inequality Database's inflation index.
3. Values (typically deceased spousal unused exclusion) with insufficient numbers of returns are excluded from IRS tables, which leads to missing observations for the figures for taxed and untaxed estates, and are therefore set to zero for the purposes of deduction graphs only. These are included in totals for all estates, but untaxed estates may appear to show some tax liability due to missing data.
4. The lowest bracket ranges from less than $1 million to $10 million. The highest bracket is over $20 million between 1995 and 2012, and over $50 million between 2013 and 2021.
4. Final tax liability is calculated by subtracting credits for gift taxes paid, as well as all other allowable credits.

exclusions are the primary sources of credits for all estates. Taxed estates in the highest brackets also substantially claimed the state tax credit before it was rolled back. In fact, the increase in

Figure 8: Net Tax Liability as a Portion of Tentative Tax Liability Across the Highest and Lowest IRS Brackets as Well as All Brackets, by Year and Tax Status



1. Data obtained from IRS public use estate tax tables for the year in which the returns are filed. The majority of estates filed in a given year likely belonged to decedents who passed away in the year prior.
2. Data is adjusted to 2022 USD using the World Inequality Database's inflation index.
3. The lowest bracket ranges from less than $1 million to $10 million. The highest bracket is over $20 million between 1995 and 2012, and over $50 million between 2013 and 2021.
4. Net tax liability is calculated by subtracting credits for gift taxes paid, as well as all other allowable credits.

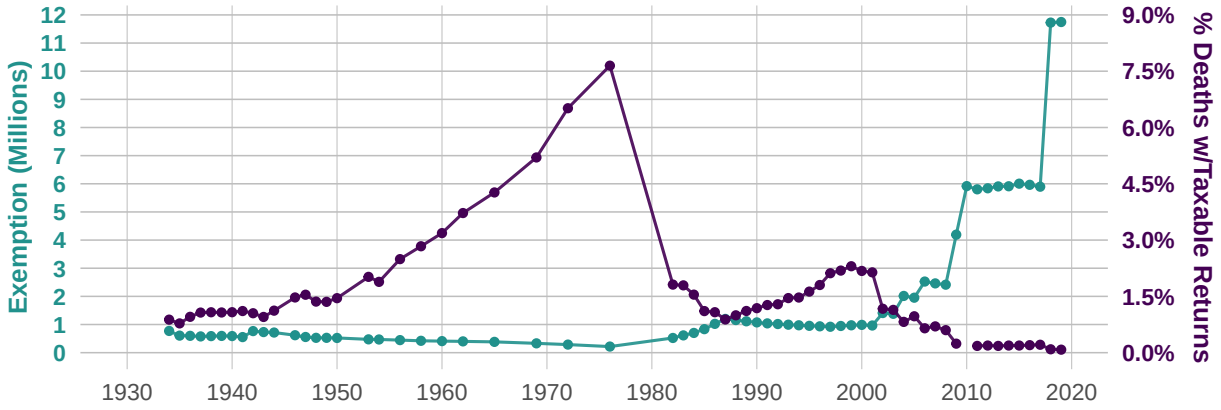
unified credits in recent years is edging closer to the magnitude of state credits at their peak for the highest tax brackets.[18] Figure 8 indicates that the gap between the tentative and net tax liabilities has increased in recent years (indicating increases in claimed credits), but the impact is tough to gauge since the threshold for the highest bracket in the IRS tables was increased in 2013. It still

[18]However, while the state credit was the result of revenues being claimed by state governments instead of the federal government, the unified credit is a direct reduction in the tax bill.

appears that taxed estates across all brackets have experienced a widening gap between net and tentative tax liabilities in recent years.

6.2.1.1 Hypotheses Figure 9 shows the percentage of decedents with taxable estates. The largest drop – a decrease from 7.5 to around 2% of decedents with taxable estates – occurs around 1976, when limits on spousal bequests were removed entirely (Joulfaian 2005). A second drop, from about 2.25 to about 1.2% of decedents with taxable estates, occurs in the 2000 to 2002 period when the threshold was increased from $675,000 to $1 million. The proportion further declines to less than 0.5% of all decedents by 2009, when the nominal statutory exemption had risen to $3.5 million.

Figure 9: Percent of Deaths with Taxable Estates and Exemption Thresholds Over Time



1. Data obtained from IRS public use estate tax tables (Table 17) for the year of death.
2. Only years for which IRS data were available are displayed. 2010 data is anomalous because the tax was revoked, but retrospectively re-instated on a voluntary basis.
3. Data is adjusted to 2022 USD using the World Inequality Database's inflation index.

The analyses in this paper will thus test the following hypotheses:

1. The bulk of reduction in estate tax liability can be attributed to deductions, the largest of which is the spousal bequest deduction.

2. Credits play an increasing role in reducing overall tax liability.

6.2.2 Effective Tax Rates After Deductions

First, deductions are subtracted from the gross estate for tax purposes in order to obtain the taxable estate (Equation 1). Next, adjusted taxable gifts are added to the taxable estate to obtain the adjusted taxable estate (Equation 2). The adjusted taxable estate is then used as the basis to calculate tentative tax liability using rate schedules (Internal Revenue Service 2019, 2022, n.d.).[19] This is referred to as graduating the adjusted taxable estate. The marginal tax rate is expressed as a decimal. The net estate tax liability is calculated after subtracting all applicable credits — including the unified credit, which is the credit-equivalent of the exemption threshold — from the tentative tax liability.

Since the lower bound for the highest applicable bracket and the tax on lower bound for that bracket will always be associated perfectly to form a linear reduction for all estates in the same bracket, the two parameters must be combined to avoid perfect multicollinearity. I thus obtain the following reduced form equation modelling the tentative estate tax liability:

$$Tentative\ Estate\ Tax_{bt} = \beta_0 + \beta_1 Graduated\ Adjusted\ Estate_{bt} - \beta_2(\underbrace{Graduated\ Lower\ Bound_{bt} - Tax\ on\ Lower\ Bound_{bt}}_{Net\ Adjustment\ for\ Previous\ Brackets}) + \epsilon \tag{3}$$

Here, subscript *b* denotes the IRS bracket and subscript *t* denotes the year of filing. Since graduated lower bound will always be higher than the tax on the graduated lower bound, the coefficient associated with this figure should always be negative, given that the lower bound is to be subtracted

[19] For more details on definitions of each variable below, see Internal Revenue Service (n.d.).

from the adjusted taxable estate.

Equation 3 thus provides a basis for estimating and analyzing tax rates. If correctly specified, β_1 should equal one. β_2 is far less standardized, since it provides a linear adjustment for previous brackets that involves multiple tax rates. However, as indicated above, the sign for this coefficient should be negative.

Given that these calculations are intensive, and the span between 1995 and 2021 involves many tax policy changes, I will focus on two periods of relative stability: 1995 to 2002, which is the pre-EGTRRA period, and 2019 to 2021, which is the post-TCJA period. These two periods should provide a sense of the impact of deductions in reducing tax rates, as well as its evolution over time. Moreover, since the 2019 to 2021 period also effectively only had a single tax bracket, the estimates are more likely to be accurate and precise. The model heavily relies on the marginal tax rate for causal claims, so the fact that both periods also had stable tax rates is also a plus. I outline the model development and expected outcomes below, followed by the estimates and findings.

As deductions are affected by marginal tax rates, some robustness checks are warranted prior to calculating the reduction in tentative tax rates that they cause. In a correctly specified model including all components, the estimated coefficients on Gross Estate and Deductions (θ_{ER} and θ_{DR}) should be approximately 1.0. (These factors directly determine tax liability, so the model should capture them one-for-one.) Coefficients on Adjusted Gifts and Bracket Adjustment (θ_{GR} and θ_{AB}) may

differ from 1 because those terms involve multiple tax rates by construction.:

$$\begin{aligned} Tentative\ Estate\ Tax_{bt} = \theta_0 + \theta_{ER}(&Gross\ Estate\ for\ Tax\ Purposes_{bt} \times \\ &Marginal\ Tax\ Rate_{bt}) - \\ &\theta_{DR}(Deductions_{bt} \times Marginal\ Tax\ Rate_{bt}) + \\ &\theta_{GR}(Adjusted\ Taxable\ Gifts_{bt} \times Marginal\ Tax\ Rate_{bt}) - \\ &\theta_{AB} Net\ Adjustment\ for\ Previous\ Brackets + \epsilon_{bt} \end{aligned} \tag{4}$$

A second test of the models will check whether the imprecise nature of the factors that involve multiple tax rates (adjustment for previous brackets and adjusted gifts) is causing the model to be less accurate. It will also test the accuracy of the model in 'predicting' tax rates by dropping the two factors, as well as using the value of the gross estate and taxable gifts (instead of rate-adjusted gross estate and rate-adjusted taxable gifts). Given the size of the estates in the top bracket as discussed in Section 6.2.1, it is likely that the parameter θ_{EG} below will be close to the statutory top marginal tax rates (55% for the pre-EGTRRA period and 40% for the post-TCJA period).[20] Additionally, θ_{DR} should be close to 1. If θ_{EG} does not approximate the top marginal tax rates, the adjusted gifts included in the gross estate may be dropped. The reduced form is as follows:

$$\begin{aligned} Tentative\ Estate\ Tax_{bt} = \theta_0 + \theta_{EG}(Gross\ Estate + Adjusted\ Gifts)_{bt} - \\ \theta_{DR} Graduated\ Total\ Deductions_{bt} + \epsilon_{bt} \end{aligned} \tag{5}$$

[20] It is worth noting that if the model predicts that the tax rate here is, in fact, the top marginal tax rate, then it is quite possible that the findings about the effective tax rate may only apply to estates in the highest tax bracket.

The checks for validation, therefore, are as follows:

1. $\theta_{ER} \approx 1$
2. $\theta_{DR} \approx 1$
3. $\theta_{EG,1995-2002} \approx 55$
4. $\theta_{EG,2019-2021} \approx 40$

Once the models have been validated, I estimate 'effective' tentative tax rates for the gross estate plus gifts after deductions have been accounted for. The model is as follows:

$$Tentative\ Estate\ Tax_{bt} = \beta_0 + \beta_{EG}(Gross\ Estate + Adjusted\ Gifts)_{bt} + \epsilon \quad (6)$$

where β_{EG} will reflect the effective tax rate for the respective time period. Therefore, the reduction in tentative tax rates due to deductions only can be calculated as the difference between the model-derived top marginal tax rate and the effective tax rate:

$$Reduction\ in\ Tentative\ Tax\ Rate\ due\ to\ Deductions = \theta_{EG} - \beta_{EG} \quad (7)$$

The results for these models are in Tables 6 and 7, respectively. The first models confirm that each element is correctly accounted in the model, the second models serve as tests, and the coefficient associated with the final model provides the effective tax rates resulting from reduction in tax liabilities due to deductions only.

The third models in Tables 6 and 7 indicate that deductions lower the tentative (pre-credit) tax rates on filing estates by about 35 percentage points in the pre-EGTRRA period, which represents a 63%

Table 6: Tax Decomposition Pre-EGTRRA OLS Estimates for (Per Estate) Effective Tentative Estate Tax Rates After Deductions (1995-2002)

	Eq (4)	Eq (5)	Eq (6)
Gross Estate + Gifts (θ_{EG} ; β_{EG})		0.5517***	0.2041***
		(0.0050)	(0.0046)
Total Deductions x Marginal Rate/100 (θ_{DR})	-1.0126***	-0.9946***	
	(0.0064)	(0.0143)	
Gross Estate x Marginal Rate/100 (θ_{ER})	1.0295***		
	(0.0062)		
Adjusted Gifts x Marginal Rate/100 (θ_{GR})	0.5049***		
	(0.1138)		
Adjustment for Previous Brackets (θ_{AB})	-0.6374***		
	(0.0414)		
Constant	-1.5e+04	-4.0e+05***	3.1e+05
	(1.1e+04)	(2.0e+04)	(1.7e+05)
N	52	52	52
F-Statistic	3.1e+05	9.7e+04	1.9e+03
R-Squared	1.0000	0.9997	0.9750
Adj. R-Squared	1.0000	0.9997	0.9745
P-Value	0.0000	0.0000	0.0000

[1] Observations are brackets based on ranges of estate values from IRS filing year estate tax tables by year. All filing estates are included in the analysis.

