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Taxing the Great Wealth Transfer:

Revenue and Distributional Effects of Taxes on Estates, Inheritances, and Unrealized Capital Gains at Death

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Abstract

Over the next several decades, the U.S. will experience the largest intergenerational transfers of wealth in history. Taxing these flows judiciously could raise revenue, boost opportunity, and reduce wealth disparities, but transfer taxes have been eviscerated in recent years. Using an innovative methodology, we examine the revenue and distributional effects of reforming the estate tax, converting it to an inheritance tax, and taxing unrealized capital gains at death. We find that wealth transfer taxes could raise much more revenue than the current estate tax and remain quite progressive.

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I. Introduction

Private transfers of resources across generations are as old as society itself, and taxes on wealth transfers date back at least two thousand years. Controversies are equally ubiquitous, featuring prominently in biblical stories and Shakespearean plots alike. In modern times, transfers are the source of a substantial share of household wealth, but the size and distribution of intergenerational transfers have raised concerns about creating family dynasties, exacerbating trends in inequality, and limiting economic opportunity and mobility.

Although taxes on wealth transfers – including levies on estates, inheritances, and unrealized gains held by the asset owner until death – typically affect very few people directly and raise little revenue, they have long been the focus of heated controversy. Batchelder (2007), Gale and Slemrod (2001), Kopczuk (2013), and OECD (2021) provide reviews.

These issues will likely rise in importance over the next several decades, as the U.S. and other countries come to grips with "The Great Wealth Transfer" – the largest set of intergenerational wealth transfers in history. Data from the Surveys of Consumer Finances (SCF), described below, indicate that the ratio of bequeathable net worth to GDP in the U.S. increased from 272% in 1997 to 465% in 2021. Of that increase, almost all – 96% – accrued to households in which the respondent is aged 55 and older and 74% accrued to the wealthiest 10% of households aged 55 and older. Similar trends have occurred in other advanced countries.[1] If the experience of earlier generations is a guide, a substantial share of the wealth held by households aged 55 or older will be held until death – especially among the very wealthiest households – and be bequeathed to future generations in a manner that maintains family dynasties and expands absolute wealth differences among households in the recipient

[1] See Sturrock (2023) and Cribb (2019) for the UK; Bauluz and Meyer (2021) for France; and Bartels and Morelli (2021) for Italy and Germany.

generation.[2]

Current U.S. law does little to tax wealth transfers. There is no federal inheritance tax. Unrealized capital gains held until the owner's death completely escape income tax and thus are taxed, if at all, only under the estate tax. The estate tax, in turn, has been all but eviscerated over the past 50 years by a variety of policy changes, including major tax cuts in 2001 and 2017. In 1972, 6.5 percent of decedents paid estate taxes, generating approximately 0.4% of GDP in revenues. By 1997, those figures fell to 2.1% and 0.19%, respectively. In 2021, fewer than 0.1% of decedents—one out of every 1,300—paid any estate taxes, and the tax raised just 0.08% of GDP in revenue.[3] The reduction in revenues is especially noteworthy, given the substantial increase in net worth among the elderly over the same period. Most recently, in 2025, Congress and President Trump reduced estate taxes further.

In anticipation of the Great Wealth Transfer—as well as the precarious federal fiscal outlook (Auerbach and Gale 2025, CBO 2026)—reforms to the wealth transfer system present an opportunity to boost revenue, reduce wealth inequality, and increase intergenerational economic mobility. In this paper, we investigate the revenue and distributional effects of existing and potential wealth transfer taxes in the United States. Our work features both a new methodological approach and new analysis, with several key results.

First, we document that increases over time in net worth and holdings of unrealized capital gains have been substantial and are concentrated among elderly wealthy households. While decedents had more wealth when alive than recipients of inheritances do before receiving

[2] The "Great Wealth Transfer" has already entered the public discussion. See, for example, Agyemang (2024), Ensign and Wolfe (2024), and Smith (2023). Cerulli Associates (2024), a financial services provider, projects that transfers will total $84 trillion through 2045.

[3] CDC (2021), Joulfaian 1998, SOI (1997, 2019, 2021).

an inheritance, both groups are tilted toward affluent households. Together, these patterns imply that over the next few decades, wealth transfers will be large and will flow mostly from extremely wealthy households to substantially wealthy households, rather than trickle down, in any large part, to middle- or lower-income households.

Second, we develop a methodology for estimating bequests and estate tax revenues. We combine data on household bequeathable wealth from the SCF; estimates of differential mortality risk (with respect to income) from the literature; estimates of estate tax deductions from Statistics of Income (SOI) data; and estimates of estate tax liability from our own tax calculators. We find that, despite high marginal tax rates on taxable estates that exceed the effective exemption, the average tax rate (revenues divided by net taxable estate) in the estate tax is only about 3.3%.

Third, we validate this approach in several ways. There is nothing in the methodology that requires (simulated) bequests to closely approximate (respondent-reported) inheritances. Nevertheless, the two measures are reasonably close in the aggregate and have broadly similar size distributions. Also, our estimates of estate tax revenue are close to actual revenue figures, though they are not directly comparable.[4] Specifically, we estimate that under 2021 tax rules, deaths in 2021 would have resulted in revenues of $19.7 billion.

The advantage of this methodology is that it allows analysis of wealth transfer taxes assuming they are borne either by decedents or heirs. To the best of our knowledge, this is the first paper to propose such a methodology. Previous studies have been constrained by having

[4] Throughout the paper, when we refer to our estimates of estate tax revenue "in 2021," we mean estate tax revenues that are generated from the simulated deaths that occur during 2021 in our sample. In contrast, the official revenue figures from the Statistics of Income Division of the Internal Revenue Service refer to revenues that were actually collected in the year in question. There is no necessary correlation between the two figures, as estate tax returns are often filed with a considerable lag.

data only on donors or only on recipients. As a result, analyses of inheritance taxes have (implicitly) placed the burdens on recipients (Batchelder 2007, Boserup, Kopczuk, and Kreiner 2016, Crawford and Hood 2016, Elinder, Erixson, and Waldenström 2018), just as studies of estate taxes have (implicitly) placed the burden on decedents (Poterba and Weisbenner 2001, Avery, Godzicki, and Moore 2015).

Our fourth result, using the methodology developed above, shows how differing assumptions about incidence affect the distributional burdens of wealth transfer taxes. We study the estate tax (as of 2021) and three stand-alone revenue-neutral alternatives: a high-rate, high-exemption (37%, $2.65 million) inheritance tax; a low-rate, low-exemption inheritance tax (15%, $890,000); and a 23.8% tax on unrealized capital gains at death with a $1.9 million exemption (and a $500,000 exemption for owner-occupied housing). The analysis shows that assigning the burden of wealth transfer taxes to decedents generates more progressive burdens than assigning the burden to heirs (consistent with the fact noted above that, on average, decedents' wealth exceeds heirs' pre-inheritance wealth) but under either assignment, the taxes are more progressive than the income tax.

Fifth, we compare the taxes, holding incidence assumptions constant, and find that the estate tax and the high-rate, high-exemption inheritance tax are the most progressive options, primarily because of the high exemption levels in each.

Finally, we examine the impact of policy changes. Because the average tax rate on wealth transfers is so low, there is ample room for reforms that raise revenue in a progressive manner. For example, we estimate that under 2013 tax rules (indexed for inflation), estate tax revenues would have been $43 billion in 2021 – more than twice as high as we estimate under 2021 rules. The same revenue could be raised via a 37% inheritance tax with an exemption of $1 million.

More dramatically, under 2001 law (again, indexed for inflation), estate tax revenues would have totaled $143 billion in 2021 – more than seven times the actual yield. The same revenue could be raised via a 37% inheritance tax with an exemption of $150,000. (A 23.8% tax on unrealized gains at death cannot achieve this revenue level could only raise $38 billion in 2021, even with a zero exemption.).

Each of the tax options listed above would be more progressive than the income tax. These results suggest that, although policy changes have substantially reduced wealth transfer tax revenues in the past quarter century, new reforms offer the potential to raise significant amounts of revenue while maintaining a significant level of progressivity.

This version of the paper is preliminary and incomplete. We intend to revise and add results along the following lines:

- *Revenue and distributional effects of alternative estate tax exemption and rate policies;*
- *Distributional effects of revenue-increasing taxes;*
- *Analysis of progressivity using Suits, Kakwani, and Gini measures;*
- *Integration of the inheritance tax with the income tax; and*
- *Integration of taxation of unrealized capital gains at death with the estate tax.*

In each case, we have preliminary results already and are working to verify and refine the analysis.

Section II provides information on wealth transfer taxes in the U.S. and other countries. Section III and the Appendix describe the data set and the methodology. Section IV discusses trends in bequeathable net worth and unrealized capital gains, and the wealth of donors relative to heirs. Section V analyzes the distributional effects of revenue-neutral wealth transfer taxes under alternative incidence assumptions. Section VI explores the potential to raise additional

revenue. Section VII concludes.

II. Background

A. Estate, Gift, and Generation-Skipping Transfer Taxes

Wealth transfers face an integrated set of estate, gift, and generation-skipping taxes in the United States, but only for a very small slice of the population and a small slice of wealth.[5] Under 2026 law – as enacted in the "One Big Beautiful Bill Act of 2025" that President Trump signed on July 4, 2025 – the estate tax is imposed to the extent that a decedent's taxable estate exceeds $15 million per individual (indexed for inflation, $30 million per couple). The taxable estate includes real and financial assets, the decedent's share of jointly owned assets, less debt, and allows deductions for spousal transfers, charitable contributions, funeral expenses, attorney's fees, executor's fees, and a broad "other" category. It includes life insurance benefits that are payable to the estate. The unlimited deduction for spousal transfers is of particular note because it can eliminate federal taxes for the first spouse to die in a married couple. While there are technically graduated tax rates and brackets, the personal exemption (applied as a credit) has risen to exceed the beginning of the top bracket in recent years. Under current law, a flat tax rate of 40 percent is applied on taxable transfers above $15 million.[6]

The tax contains special exceptions for small businesses and family farms. If a farm or small business comprises at least 35 percent of the net value of the estate, the tax on the small

[5] The Joint Committee on Taxation (JCT, 2015) provides a comprehensive history of wealth transfer taxes. The changes made in the Tax Cut and Jobs Act of 2017 and the One Big Beautiful Bill Act of 2025 are described in JCT (2017, 2025) and CRS (2025).

[6] Cuts to estate and gift taxes occurred in 1981, 1997, 2001, 2017, and 2025. The 2001 tax cut abolished the estate tax for one year, 2010, and replaced it with a carryover basis tax regime for assets with capital gains (Gordon, Joulfaian, and Poterba 2016). The Tax Cut and Jobs Act of 2017 more than doubled the estate tax exemption, from $5.49 million to $11.18 million ($22.36 million for a married couple) and indexed it for inflation, through 2025. The One Big Beautiful Bill Act of 2025 raised the exemption to $15 million ($30 million for a married couple) and made the indexing permanent.

business or farm portion of the estate can be paid in installments over 14 years, with payments determined using a lower-than-market interest rate and with interest only due on the first five years. A closely-held small business may be able to claim additional valuation discounts for a minority share, because minority shareholders are limited in their scope of control over the business, which depreciates the market value of their holdings.

As of 2026, the gift tax provided a lifetime exemption of $15 million per donor ($30 million for a married couple). This exemption is sometimes said to be integrated with the estate tax exemption, meaning that a gift will reduce the exemption amount that is available for the estate tax. For gifts above the exemption, donors face the same tax brackets as the estate tax, including a top rate of 40 percent. There is an additional annual gift tax exclusion ($19,000 in 2026), which is indexed for inflation in $1,000 increments and granted separately for every donor-recipient combination. Gifts received are not taxable income for the recipient. Also, a spouse may use any remaining unused portion of decedent's exemption in addition to their own exemption.

There are at least two key differences in the tax treatment of gifts and bequests. First, assets transferred as part of a bequest receive a step-up in basis for all unrealized gains (eliminating any income taxes on those gains forever), whereas recipients of assets transferred *inter vivos* retain the original basis in the asset (and thus pay capital gains tax on the unrealized gain that accrued to the previous owner, but only if and when they sell the asset). Second, the tax rate on gifts is imposed on a tax-exclusive basis while the estate tax is imposed on a tax-inclusive basis.

The generation-skipping transfer tax (GSTT) is applied in addition to the estate or gift tax and imposed on transfers that are either direct or through a trust (and other similar arrangements)

to a beneficiary who is more than one generation below the transferrer. For 2026, the generation-skipping transfer tax had an exemption of $15 million (unified with the estate and gift tax exemptions). The GSTT is imposed at the highest marginal estate and gift tax brackets applicable, 40 percent in 2026.

B. Inheritance Taxes

The federal government does not tax inheritances received, as opposed to estates, but such taxes exist in several states and other countries. As of 2023, six states imposed inheritance taxes (TPC 2023).[7] Typically, tax rates vary with the recipient's proximity to the decedent, the size of the inheritance, or both. For example, Pennsylvania taxes inheritances at a flat rate of 4.5 percent for direct descendants, 12 percent for siblings, and 15 percent for other recipients (Pennsylvania Department of Revenue 2024). New Jersey imposes an inheritance tax of up to 16 percent of inheritances received and varies the exemption and rate by both relationship to the decedent and size of the inheritance (New Jersey Treasury 2020).

