

**U.S. capital gains and estate taxation:
status report and directions for reform**

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Abstract

Recent changes in estate taxation significantly reduced its reach and revenue, although the tax continues to contribute to progressivity of the overall tax system and is likely to play a role in influencing the long term concentration of wealth. I discuss recent changes, empirical evidence and theory applying to this form of taxation. I then discuss directions for reform of the tax. The interaction between estate taxation and other components of the tax system is most important in the context of capital gains, with step up in basis partially compensating for high marginal rates while at the same time creating very strong deferral incentives. Modifying this interaction is long overdue and experience from the temporary repeal of the tax in 2010 is helpful in understanding challenges. I discuss options for modifying this interaction, including implications both for estate tax design and for the great majority of taxpayers who are not subject to the estate tax.

1 Introduction

The U.S. estate taxation has undergone major changes since 2001 when a major volume devoted to economic research on the topic was published (Gale et al., eds, 2001). Much has happened on the research front as well, although there is certainly still room for further rethinking. The objective of this paper is to provide a policy-relevant overview of the current state of research on the topic and directions for a reform.

2 Policy landscape

The estate tax has evolved dramatically over the last 15 years as Figure 1 illustrates. As of 2001, the exemption stood at \$675,000 and the top marginal tax rate was 55%, applying to estates over \$3,000,000. As the result of changes introduced by the Economic Growth and Recovery Tax Act of 2001, the rate structure and exemption evolved over the next 9 years. By 2009, the exemption increased to \$3,500,000 and the top rate declined to 45%. In 2010, the tax was temporarily repealed (as I will describe in a bit more detail below). The estate tax provisions of the 2001 Act were scheduled to “sunset” as of 2011, at which point the tax would have returned to its 2001 structure. Instead, initially the top rate was set at 35% in 2011 and 2012, and the exemption at \$5,000,000. Starting with 2013, the top rate stands at 40% and exemption is automatically adjusted for inflation (it is \$5,430,000 in 2015).

These changes resulted in a major decline of the number of tax returns filed, as well as in reduction in revenue. Figure 2 shows the overall number of tax returns filed and the overall number of taxable returns. (Note that — because of data availability — these are year-of-filing numbers; the great majority of tax returns (over 80%) are filed between 9 and 18 months after taxpayers’ death so that tax returns filed in a given year primarily reflect deaths in the year before). The decline in the reach of the tax has been dramatic — the number of returns by 2014 is only about 10% of that in 2001. Figure 3 shows the overall gross estate reported on tax returns and net tax liability (in current dollars). Here the decline was less pronounced, although still important. Consistently with rate reductions, the overall revenue declined more than gross estate reported on the tax returns.

Finally, Figure 4 shows the number of estates (overall and taxable) with gross value of assets above \$10 million (this is the largest group that is consistently taxable over the period that is broken down in the IRS Statistics of Income publications). Except for the 2011 dip that was due to the repeal, the number of returns appears to primarily change with the state of the economy.

The repeal of the tax in 2010 required specifying tax implications of the world without estate taxation. The key consideration here has to do with the step up in basis at death. Appreciated assets that are not sold (and hence capital gains on which are not realized before death) so that they constitute part of the estate have their base reset to the date of death value and thus escape capital gains taxation (though they are naturally subject to the estate tax if estate is taxable). As part of the repeal, the law in effect for 2010 specified an alternative approach to treating capital gains at death. Instead of allowing for step up, the approach was to implement carryover basis: the basis for capital gains was not stepped up but instead the original basis carried over to the recipient (though with allowance for an increase in basis by \$1,300,000 and an additional \$3,000,000 for the spouse). This is the approach that mimics the current gift tax treatment of capital gains and an approach that was previously enacted in 1976 but repealed before it went into effect.

To complicate matters somewhat, this new treatment of capital gains at death in 2010 was made elective: taxpayers could opt into it or they could instead choose to be subject to the estate tax in its 2011 form. Even when all estate consisted of unrealized capital gains, marginal tax rate differences might seem to favor capital gains treatment. Still, some estate tax returns were filed in this new tax regime. Taxpayers that opted for carry-over capital gains tax treatment had to file information Form 8898. Just over 8,000 of such returns were filed (Office of Tax Analysis, 2014). For comparison, there were 7,510 estate tax returns filed for taxpayers with gross estates above \$5 million who died in 2009 (\$5 million was also the threshold for elective 2010 estate tax treatment) and 9,447 in 2011. While SOI makes year-of-death summary statistics only in some years (the data is available for 2009 and 2011 in particular, but not for 2010), Office of Tax Analysis (2014) reports based on unpublished data made available to them that 2,832 estate tax returns with gross values above \$5 million were filed for 2010 decedents, so that there were about 11,000 of forms 8898 and over \$5 million estate tax returns combined that were filed. Given the fairly flat stock