[2] All values are per estate, calculated with the aggregate amounts per range of estate values divided by the number of estates in the IRS bracket by tax status.

Table 7: Tax Decomposition Post-TCJA OLS Estimates for (Per Estate) Effective Tentative Estate Tax Rates After Deductions (2019-2021)

	Eq (4)	Eq (5)	Eq (6)
Gross Estate + Gifts (θ_{EG} ; β_{EG})		0.4010***	0.1125***
		(0.0009)	(0.0085)
Total Deductions x Marginal Rate/100 (θ_{DR})	-0.9993***	-1.0028***	
	(0.0025)	(0.0031)	
Gross Estate x Marginal Rate/100 (θ_{ER})	0.9994***		
	(0.0020)		
Adjusted Gifts x Marginal Rate/100 (θ_{GR})	1.0010***		
	(0.0055)		
Adjustment for Previous Brackets (θ_{AB})	-9.7107***		
	(1.0617)		
Constant	4.8e+05***	-9.1e+04***	2.9e+06**
	(4.9e+04)	(1.2e+04)	(7.6e+05)
N	12	12	12
R-Squared	1.0000	1.0000	0.9454
Adj. R-Squared	1.0000	1.0000	0.9400
P-Value	0.0000	0.0000	0.0000

[1] Observations are brackets based on ranges of estate values from IRS filing year estate tax tables by year. Only filing estates are included in the analysis.

[2] All values are per estate, calculated with the aggregate amounts per range of estate values divided by the number of estates in the IRS bracket by tax status.

reduction relative to the statutory rate. In the post-TCJA period, the tentative tax rate is lowered by roughly 29 percent, which represents a 72% reduction relative to the statutory rate. The differences in both periods are substantial.[21]

The estimates indicate that deductions contribute significantly to reducing tax liability. This is in keeping with Figure 6, as well as Figure 9, which both indicate the substantial role played by

[21] Estimates for intervening periods also tend to yield similar results, exhibiting a pattern of increasing reductions relative to statutory rates. The period around 2010 to 2013 does not pass robustness check, possibly due to the 2010 sunset.

deductions. It also confirms the hypothesis from Section 6.2 that the large decrease in the proportion of taxable estates after 1976 was driven by the introduction of unlimited deductions for spousal bequests.

6.2.3 Effect of Credits on Net Tax Liability

$$Total\ Tax\ Before\ Credits = Tentative\ Estate\ Tax - Total\ Gift\ Taxes\ Paid \quad (8)$$

The calculation for credits as they relate to net tax liability is much easier:

$$Net\ Estate\ Tax\ Liability = Total\ Tax\ Before\ Credits - Allowable\ Unified\ Credits - Other\ Tax\ Credits \quad (9)$$

The only difference between these two calculations is the value of credits. Since not rates are involved, a coefficient identity check is not required. The reduced form, therefore, is simply:

$$Net\ Estate\ Tax\ Liability_{bt} = \beta_0 + \beta_1 Total\ Tax\ Before\ Credits_{bt} + \epsilon \quad (10)$$

As indicated in Table 8, while credits reduced the effective tax rates much more in the past, up to a whopping 28% in the 1995 to 2002 period when they were driven predominantly by credits for state tax payments, the decrease has dropped over time to a low of less than 1% in the 2014 to 2018 period, and rose in the post-TCJA period to about 3% (see Figure 7). This implies that, as of 2021, credit reduced tax liability by an average of 3 cents on the dollar for filing estates, which is down from a value of 28 cents between 1995 to 2002.

Table 8: OLS Estimates for Average (Per Estate) Net Tax Owed Based on Tax Before Credits by Time Period (1995 - 2009)

	1995-2002	2003-07	2008-09
Total Tax Liability Before Credits	0.7171***	0.8763***	0.9871***
	(0.0020)	(0.0477)	(0.0057)
Constant	1.1e+05**	-3.7e+05	-8.6e+05**
	(2.6e+04)	(4.6e+05)	(4.8e+04)
N	16	10	4
F-Statistic	1.3e+05	337.9370	3.0e+04
R-Squared	0.9999	0.9769	0.9999
Adj. R-Squared	0.9999	0.9740	0.9999
P-Value	0.0000	0.0000	0.0000

[1] Observations are brackets based on ranges of estate values from IRS filing year estate tax tables by year. All filing estates are included in the analysis.
[2] All values are per estate, calculated with the aggregate amounts per range of estate values divided by the number of estates in the IRS bracket by tax status.

Factors such as the elimination of the revenue-sharing agreement in the form of state tax credits may also be driving the changing patterns. This is an especially compelling reason given that in the aftermath of the state credit sunset in 2005, the impact that credits have on reducing tax liability drops from 12 cents during the sunset period to 1 cent in the 2008 to 2009 period.

7 Conclusion

By incorporating detailed statutory parameters into the analysis, this paper provides a granular, retrospective view of how specific estate tax policy levers affect tax outcomes. Using a decomposition framework that mirrors actual tax law, I estimate the effective estate tax rates faced by filers over time and the contributions of exemptions, deductions, and rates to changes in those effective rates.

Table 9: OLS Estimates for Average (Per Estate) Net Tax Owed Based on Tax Before Credits by Time Period (2012 - 2021)

	2012-13	2014-18	2019-2021
Total Tax Liability Before Credits	0.9895***	0.9932***	0.9711***
	(0.0037)	(0.0022)	(0.0118)
Constant	-1.7e+06***	-2.0e+06***	-3.5e+06***
	(3.7e+04)	(3.1e+04)	(1.5e+05)
N	5	15	9
R-Squared	1.0000	0.9999	0.9990
Adj. R-Squared	0.9999	0.9999	0.9988
P-Value	0.0000	0.0000	0.0000

[1] Observations are brackets based on ranges of estate values from IRS filing year estate tax tables by year. All filing estates are included in the analysis.
[2] All values are per estate, calculated with the aggregate amounts per range of estate values divided by the number of estates in the IRS bracket by tax status.
[3] The filing years 2010 and 2011 are omitted given the complex retroactive 'voluntary filing' policy enacted for the year 2010.

The findings indicate that U.S. estate tax policy changes have significantly eroded the effective tax rate and the tax base. For example, the average pre-credit effective estate tax rate after deductions has fallen from over 20% in the late 1990s to roughly 11% in recent years. Notably, tax credits have a minimal impact (around a 3% reduction in liabilities as of 2021) on reducing estate tax liabilities. This suggests that while higher unified credits may have eroded the tax base, they play a much smaller role in reducing the tax liability of estates that are valued above the exemption threshold.

Future research could extend the framework presented in this paper to examine longer-run responses (e.g., changes in avoidance behavior or wealth accumulation due to estate tax policy) and to incorporate changing wealth distributions. As comprehensive data on wealth and estate flows (like the GC Wealth Project data used here) become more available, analysts can refine these estimates and

explore how estate tax policy interacts with inequality and taxpayer behavior. Such work can further inform the design of estate and gift tax policies that balance revenue generation with equity and efficiency considerations.

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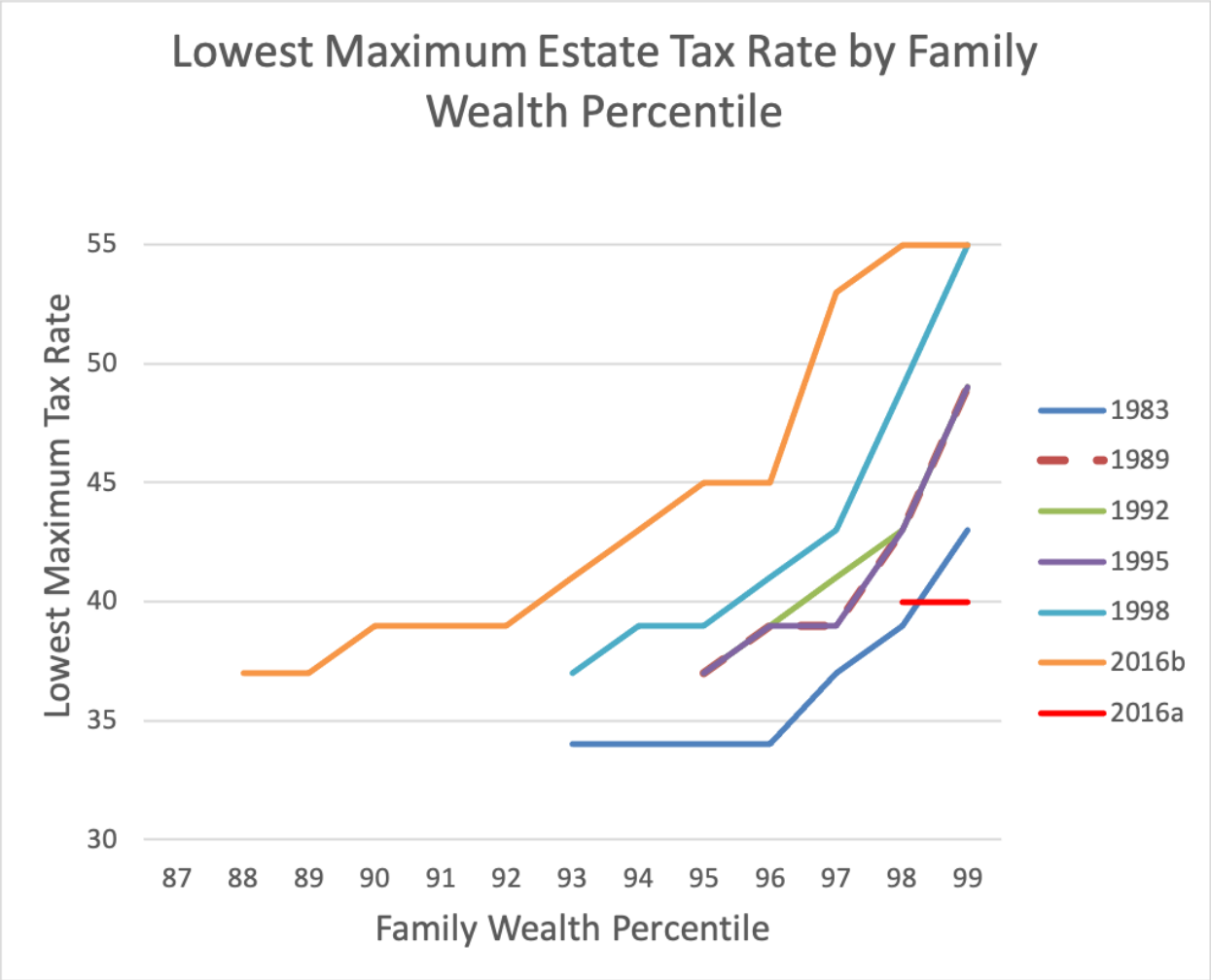
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A Appendix

Figure 10: Hypothetical Lowest Possible Maximum Estate Tax Rate by Family Wealth Distribution Percentile



A.1 IRS and Other Policy Tables and Figures

Table 10: Sample Data from IRS's 1995 Filing Year Tables File

Size of gross estate	Type of property: Gross estate for tax purposes	Type of property: Gross estate for tax purposes	Type of property: Personal residence	Type of property: Personal residence	Type of property: Real estate	Type of property: Real estate
	Number	Amount	Number	Amount	Number	Amount
All returns, total	69755	117697788	42371	8370542	37654	13854460
$600,000 under $1,000,000	37328	28555075	21652	3243281	18609	3798330
$1,000,000 under $2,500,000	24544	36061599	15517	3060377	13911	4704582
$2,500,000 under $5,000,000	5330	18104287	3473	1073934	3374	2221303
$5,000,000 under $10,000,000	1683	11653648	1127	511545	1098	1381843
$10,000,000 under $20,000,000	570	7844740	384	252648	418	774453
$20,000,000 or more	300	15478439	219	228757	245	973949
Taxable returns, total	31563	67184741	17367	3847147	15770	6644984
$600,000 under $1,000,000	13827	11193040	7155	1151227	6177	1344311
$1,000,000 under $2,500,000	12712	18851171	7064	1428352	6447	2181729
$2,500,000 under $5,000,000	3298	11288952	2034	617704	1991	1239002
$5,000,000 under $10,000,000	1105	7767464	684	303009	680	758100
$10,000,000 under $20,000,000	390	5366376	259	170983	286	446436
$20,000,000 or more	231	12717737	169	175873	190	675406
Nontaxable returns, total	38192	50513048	25004	4523395	21884	7209475
$600,000 under $1,000,000	23501	17362035	14497	2092055	12432	2454019
$1,000,000 under $2,500,000	11832	17210429	8452	1632025	7464	2522853
$2,500,000 under $5,000,000	2032	6815335	1438	456230	1383	982301
$5,000,000 under $10,000,000	578	3886183	442	208536	418	623743
$10,000,000 under $20,000,000	181	2478364	124	81665	132	328017

$20,000,000 or more	68	2760702	49	52883	54	298543

[1] Types of property, deductions, and so on are all merged in the original excel files.