As of 2020, 20 of the 36 OECD countries taxed inheritances (compared to only four that taxed estates – the United States, the United Kingdom, Denmark, and Korea), all according to some combination of the relationship to the decedent and the size of inheritance received (OECD 2021). For example, France varies marginal tax rates based on the size of the inheritance and the relationship to the decedent. Italy, Denmark, and others vary the tax rate based only on the relationship to the decedent (with lower rates for close family members). Exemption levels vary substantially across countries, ranging from as low as $17,000 from 1990-2018 in Spain to $1.1 million from 2007-2018 in Italy. Above the exemption level, countries often differentiate among asset types. France, Germany, and Spain tax main residences at preferential rates, and Spain

[7] States with inheritance taxes are Iowa, Kentucky, Maryland, Nebraska, New Jersey, and Pennsylvania.

excludes private pensions from the tax base. Many countries preferentially tax transfers of family-owned businesses.[8] Wealth transfer taxes generate less than 2% of aggregate tax revenues in all OECD countries and less than 1% in all but four countries (OECD 2021) but may well be more popular than estate taxes (Stantcheva 2021).

C. Taxes on Unrealized Capital Gains at Death

Under long-standing law, no income tax is ever paid on the unrealized capital gains that occur over the owner's lifetime if the owner holds the asset until death. Dubbed the "Angel of Death" loophole, this provision not only loses billions of dollars in revenue (relative to alternatives discussed below) but also distorts behavior—individuals are incentivized to hold capital assets for their entire lifetime to avoid taxation when that capital might be more efficiently employed elsewhere (Kinsley 1987). Bricker et al. (2020), using SCF data, estimate that in 2019, unrealized capital gains accounted for 27 percent of all household wealth and 41 percent of the wealth held by the top 1 percent.

The loophole could be closed in either of two ways. First, capital assets could be subject to carryover basis at death (as are *inter vivos* gifts). Heirs would receive the asset with the original basis and, when they sold the asset, they would be taxed on the full capital gain rather than (under current rules) just the appreciation that occurs after they receive the bequest. Congress enacted this approach in 1976 legislation but repealed it in 1980 before it ever went into effect. CBO (2022) estimates that implementing carryover basis at death starting in 2023 would have raised an additional $2 billion in revenue in the first year and $156 billion over 10 years.

[8] Other asset classes excluded from taxation in other countries include buildings of historical value (Germany and Italy), vehicles (Italy), and furniture (Finland, Germany, Portugal, and Slovenia), all of which are excluded from their respective countries' inheritance taxes (OECD 2021).

Alternatively, previously unrealized capital gains could be taxed directly at death, a provision sometimes referred to as "constructive realization." Canada, for example, has no estate or inheritance tax but treats death as a realization event (Canada Revenue Agency 2024a, OECD 2021). To address liquidity issues, Canada exempts capital gains on principal residences and provides a lifetime deduction of 1 million Canadian dollars for qualified farm and fishing property (Canada Revenue Agency 2024b).

Poterba and Weisbenner (2001) and Avery, Grodzicki, and Moore (2015) estimate that a tax on unrealized gains at death could raise more revenue than the then-existing estate tax system, if there were no exemption level, but that the tax burden would fall more on low-wealth decedents than under the estate tax. If the exempt amount of unrealized gains equaled the estate tax effective exemption, taxing gains at death would raise substantially less than the estate tax. We obtain similar results below. Modelling a carryover basis regime, however, raises a variety of complicated issues (see Zelenak 1993) that we defer to future work.

III. Data and Methods

A. Data

We employ data from ten waves (1995-2022) of the Survey of Consumer Finances (SCF), a public-use triennial household survey that contains detailed household-level information on demographics, income, inheritances received, and wealth. Because wealth, capital gains, and transfers given and received are concentrated among the most affluent households, a key advantage of the SCF is its oversample of wealthy households. The SCF is generally considered the "gold standard" for measuring household wealth and wealth transfers in the U.S. and has been used in many previous studies (e.g. Gale and Scholz 1994; Poterba and Weisbenner 2001; Wolff and Gittleman 2014; Avery et al. 2015; Feiveson and Sabelhaus 2018; Gale et al. 2020;

and Nolan et al. 2022).

B. Estates, Bequests and Estate Tax Revenue

In this section, we provide a high-level summary of how we calculate bequests and estate tax revenue. The Appendix provides further details. Table 1 shows the aggregate magnitude of each concept and adjustment for 2021. Some relevant concepts, all defined at the household level, include:

- *Net worth* equals the standard SCF bulletin net worth measure, which measures marketable assets less debts, with a few very minor adjustments explained below.
- *Gross wealth* equals *net worth* plus debt.
- *Gross estate* equals *gross wealth* for a single person who dies or for a married couple where both members die in the year in question. Otherwise, gross estate is zero.
- *Gross taxable estate* equals *gross estate* less valuation adjustments.
- *Net taxable estate* equals *gross taxable estate* less exemptions and deductions (such as funeral expenses and charitable deductions). *This is the estate tax base.*
- *Net-of-tax estate* equals the *net taxable estate* less any estate tax paid.
- The *total bequest* equals the *net-of-tax estate* plus the valuation adjustments that were previously used to reduce taxes.
- A *bequest* is the amount given by a particular decedent (or married couple where both partners die) to a particular heir. The sum of all bequests given by a particular decedent is that decedent's *total bequest*.
- An *inheritance* is the amount received by a particular heir from a particular decedent (or from a married couple where both partners die).

- Given these definitions, a *bequest* and an *inheritance* represent the same transfer, just viewed from the perspective of the decedent or the recipient, respectively. The number, aggregate amount, and size distribution of bequests given and inheritances received should be the same.

i. Net Worth and Gross Wealth

We define *net worth* as the sum of a household's assets (financial assets, real estate assets, equity in noncorporate business, and non-financial/consumer durable assets) less all debt. Our measure of net worth is very close to the SCF standard measure of household net worth (Bricker et al. 2016), which excludes defined benefit pensions, and social security payments, which generally cannot be passed along to future generations.[9]

There is a timing issue regarding net worth, which we illustrate using the 2019 and 2022 SCF. The 2022 survey reports 2022 wealth and 2021 income, including inheritances received. When estimating estates and bequests, we would like to measure 2021 wealth transfers, to conform with the inheritance data. In practice, transfers occurring during 2021 are based on wealth at the end of 2020. To generate net worth measures for 2020, we adjust SCF net worth measures by major components in the two SCFs that bracket the tax year of interest. Specifically, we adjust 2019 (2022) wealth by the change in wealth in the Distributional Financial Accounts (DFAs) from 2019 (2022) to 2020 and then divide survey weights in half. This generates a cross-section of household wealth in 2020, consistent with data from both the SCF and the DFAs. We follow similar procedures for earlier years.

[9] The Bulletin measure of net worth captures only end-of-cycle credit card balances, so we add half of new credit card charges to that measure to better capture the average balance at any point in time. We also include debt obligations associated with leased vehicles and the debt associated with vehicles used by the self-employed. These changes reduce aggregate net worth by less than 1% in 2021.

We estimate net worth to be $109.7 trillion in 2021 (see Table 1), including $15.4 trillion in liabilities. Importantly, the IRS uses a gross wealth concept for the estate tax base, not a net wealth concept – liabilities are subtracted from gross wealth later as deductions. We follow IRS practice and add liabilities back to net worth, arriving at $125.1 billion in gross wealth (Table 1).

ii. Gross Estate and Mortality Probability

Gross estate equals the gross wealth of single individuals who die during the year in question and of couples where both spouses die during the year in question. Otherwise, gross estate is zero. This definition implies that if only one spouse in a married couple dies during the year in question, that person's wealth is transferred to the surviving spouse, rather than to children.[10]

The Social Security Administration provides average mortality rates by age, sex, and birthyear (SSA 2024). However, because mortality and economic status are negatively correlated, we adjust mortality rates using SCF incomes and empirical estimates of the correlation between income and mortality (Chetty et al. 2016).[11] Applying the estimated differential mortality rates to SCF sample weights generates the probabilistic deaths we use to simulate bequests at death. Table 1 shows that our average (wealth-weighted) mortality rate is approximately 0.54%, generating total gross estate of $681 billion.

iii. Net Taxable Estate

To move from gross estate to *net taxable estate*, we (a) subtract valuation adjustments

[10] In practice, some intergenerational transfers also occur when only one member of a couple dies and the surviving spouse does not receive the entire estate, but those transfers are a relatively small component and are not captured in the gross estates measure developed here. This is consistent with the SCF inheritance questions (discussed below) which clearly indicate the respondent should not report transfers to a surviving spouse.

[11] Research on mortality differentials has also found correlations with socioeconomic factors like education, marital status, and race, but those correlations are second order after controlling for income (Chetty et al. 2024).

from gross estate (arriving at gross taxable estate), and then (b) subtract estate-tax-deductible expenses (arriving at net taxable estate).

We estimate valuation adjustments according to IRS practice. Respondent-reported asset values in the SCF are generally higher than what is reported for estate tax purposes; this is unsurprising because SCF respondents have no reason to undervalue assets, while executors obviously want to reduce the estate's tax liability. When assets are transferred, the IRS expects a 4.1 percent decline in real estate value but only a 0.01 percent decline for financial assets.[12] The different adjustments stem from the difficulty of observing some real estate market prices and the substantial costs associated with real estate transactions compared to the ease with which financial asset prices are observed. The IRS assumes a 22.8 percent decline in the value of closely-held businesses that are transferred at death because the market price of a non-public business is difficult to determine and the part of the business value that is tied to the human capital of the owner is lost when the owner dies (Smith et al. 2019). These adjustments help bring our estimate of gross taxable estates into alignment with historical estate tax filings (Gale et al. 2020). The total value of these adjustments is approximately $33 billion (see Table 1).

From gross taxable estates, we then subtract estimated deductions and exemptions to arrive at net taxable estates. To construct data on deductions and exemptions, we use historical estate tax filings. We pool together several years of published estate tax filings to estimate the relationship between the various deductions and the size of gross estates. Expenses such as funeral costs are nearly ubiquitous, and the average deduction does not vary much across gross estate size classes. The likelihood and amount (relative to gross estate) of charitable contributions rise substantially with the size of gross estates. Although most of our simulated

[12] Private correspondence from IRS Statistics of Income.

gross estates are below the estate tax filing threshold, we use the same equations (controlling for wealth) to predict expenses and deductions for non-filers. These exemptions and deductions equal approximately $46 billion, leaving $601 billion in net taxable estates (Table 1). Net taxable estate is approximately 88% of gross estate, losing 12% of its value to valuation adjustments, exemptions, and deductions.

iv. Net-of-tax Estate and Estate tax revenues

We determine aggregate *net-of-tax estates* by subtracting estate taxes from the net taxable estate. We calculate estate tax paid for each decedent using the rules in place in 2021. For most decedents, 2021 estate tax is zero because their net taxable estate does not exceed the basic exclusion amount of $11.7 million ($23.4 million for married couples). Our aggregate estate tax revenue estimate is $19.7 billion for 2021. This compares to actual revenue from the estate tax of $18.4 billion in 2021 and $22.5 billion in 2022 (SOI 2022, 2024). As noted above, the figures are not exactly comparable, because our estimates are based on (simulated) deaths in 2021, whereas the actual revenue figures refer to estate tax returns filed in a given year.[13] We estimate the aggregate net-of-tax estate to be $583 billion (Table 1).

Notably, average tax rates on gross estate and even net taxable estate are quite low, measuring 2.9% and 3.3%, respectively.

v. Bequests

To determine *total bequests*, we add $33 billion in previously subtracted valuation adjustments to net-of-tax estates. In doing so, we are assuming that valuation adjustments represent a tax-related compromise between the IRS and estate tax payors rather than an actual

[13] As noted in SOI (2022), "Because of the relatively long filing period, estate tax returns filed in a single calendar year may be for [different] decedents who died in … different years."

reduction in value at death. This yields an aggregate measure of total bequests of $616 billion, representing the total amount of transfers given be decedents.

To determine the individual *bequests* made by a household, we divide each household's total bequest equally among heirs (Bernheim and Severinov 2003). To calculate heirs for each household, we take the number of children of the decedent as a lower bound and adjust heirs for some very-high-wealth households according to a comparison of SCF and estate tax data. Published estate tax filings indicate that large net estates have more heirs than living children observed in the SCF. This is not surprising: in practice, some transfers probably go to grandchildren and other relatives. On average, we estimate 2.9 heirs per decedent.

Taken together, the calculations above generate estimates of the aggregate amount of total bequests and the distribution of individual *bequests* by size, both of which are compared below to conceptually equivalent data on aggregate inheritances received and individual i*nheritances* received by size.

C. Inheritances

Inheritances are directly reported in the SCF, and we employ a method developed by Feiveson and Sabelhaus (2019) to include reported inheritances as well as transfers of real property not captured in the SCF inheritance module. In the "Inheritances and Gifts Received" module of the SCF, respondents report any "substantial" inheritances or gifts received, "including" those already reported elsewhere in the survey. The qualifier is important, because about fifteen percent of inheritances are captured in two other survey modules (Feiveson and Sabelhaus 2019). Cash inheritances received in the year prior to the survey are captured in the SCF income module. Transfers in the form of real assets are captured in the owned housing, business, and other real estate modules, where respondents who report owning the asset are

asked how they came into possession, with "inherited" as an option. Our method for reconciling the reporting of inheritances and distinguishing inheritances from other types of gifts received is based on earlier work (Feiveson and Sabelhaus 2018, 2019).

Just as there is a timing issue with respect to net worth, there is also an issue related to inheritances received. The SCF inheritance module asks about inheritances ever received and the year in which they were received. For reasons of respondent confidentiality, however, the public-use SCF reports inheritance received years rounded to the nearest "0" or "5" year. In the 2022 SCF, for example, all inheritances received between 2018 and 2022 are reported as being received in 2020. We estimate inheritances received in 2021 (and each year in earlier surveys corresponding to the year in which income is reported) using a probabilistic adjustment, explained in the Appendix.

Taken together, these calculations generate estimates of the aggregate amount of inheritances received, and an estimated size distribution of *inheritances* received, both of which can be compared to conceptually equivalent data on *bequests* given, discussed above. We estimate aggregate inheritances to be $599 billion in 2021, within 3% of the $616 billion in simulated bequests (Table 1).