market in 2011, it suggests that there were some estates that would otherwise be nontaxable and whose executors selected the carryover treatment (though, perhaps, capital gains in these estates may have already been below the exempt capital gain allowance amount). On the other hand, the fact that some estate tax returns were filed indicates that in some cases the estate tax treatment was beneficial to taxpayers when compared to capital gains tax treatment. Only 352 of these estates had tax liability so, naturally, this preference is likely there only for relatively small estates, tax returns with a lot of deductions and those with relatively high share of capital gains. Finally, Office of Tax Analysis (2014) also reports that there were 4,559 estate tax returns filed for 2010 deaths that fell under \$5,000,000 threshold. While the IRS does not explicitly report tax returns under the filing threshold in its year-of-death summary statistics, it does so in the year-of-filing data — for 2011-2014, the number of such returns was between 1,000 and 1,500 (with a small number of them likely corresponding to deaths before 2010 when the threshold was lower) so that the number of such small filings for 2010 deaths appears unusually large. This is perhaps indicating that some small returns were filed unnecessarily to explicitly opt against carryover capital gains treatment.

The estate tax and gift taxes are naturally related and, since 1977, they have been directly connected through the existence of the unified tax credit that applies jointly to both estate and gift taxes. Changes in 2000s temporarily modified this link. While the unified credit had increased from \$675,000 in 2001 to \$3.5million between 1999 and 2009, the portion of it that could have been used toward gifts was only lifted to \$1 million as of 2002 (in step with the estate tax) and kept at that level for the rest of 2000s. With the reinstatement of the estate tax in 2011, the joint unified credit feature has been brought back, so that again the full lifetime exemption can be used for either gifts or estates.

The rate structure under the gift tax has always been the same as for the estate tax. However, while the estate tax applies to the tax inclusive basis, the gift tax applies in a tax exclusive fashion. Hence, the marginal tax rate of t results in the taxpayer retaining $1 - t$ net-of-tax in the case of estate, while the marginal tax rate for gifts as a share of gift-plus-tax basis is $\frac{t}{1+t}$. In particular, it implies that — despite nominal unification — the marginal tax rate on gifts is lower than the marginal tax rate on estates. Furthermore, small gifts are tax exempt — as of 2014, a taxpayer may

give up to \$14,000 per donee tax free. On the other hand, the step up preferences for capital gains does not apply in the case of gifts reducing the gift tax treatment advantage for appreciated assets.

It is interesting to note that the gift tax was left in place in 2010 despite removal of the estate tax. While that might seem internally inconsistent, it is not necessarily so both from the short- and the long-run point of view. In the short-run, most of observers and — likely — the policy makers expected the repeal to be temporary so that lack of gift taxation would lead to erosion of future tax base. From the longer-term policy-design perspective, the gift tax plays an important role in reducing tax avoidance possibilities not just for the estate tax, but also in the case of the income tax where transfer of an income-generating asset to another person (e.g., a child) in a lower tax bracket is a potential tax avoidance approach.

The final component of the estate tax system is the Generation Skipping Tax (GST) that applies to transfers that pass a generation and avoid corresponding layer of taxation (e.g. to grandchildren). This tax has followed the same modifications as the basic estate tax: first, gradual increases in exemption and reductions of tax rates, then repeal, and — finally — reinstatement.

The estate tax has been in place in the United States since 1916.¹ The basic structure of the current system of estate/gift/GST taxes originated in the 1976 Act that overhauled the whole system. The main component of that reform was unification of the estate and gift tax systems via unified credit. There were other major tax provisions over the years that are of continuing interest and highlight various problems in implementing the effective estate tax regime. The introduction of the GST tax in 1976 was intended to eliminate a particular form tax avoidance where a child could benefit from an asset during lifetime but a grandchild would obtain the ownership at child's death — this strategy was intended to avoid the tax for an intermediate generation. The estate tax treatment of marital transfers has been controversial since the tax was introduced. One of the issues was effectively different treatment of taxpayers in community-property states where assets were split between spouses by default. Another one is a more general point about appropriateness of imposing a tax on individual rather than on household level. This issue was address in steps over time: first, through an introduction of marital deduction in 1948, then its expansion in 1976,

¹See Luckey (2009) for a much more comprehensive overview of the history of estate, gift and GST legislations.

implementation of unlimited deduction in 1981 and finally introduction of portability of the unified credit between spouses in 2011. The 1976 reforms also attempted to address the capital gains exemption via step-up in basis but it was a shortly lived effort: the rule to introduce carryover basis was suspended in 1978 before it went into effect and it was repealed outright in 1980.