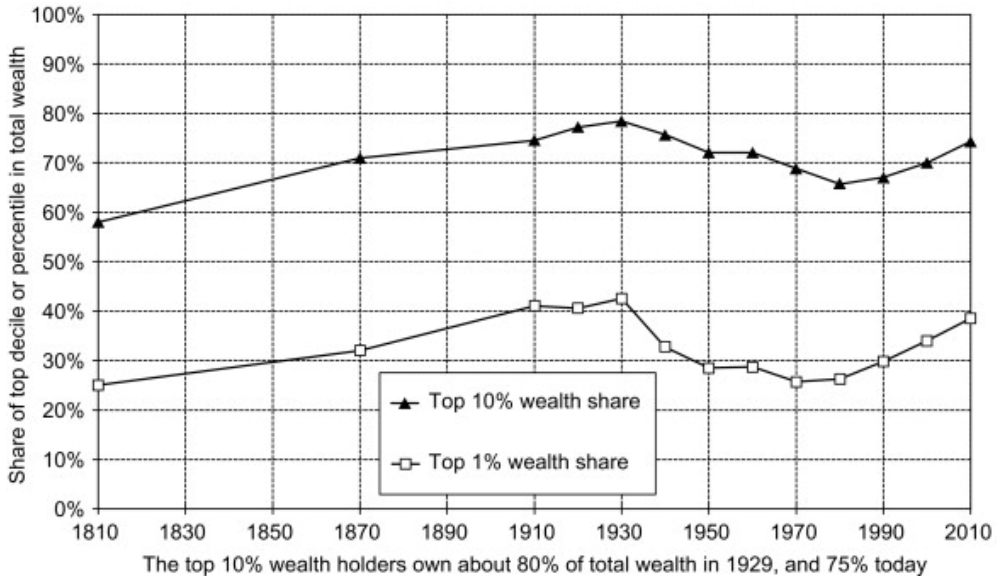
[2] Amounts are in thousands of dollars.

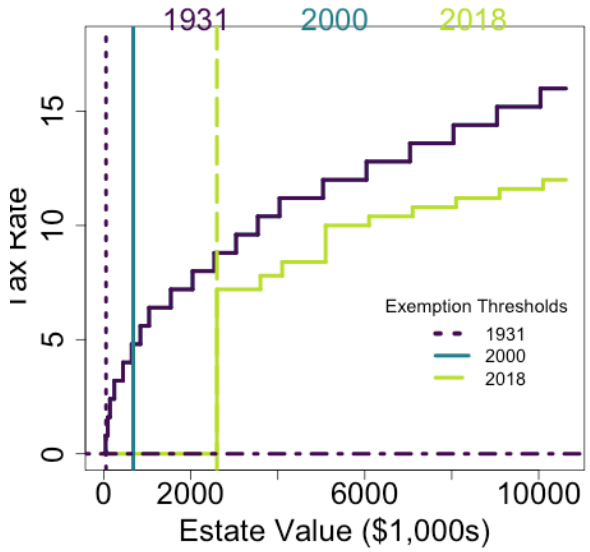
[3] Any deductions or credits that were missing for major periods of time during the pre or post-EGTRRA period (or both) are excluded.

[4] All values are per estate, or the aggregate amounts per range of estate values (as provided by the IRS in filing year tables) divided by the corresponding number of estates.

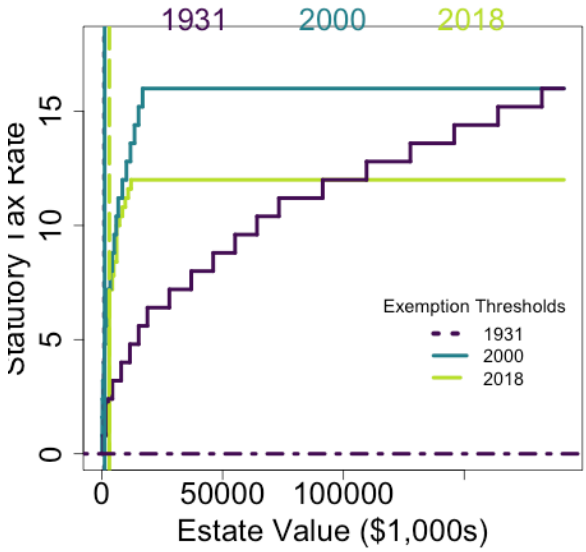
[5] Values with insufficient numbers of returns are excluded from IRS tables, which leads to missing observations.

Figure 11: Wealth inequality in the United States, 1810–2010. Source: Piketty and Zucman (2015) (Figure 15.15)

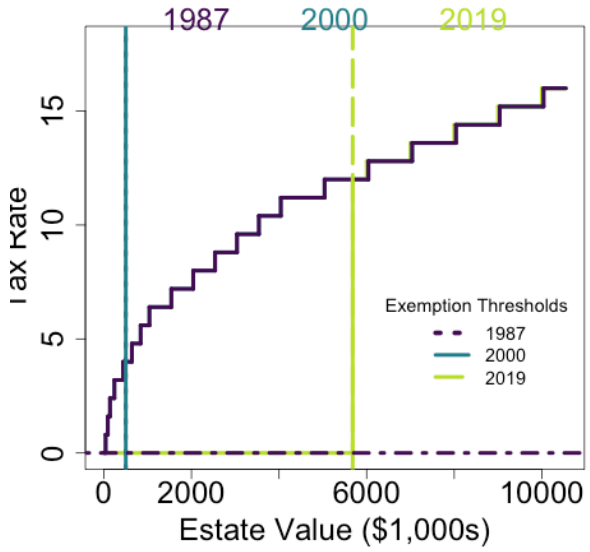




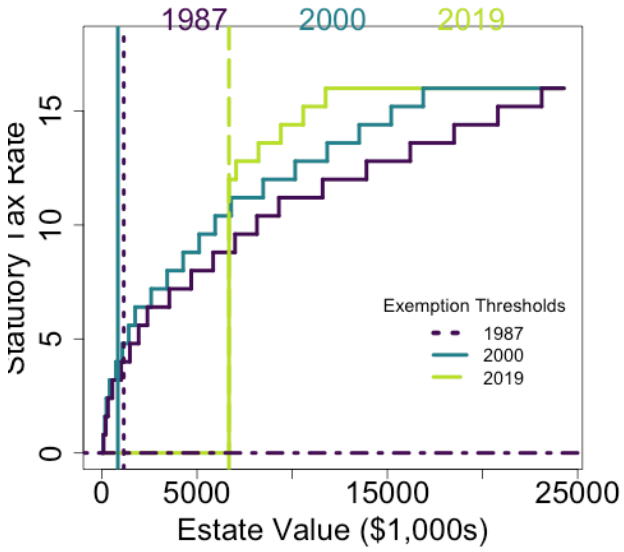
(a) Connecticut



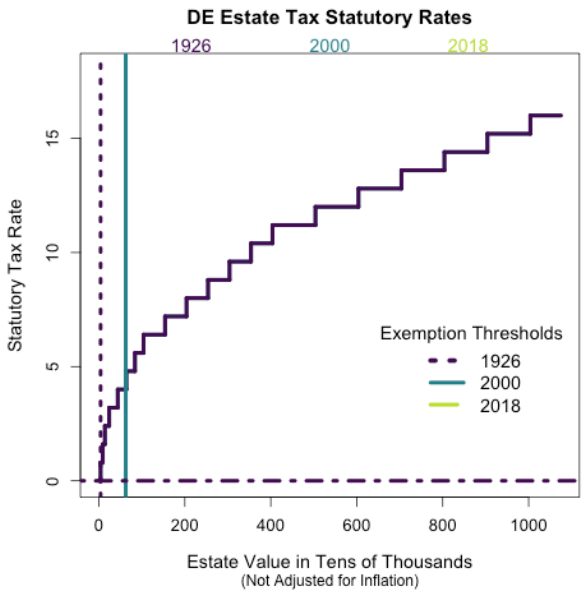
(b) Connecticut, Inflation-Adjusted



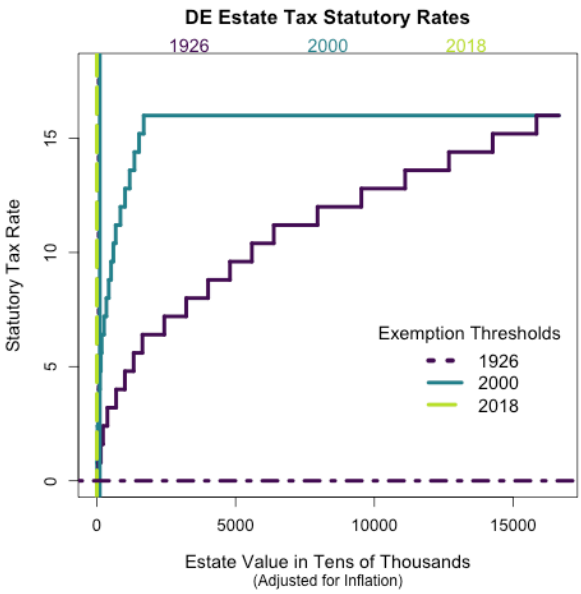
(c) D.C.