D. Comparing Bequests and Inheritances

By definition, the concept of an inheritance received by an heir exactly matches the concept of a bequest given by a decedent. But there is nothing built into our methods that forces alignment. Bequests are constructed from wealth measures, mortality probabilities, regressions using data from estate tax filings, and family information. In contrast, inheritances are reported by survey respondents. As a result, comparability between the two measures provides evidence that on the validity of the methodology for estimating bequests.

We report two such measures. First, as noted above, we estimate total simulated bequests ($616 billion) to be 103% of total reported inheritances ($599 billion) in 2021 (Table 1). Second, the distribution of the two measures by size of transfer also matches well (Figure 1). In each of the top five size classes, covering transfers greater than $200,000 and representing 83% of all wealth transfers, simulated bequests are within 15% of reported inheritances.

E. Unrealized Gains at Death

To measure unrealized capital gains, we largely follow previous work using the SCF (Avery, Grodzicki, and Moore 2015). For real estate holdings, the SCF asks about current value and original purchase price. For stocks and mutual funds outside of retirement accounts, the survey asks about current value and any unrealized gains on those holdings. For closely held businesses, the survey asks about current value (what the business would sell for) and the basis for tax purposes.

To measure unrealized capital gains at death for purposes of taxing such gains, we apply the mortality probabilities discussed above to unrealized gains to households in the SCF sample. We allow for unlimited spousal transfer of unrealized capital gains in couples where only one spouse dies in a given year. This procedure generates $162 billion in transferred unrealized gains at death in 2021, or about 26% of total bequests in that year. While transferred unrealized gains represent substantial resources, they are small relative to overall transfers at death, which will limit the ability to raise revenues just from taxing unrealized gains compared to inheritance or estate taxes.

IV. Data Patterns

In this section, we discuss trends in household net worth and unrealized capital gains, as well as the distribution of bequests given and inheritances received by measures of household

wealth. The data patterns suggest that transfers at death will rise substantially in future years and that the vast majority of such wealth will go to households that are already quite well-off, leaving much less to households with lower economic status.

A. Net Worth

SCF data imply that aggregate net worth rose from 272% of GDP in 1997 to 465% of GDP in 2021 (Figure 2).[14] Of that 193 percentage-point increase, almost all (185 percentage points, 96 percent of the overall increase) accrued to households where the head is 55 or older (Figure 3).[15] Within the group aged 55 and older, the vast majority of aggregate wealth growth (143 percentage points relative to GDP, 74 percent of the total increase) accrued to the top 10 percent of households (Figure 4). As a result of these trends, households aged 55 and older controlled 72 percent of aggregate net worth in 2021, up from 54 percent in 2021. Households in the top 10 percent of the net worth distribution among those aged 55 and older held 52 percent of total net worth in 2021 compared to 36 percent in 1997.

B. Unrealized Capital Gains

Trends in aggregate unrealized gains are similar. The stock of unrealized capital gains has grown from 98 percent of GDP in 1997 to about 154 percent of GDP in 2021. The latter figure translates into a stock of unrealized gains of about $35.4 trillion as of 2021. The ratio of

[14] As described in the previous section, we interpolate wealth between SCF survey years. In this section, we use data from the interpolated years. Using data from the actual SCF survey years would not change any of the trends. Gale, Hall, and Sabelhaus (2024) and Wolff (2025) provide more detail on these trends.

[15] These trends are due both to changes in the composition of the population and changes in relative wealth. From 1997 to 2021, the number of households with heads below age 55 was almost constant, while the number with heads aged 55 and older rose by 70%. This largely reflects the aging of the Baby Boomers, who were between 33 and 51 in 1997 and between 57 and 75 in 2021. A second factor is that wealth grew more rapidly for older households than younger households. Real mean net worth in 2021 was 212% of its 1997 value for households with heads aged 55 and older but only 164% of its 1997 value for households with heads younger than 55. Relative changes in median wealth in the same direction as relative changes in mean wealth, but the differences were quantitatively more muted. The differences between trends in median and mean wealth reflect the finding that the distribution of wealth has become more unequal over time (Saez and Zucman 2018, Smith et al. 2022).

unrealized gains to net worth increased from 36 percent in 1997 to a peak of 42 percent in 2006 and then leveled off at about 32 percent after the financial crisis (Figure 2).

Perhaps surprisingly, unrealized gains are about the same proportion of wealth for households with a head older or younger than 55 (Figure 3). Among households aged 55 and older, the ratio of unrealized gains to net worth does not vary monotonically with net worth; rather, households in the top 1 percent and in the bottom 50 percent of the distribution have the highest ratios of unrealized gains to net worth (Figure 4). Notably, the top one percent of households with heads aged 55 and older controlled unrealized gains equal to 47 percent of GDP in 2021, more than double the equivalent 1997 value and more than the bottom 90 percent of households aged 55 and older (Figure 4).

We divide unrealized gains into four categories: primary residences, other real estate, stocks and mutual funds, and business equity. Figure 5 shows that aggregate unrealized capital gains in 2021 were distributed across primary residences (29%), other real estate (13%), stocks and mutual funds (17%) and closely held businesses (41%). These proportions remain largely unchanged across age groups. Within the 55 and older age group, however, the share of unrealized gains due to primary residences varies widely by wealth. Primary residences account for more than 90 percent of all unrealized gains in the bottom 50 percent but only 6 percent of unrealized gains for the top 1 percent, where the majority of unrealized gains – 60 percent – accrue in business equity.

C. Who Gives Bequests and Receives Inheritances?

As noted above, aggregate bequests and inheritances totaled about $600 billion in 2021. The left panel of Figure 6, ordering households by net worth, shows the distribution of aggregate bequests given by the net worth of the decedent and documents the intuitive point that bequests

are disproportionately given by the well-off. About 27 (64, 93) percent of bequests were given by decedents in the top 1 (10, 40) percent of the net worth distribution.

The right panel orders households by inheritance-exclusive net worth. This concept removes inheritances received in the last year from the household wealth measure. The intention is to measure the economic status of heirs independent of the inheritances they have received recently. The figure shows that inheritances are disproportionately received by the well-off, *even ignoring the value of the inheritance.* About 12 (54, 82) percent of inheritances were received by households in the top 1 (10, 40) percent of the inheritance-exclusive net worth distribution.

Figure 6 also shows how the $162 billion in unrealized capital gains transferred at death is distributed. About 55 (90, 99) percent of these gains accrue to the top 1 (5,10) percent of decedents. Transfers of unrealized gains account for nearly half of all bequests given by the top 5 percent of decedents (ranked by net worth), and a sizable minority of inheritances received by the top 5 percent of inheritors (ranked by inheritance-exclusive net worth).

V. Incidence and Distributional Effects of Revenue-Neutral Taxes

A. Theory and Practice

The extent to which wealth transfer taxes are borne by recipients or donors is unclear. The burden would fall on inheritors if bequests were accidental (Hurd 1987), in the sense that donors were not saving to give a bequest. In this case, the tax would not change the behavior of decedents when they were alive but would reduce the net-of-tax inheritance. In contrast, if the decedent, while alive, cared about the after-tax value of the wealth transfer, an inheritance or estate tax would be borne to some extent by the decedent, who would adjust the bequest. This could occur, for example, if the decedent were motivated by altruism (Barro 1974, Becker 1974)

or the strategic bequest motive (Bernheim, Schleifer, and Summers 1987).[16]

As noted above, previous studies have been constrained by having data only on donors or only on recipients. Our methodology allows us to examine the distributional burden of wealth transfers tax under either incidence assumption.

To anchor thoughts, consider a decedent with a $5 million gross estate who would leave five $1 million (untaxed) bequests under current law and suppose a 10 percent tax were imposed on the estate. Assigning the burden of that tax to the decedent is straightforward, using the data on bequests. Assigning the burden of the tax to *recipients* of inheritances is also possible under our methodology. This would involve simply applying the 10 percent tax to each $1 million inheritance reported in the SCF.

Likewise, if a 10 percent tax were imposed on inheritances of $1 million, it would be straightforward to assign the burden to recipients of inheritances. Our methodology, however, also allows the tax to be assigned to donors, by imposing a 10 percent tax on *total* estates that led to *individual* bequests of $1 million, such as the $5 million estate split five ways, noted above.

In practice, we perform these calculations using a range of values of bequests and inheritances (for example, $100,000 to $150,000) rather than at each precise level (for example, $100,000).[17]

B. Specification of tax options

[16] Of course, agents may save for several reasons simultaneously (Kopczuk and Lupton 2007) and agents other than donors or recipients could bear some of the burden to the extent that the taxes have effects on saving, labor supply, or other activities. The vast literature on these issues is reviewed in surveys by Batchelder (2007), Gale and Slemrod (2001), Kopczuk (2013), and OECD (2021).

[17] When aggregate bequests given differ from aggregate inheritances received within a certain size range we adjust bequests proportionally to equal inheritances, since self-reported inheritances are likely to be more reliable than the bequest estimates, which are constructed in several steps. However, in sensitivity analysis, we find that it makes virtually no difference to any result to reverse the adjustment – that is, to adjust inheritances received to match bequests given in each size range.

To implement this methodology, we consider four taxes, each of which raise the same amount of revenue:

- The estate tax under 2021 parameters;
- A 37 percent inheritance tax with an exemption of $2.65 million;
- A 15 percent inheritance tax with an exemption of $890,000;
- A 23.8 percent tax on unrealized capital gains at death with a $1.87 million exemption and an exemption of the first $500,000 of unrealized gains in the form of a primary residence.[18]

We chose these parameters to be representative of plausible options and aimed to anchor the specifications to features of the existing tax system. The 37% and 23.8% rates represent the current highest marginal income tax bracket and tax rate on capital gains, respectively. The 15% figure provides estimates of an inheritance tax with a lower rate and broader base. The $500,000 exemption for gains from residential housing is a feature of current law (for married couples). In the analysis in this section, each of the three alternative taxes would replace the estate tax. Hence, we show the distribution of each tax separately. For decedents, we distribute taxes by net worth. For heirs, as noted above, we distribute taxes by inheritance-exclusive net worth.

C. Distributional effects under alternative incidence assumptions

The four panels of Figure 7 are organized by tax proposal and show how the estimated distribution of the tax burden depends on the incidence assumption. Table 2 reports the data

[18] Let X = unrealized gains on the primary residence - $500,000. Then, the tax base would be MAX (X, 0) + Unrealized gains on other assets - $1.87 million.

shown in the Figure. There are two main conclusions.

First, under either incidence assumption, the wealth transfer taxes modelled are quite progressive, and more progressive than the income tax. When the incidence is assigned to decedents, the top 10 percent of decedents bear the entire burden of each tax. When the incidence is assigned to heirs, the top 20 percent of heirs bears between 94 percent and 100 percent of each tax. In contrast, the top 20 percent of households, ranked by net worth, pay 76 percent of the income tax. These results are consistent with the finding that both donors and heirs are wealthier than the average household.[19] In short, households that receive large inheritances are themselves quite well off, even without consideration of the inheritance itself.

Second, notwithstanding the similarities across the transfer tax alternatives, there are important differences in distributional burdens depending on the incidence assumption, with the differences concentrated at the top of the wealth distribution. Most generally, the wealth transfer taxes modelled are more progressive if assigned to decedents than to inheritors, consistent with the finding above that decedents' net worth is higher than heirs' pre-inheritance net worth. These results, however, vary by tax.

For example, Figure 7 Panel A shows that, if the estate tax burden is borne by decedents, 98 percent of the revenues come from households in the top 1 percent of the net worth distribution and 64 percent come from the top 0.1 percent. In contrast, when the burden is borne by heirs, tax burdens are less concentrated: households in the top 1 percent of the inheritance-exclusive net worth distribution bear 33% of the burden and the top 0.1 percent bears 6 percent – and therefore the burden falls farther down the wealth distribution – the top 10 percent bearing 59 percent of the burden, and the top 20 percent bearing 98 percent of the burden.

[19] Similar results hold when decedents and heirs are ranked by age-adjusted net worth measures.

The remaining panels of Figure 8 address the other tax alternative. The same general patterns hold. For each tax, assigning the burden to decedents generates a more concentrated outcome than assigning the burden to heirs. When decedents are assumed to bear the burden of the tax, each tax raises the vast majority of its revenue – between 95% and 100% – from the top 5% of the net worth distribution. When the burden is assigned to heirs, households in the top 5% of the inheritance-exclusive net worth distribution bear between 41% and 47% of the tax and households in the top 20% bear between 94% and 100%. By contrast, the income tax draws 44% (68%) of its revenue from households in the top 5% of the net worth (inheritance-exclusive net worth) distribution and 76% (95%) from the top 20% (as shown in Table 2).

D. Comparing the taxes

The two panels in Figure 8 report the same information as the four panels in Figure 7, but in order to highlight comparisons across the various policies, the panels are organized by assumptions about incidence.

Figure 8, Panel A shows the distribution of the four taxes assuming that decedents bear the burden of the tax. Under this assumption, the estate tax is the most progressive option, followed by the 37% inheritance tax. Both of these taxes draw over 60% of their revenues from the top 0.1% of decedents. The unrealized-gains-at-death tax is the least progressive. This ranking is largely a function of the effective exemptions: $11.7 million for the estate tax and $2.65 million (per heir) for the 37% inheritance tax. In contrast, a tax on unrealized gains at death needs a lower filing threshold of $1.87 million to raise the same amount of revenue, which is why it raises the least amount from the top 0.1% and the most from the 95th-99th percentiles. The 15% inheritance tax, with an exemption of $890,000 (per heir), is slightly more progressive than the tax on unrealized gains at death, raising 28% of its revenues from the top 0.1% of the

net worth distribution.