3 Theoretical landscape²

Modeling intergenerational transfers starts with assumptions about individual preferences and economic environment that result in a motive to leave a bequest. In principle, bequests may be intentional or not. Unintentional bequests may arise for a number of reasons: as the result of uncertainty about the lifespan (“accidental bequests”), when individuals have incorrect assessment of their mortality (“denial of death”) or when wealth enters preferences directly (e.g., with wealth as a measure of status or proxy for control). Alternatively, an individual may directly value bequests (joy-of-giving) or benefit from consequences of bequests (increased utility of a child in the case of altruism, specific services in the case of exchange). The motivation for bequests matters both for predicted behavioral response to taxation and for its welfare implications. The literature on these topics is vast and has not settled on a single motive. Work on understanding the shape of the wealth distribution and on bequest patterns and behavioral responses to taxation informs it by indicating the need for a mixed motive: precautionary considerations and “accidental” bequests are important, but some form of bequest motivation is necessary to explain the top tail of the distribution. Responsiveness to taxation indicates intentional motives, although altruism is not powerful enough to explain the tail; there is also evidence that control over wealth during life is important. When considering taxation at the very top of the distribution, the key considerations simplify similarly as in the work on the top marginal tax rates (Diamond, 1998; Saez, 2001): with marginal utility converging to zero, behavioral elasticities are important for understanding revenue implications, while welfare consequences of the tax remain important only to the extent that bequests influence overall welfare through channels other than utility of the wealthy donors or donees (in particular,

²For a much more extensive overview of theoretical literature on estate taxation and additional references see Kopczuk (2013b).

when they generate externalities, including those of fiscal nature).

Theoretical analysis of desirability of estate taxation used to take as its departure point models of capital taxation. An estate tax is a form of a tax on capital, hence it is convenient to start with models of capital taxation more generally and extend them to consider specific features of the estate tax context: bequest motivations that may generate behavior different than that following from other reasons to save, interactions between parents and children and implications of wealth rather than capital income taxation. While this is attractive line of thinking, the applicability of the long-standing Chamley-Judd theorem showing optimality of zero capital tax rate in the long run (Judd, 1985; Chamley, 1986) has recently been challenged by Straub and Werning (2015) who showed that it holds only under restrictive conditions. Chamley-Judd result has always been a somewhat unrealistic departure point though, because of its unattractive assumptions about feasible instruments (no initial taxation) and, even with these assumptions, lack of robustness due to time inconsistency of the optimal policy. Despite the unsettled status of capital income tax literature, recent research has illuminated a number of considerations that are relevant for thinking about estate taxation.

Farhi and Werning (2010) focused on implications of externality from giving: bequests benefit parents and children; even when parents internalize the effect on children, the policy maker may put stronger preference on child's welfare recognizing that it benefits parents as well. This has a natural implication of pushing in the direction of subsidies to bequests and, interestingly, does so in a "progressive" fashion by calling for subsidies to bequests at the bottom of the distribution and marginal subsidy disappearing at the top. Building on this model, Kopczuk (2013a) additionally incorporates a fiscal externality from bequests: transfers discourage labor supply of children due to income effect (one can also think of it as incorporating the Carnegie-hypothesis effect) with corresponding revenue consequences when children's income is taxed. This extension gives rise to an appealing structure of taxation: subsidies to giving toward the bottom of the distribution (consistent, for example, with policies that encourage parental investment in human capital of their children) and taxes at the top where the motive for subsidy vanishes and only fiscal externality is of relevance. An interesting aspect of these papers is that the responsiveness of bequests/estates to

taxation is not a relevant parameter for designing the estate tax. This may seem counterintuitive since one would naturally expect that the distortionary effect on bequests determines the extent of deadweight loss. However, in these models the role of estate taxation is corrective: it is supposed to address externalities from giving and from fiscal consequences of transfers. As is the case with Pigouvian taxation more generally, the correction depends on the gap between private and socially desirable incentives rather than responsiveness. Excess burden does matter but it's the marginal excess burden of the overall tax system (the Marginal Cost of Funds or, more technically, Lagrangian multiplier on the budget constraint) rather than that of the estate tax in isolation.

A different direction has been pursued by Piketty and Saez (2013) who explicitly incorporate imperfect correlation of abilities across generations in an infinite horizon model and study long-run optimal income and inheritance taxation. Their main conclusion is that optimal inheritance tax is non-zero in the steady state. The two main limitations of this analysis is lack of understanding of the policy along the transition path to the steady state (so that it is potentially subject to caveats identified by Straub and Werning, 2015), and analysis of linear taxes only so that the results are not necessarily a guide for policy at the top of the distribution. The paper is also better thought of as modeling the overall lifetime capital income and estate tax rate, rather than the estate tax alone. The results are expressed in terms of behavioral elasticities that incorporate steady-state adjustments and, hence, are hard to relate to feasible empirical estimates: the required behavioral elasticities correspond to moving long-run equilibria corresponding to different policies and estimating such elasticities is a daunting task.