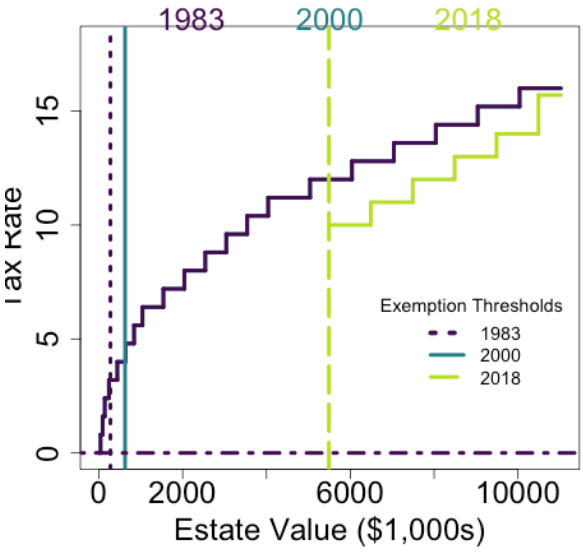
(d) D.C., Inflation-Adjusted



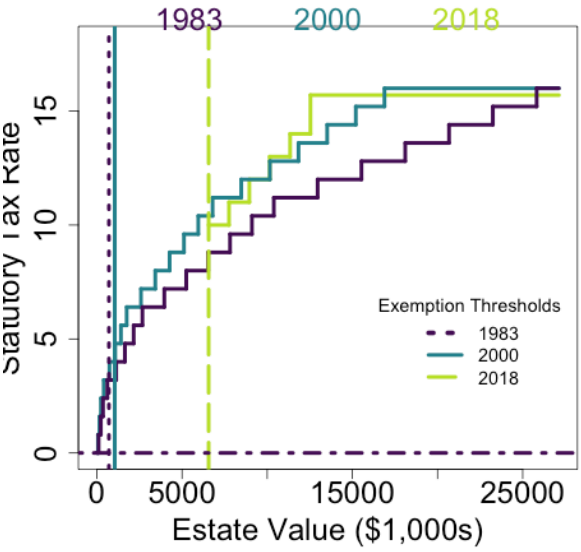
(a) Delaware



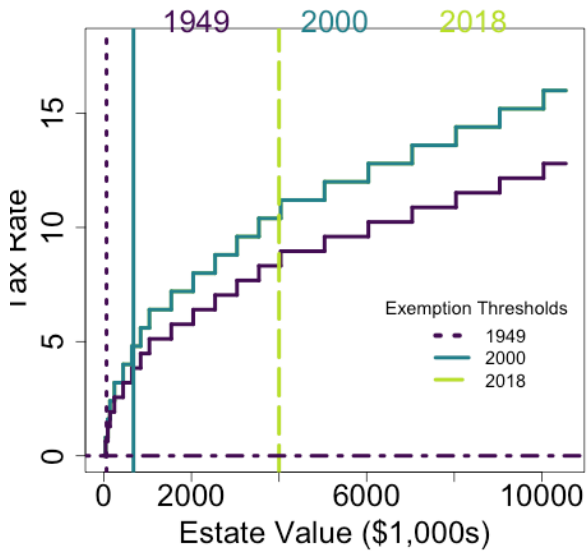
(b) Delaware, Inflation-Adjusted



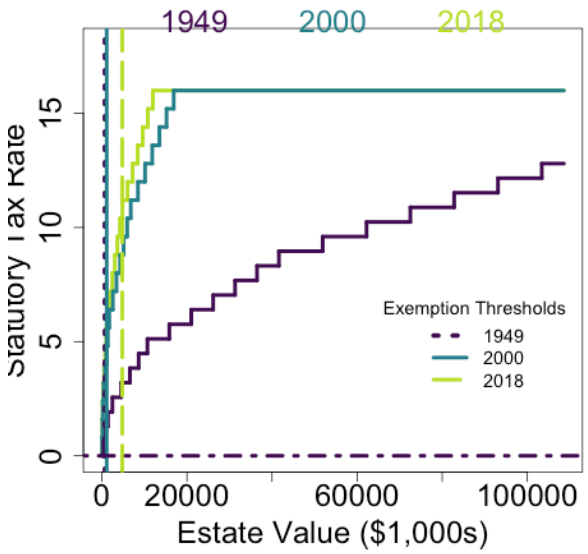
(c) Hawaii



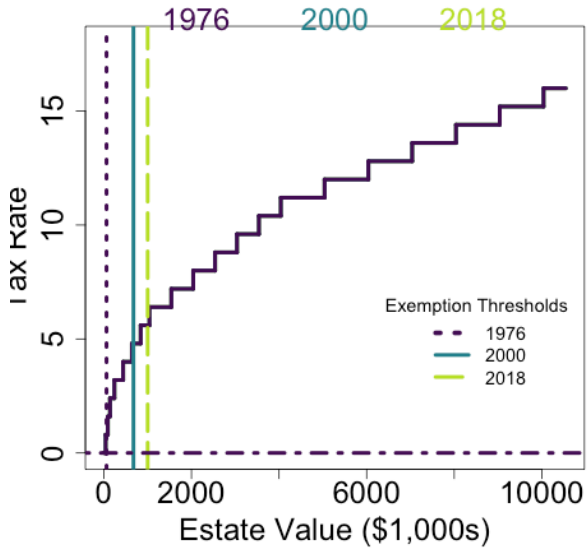
(d) Hawaii, Inflation-Adjusted



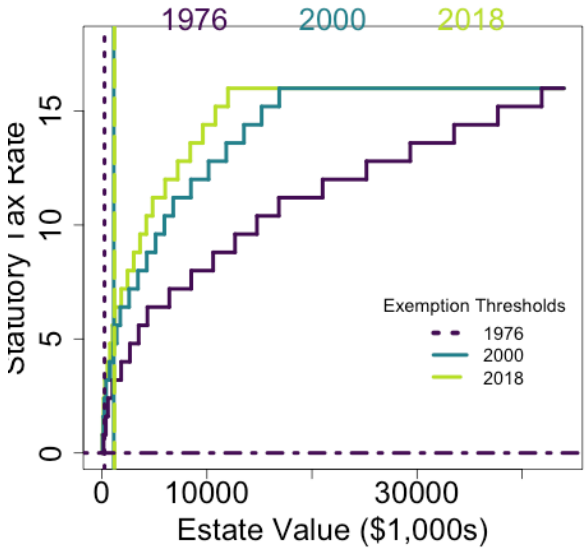
(a) Illinois



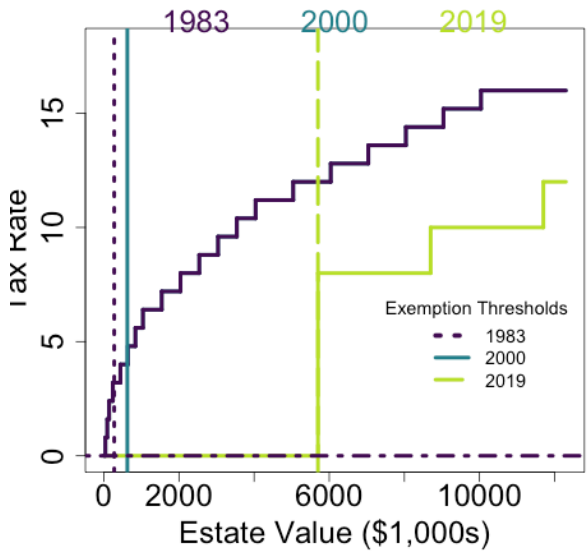
(b) Illinois, Inflation-Adjusted



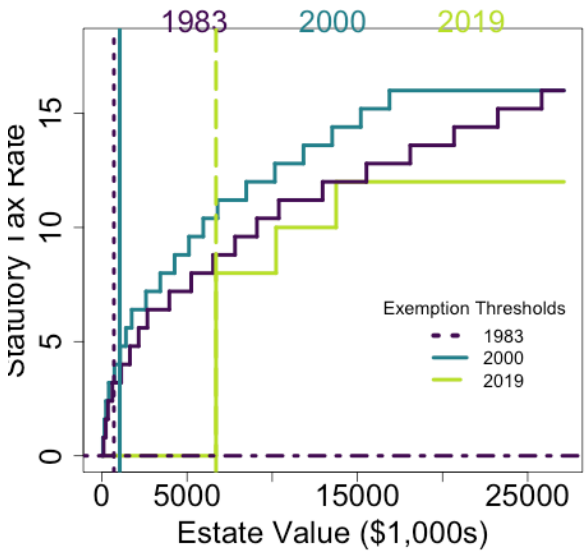
(c) Massachusetts



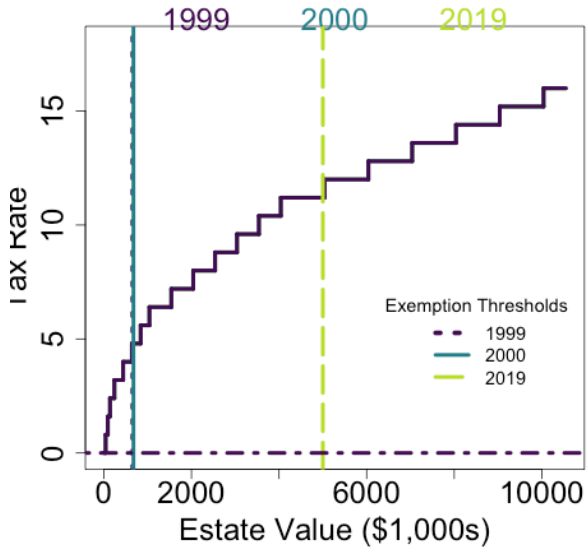
(d) Massachusetts, Inflation-Adjusted



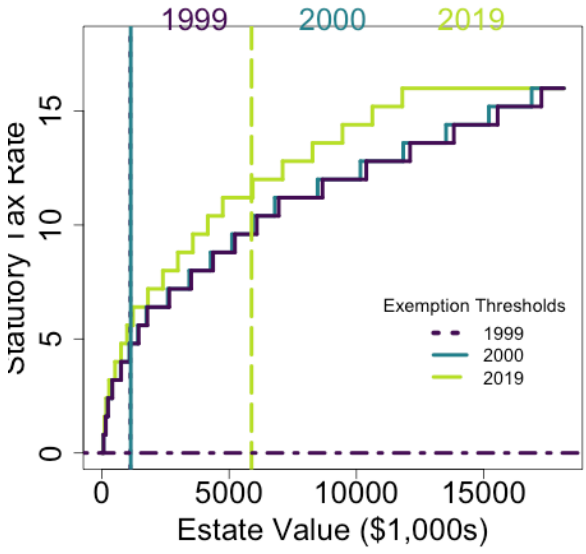
(a) Maine



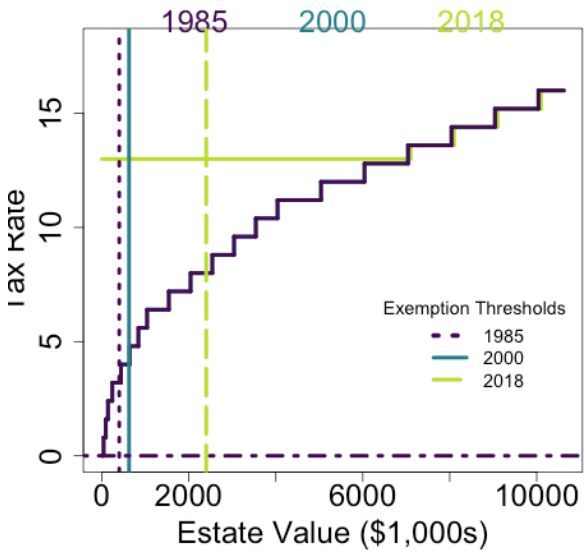
(b) Maine, Inflation-Adjusted



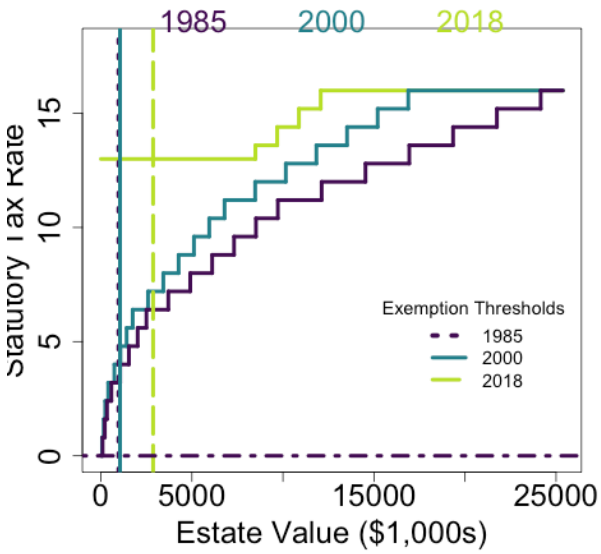
(c) Maryland



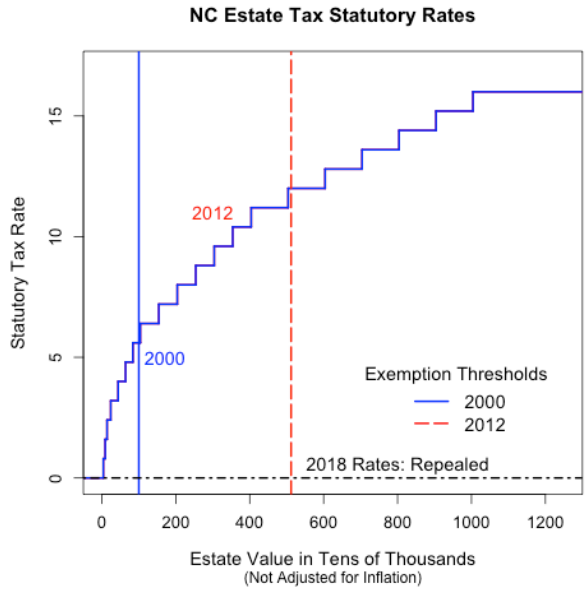
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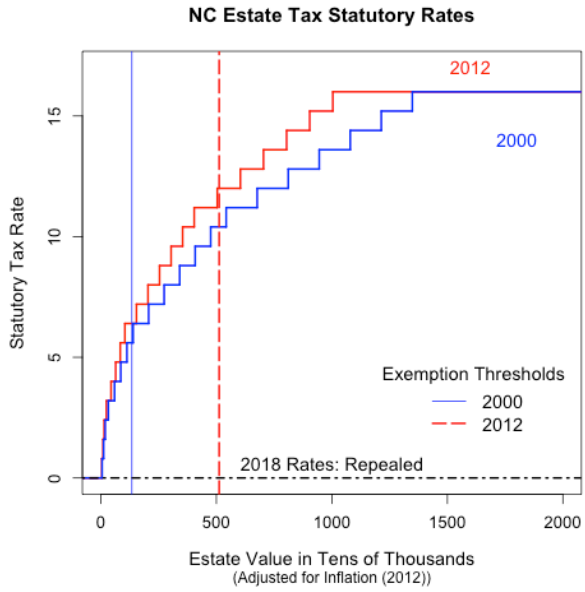
(a) Minnesota