Figure 8, Panel B, shows that when the burden is assigned to heirs, the results change. Both the 37% inheritance tax and the estate tax raise only about 6% of their revenues from the top 0.1% of the inheritance-exclusive net worth distribution, approximately one-third from the top 1%, and just over half from the top 10%. Both taxes raise almost 100% of their revenue from the top 20% of the inheritance-exclusive net worth distribution. These results are not simply a mechanical feature of the fact that the 37% inheritance tax has a $2.67 million exemption, because our classifier for heirs is net worth exclusive of the inheritance. The 15% inheritance tax and tax on unrealized gains at death raises less from the top 1%, collecting just 18-21% of their revenues from that group. Of the four taxes, the gains at death tax raises the most revenue (6%) from the bottom four quintiles of the inheritance-exclusive net worth distribution.

VI. Raising Revenue from Wealth Transfer Taxes

As noted earlier, despite the substantial increase in wealth among older groups and substantial aging of the population (and the associated higher mortality rates), estate tax revenue has fallen precipitously as a share of GDP in the last several decades. The potential for future wealth transfer taxes to raise revenues is especially important in light of the Great Wealth Transfer as well as looming federal fiscal shortfalls). In this subsection, we examine the revenue and distributional consequences of alternative stand-alone wealth-transfer taxes, finding that there is substantial potential for increases in revenue on a progressive basis.

Figure 9 shows the general relationship between personal exemption levels and revenue for the inheritance tax options and unrealized-gains-at-death taxes. The grey horizontal lines show estate tax revenues under various policy scenarios. The first line at $19.9 billion shows the current law estate tax, which has a top rate of 40% and a personal exemption of $11.7 million in

2021. The two lines above show that an estate tax with 2013 rates and brackets adjusted for inflation (a top rate of 40% and an exemption of $6.1 million) would have raised $42.6 billion in 2021. An estate tax with 2001 rates and brackets adjusted for inflation (a top rate of 55% and an exemption of $1.03 million) would have raised $143.6 billion in 2021 – more than *seven times* what the estate tax raised in 2021.

With no exemption, a 37% inheritance tax tops out at $229 billion in revenue in 2021. Revenue falls to $44 billion with a $1 million exemption, $26 billion with a $2 million exemption, $17 billion with a $3 million exemption, and $14 billion with a $4 million exemption. The 15% inheritance tax, since it applies to the same tax base as the 37% tax, raises a directly proportional amount of revenue at each exemption amount - $93 billion with no exemption, $18 billion with a $1 million exemption, $11 billion with a $2 million exemption, $7 billion with a $3 million exemption, and $6 billion with a $4 million exemption.

The tax on unrealized capital gains at death, on the other hand, can only raise up to $38 billion without an exemption (except for $500,000 on personal residences) – far less than either inheritance tax with no exemption but almost twice as much as the current estate tax. The tax would raise $24 billion with a $1 million exemption. But the revenue estimate only drops to $19 billion with $2 million exemption or $13 billion with a $4 million exemption. The relative lack of fall off in revenue as the exemption rises reflects the fact that unrealized gains at death are highly concentrated among the very wealthiest households, who tend to hold very large stocks of unrealized gains. Since inheritances are more dispersed than unrealized gains at death, any increase in the inheritance tax exemption cuts into the revenue-raising power of an inheritance tax more substantially.

VII. Conclusion

The impending Great Wealth Transfer, as well as the dismal federal fiscal outlook, motivate a reconsideration of federal wealth transfer taxes. Several policy changes – including reform of the estate tax, the creation of an inheritance tax, and/or the taxation of unrealized gains at death – could raise revenues and reduce intra-generational inequality. At the same time, their incentives, not examined above, merit careful consideration.

Our analysis provides a methodology for assigning the burden of such taxes to either decedents or heirs and finds that the taxes in question are progressive under either assignment. We also find that the average tax rate on estates is quite low, which creates the possibility of raising significant from any of a variety of reforms. Policy makers will need to consider these and other considerations in the future.

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Table 1. Wealth Totals and Adjustments, 2021

Wealth Category	Total
A. Wealth Totals (billions)	
Net Worth	109,698
Add back in liabilities	*15,387*
Gross Wealth	125,085
Multiply by mortality probabilities	*0.54%*
B. Transferred Wealth (billions)	
Gross Estate	681
Subtract valuation adjustments	*-33*
Gross Taxable Estate	648
Subtract exemptions and deductions	*-46*
Net Taxable Estate	601
Subtract estate tax	*-19*
Net-of-tax Estate	583
Add back in valuation adjustments	*33*
Total Bequest	616
Scale to measured inheritances	*97%*
Measured Inheritances	599
C. Ratios	
Estate Tax Revenue (billions)*	19.9
Estate Tax / Gross Estate	0.029
Estate Tax / Net Taxable Estate	0.033
Net Taxable Estate / Gross Estate	0.883

*Estate tax revenues in section C differ slightly from section B because we adjust revenues by the ratio of inheritances to bequests in a given transfer size class. On the aggregate, inheritances are smaller than bequests, but within the top transfer classes (which are the only ones to pay any estate tax), inheritances exceed bequests slightly.

Table 2. Distribution of Revenue-Neutral Wealth Transfer Taxes

Net Worth Percentile Group	Estate Tax		Gains at Death Tax		Inheritance Tax (37%)		Inheritance Tax (15%)		*Addendum: Income Tax*
	D	H	D	H	D	H	D	H	
Bottom Quintile	0%	0%	0%	0%	0%	0%	0%	0%	*-4%*
Second Quintile	0%	0%	0%	1%	0%	0%	0%	0%	*-2%*
Middle Quintile	0%	0%	0%	0%	0%	0%	0%	0%	*1%*
Fourth Quintile	0%	2%	0%	5%	0%	0%	0%	2%	*10%*
p80-p90	0%	39%	0%	28%	0%	48%	0%	31%	*11%*
p90-p95	0%	15%	3%	19%	2%	11%	5%	23%	*16%*
p95-p99	2%	11%	58%	29%	18%	7%	50%	23%	*30%*
p99-99.9	34%	27%	14%	16%	18%	27%	16%	18%	*27%*
Top 0.1	64%	6%	26%	3%	62%	6%	28%	3%	*11%*
Addendum: Inclusive Categories									
Top 20	100%	98%	100%	94%	100%	100%	100%	98%	*95%*
Top 10	100%	59%	100%	65%	100%	52%	100%	67%	*84%*
Top 5	100%	44%	97%	47%	98%	41%	95%	44%	*68%*
Top 1	98%	33%	39%	18%	80%	34%	45%	21%	*38%*

Figure 1. Joint Distribution of Bequests and Inheritances, by Transfer Size, 2021