Three other theoretical points are worth mentioning.

First, behavioral implications of taxation on bequests may influence aggregate capital stock. This point is part of the Chamley-Judd result, but by itself it does not necessarily imply that capital tax is undesirable. Aiyagari (1995) showed that capital tax may in fact be necessary to address dynamic inefficiency that naturally arises due to overaccumulation driven by precautionary saving. Saez (2002) makes an important point that increased rate of return caused by reduced accumulation of the rich due to progressive estate tax should stimulate saving by those unaffected by the tax. In the special case that he considers, there is in fact no effect of progressive estate

taxation on the aggregate capital stock.

Second, understanding the process and implications of wealth accumulation at the top of the distribution is bound to matter. A few recent papers have considered optimal income tax implications of superstar effects and rents; extension to the estate tax is of interest. Implications of the motive for control over wealth and relative status implications of wealth have not been analyzed, but are bound to interact with welfare implications of the tax and its revenue implications.

Finally, any potential externalities from wealth concentration are potentially important. This includes effects that might flow through political system or economic influence. It also includes any value that might be placed on equality of opportunities and would thus go beyond welfarist framework.

4 Empirical evidence

One of natural questions to ask regarding behavioral responses to estate taxation is about its effect on wealth accumulation. This is a question that is hard to compellingly answer empirically. A number of papers in the U.S. attempted to shed a light on it. Kopczuk and Slemrod (2001) relied on repeated cross-section of estate tax returns and variation over time and taxpayers' age at death (which corresponds to different tax regimes in place at any particular stage of life). Holtz-Eakin and Marples (2001) exploited cross-sectional wealth information and variation in state tax rates. Joulfaian (2006) resorted to using estate tax series. While none of these strategies is particularly appealing by the post-"credibility revolution" standards of what constitutes a convincing empirical design, interestingly they produce fairly similar estimates of the elasticity of estate to net-of-tax rate of between 0.1 and 0.2. Similarity of the estimates based on wealth during life and estate at death is also consistent with the responsiveness on the real rather than avoidance margin.

A recent paper by Goupille-Lebret and Infante (2015) uses unusual data from France to estimate responsiveness of wealth accumulation to tax considerations based on a much stronger research design. Life insurance in France is about a quarter of the overall bequest flows. Despite its name, it need not necessarily have insurance features and instead is used as a vehicle for wealth accumulation

(similarly to whole life insurance). Importantly, it is preferentially treated for both income tax and inheritance tax purposes (it is comparable to Roth IRA treatment over the lifetime coupled with preferential treatment at death). Changes over the years reduced the tax advantage (while grandfathering some old policies), and introduced discontinuous treatment of contributions made before turning 70. This context gives rise to age and time discontinuities and allows for identifying accumulation of assets intended for bequest as it accrues over lifetime rather than relying solely on observations at death. While the analysis has important limitations (most importantly, inability to observe other types of assets), it convincingly indicates the presence of important but relatively small response. The estimated magnitude of the tax effect is in line with that obtained from less compellingly identified U.S. studies discussed before.

The United States does not have an annual wealth tax, although there are occasional suggestions for it to be considered and Piketty (2014) has suggested an internationally coordinated wealth tax as a prescription for addressing wealth inequality (see Mintz, 1991; Auerbach, 2008, for an overview of different forms that wealth taxation can take). The evidence on the impact of wealth taxation is scant. An important recent exception is the paper by Seim (2015) who analyzes the response to the Swedish wealth tax and finds strong evidence of tax avoidance using bunching design — remarkable, given that one might think that wealth (stock) is harder to control than income (flow) and given that empirical studies of income responsiveness using bunching design usually yield very small behavioral elasticity. The presence of strong avoidance response in Sweden may reflect poor design of the tax that had trouble targeting a comprehensive measure of wealth. Underreporting of cars (that at the time were not observable to tax authorities) was the main empirically observable source of response and preferential treatment of business assets reflected difficulty in valuing these types of wealth holdings. However, poor design of wealth taxation is likely to be a norm rather than exception. Brown (1991) analyzed practical administrative difficulties in imposing wealth taxation and concluded that they are insurmountable.