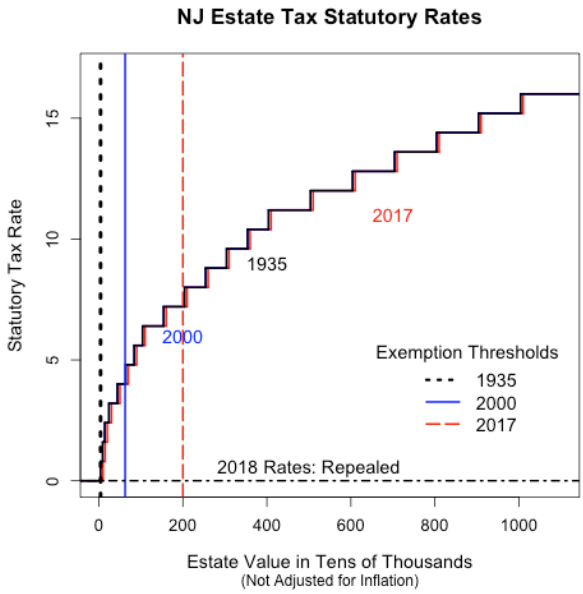
(b) Minnesota, Inflation-Adjusted



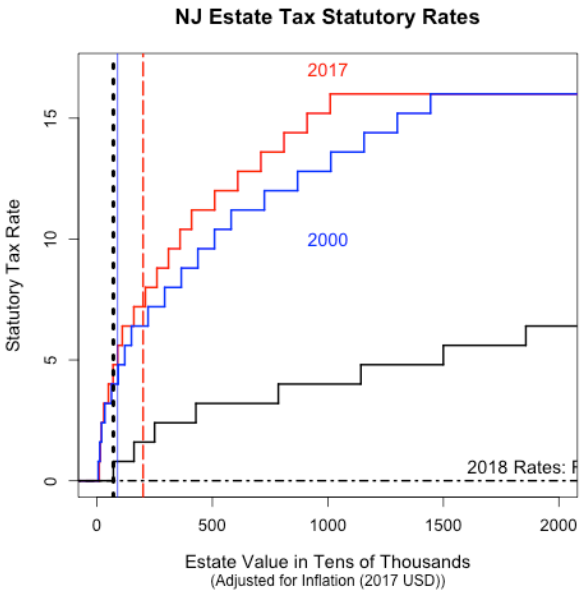
(c) North Carolina



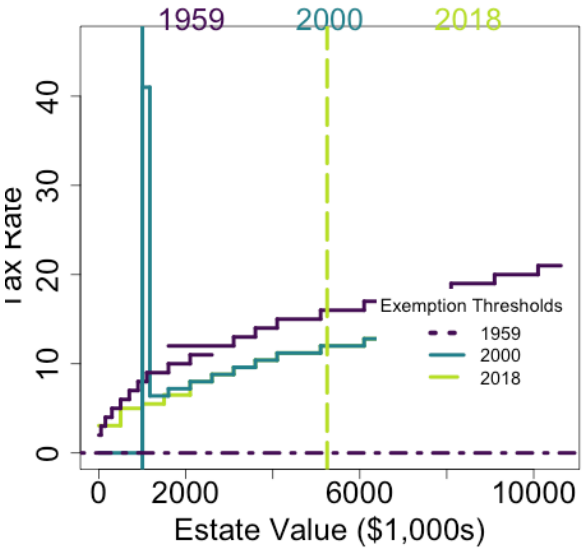
(d) North Carolina, Inflation-Adjusted



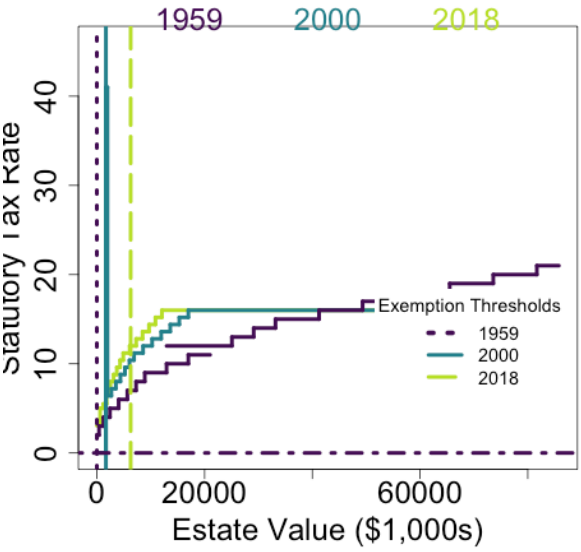
(a) New Jersey



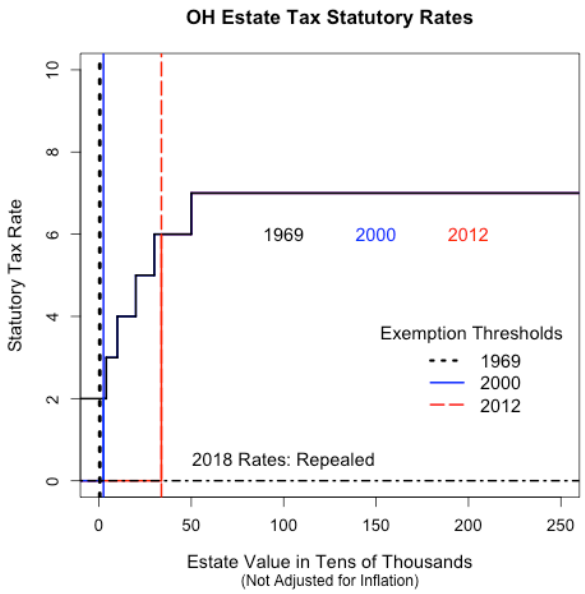
(b) New Jersey, Inflation-Adjusted



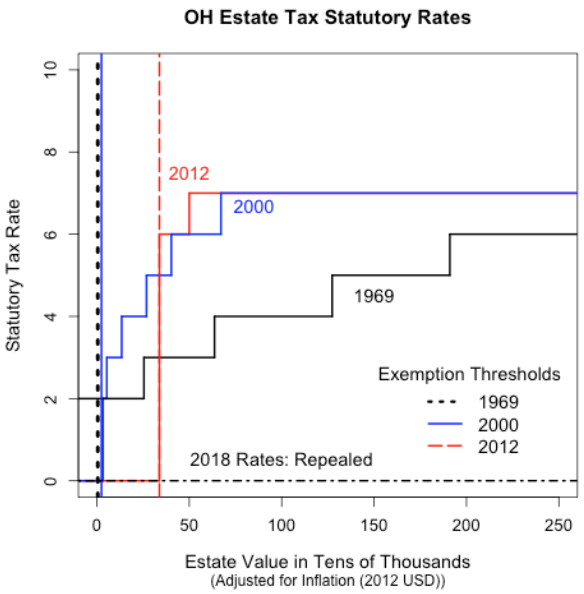
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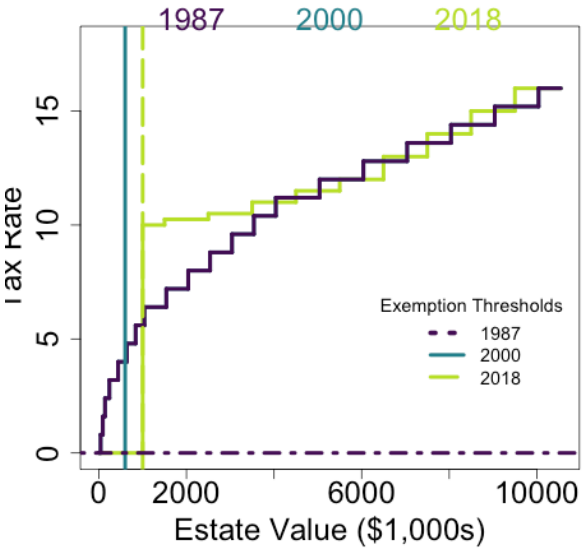
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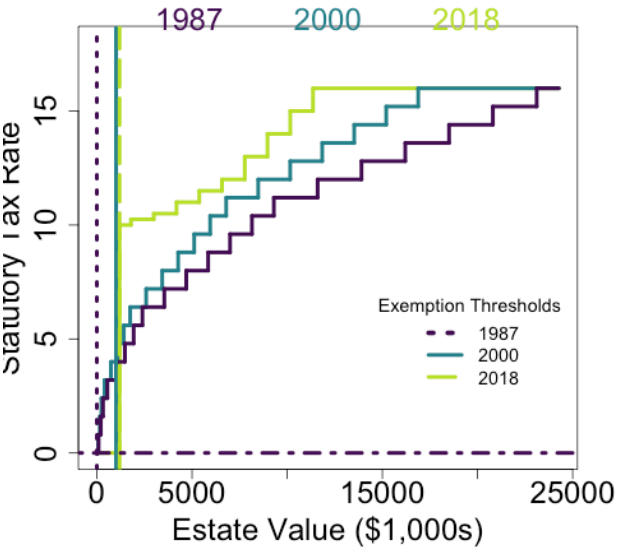
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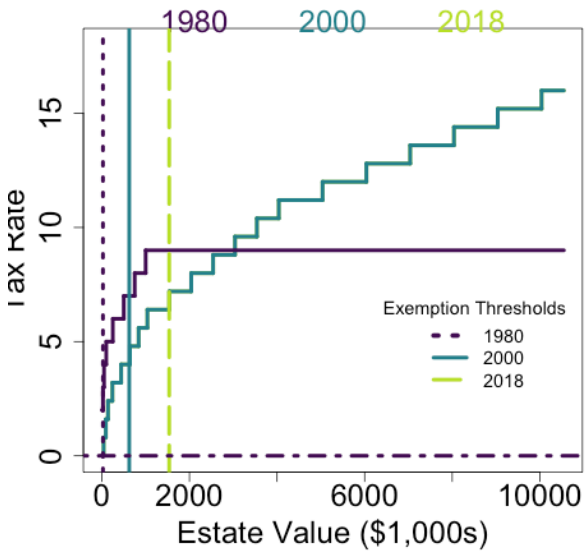
(b) Ohio, Inflation-Adjusted