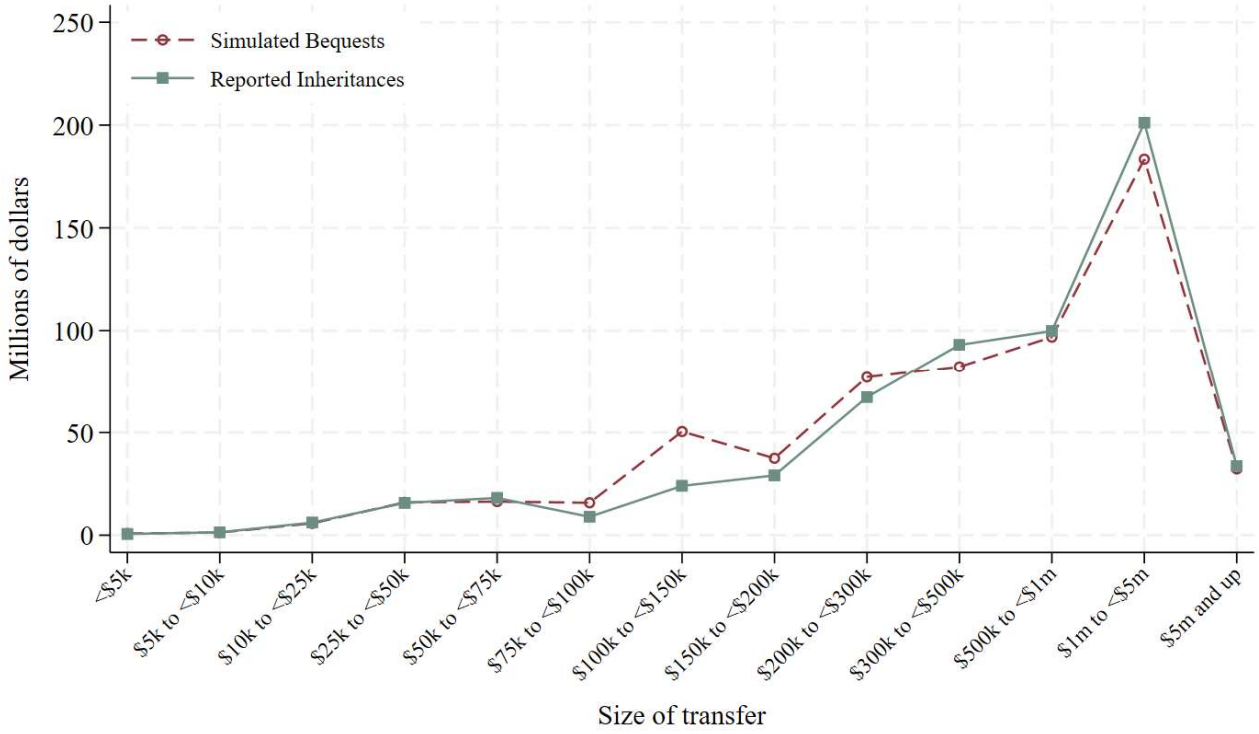


Figure 2. Aggregate Net Worth and Unrealized Gains Over Time

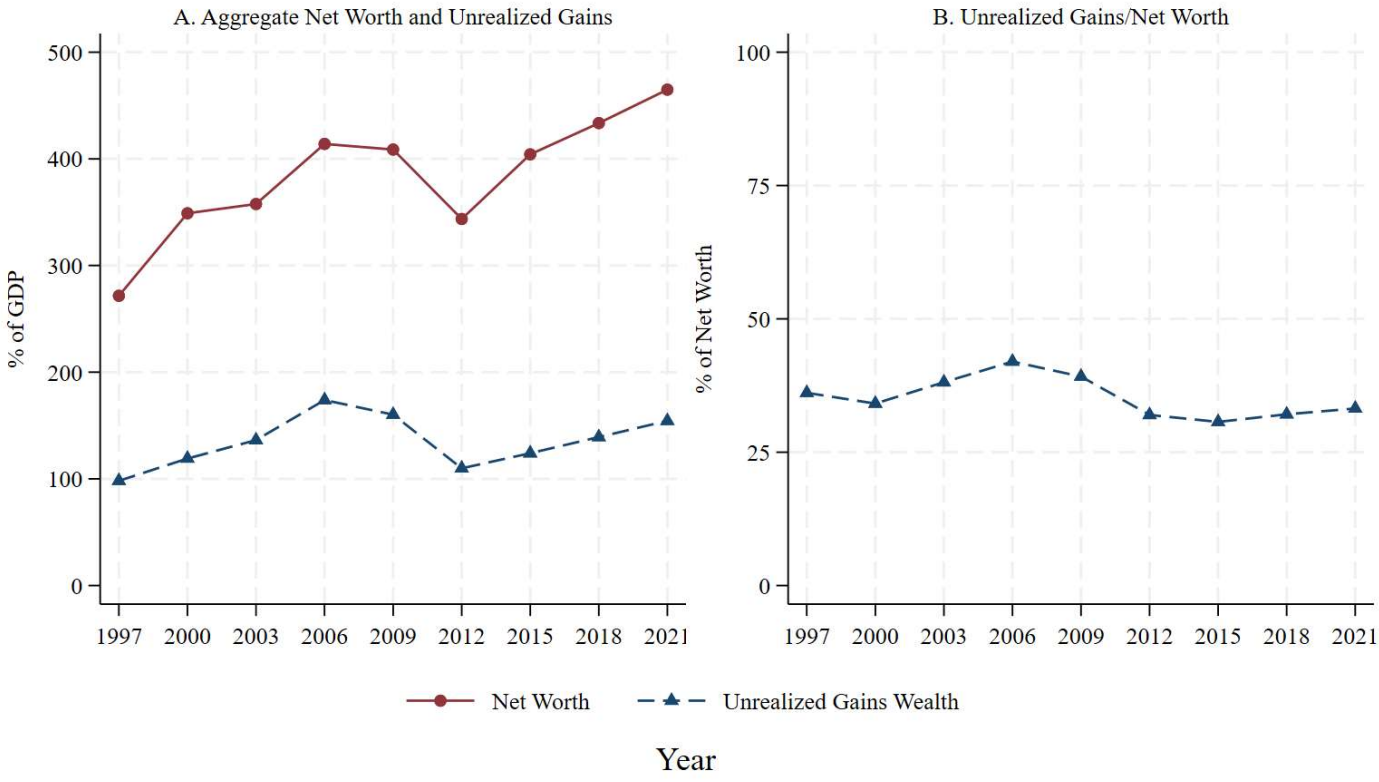


Figure 3. Aggregate Net Worth and Unrealized Gains by Age Group

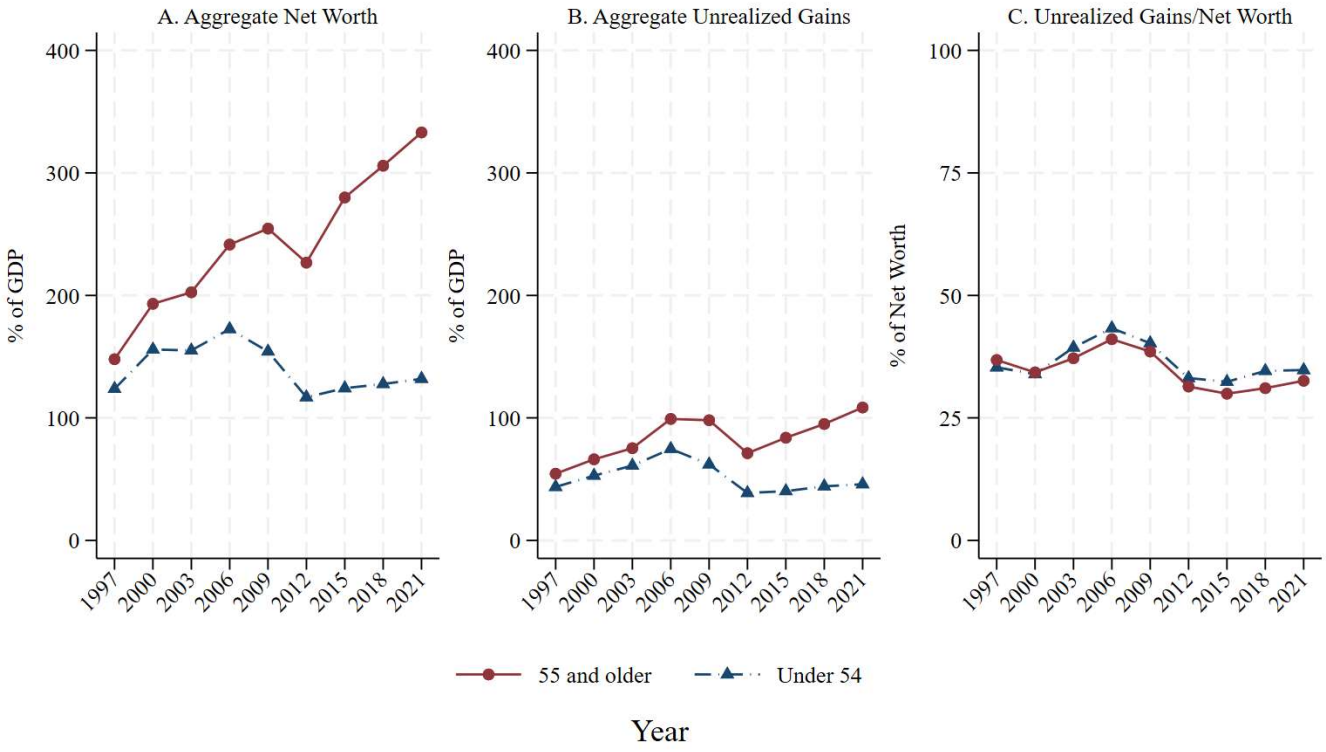


Figure 4. Aggregate Net Worth and Unrealized Gains by Wealth Percentile, 55+

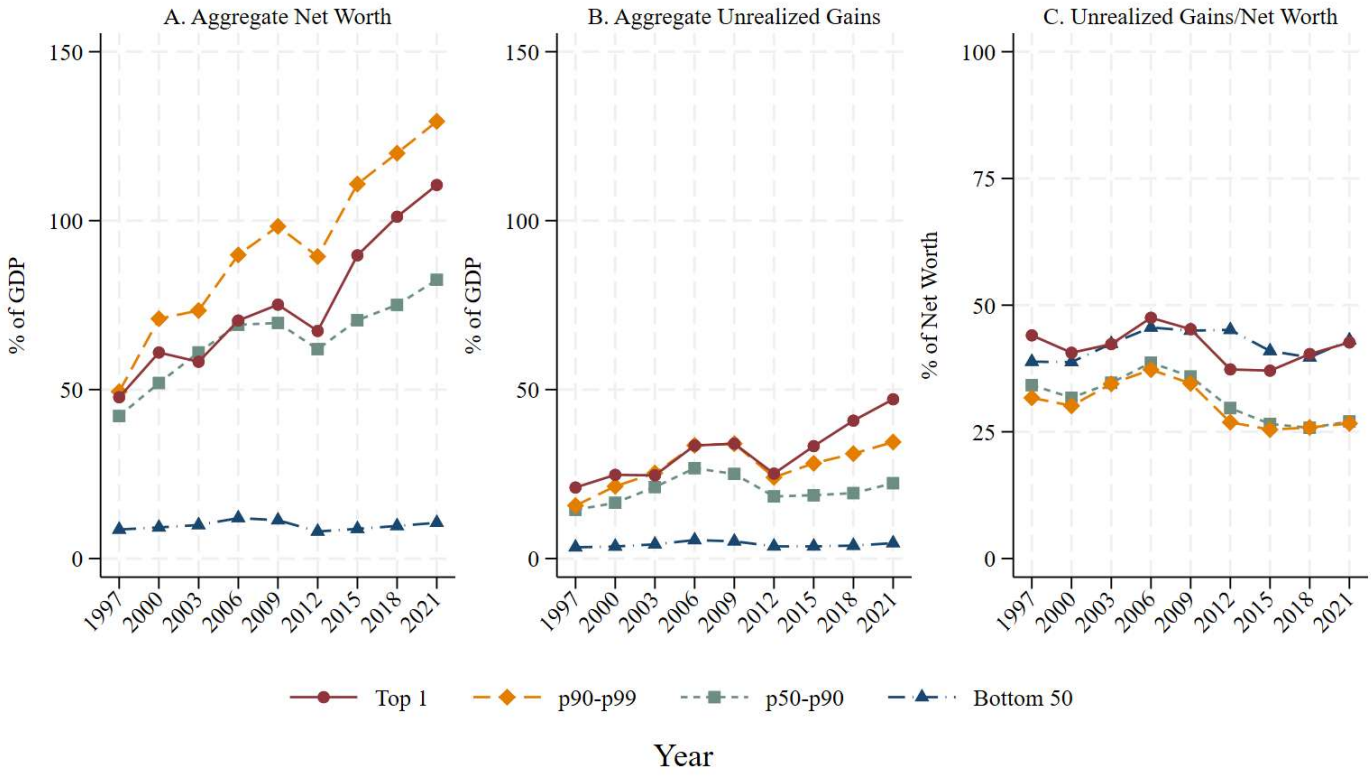


Figure 5. Composition of Unrealized Gains by Net Worth Percentile, 2021

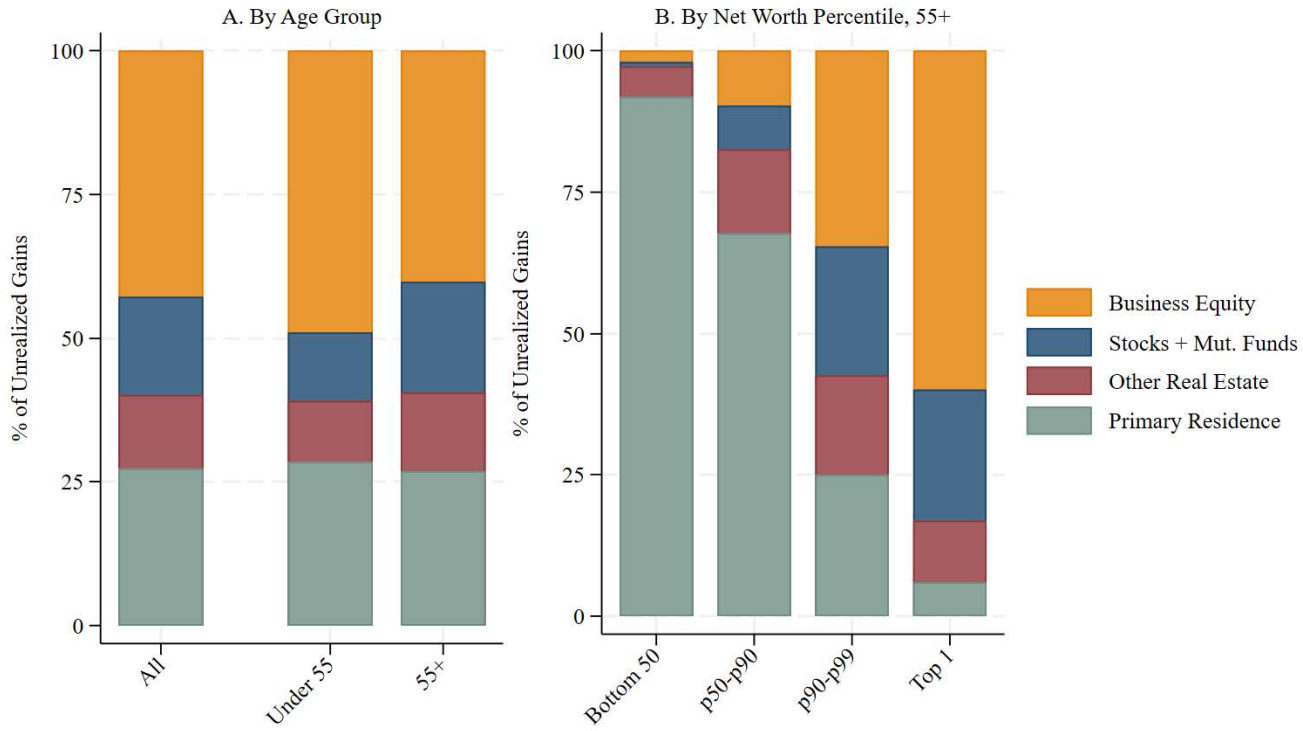


Figure 6. Wealth Transfers by Net Worth Percentile, 2021

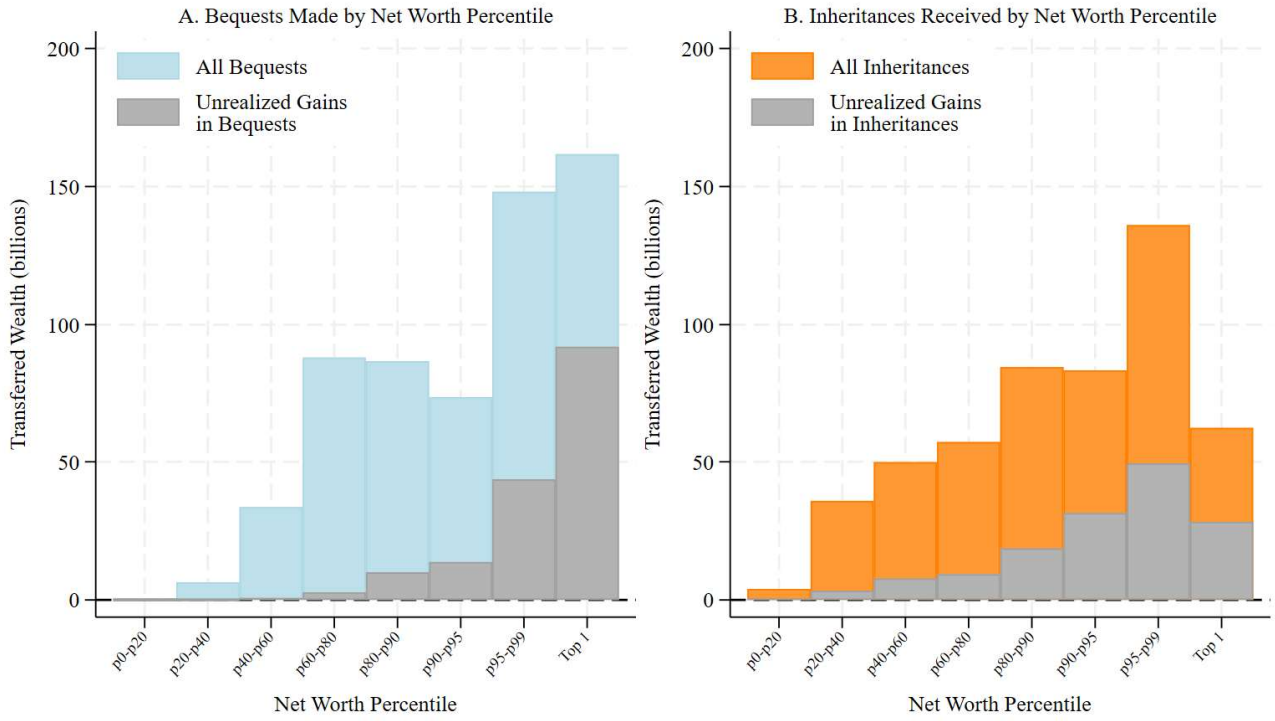


Figure 7. Distributional Effects of Revenue-Neutral Wealth Transfer Taxes Grouped by Tax.