Adam et al. (2011) also conclude that experience with attempts to implement wealth taxation has been discouraging in practice. They also make an important point that this form of taxation falls disproportionately on normal return rather than excess return and hence its unappealing on

both efficiency and normative grounds. In the simplest context, wealth and capital income taxes may be equivalent: normalizing initial investment to \$1 and denoting the rate of return by r , the wealth tax is imposed on $1+r$, while a capital income tax is imposed on r . Ceteris paribus, a capital income tax at the rate of t would then collect as much revenue as the wealth tax of $t^w = t \cdot \frac{E[r]}{1+E[r]}$ where $E[r]$ is the expected return. Naturally, $t^w \ll t$ because the wealth tax is imposed on a much broader base. This equivalence breaks though when considering different components of the return. One of the strongest argument for taxing wealth or capital income rests on the possibility of rents. Because the marginal increase in rate of return under wealth tax is taxed at a much lower rate than the marginal increase in capital income, wealth tax effectively taxes rents much more lightly than capital income tax does. Conversely, by taxing principal, wealth taxation effectively imposes heavy burden on the normal rate of return. This is most starkly visible in the (close to) zero interest rate world, $r \approx 0$. In that case, the tax-adjusted normal rate of return under the wealth tax is negative, while capital income tax does not have an effect. Hence, the wealth tax imposes burden precisely on the wrong components of the rate of return.³

A number of papers studies responsiveness of inter vivos gifts to changes in the gift tax rates. Joulfaian (2014) documents large temporal responses of large taxable gifts associated with changes and (possibly) expectations about future tax rates around 2010. In older work (Joulfaian, 2004), he also provides systematic evidence of responsiveness of aggregate gift flows over much of the 20th century, in particular very strong response in 1976 when unification of gift and estate taxation (and, hence, increased tax cost of making lifetime gifts due to offset of exemption on estate tax return) was announced. Ohlsson (2011) provides evidence of similar kind for Sweden. Time series evidence indicating strong tax sensitivity of large taxable gifts is very compelling.

Page (2003) and Bernheim et al. (2004) use data from the Survey of Consumer Finances (SCF) and show responsiveness of gifts to estate taxation using cross-sectional variation in state tax rates and difference-in-difference design leveraging estate tax exemption increases, respectively. This evidence applies to people with moderate wealth (effectively, those captured by the SCF and not far from the tax threshold in the 1990s; i.e. net worth in the neighborhood of \$1 million). Arrondel and

³A capital income tax is also in principle more amenable to exempting normal rate of return altogether.

LaFerrère (2001) provide similar evidence for France. A number of papers (McGarry, 2000, 2001; Poterba, 2001; Joulfaian and McGarry, 2004) focus on studying whether taxpayers take advantage of an annual gift tax exclusion (\$14,000 as of 2015) that allows for tax-free transfers to anyone and is the simplest estate tax planning technique. They conclude that this strategy is underutilized, thereby suggesting that potential estate taxpayers do not act as tax minimizers (that does not mean that these gifts are not extensively used, just that they are not used sufficiently from tax minimization point of view). Joulfaian and McGarry (2004) further find that only about 1/3 of ultimate estate taxpayers make taxable gifts over their lifetime despite apparent significant tax advantage of inter vivos gifts. Part of the explanation here may be different tax treatment of capital gains under gift and estate regimes (carryover basis vs step-up). Joulfaian (2005) analyzes tax incentives while accounting for capital gains treatment, concludes that gifts are usually but not universally tax advantaged, and estimates tax responsiveness of gifts while properly accounting for these considerations. Kopczuk (2007) shows that large estates strongly decline following the onset of a terminal illness, with avoidance being the most plausible channel.

Overall, the empirical evidence suggests that bequests and gifts respond to taxation, with large gifts in particular exhibiting very strong temporal responsiveness around tax changes. At the same time, tax minimization does not appear to be the right approach to modeling taxpayer responsiveness both because lifetime gifts are too small to be consistent with it and because large responses shortly before death indicate insufficient planning before. The importance of retaining control over assets is a leading explanation allowing to reconcile these patterns (Schmalbeck, 2001; Kopczuk, 2007).

The responsiveness of gifts indicates some tax planning, but the overall extent of tax avoidance is harder to evaluate. One approach is to compare the actual estate tax liability to expected tax liability using cross-sectional survey-based information about wealth distribution and assumptions about mortality rates. Unfortunately, estimates using this approach are very sensitive to assumptions and the literature has not reached clear conclusions (Wolff, 1996; Poterba, 2000b; Eller et al., 2001). Audit based studies (Eller and Johnson, 1999; Erard, 1999; Eller et al., 2001) estimate the extent of non-compliance at between 8 and 13 percent but, naturally, these estimates only reflect what is discovered during tax audits — either tax evasion or unsuccessful tax avoidance — and

cannot be interpreted as the overall estimate of tax avoidance activity. An example of successful form of tax avoidance is the use of marketability and minority discounts (Johnson et al., 2001; Poterba and Weisbenner, 2003).