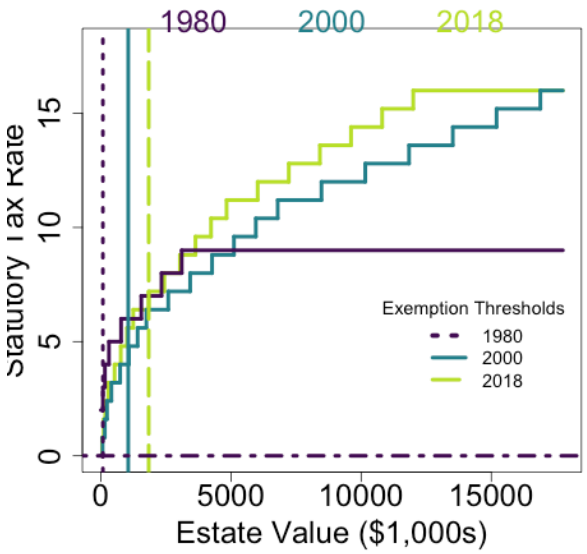
(c) Oregon



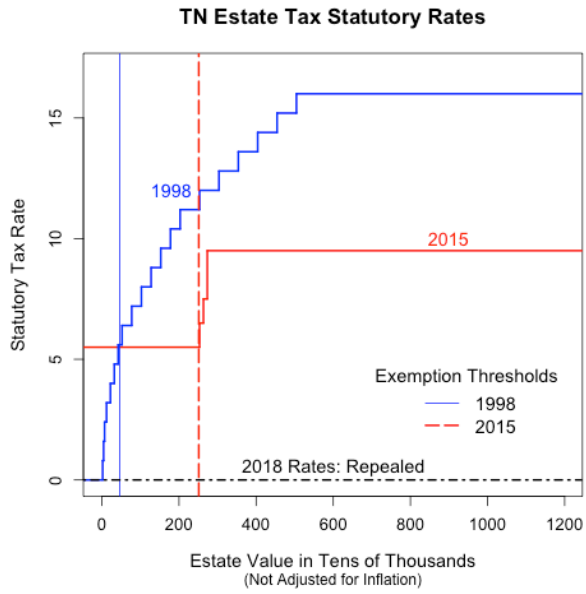
(d) Oregon, Inflation-Adjusted



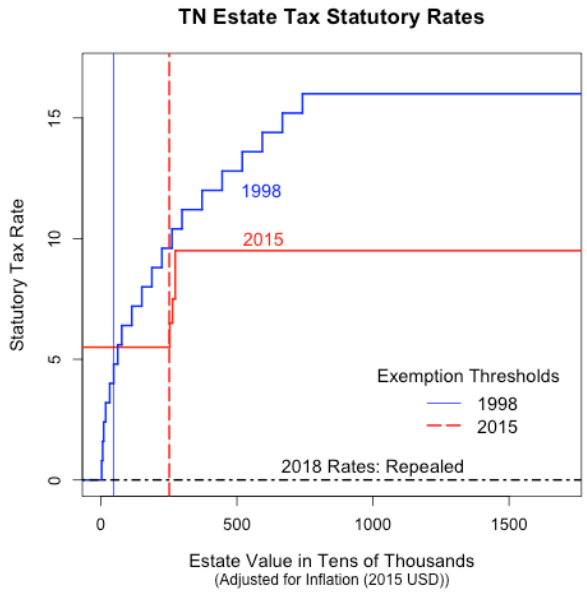
(a) Rhode Island



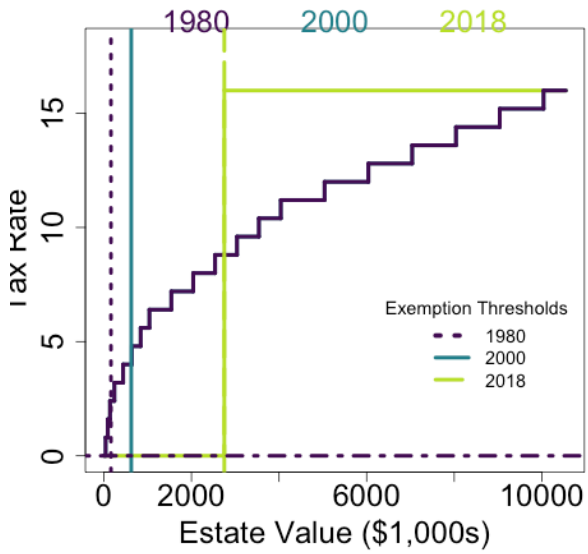
(b) Rhode Island, Inflation-Adjusted



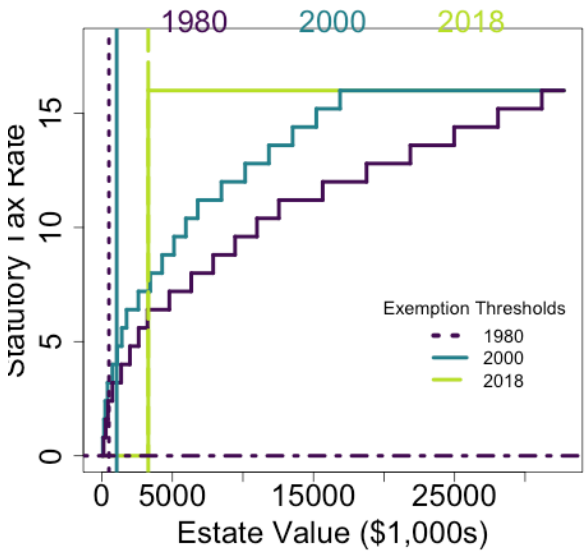
(c) Tennessee



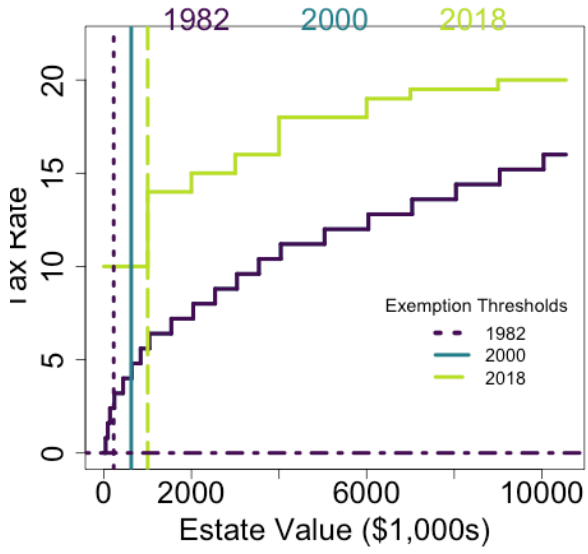
(d) Tennessee, Inflation-Adjusted



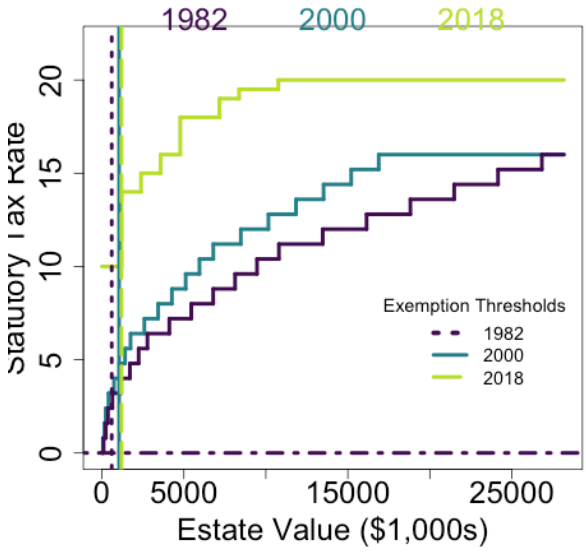
(a) Vermont



(b) Vermont, Inflation-Adjusted



(c) Washington



(d) Washington, Inflation-Adjusted

Table 11: Tax Return Components in IRS Tables By Year

Component	95	96	97	98	99	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21
Gross estate for tax purposes	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Net Worth*	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	Y
Type of property																											
Personal residence	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Real estate	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Real estate partnerships	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Closely held stock	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Publicly traded stock*	N	N	N	N	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Other stock*	Y	Y	Y	Y	Y	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
State and local bonds	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Federal bonds**	N*	N*	N*	N*	N*	N*	N*	N*	N*	N*	N*	N*	N*	N*	N*	N*	N*	N*	Y	Y	Y	Y	Y	Y	Y	Y	Y
Federal savings bonds**	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N*	N*	N*	N*	N*	N*	N*	N*
Other Federal bonds**	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N*	N*	N*	N*	N*	N*	N*	N*
Corporate and foreign bonds	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Bond funds	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

Unclassifiable mutual funds	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Unallocated investments*	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y
Cash assets**	N*	N*	N*	N*	N*	N*	N*	N*	N*	N*	N*	N*	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Cash**	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N*	N*	N*	N*	N*	N*	N*	N*	N*	N*	N*	N*	N*	N*	N*
Cash management accounts**	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N*	N*	N*	N*	N*	N*	N*	N*	N*	N*	N*	N*	N*	N*	N*
Net life insurance**	N*	N*	N*	N*	N*	N*	N*	N*	N*	N*	N*	N*	N*	N*	N*	N*	N*	N*	Y	Y	Y	Y	Y	Y	Y	Y	Y
Insurance, face value**	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N*	N*	N*	N*	N*	N*	N*	N*	N*
Insurance, policy loans**	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N*	N*	N*	N*	N*	N*	N*	N*	N*
Farm assets	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Private equity and hedge funds**	N*	N*	N*	N*	N*	N*	N*	N*	N*	N*	N*	N*	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Other limited partnership**	N*	N*	N*	N*	N*	N*	N*	N*	N*	N*	N*	N*	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Limited partnerships**	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N*	N*	N*	N*	N*	N*	N*	N*	N*	N*	N*	N*	N*	N*	N*
Other noncorporate business assets	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Mortgages and notes	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Retirement assets*	N	N	N	N	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Annuities*	Y	Y	Y	Y	Y	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Depletable/intangibles	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Art	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

Other assets	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Type of deductions																											
Funeral expenses	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Executors' commissions	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Attorneys' fees	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Other expenses/losses	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Debts and mortgages	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Bequests to surviving spouse	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Charitable deduction	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Total allowable deductions	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
State death tax deduction*	N	N	N	N	N	N	N	N	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Everything Else																											
Taxable estate	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Adjusted taxable gifts	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Adjusted taxable estate	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Tentative estate tax	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Gift tax	Y	Y	Y	Y	Y	Y	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*
Estate tax before credits	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

Deceased spousal unused exclusion*	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y
Allowable unified credit	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
State death tax credit*	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Other tax credits*	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	N	N	N	N	N	N	N	N	N	N
Net estate tax	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Generation-skipping tax*	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Community property	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Total Mutual Funds*	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	N	N	N	N	N	N	N	N
Total joint property	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Total lifetime transfers	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Qualified terminable interest trusts*	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	N	N	N	N	N	N	N	N

[1] *: Single starred items are not available in all years

[2] **: Double starred items are not available in all years, but can be calculated from other available components.

Table 12: IRS Data Table Brackets by Year

1995-2000	2001-2004	2005-2006	2007-2009	2010-2011	2012	2013-2018	2019-2021
$600,000-1 mil	< $1 mil						
$1-2.5 mil	$1-1.5 mil	< $1.5 mil					
	$1.5-2 mil	$1.5-2 mil	< $2 mil				
$2.5-5 mil	$2-3.5 mil	$2-3.5 mil	$2-3.5 mil	< $3.5 mil			
	$3.5-5 mil	$3.5-5 mil	$3.5-5 mil	$3.5-5 mil	< $5 mil	< $5 mil	
$5-10 mil	$5-10 mil	$5-10 mil	$5-10 mil	$5-10 mil	$5-10 mil	$5-10 mil	< $10 mil
$10-20 mil	$10-20 mil	$10-20 mil	$10-20 mil	$10-20 mil	$10-20 mil	$10-20 mil	$10-20 mil
> $20 mil	> $20 mil	> $20 mil	> $20 mil	> $20 mil	> $20 mil	$20-50 mil	$20-50 mil
						> $50 mil	> $50 mil

[1] Types of property, deductions, and so on are all merged in the original excel files. Errors in file such as missing names for 'Amount' columns or unmerged cells for the second row of names have been fixed.

[2] Amounts are in thousands of dollars.

[3] Any deductions or credits that were missing for major periods of time during the pre or post-EGTRRA period (or both) are excluded.

[4] All values are per estate, or the aggregate amounts per range of estate values (as provided by the IRS in filing year tables) divided by the corresponding number of estates.

[5] Values with insufficient numbers of returns are excluded from IRS tables, which leads to missing observations.