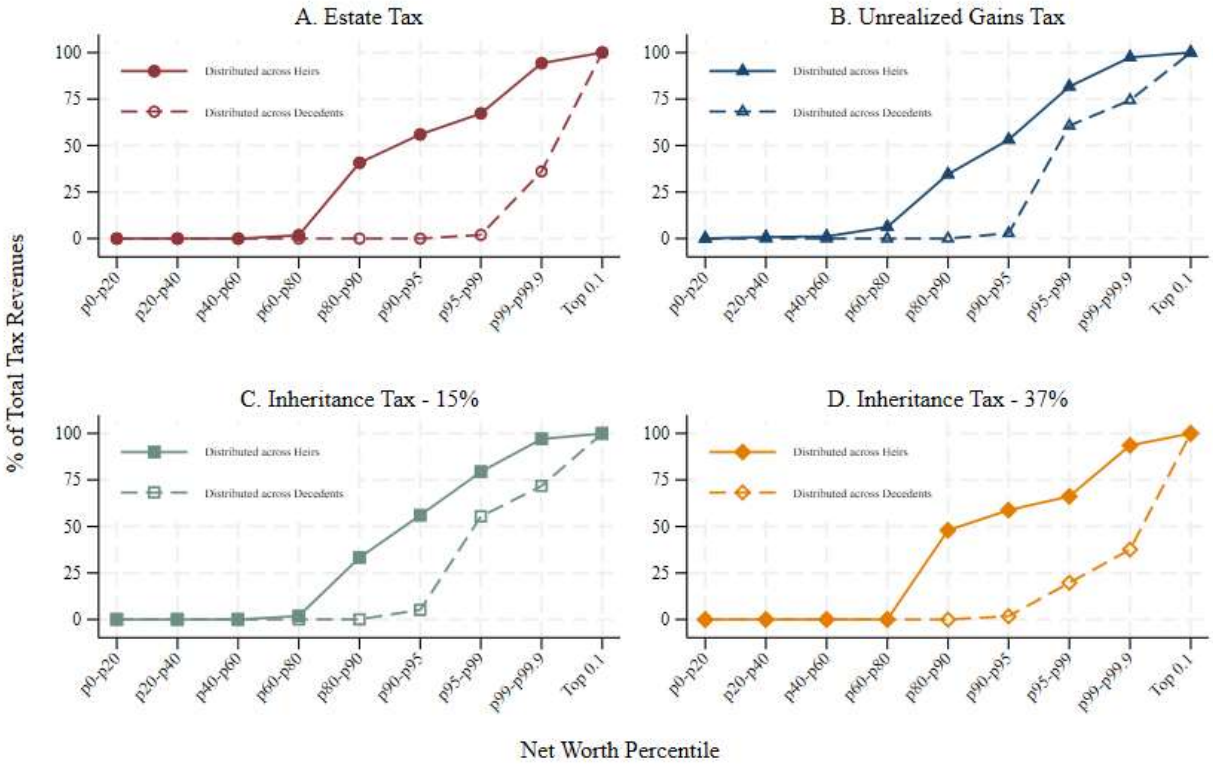


Figure 8. Distributional Effects of Revenue-Neutral Wealth Transfer Taxes Grouped by Incidence

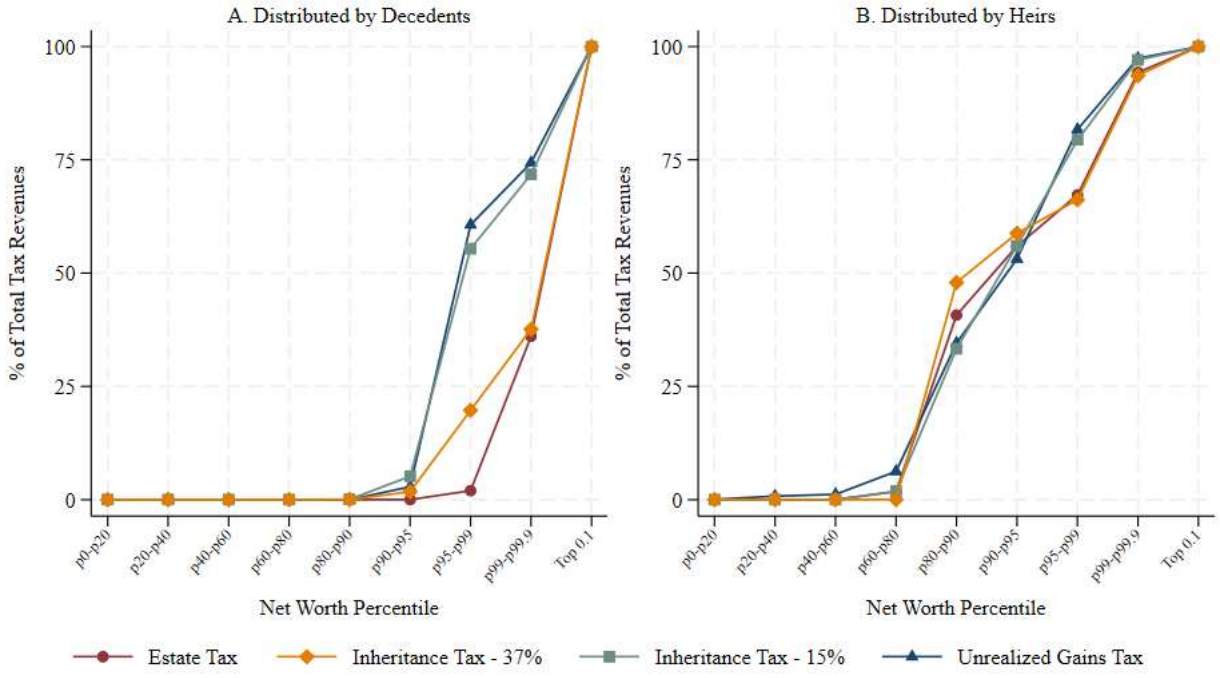
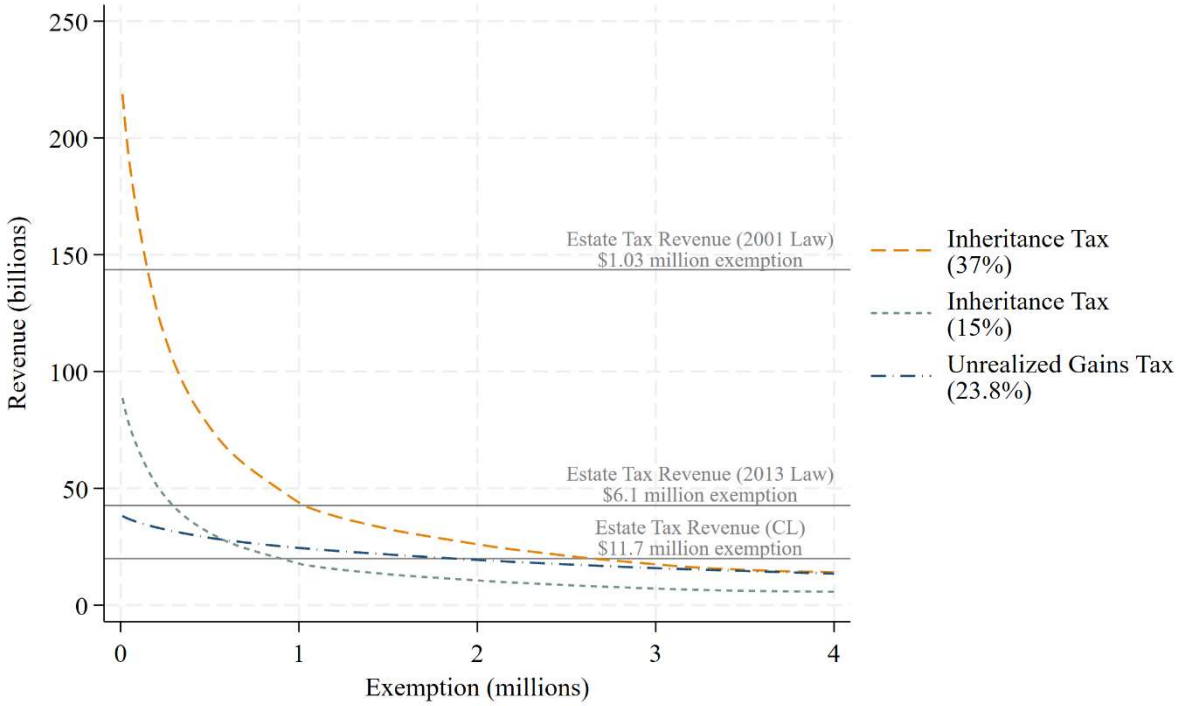


Figure 9. Revenue Options for Stand-alone Taxes



Appendix

This Appendix provides details about the methods summarized in Section III and compares simulated bequests given and inheritances received across SCF survey waves and by transfer size class. Our measures of simulated bequests and inheritances are both based on SCF data, but there is no direct connection between the two sets of estimates that imposes conformity. We construct estimates of bequests based on a sequence that includes survey measures of bequeathable wealth, estimated mortality rates, estimated subtractions from gross estates to determine taxable estate, subtraction of estimated estate tax to determine net estates, and division of estates across heirs. In sharp contrast, inheritances are reported directly by the respondent.

A. Bequeathable Wealth

As noted in the text, because the SCF in year t+3 collects income data for year t+2, we would like transfer data for year t+2 as well. Typically, bequests and inheritances given in year t+2 will be based on wealth in year t+1. Thus, we impute wealth data in year t+1 by using SCF wealth data in year t and in year t+3. We lag the wealth measures in the t+ 3 survey by two years and lead the wealth measures in the year t survey by one year. For example, for bequeathable wealth in 2020, we lag the 2022 two years (to 2020) and lead the 2019 survey data one year (also to 2020). Survey weights are divided in half.

The lag and lead adjustments are based on the Distributional Financial Accounts (DFA) produced by the Federal Reserve Board (2024). We use DFA aggregates for real estate, closely held businesses, stocks and mutual funds, and DC pensions to create separate lagged and forward adjustment factors (Table A1). The DFA values are taken from the third quarter of each year, consistent with the timing of the median SCF survey in survey years.[20] As expected, the lagged

[20] DFA aggregates capture changes over time due to net acquisitions (saving) and asset revaluations. Over short intervals the changes are dominated by revaluations, which is exactly what we are trying to capture.

adjustment values are generally below one, while the forward adjustment factors are generally greater than one. The exceptions underscore the importance of the adjustments. For example, the lagged adjustment factor for real estate in 2010 (moving from 2010 values to 2008 values) is 112 percent, because real estate values fell substantially between 2008 and 2010 (Table A1).

B. Differential Mortality

After determining bequeathable wealth, we apply mortality rates to estimate gross estate. We start by constructing mortality rates using Social Security Administration (SSA 2024) average life tables by age, sex, and birth year. It is well known, however, that mortality rates vary inversely with economic status. Thus, we adjust the SSA rates with an income-based mortality correction from Chetty et al. (2016).[21] The impact of the adjustment is very large, because failure to correct for differential mortality biases predicted wealth transfers up by more than a third.

We denote age-gender-year specific average mortality rates from the Social Security Administration using (Π_{agt}), where a is age, g is gender, and t is (birth) year. The differential mortality adjustment here is not time dependent (or race dependent, see Chetty et al. 2024), so we pool years to smooth over year-to-year variability. We compute *relative* mortality (λ_{agk}) for income percentiles k=1, …, 100 by age and gender, by normalizing each age-gender-income mortality rate by the overall mortality rate for that age and gender group. We then fit cubic functions for relative mortality across income percentiles within each age and gender group (Figure A1). The fitted values are the values for λ_{agk} used to construct differential mortality rates. Thus, the mortality rate for an individual is $\pi_{agtk} = (\Pi_{agt})*(\lambda_{agk})$. These values are used directly for individuals ages 40 to 76. Beyond age 76, we follow Chetty et al. (2016) and interpolate

[21] The study was based on income and death records for males and females separately at ages 40 to 76 for the years 2001 through 2014. The study computed and reported mortality across 100 income percentiles for each age, gender, and year.

relative mortality differentials (the λ_{agk} terms) to asymptote to 1 by age 100 (Figure A2).[22] Setting the λ_{agk} terms equal to 1 for 100-year-olds is consistent with the convergent patterns in the observed part of the age distribution and explainable in large part because as the lower-income population dies off as a cohort ages, the remaining differentials shrink and, asymptotically, vanish.

C. Gross, Taxable, and Net Estates

Gross estate equals bequeathable wealth for a single person who dies in the year in question or a married couple where both members die in the year in question. Otherwise, gross estate is zero. When a household's gross estate is positive, two types of subtractions are required to move from gross estate to taxable estate: first, allowable exemptions and deductible costs associated with death itself, including funeral costs, executor fees, and legal fees; second, charitable contributions made from the estate. To calculate *net estate,* we subtract estate taxes (which are based on taxable estate less valuation discounts) from taxable estate. Net estate is the total intergenerational transfer that the household gives to the next generation.

To predict allowable exemptions and deductions, we rely on historical estate tax filings. The IRS publishes aggregated filings by gross estate size, with varying gross estate size classifications by year. Thus, the aggregated data for all returns in a given gross estate class and a given year is the unit of observation in the analysis below. There are 98 such observations for the period 2001 through 2016 that we use to estimate the expense and charitable deduction

[22] For simplicity, differentials are ignored before age 40—meaning the λ_{agk} terms are all 1—because transferable wealth and average mortality are negligible at younger ages.

equations.[23] All dollar values are inflated to 2016 using the personal consumption expenditure deflator.

For each of the gross estate size class/year observations, we observe the number of returns, gross estate amount, and the number of returns with, and total amounts for, funeral expenses, executor fees, attorney expenses, other expenses, and charitable deductions. For each of the four expenses and the charitable deductions the goal is to identify a relationship between that deduction and gross estate size.

We first model the probability that a given gross estate will have that expense or deduction and then model the (conditional) size of the expense or deduction, both as a function of gross estate size. The empirical specifications are all simple linear splines in gross estate size, with breaks at 1, 5, 10, 25, 50, 75, and 100 million. Constant terms are suppressed.[24]

In general, most returns claim funeral, executor, attorney, and other expenses, with the probability of such claims ranging from an average of just over 50 percent for attorney's fees up to 90 to 100 percent for funeral, executor, and other expenses. Also, in general, if there is a relationship between the fraction of estates with a given expense and gross estate size, that relationship is slightly negative.

Conditional on having funeral, executor, attorney, or other expenses, the average expense rises with gross estate size, but the slope of the relationship varies by expense category, and the slopes are generally non-linear. Even average funeral expenses increase with gross estate size. Most gross estate size classes have average funeral expenses around $10,000, but this rises to

[23] We currently use only 2001 through 2016 because changes in the filing threshold over the past decade has severely limited the share of gross estates for whom the published estate tax data are relevant.
[24] Estimation results and processed estate tax data files available from authors upon request.

over $30,000 for gross estates between $50 and $100 million, and close to $60,000 for gross estates over $150,000.

Similar upward sloping average expenses relative to gross estates are observed for the other expenses, and the non-linearities are even more important. An ocular regression on attorney's fees, for example, suggests that a simple fitted line would greatly overpredict expenses for very small and very large estates, and underpredict in the middle range. The linear-spline specification addresses that potential problem, and suppressing the constant prevents predictions of negative conditional expenses. The non-linearity is most pronounced for charitable contributions, which are more frequent and larger (relative to gross estate) for estates in the largest estate size classes.