The direct evidence of implications of step up in basis is limited. Poterba (2001) provides evidence that the presence of unrealized capital gains discourage inter vivos gifts, because it would amount to foregoing the step-up benefit from which doesn't apply to gifts. On the other hand, Auten and Joulfaian (2001) show that in the presence of step up, higher estate tax weakens the lock-in effect by leading to earlier capital gains realizations. Poterba and Weisbenner (2001) estimate the effect of replacing estate tax by constructive realization of capital gains and highlight distributional consequences of such a switch.

As discussed in the brief overview of theory above, the effect of bequests on labor supply or income of recipients is one of the key determinants of desirability of estate taxation (Kopczuk, 2013a). The early work on this topic framed the question as “Carnegie hypothesis” (Holtz-Eakin et al., 1993; Joulfaian and Wilhelm, 1994) and showed negative effect of inheritances on labor force participation using linked income and estate tax data and PSID. Brown et al. (2010) confirm this finding using older Health and Retirement Study (HRS) sample. They study the effect on retirement while further controlling for bequest expectations, so that the response is identified off the unexpected component of bequest. Using Swedish data Elinder et al. (2012) show that overall labor income declines following receipt of inheritance. Evidence from other shocks to wealth (Imbens et al., 2001; Kuhn et al., 2011; Poterba, 2000a) is somewhat mixed though on balance also supportive of the presence of labor supply response.

Evidence suggests that there is negative effect of inheritances on labor supply overall, but the effect on a particular class of donees — (actual or potential) entrepreneurs received separate attention. Holtz-Eakin et al. (1994a,b) find support for the hypothesis that inheritances matter for survival of small businesses, Brunetti (2006) finds suggestive evidence (using probate records and relying on repeal of inheritance tax in California for identification) that the estate tax increases the likelihood of selling small businesses and Tsoutsoura (2015) finds that repeal of inheritance in Greece led to increased investment in transferred firms. All these papers therefore indicate potential importance

of liquidity and financing constraints in inherited businesses. At the same time, a different strand of the literature (Pérez-González, 2006; Villalonga and Amit, 2006; Bloom and Van Reenen, 2007) finds that inheritance of control within family appears to be associated with reduced performance, so that the overall welfare implications of taxing transfers of business assets are mixed.

Finally work of Piketty (2011, 2014) has recently revisited the question of the role of inheritances in overall wealth accumulation and wealth concentration in particular. Older literature (Kotlikoff and Summers, 1981; Modigliani, 1988) focused on the question of the aggregate contribution of bequests to wealth accumulation. See Davies and Shorrocks (2000) for a review, with the bottom-line conclusion that bequests are responsible for roughly a half of the stock of wealth, although recent work of Piketty (2014) suggests important heterogeneity both over time and across countries. Cagetti and De Nardi (2008) review work on modeling wealth distribution and conclude that explaining the upper tail requires an introduction of some form of a bequest motive (see also Gale and Scholz, 1994; Dynan et al., 2004, 2002; De Nardi, 2004). Two recent papers (Boserup et al., 2015; Elinder et al., 2015) explore administrative data from Denmark and Sweden that allows for linking wealth holdings across generations to trace direct implications of inheritances for determining the shape of wealth distribution and the extent of inequality.

5 Best practices and reform

The empirical evidence provides support for the notion that estate and gift taxation generates behavioral response, although it is certainly not precise enough to definitively pin down its magnitude. It also points to importance of tax avoidance although it does not necessarily indicate that tax avoidance is the main source of response on the margin. Recent theoretical work opens up the possibility that some form of inheritance taxation may be part of the optimal tax system and it does so in a way that is broadly consistent with the current structure of taxation: a tax that applies at the top of the distribution and potential arguments for preferences/subsidies elsewhere. In my view, the most convincing normative arguments for taxation of high estates have to do with their potential externalities — either reflecting fiscal effect due to reduced labor supply of recipients

(with reasonable empirical support) or potential externalities from wealth concentration or due to reduced equality of opportunities (with speculative and anecdotal empirical support, in need of further work). There is also work that suggests the role of inheritance taxation as a redistributive instrument (Piketty and Saez, 2013) but it is based on linear taxation and steady-state comparative statics, so that it is difficult to relate to the actual structure of the tax system.

Overall, the general question of whether a limited estate tax of the kind currently in place in the United States should be a part of the tax system deserves the firm answer of “it depends” — it depends on the weight that one puts on labor supply impact on recipients (with a tax applying only at the very top, such effects are not likely to be too important quantitatively even if they justify positive taxation) and the presence of externalities from wealth concentration on which evidence is scant and reasonable people might disagree. A more practical consideration are revenue consequences of any modification in rate structure and past experience suggests that they are important enough to make it difficult to eliminate this instrument even by positively predisposed majority. It is also worth noting that in the past estate taxation has been introduced or expanded during times when major resource mobilization was necessary, war financing in particular (Scheve and Stasavage, 2012), so that there is an option value of having administration in place to use this form of taxation if necessary.