A.2 Supplementary Graphs and Tables for Policy Parameters

Figure 21: Decomposition of Change in Estate Tax Liability by Factor Since 2000

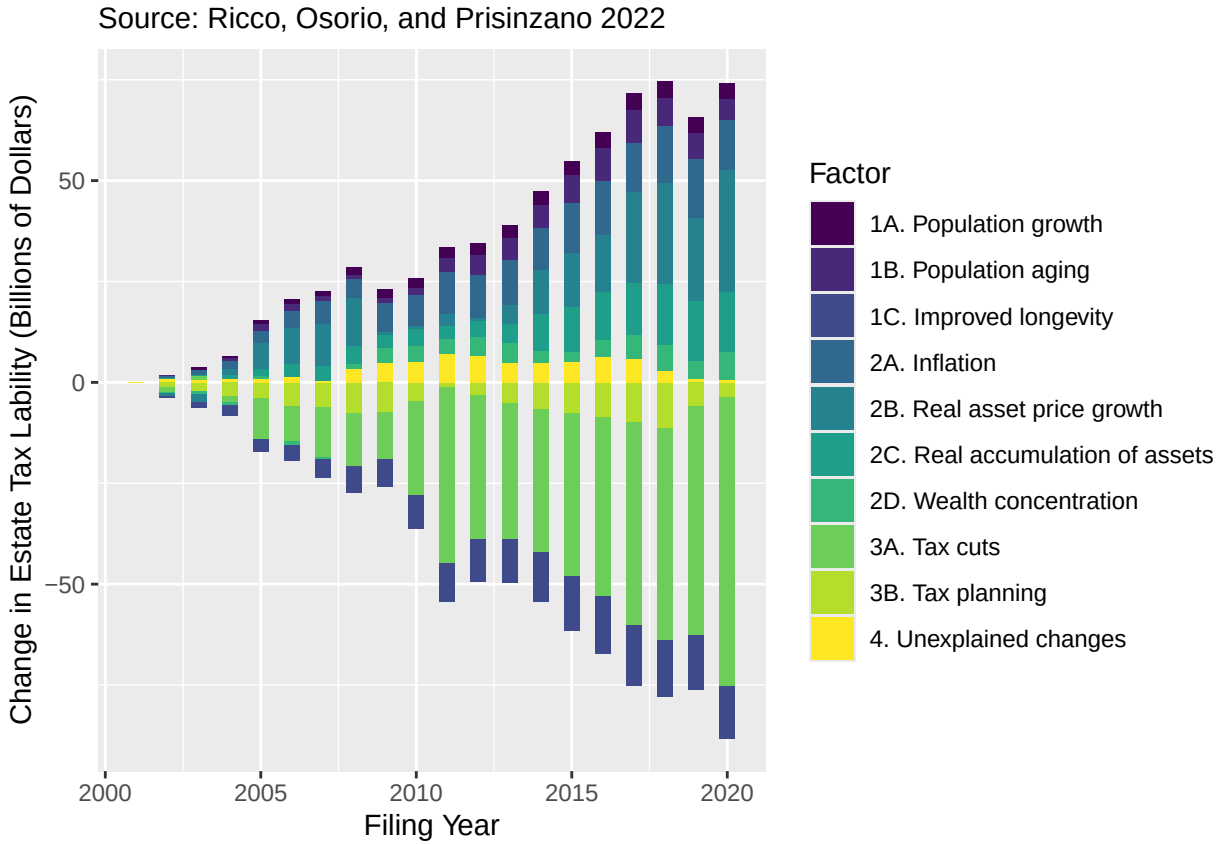
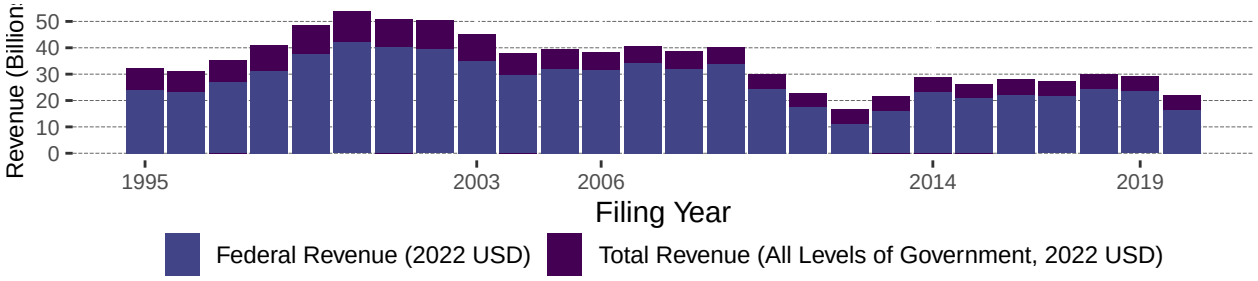


Figure 22: Estate, Inheritance, and Gift Tax Revenue for All Levels of Government and the Federal Government (1995-2020)

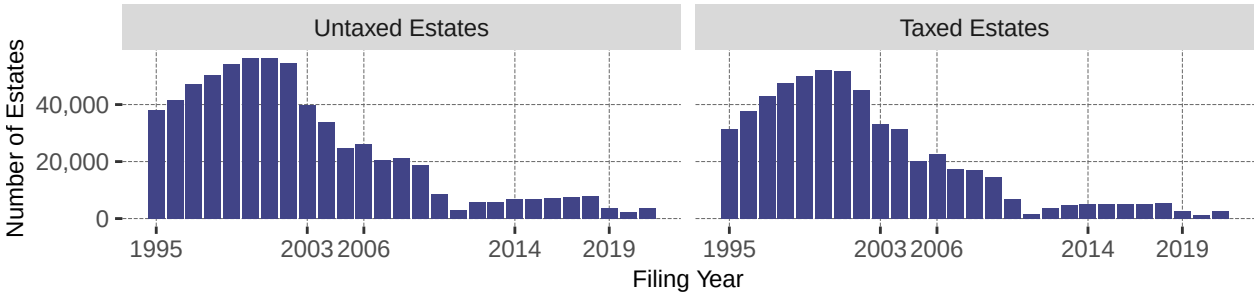


1. Data obtained from IRS public use estate tax tables for the year in which the returns are filed. The majority of estates filed in a given year likely belonged to decedents who passed away in the year prior.
2. Data is adjusted to 2022 USD using the World Inequality Database's inflation index.
3. Values (typically spousal bequests and deceased spousal unused exclusion) with insufficient numbers of returns are excluded from IRS tables, which leads to missing observations for the figures for taxed and untaxed estates, and are therefore set to zero for the purposes of deduction graphs only. These are included in totals for all estates.

Table 13: Estate Tax Base as of 2012. Source: Table 2 from Joint Committee on Taxation (2012).

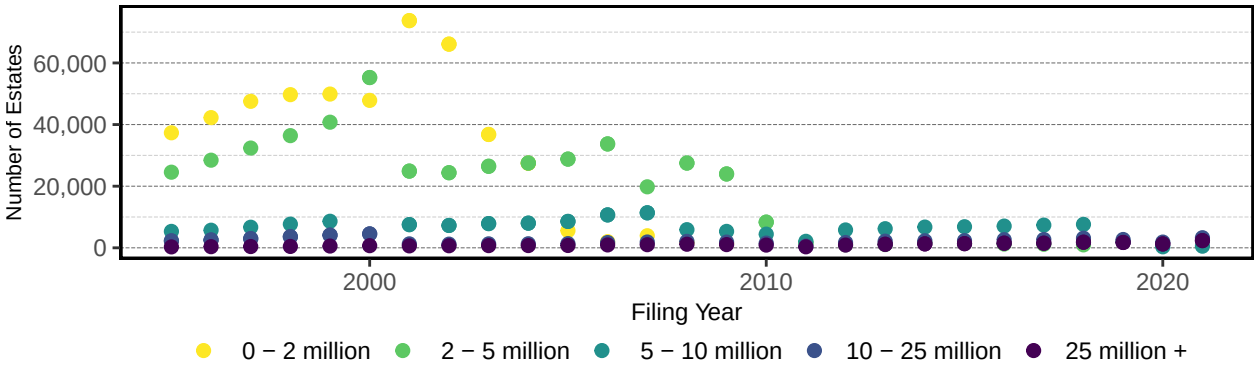
Fully.Included	Personal.Residences
Fully Included	Other Real Estate
	Publicly Traded Stock
	Bonds
	Mutual Funds
	Life Insurance on the Decedent Owned by the Decedent
	Pension and Annuity Assets
	Cash
	Collectibles
Partially Included	Family Owned Business Assets
	Farming Property
	Closely Held Business Assets
	Conservation Easements
Fully Excluded	All Assets Transferred to a Surviving Spouse
	All Assets Transferred to Charity
	Certain Estate Administrative Expenses (e.g., funeral expenses)
	Certain Assets Transferred to a Trust

Figure 23: Number of Taxed and Untaxed Estates by Year



Data obtained from IRS public use estate tax tables for the year in which the returns are filed. The majority of estates filed in a given year likely belonged to decedents who passed away in the year prior.

Figure 24: Number of Estates by Average Gross Estate Size by Bracket Over Time



1. Data obtained from IRS public use estate tax tables for the year in which the returns are filed. The majority of estates show in a given year likely belonged to decedents who passed away in the year prior.
2. The data are matched based on the bracket(s) with average gross estate values that fall within the specified range. The individual data points represent the number estates that fall within all applicable brackets in a given filing year.
3. Data is adjusted to 2022 USD using the World Inequality Database's inflation index.
4. 2010 data is anomalous because the tax was revoked, but retrospectively re-instated on a voluntary basis.

A.3 Supplemental Regressions and Tests

Table 14: ADF Test Results for Level Variables

Variable	Test Statistic	1% Critical	5% Critical	10% Critical	P Value
Log GDP per Capita	-2.107	-3.566	-2.922	-2.596	0.2417
Log Federal EIG Revenue	-2.068	-3.600	-2.938	-2.604	0.2576
Log Top Marginal Tax Rate	-2.509	-3.503	-2.889	-2.579	0.1133
Log Exemption Threshold	1.049	-3.509	-2.890	-2.580	0.9948

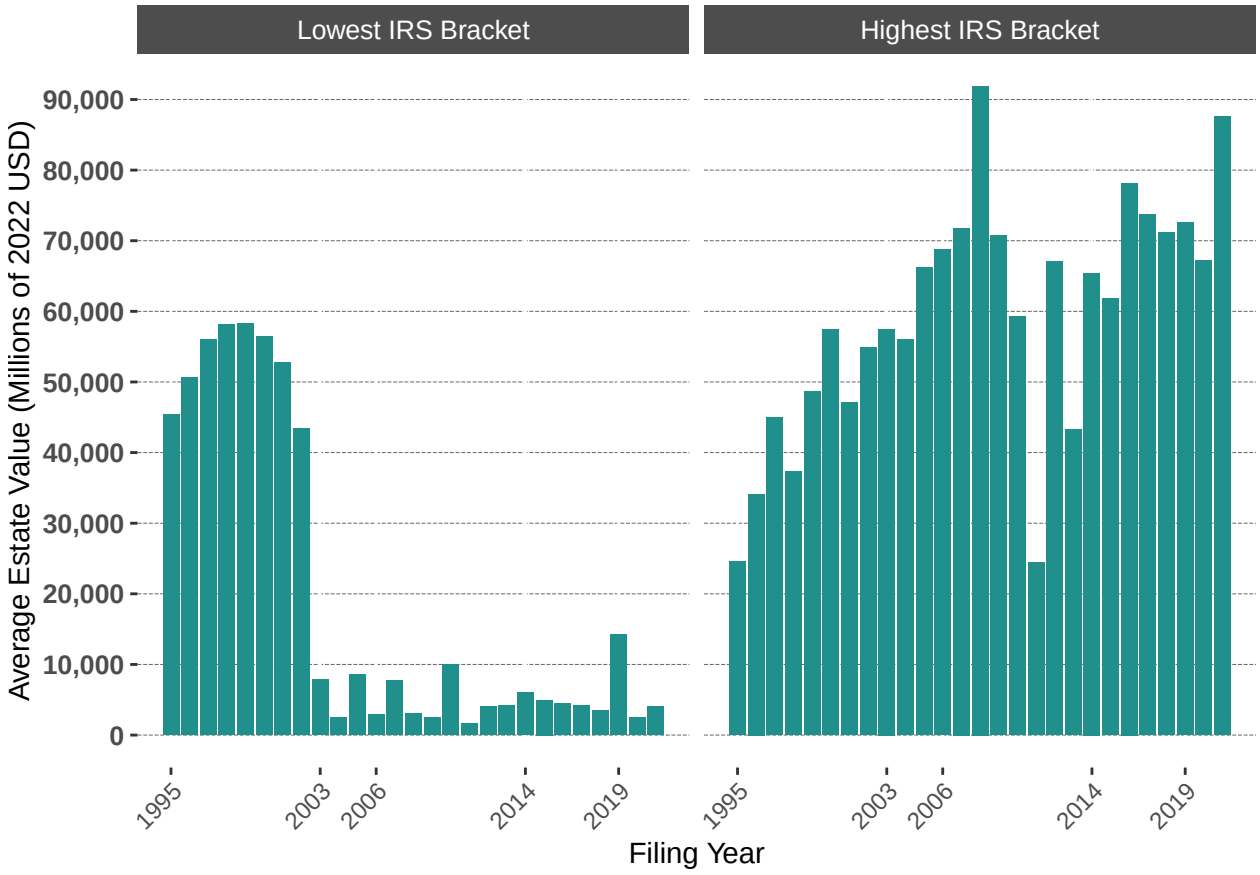
Table 15: ADF Test Results for First Differences