Most gross estates are not subject to estate tax filing because they are below the filing threshold. The non-linear relationships in our exemption and deduction imputation model makes it possible to estimate costs associated with death and charitable contributions for non-filers. The different correlations with gross estate size play a key role here: funeral expenses are ubiquitous, but smaller for non-filers. Charitable contributions at death are less frequent and much smaller (in dollars and as a share of gross estates) for decedents with wealth below the filing threshold.

Although the estate tax system has changed dramatically in the period covered by our SCF samples, the imputation model does a good job capturing the subtractions needed to move from gross to taxable estates. Published nominal estate tax revenues in 1997 were $16.6 billion and grew only slightly to $18.4 billion in 2021. The lack of growth in estate tax revenues is of course due to changes in law, because nominal gross estates rose nearly 500 percent. The model captures the (lack of) trend well, with simulated estate taxes increasing from $17.3 billion in 1997 to $24.4 billion in 2021.

D. Unrealized Capital Gains

We estimate the unrealized capital gains component of wealth holdings following the methods in Avery, Grodzicki, and Moore (2015). The SCF questionnaire makes it possible to estimate unrealized capital gains for real estate, directly held stocks and mutual funds, and closely held businesses.[25] For real estate, respondents are asked to provide the current value and the original purchase price (or value when received as a gift) for their primary residence, vacation properties, and other properties not owned by a business. In the case of primary residences, respondents are also asked about large improvements. Thus, the estimated unrealized gains component is the current price less the original price and the cost of improvements. The estimated unrealized gains component of real estate has varied between 30 and 50 percent of the total asset value over time (Table A2). The lowest values occur in the wake of the Financial Crisis. In the 2022 SCF, the unrealized gains share of real estate is about 43 percent, roughly the same as the share in the mid to late 1990s.

Unrealized gains on directly held stocks and mutual funds are reported directly in the SCF. After asking respondents about current holdings, the survey asks about any gains or losses since acquiring the assets. As with real estate, the share of unrealized gains in the value of directly held stocks and mutual funds varies over time, from lows of nine or 10 percent at the end of bear markets to highs approaching 30 percent at the end of bull markets (Table A2). On average, unrealized gains are a smaller share of current asset value for stocks and mutual funds than for real estate, which makes sense because real estate is typically held for longer periods.

For closely held businesses, the SCF asks respondents to report the current value of the business and the "cost basis for tax purposes." The cost basis question has clarifying interviewer

[25] Note that we do not estimate the capital gains component of holdings in tax preferred retirement accounts because distributions from those accounts are already taxed at normal rates.

instructions that cost basis means "original investment plus additional investments less depreciation." The estimated share of unrealized capital gains on closely held businesses is much higher than it is for real estate and stocks plus mutual funds. Also, the unrealized share varies less, ranging narrowly between 60 and 70 percent (Table A2). This is not because the value of closely held businesses does not change—see the dramatic drop between 2007 and 2010, for example. The stability in the unrealized gains component for closely held businesses is mostly attributable to many owners reporting zero basis for tax purposes, meaning the entire value is taxable for capital gains purposes if the business were to be sold.

Some rough calculations suggest that estimated unrealized gains in the SCF are plausible. Unfortunately, there is no other data set that allows a direct comparison. The Financial Accounts (FA) reports total holding gains for each of the three asset classes in any given year. Cumulating those gains over time can give a rough estimate of the stock of capital gains. In addition, some capital gains are realized for tax purposes, and we can cumulate the gains reported in IRS Statistics of Income (SOI) data to generate the amount to subtract from total gains. Indeed, we use the combination of FA total and SOI taxable gains to estimate annual *flows* of unrealized capital gains in our measure of Expanded Income (EI). However, estimating the *stock* of unrealized gains is complicated by the fact that some assets are transferred (and thus the basis changes) without being reported for tax purposes. For example, if a parent gifts a house to their child below the estate tax filing threshold, the child will report the asset basis at the transfer value when answering the survey.

Despite the data challenge, a back-of-the-envelope calculation provides evidence that the SCF estimates are in the ballpark of the macro data. In 2022, our approach using the SCF generates an estimate of $48.2 trillion in unrealized gains. In the FA, cumulated from the

beginning of the data in 1946, there are nearly $90 trillion in capital gains. Clearly, many of those gains were realized before 2022, with some gains taxable, and some gains not taxable because they enjoyed step-up in basis at death. If we use a more reasonable look-back time horizon of 25 years (1998 through 2022), we get cumulated total capital gains of about $68.0 trillion in 2022. Over that same period, nearly $20.0 trillion in realized capital gains were reported on income tax forms, so the net unrealized capital gain ($68.0 minus $20.0) matches the SCF estimate. Although this macro benchmarking exercise is admittedly very crude, it is reassuring that the totals are close.

E. Inheritances Received: Amount

Inheritances are captured in several SCF survey modules. First, in the income module, respondents report inheritances in the year before the survey under the "other income" category. Second, respondents who own a residence, a business, or other real estate are asked how they obtained the asset, with "inherited" as one of the options. Finally, the inheritance module captures details on up to three inheritances received over the respondent's lifetime, with any additional inheritances captured under the "any remaining" category.

In principle, inheritances captured in the asset or income modules should also be captured (again) in the inheritance module. Unlike most question instructions which explicitly direct respondents to avoid double counting, the SCF inheritance questions clearly ask respondents to report inheritances they received *including those they have already reported.* The inheritance question instructions (and follow up post-processing by SCF staff) do a good job of capturing asset and income module inheritances in both places, but roughly 15 percent of total inheritances are not captured in the inheritance section (Table A3).

F. Inheritances Received: Timing

As noted in Section III, respondents are asked the year in which they received each of the three largest wealth transfers. But the public-use data rounds the year to the nearest "5" or "0" year (1995, 2000, 2005, etc.). Thus, the inheritance happened in one of the two-to-five years associated with the most recent rounding year, and that rounding year also includes the survey year itself. For example, in the 2022 SCF, the inheritances of interest are for the year 2021 (year "t-1," the same year as the income reported in the 2022 SCF). But 2021 inheritances are combined with inheritances received in 2018, 2019, 2020, and 2022 and all reported as having been received in 2020 (the rounding year). The modal SCF survey is conducted halfway through 2022, so there are 4.5 statistical years covered by rounded year 2020. Thus, the probability that an inheritance with rounded year 2020 occurred in 2021 is (1/4.5).

In practice, a probability of (1.25/4.5) for 2021 brings the reported inheritances into closer alignment with known aggregates by date from the internal SCF data, likely because the respondent's time frame is focused on the previous year for reporting income and other outcomes. We use similar adjustments for the other SCF waves, though the proximity to the most recent rounding year changes the denominator. For example, in 2019, the most recent rounding year is 2015, which includes 2013 to 2017. Thus, inheritances with reported year 2019 include those received in 2018 and 2019 itself. Thus, the 2019 denominator is 1.5 statistical years.

Knowing the probability that a given rounded year inheritance belongs in t-1 is the first step. We then generate two implicates (one in which they receive the transfer, the other in which they do not) for each respondent reporting an inheritance in the rounded year which includes t-1. The probability the inheritance occurred in t-1 is used to create a reweighted observation with the reported inheritance occurring in year t-1 and one minus the probability to create a reweighted observation with no inheritance in t-1. This preserves all other SCF data moments without

worsening the (already substantial) sampling variability associated with rare events such as inheritance receipt.[26]

G. Comparing (Simulated) Bequests with (Reported) Inheritances

The fact that we have measures of transfers at death from the perspective of both decedents and heirs is a key feature of our approach. SCF-reported inheritances have been used in many studies of intergenerational wealth transfers,[27] but there is no other source of data on (say) total inheritances that can be used to validate SCF data quality. Likewise, SCF-based estimates of bequeathable wealth and estate tax reform options have been undertaken by groups like the Tax Policy Center (2022) and Congressional Budget Office (2021), using methods like ours. However, other than checking predictions about very large estates against published SOI estate tax filings, there is no attempt to validate predicted transfers more generally against an external benchmark.

Comparing simulated bequests to reported inheritances allows us to validate the models for simulating bequests against reported inheritances. There is nothing built into the processing and modeling that forces simulated bequests to match reported inheritances, so observing a close correspondence between the two is reassuring. Indeed, given the assumptions required to simulate bequests and the potential for sampling variability in inheritances, a fair amount of divergence might be expected.

Figure A3 shows simulated aggregate bequests and reported aggregate inheritances over time. Nominal inheritances have roughly tripled in size over this period, from roughly $200

[26] An alternative approach would be to compare the known probability the inheritance occurred in year t-1 against a random number and assign the inheritance value to t-1 (or not) based on the probabilistic comparison. That approach exacerbates sampling variability, however, because it throws away many reported inheritances, those in the same rounded year but deemed to have occurred in a year other than t-1.

[27] See, for example, Modigliani (1988); Wolff and Gittelman (2012); Alvaredo, Garbini, and Piketty (2017); Feiveson and Sabelhaus (2019); and Nolan et al. (2022).

billion in 1997 to $600 billion in 2021. Simulated bequests have grown faster, but that is mostly because inheritances substantially exceeded bequests in the early part of the sample. In recent years, the aggregate values are closer, and the values are nearly identical in 2021.

Figure A4, Panel B reports the size distributions of simulated bequests and inheritances in 2021, across 13 size classes ranging from <$5,000 to $5 million or more. The distributions of simulated bequests and reported inheritances by size are remarkably similar. The aggregate amount of simulated bequests is about five percent higher than aggregate inheritances. Again, there is nothing in the methods that forces these distributions to align perfectly, and plenty of assumptions that go into simulating net estates and dividing by the number of heirs that could introduce divergence.

However, the same size distribution comparison for 2018 reminds us that we need to be careful about model assumptions and sampling variability (Figure A4, Panel A). The first indication of divergence is that aggregate simulated bequests are nearly 15 percent below reported inheritances in 2018 (Figure A3). The size distribution shows us that most of the divergence occurs for transfers in the $1 million to $5 million range. The reported inheritances in that range decrease predictably and modestly between 2018 and 2021, while the simulated bequests increase sharply.

Simulated bequests are sensitive to the many assumptions used to move from bequeathable wealth to transfers by size. That sensitivity, of course, motivates continued research on our modeling approach. The divergence between simulated bequests and inheritances in some years also underlies the distributional approach used in this paper, which is focused on inheritances received (Sections IV and V). As discussed in the text, policy effects are measured in terms of *changes* in net inheritances received by individuals. In the base year for our policy

experiments (2021), the choice does not matter because there is a close correspondence between the bequest and inheritance distributions.

Table A1. Bequeathable Wealth Timing Adjustment Factors

	1995	1998	2001	2004	2007	2010	2013	2016	2019	2022
Lagged Adjustments (Contemporaneous Survey)										
Real Estate	94%	88%	77%	80%	96%	112%	92%	87%	89%	74%
Closely Held Businesses	89%	85%	87%	82%	88%	118%	82%	88%	89%	77%
Stocks and Mutual Funds	83%	72%	119%	68%	74%	90%	68%	92%	87%	94%
DC pensions	89%	89%	89%	89%	90%	92%	88%	95%	94%	99%
Forward Adjustments (Previous Survey)										
Real Estate	105%	110%	110%	114%	91%	96%	107%	108%	108%	104%
Closely Held Businesses	104%	105%	103%	114%	88%	105%	108%	106%	106%	97%
Stocks and Mutual Funds	116%	121%	84%	118%	73%	98%	115%	114%	109%	113%
DC pensions	106%	106%	105%	106%	104%	104%	105%	103%	102%	100%

Table A2. Unrealized Capital Gains in the SCF

	Total Assets (Trillions)									
	1995	1998	2001	2004	2007	2010	2013	2016	2019	2022
Total	$ 22.1	$ 30.1	$ 42.2	$ 52.3	$ 66.9	$ 59.6	$ 63.8	$ 83.9	$ 93.3	$131.9
Real Estate	$ 8.6	$ 11.2	$ 15.3	$ 23.0	$ 29.7	$ 25.5	$ 26.1	$ 30.5	$ 35.6	$ 49.7
Directly Held Stocks and Mutual Funds	$ 2.6	$ 4.8	$ 6.8	$ 6.8	$ 8.7	$ 7.6	$ 9.3	$ 15.5	$ 16.6	$ 25.5
Closely-Held Businesses	$ 4.3	$ 5.7	$ 8.0	$ 9.8	$ 14.8	$ 12.2	$ 13.5	$ 19.3	$ 21.4	$ 30.8
Other Assets	$ 6.6	$ 8.3	$ 12.1	$ 12.8	$ 13.7	$ 14.3	$ 14.9	$ 18.6	$ 19.7	$ 26.0

	Estimated Unrealized Gains (Trillions)									
	1995	1998	2001	2004	2007	2010	2013	2016	2019	2022
Total	$ 6.7	$ 10.1	$ 13.9	$ 18.5	$ 27.4	$ 17.1	$ 18.3	$ 26.0	$ 30.6	$ 48.2
Real Estate	$ 3.7	$ 4.8	$ 7.4	$ 11.5	$ 14.7	$ 9.0	$ 8.2	$ 11.5	$ 12.7	$ 21.4
Directly Held Stocks and Mutual Funds	$ 0.4	$ 1.4	$ 1.1	$ 0.6	$ 2.0	$ 0.7	$ 1.9	$ 3.0	$ 4.8	$ 6.4
Closely-Held Businesses	$ 2.6	$ 3.9	$ 5.4	$ 6.4	$ 10.7	$ 7.4	$ 8.1	$ 11.4	$ 13.1	$ 20.4
Other Assets	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -

	Estimated Unrealized Gains as a Share of Assets									
	1995	1998	2001	2004	2007	2010	2013	2016	2019	2022
Total	30%	34%	33%	35%	41%	29%	29%	31%	33%	37%
Real Estate	42%	43%	48%	50%	49%	35%	31%	38%	36%	43%
Directly Held Stocks and Mutual Funds	17%	29%	16%	9%	23%	10%	21%	19%	29%	25%
Closely-Held Businesses	61%	68%	68%	65%	72%	61%	60%	59%	61%	66%

Notes: Total assets excludes amounts in quasi-liquid retirement accounts. Real estate includes owner occupied housing and other real estate not owned by a closely-held business.