In what follows, I am going to focus on the design of the tax and its interaction with other components of the tax system.

Capital gains. As the 2010 experience demonstrated, a repeal of the tax is likely to be associated with modification of treatment of capital gains at death both to address reduce revenue consequences and because it is difficult to justify retaining taxation of realized capital gains during life and lack of any tax liability if unrealized until death. Importantly though, it is difficult to find a rational argument for step up in the first place whether the estate tax is in place or not. The presence of step up creates a strong incentive not to realize capital gains. While any realization-based tax has incentives for deferral built into it by design, the ability to avoid the tax by holding assets until death creates particularly strong incentive for an obvious tax avoidance strategy and generates distortions

due to lock-in or due to any costly attempts to tap into assets without triggering realization. It also introduces inequity between life-cycle and bequest-motivated savers.

Constructive realization (taxing unrealized capital gains at death) is a natural approach to modify the current treatment of capital gains. This approach is in place in Canada (referred to there as “deemed disposition”) and it was proposed by President Obama in the 2015 State of the Union address. It arguably imposes lower compliance costs than the carry-over basis which has been attempted in the U.S. in 1976 and 2010, because it limits record-keeping to the lifetime of a taxpayer. It also effectively “unlocks” the gain, while the carry-over basis perpetuates lock-in of gains past death of the taxpayer. Because deferral advantage grows with the expected holding period, introducing certain realization event at death of taxpayer would encourage lifetime realizations. A comprehensive application of this approach to any transfers either through gifts or at death would lead to overall simplification of the tax system, increased efficiency due to reduction in lock-in, and interestingly (given fiscal pressure) acceleration of tax revenue.

Introducing carry-over approach at death would still be a significant improvement over the current system by eliminating the strong advantage of holding assets until death, although — naturally — it retains the standard lock-in incentive. The main advantage of carryover treatment over constructive realization regime has to do with liquidity constraints. This is usually not a concern with regular capital gains that are the result of arm’s length transactions. It is a potential consideration though when transfer takes place without sale of the underlying asset (and, in particular, when there are plausible distortions that might be associated with sale — for example, due to thinness of the market or disruptions to a business). As discussed in the empirical section, there is empirical evidence both to support the notion that these effects are sometimes important and against treating preserving continuity of family ownership as a desirable policy objective. Nevertheless, one can certainly imagine a system of constructive realization with similar preference for transfers of business assets as those existing under the estate tax (discounting value to reflect marketability or minority ownership, evaluating the value of a business at current rather than best use, paying tax in installments). One could also envision having a constructive realization system in general, but applying carryover basis for particular categories of assets where liquidity constraints are important.

Another possibility would be to assess the tax at death and delay payment until the asset is sold.

The step up applies to all assets and not just to those that are subject to the estate tax. As the result, modification of tax treatment of capital gains at death has consequences for individuals across the distribution. For that reason, the 2010 repeal provided for allowance of \$1,300,000 to increase basis in transferred assets (effectively, exempt part of the unrealized capital gain from taxation). Under the proposal outlined in the 2015 State of the Union, the exemption would be much lower at \$100,000. Naturally, the 2010 approach effectively exempted great majority of estates from worrying about capital gains consequences, but at the same time it also retained the step-up advantage and hence incentives for deferral. While it seems like a logical continuation of a system in which small estates are not taxed, it is a puzzling approach from the point of view of thinking about the income tax. Certainly, small capital gains are not exempt if realized during the lifetime so why should they be exempt at death? Alternatively, if there is a reason to exempt them, why not extend that treatment to capital gains realized during the lifetime?

For example, imagine converting the \$1,300,000 exemption at death to “equivalent” annual exemption, say of \$8,000 for concreteness.⁴ A taxpayer could be offered an annual allowance in that amount to adjust basis, effectively exempting the first \$8,000 of capital gains with the present value of the preference equivalent to exemption at death. Better yet, taxpayers could be allowed to either accumulate the unused allowances or be given lifetime allowance to be used as they wish. Alternatively, one could also consider income-related limits. The advantage of a system like this would be eliminating the deferral advantage by not introducing a point when capital gains are forgiven. I do not see a good reason for having a generous capital gains exemption in the first place (which would be on top of already existing preferential tax treatment of capital gains relative to other forms of capital income). Should one decide to have such an exemption though, there is little economic case for having the exemption granted at death rather than designing it in a way that would be (closer to) neutral with regard to timing of realization.