Variable	Test Statistic	1% Critical	5% Critical	10% Critical	P Value
D.Log Federal EIG Revenue	-5.593	-3.607	-2.941	-2.605	0
D.Log Top Marginal Tax Rate	-7.439	-3.504	-2.889	-2.579	0
D.Log GDP per Capita	-5.384	-3.567	-2.923	-2.596	0
D.Log Exemption Threshold	-6.423	-3.509	-2.890	-2.580	0

Table 16: Engle-Granger Cointegration Test Results

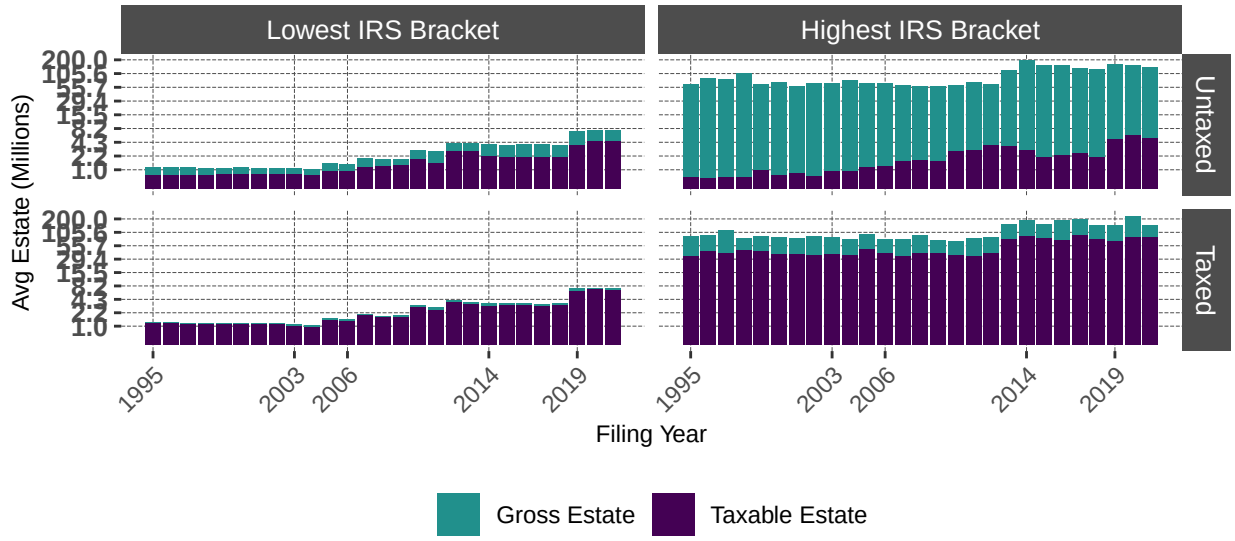
Variable	Test Statistic	1% Critical	5% Critical	10% Critical
Log EIG Rev & Log Top Rate	-1.227	-4.129	-3.464	-3.132
Log EIG Rev & Log Exemption	-2.138	-4.134	-3.466	-3.134
Log Top Rate & Log Exemption	-2.758	-4.003	-3.395	-3.085

Figure 25: Average Gross Estate Size for Lowest and Highest IRS Brackets in Each Year



1. Data is obtained from IRS public use estate tax tables for the year in which the returns are filed. The majority of estates filed in a given year likely belonged to decedents who passed away in the year prior.
2. The lowest bracket ranges from less than $1 million to $10 million. The highest bracket is over $20 million between 1995 and 2012, and over $50 million between 2013 and 2021.
3. Data is adjusted to 2022 USD using the World Inequality Database's inflation index.

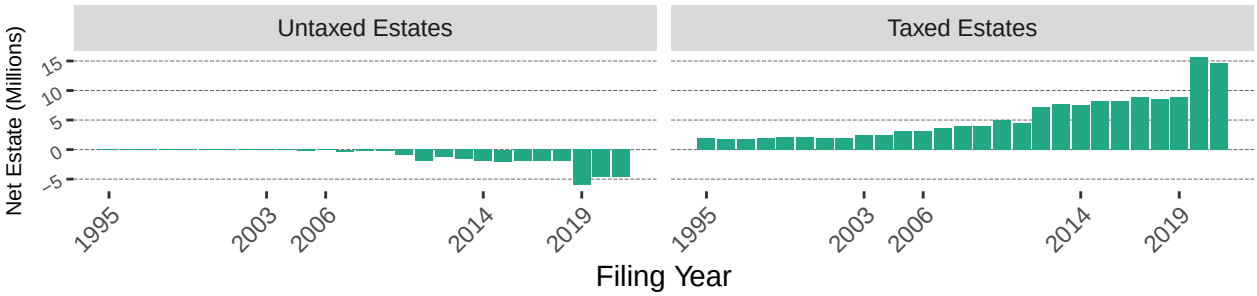
Figure 26: Log† Values for Taxable Portion of Gross Estate on Average for the Lowest and Highest Brackets by Year



†:'Log' values are inverse hyperbolic sine of (asinh(x) = lnx+sqrt(x*x + 1)) to accommodate zeros and negative values. Averages are calculated before they are transformed. While the graph pictures transformed values, the y-axis labels are in millions of 2022 USD.

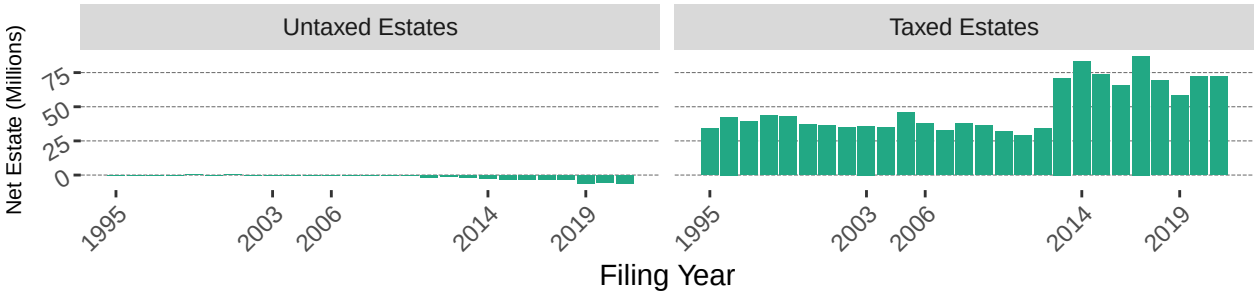
1. Data is obtained from IRS public use estate tax tables for the year in which the returns are filed. The majority of estates filed in a given year likely belonged to decedents who passed away in the year prior.
2. Data is adjusted to 2022 USD using the World Inequality Database's inflation index.
3. Lowest bracket ranges from less than $1 million to $10 million. Highest bracket is over $20 million between 1995 and 2012, and over $50 million between 2013 and 2021.

Figure 27: Average Taxable Estate Minus Exemption Threshold (Millions of USD) by Year for All Estates



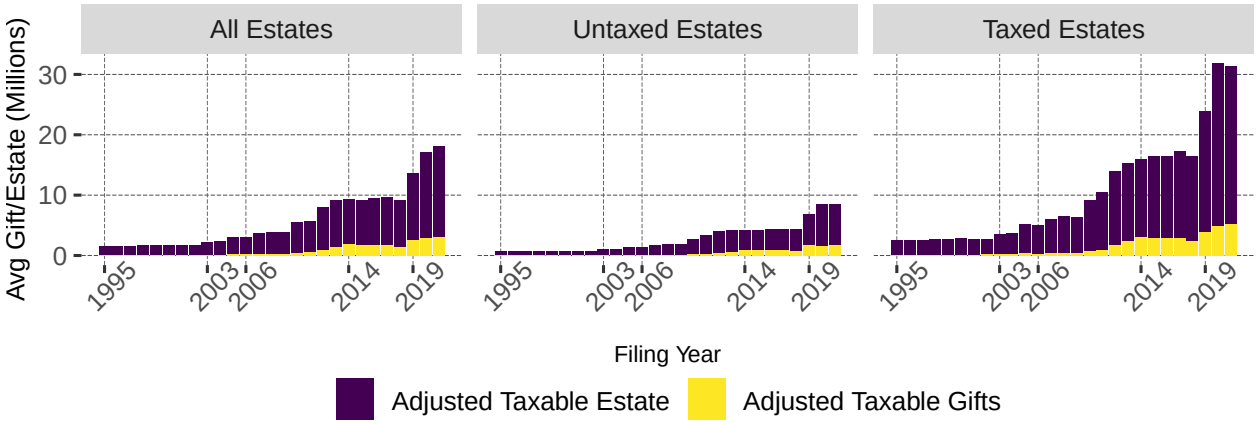
1. Data is obtained from IRS public use estate tax tables for the year in which the returns are filed. The majority of estates filed in a given year likely belonged to decedents who passed away in the year prior. Therefore, the exemption used is the statutory exemption threshold from the year prior to the filing year.
2. Data is adjusted to 2022 USD using the World Inequality Database's inflation index.

Figure 28: Average Taxable Estate Minus Exemption Threshold (Millions of USD) for the Highest IRS Bracket by Year



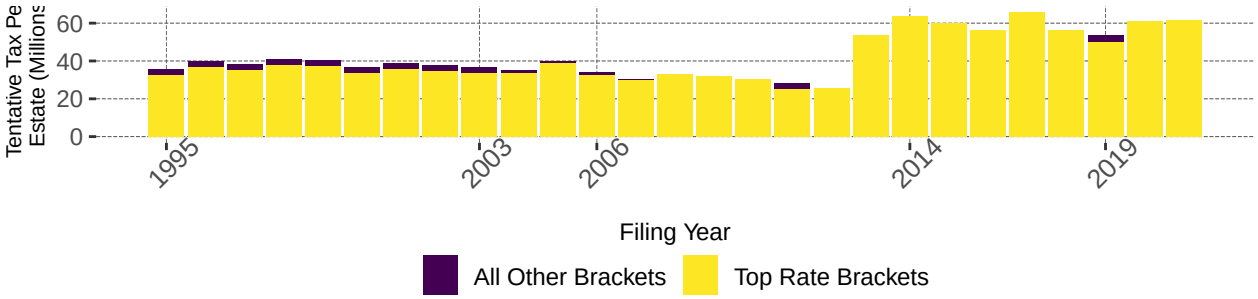
1. Data obtained from IRS public use estate tax tables for the year in which the returns are filed. The majority of estates filed in a given year likely belonged to decedents who passed away in the year prior. Therefore, the exemption used is the statutory exemption threshold from the year prior to the filing year.
2. Data is adjusted to 2022 USD using the World Inequality Database's inflation index.
3. The highest bracket is over $20 million between 1995 and 2012, and over $50 million between 2013 and 2021.

Figure 29: Adjusted Taxable Gifts as a Portion of Adjusted Taxable Estate Value Across All Brackets by Year



1. Data is obtained from IRS public use estate tax tables for the year in which the returns are filed. The majority of estates filed in a given year likely belonged to decedents who passed away in the year prior.
2. Data is adjusted to 2022 USD using the World Inequality Database's inflation index.

Figure 30: Tentative Estate Tax Liability for the Highest Bracket Compared to All Other Brackets



1. Data obtained from IRS public use estate tax tables for the year in which the returns are filed. The majority of estates filed in a given year likely belonged to decedents who passed away in the year prior.
2. Data is adjusted to 2022 USD using the World Inequality Database's inflation index.
3. The highest bracket is over 20 million USD between 1995 and 2012, and over 50 million USD between 2013 and 2021.