Table A3. Inheritances Captured by SCF Module Source

	Income Module		Real Asset Modules		Inheritance Module		Total	
Year	Counts	Billions	Counts	Billions	Counts	Billions	Counts	Billions
1998	197,992	$ 3.6	185,600	$ 27.7	1,775,916	$ 166.1	2,119,528	$ 197.4
2001	116,862	$ 1.7	134,520	$ 60.2	1,978,266	$ 203.9	2,191,600	$ 265.9
2004	69,456	$ 0.4	77,760	$ 6.3	2,446,351	$ 245.0	2,593,491	$ 251.7
2007	92,352	$ 1.7	140,531	$ 78.0	2,110,084	$ 270.1	2,336,210	$ 349.8
2010	179,140	$ 3.2	100,631	$ 10.2	2,062,543	$ 314.7	2,308,077	$ 328.0
2013	249,201	$ 5.8	321,499	$ 60.5	2,131,075	$ 371.4	2,599,010	$ 437.6
2016	196,449	$ 7.3	212,967	$ 24.0	2,030,640	$ 393.4	2,375,878	$ 424.7
2019	260,719	$ 17.5	156,773	$ 18.3	2,830,063	$ 526.2	2,980,084	$ 562.0
2022	439,571	$ 26.4	199,121	$ 39.3	2,443,526	$ 533.4	3,001,376	$ 599.1

Figure A1. Relative Mortality by Income Percentile, 62-Year-Old Males

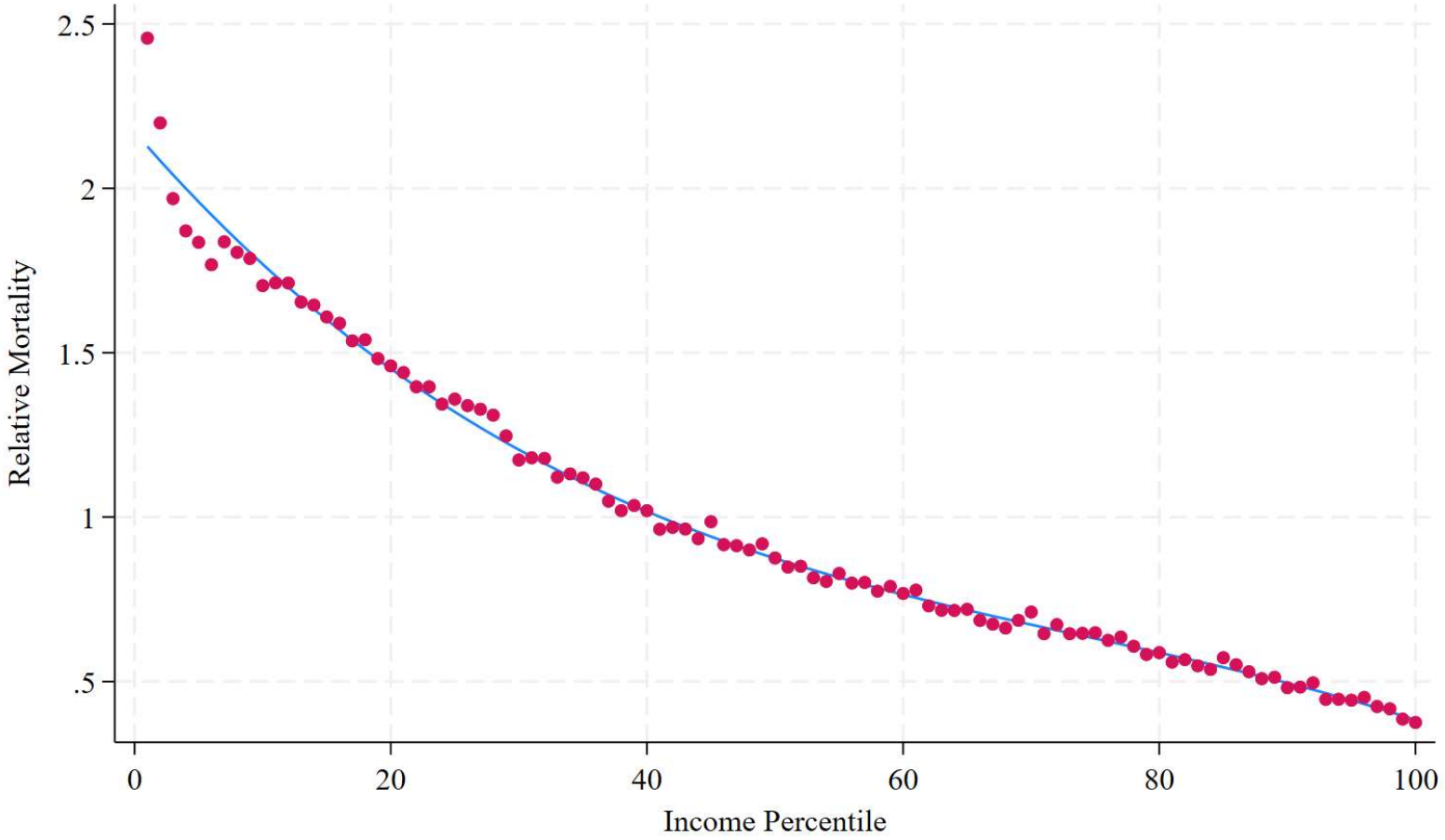


Figure A2. Convergence of Relative Mortality by Age, Males

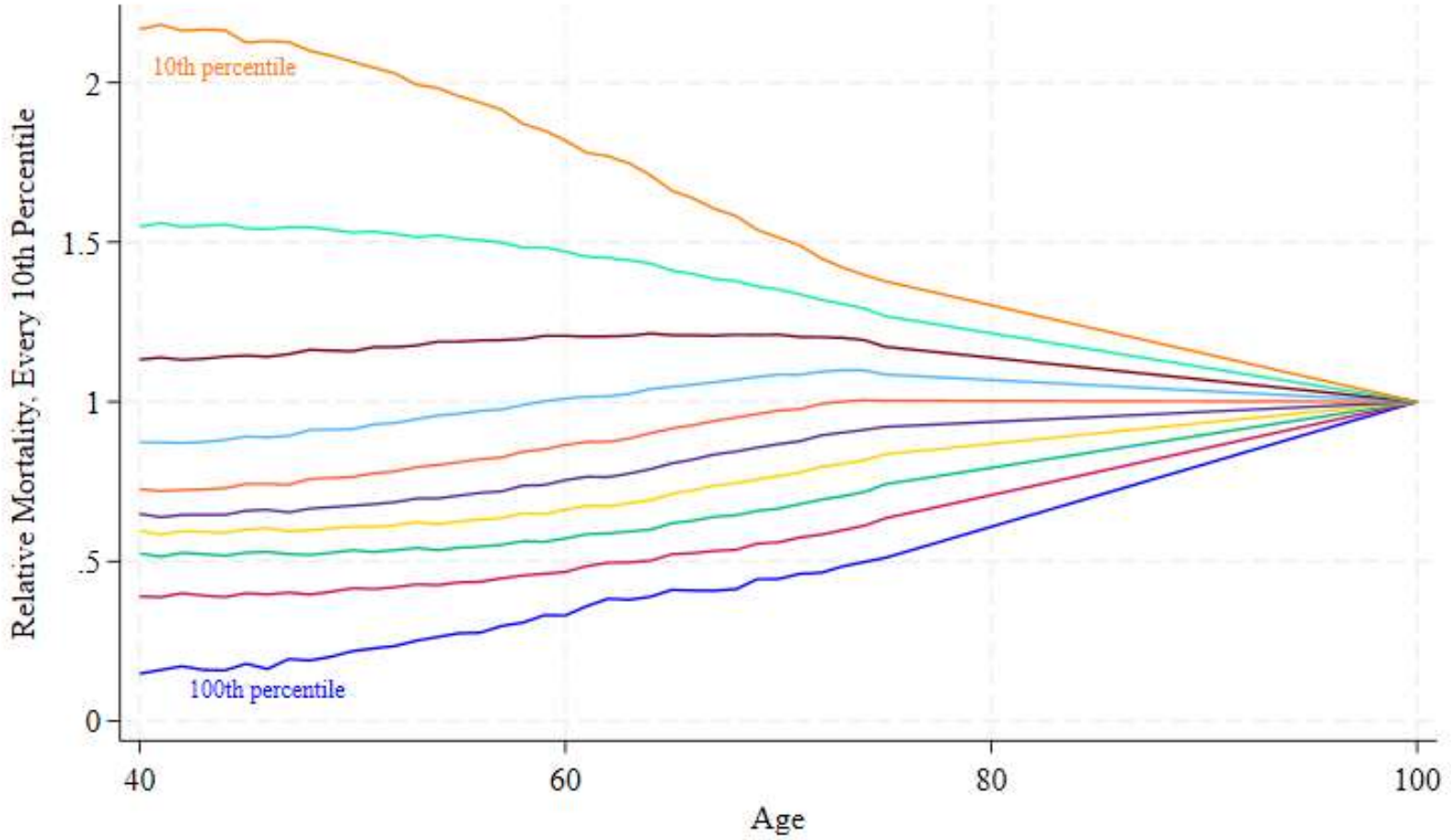


Figure A3. Aggregate Inheritances and Simulated Bequests, 1997-2021

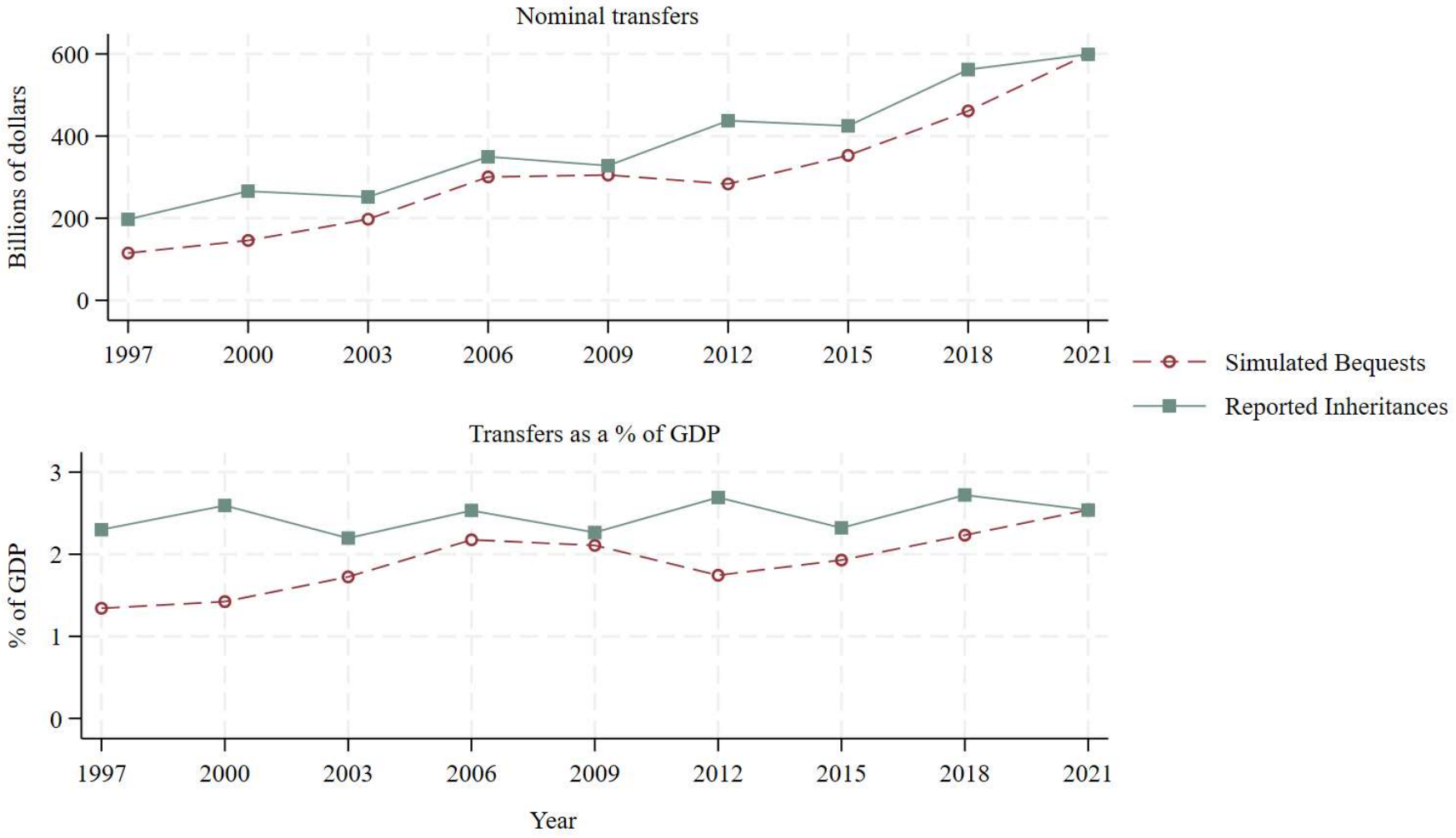


Figure A4. Size Distribution of Inheritances and Simulated Bequests, 2018 and 2021