⁴Consider annual exemption of E , lifespan of 60 (adult) years and rate of return $r = 0.03$. Annuitized exemption E in text is obtained to equate discounted value at the time of death to \$1,300,000: $1300000 = \sum_{t=0}^{60} (1+r)^t E = E \frac{(1+r)^{60}-1}{r} = E \frac{1.03^{60}-1}{0.03}$ implying $E = \$7972.85$

A modification of the capital gains tax treatment at death has budgetary repercussions. A recent estimate of the cost of step up performed by Office of Tax Analysis (2014) using information from the SCF and 8939 form filed for 2010 taxpayers opting for capital gains treatment put the 2014 cost at \$60.4 billion. For comparison, net estate tax revenue from 2009 decedents was \$13.5 billion, revenue collected from 2011 recipients was \$10.9 billion and revenue collected from tax returns filed in 2014 (for deaths in prior years) was \$16.4 billion. The unrealized and untaxed capital gains constituted 38% of net worth of form 8939 filers. The tax expenditure calculation assumes applying the maximum combined capital gain in effect in 2014 (23.8%) and does not incorporate any exemption on the capital gain side. Naturally, estate tax revenue is net of unified tax credit — the 2014 revenue before the credit would be \$36.2 billion. Even by that apples-to-apples comparison with no exemptions allowed for either capital gains or estates, the constructive realization approach to capital gains tax has potential to collect more revenue than estate tax despite lower marginal rate and the base that is 40% of estate.

That is of course because of distributional differences: the capital gains tax applies to everyone, while the estate tax applies only to a small number of high net worth decedents. Applying the 0.238 capital gains rate to \$169.2 billion of gross estates reported for 2014 taxpayers while assuming the 0.38 share of untaxed gains in net worth implies \$15.3 billion of revenue from this population — close to the actual estate tax collection. This calculation assumes taxation of the full capital gain without any exemptions or credits (including to spouse or charity). Given 11,931 estate tax returns filed in 2014 and conservatively assuming that all of them would fully utilize the exemption, the corresponding revenue cost of \$1 million capital gains exemption is \$2.8 billion (and scales proportionally with the size of exemption). Based on these back of the envelope calculations, it seems that while constructive realization treatment of capital gains cannot quite match revenue from estate taxpayers in the presence of exemption at the level established in 2010, the revenue loss is not enormous. This kind of change would of course not be distributionally-neutral within the estate taxpaying population — the calculation assumes imposing a capital gains tax to otherwise nontaxable estates and it would naturally introduce differences reflecting heterogeneity in unrealized capital gains share of net worth. At the same time, the reach of the tax would extend beyond the

current estate taxpayers (how far would depend on whether the exemption is present and how large it is) which would compensate for any revenue loss. Most importantly, as stressed before, a change of this kind should be viewed as closing a loophole that has little justification to exist in the first place and that imposes efficiency cost due to misallocation of personal investments.

Furthermore, the modification of step up need not be associated with elimination of the estate tax. While one common argument for the existence of step up is to avoid “double taxation” at death, this is a flawed argument because this is not any more “double taxation” than that which occurs as the result of taxing capital income at any other stage of the life-cycle and then taxing estate again. To the extent that there is any basis to question “double taxation” in this context, it would call for modifying interaction of estate tax with capital taxation in general but not for introducing a capricious treatment of just capital gains at death specifically. Closing this loophole while leaving estate tax in place would naturally result in revenue increase. While earmarking revenue for a particular purpose is not necessarily an economically-justifiable way of proceeding, one could — for example — imagine that this additional revenue could be allocated to reducing capital gains tax rate overall: an appealing base-broadening combination consisting of elimination of the loophole on one side and reduction in overall tax wedge on the other.

Finally, to the extent that the estate tax remains and step up is eliminated, one might worry that it effectively increases tax burden of estate taxpayers. The solution that has been sometimes proposed is to provide credit for capital gains tax against estate tax liability. This is of course an approach with distributional consequences but it also has incentive effects. In particular, a credit for capital gains tax liability at death would retain the deferral realization incentive unless it is also available for capital gains taxes paid before death. As before, introducing capital gains exemption (to the extent that one wants to have one in the first place) that is not conditional on death — perhaps a lifetime one — is a preferred approach.

The role of estate taxation. This long discussion of capital gains taxation touched on the interaction between capital gains and estate tax. This interaction is an artifact of a problem with implementing capital gains taxes (they are based on realization rather than accrual). Capital gains

taxation is a part of the system of taxing capital income. Estate tax is a tax on transfers. These two issues are conceptually separate — the design of the income tax and the appropriate burden on capital income within that system should govern decisions about capital gains taxation.

The estate tax, especially the type of tax that is in existence in the United States, serves a different objective. What is that objective? As discussed before, the case for taxing estates arises at the top of the distribution (there actually may be reasons to subsidize rather than tax transfers at lower wealth levels) and has to do with addressing externalities through effects on behavior of the next generation, any aggregate implications of the concentration of wealth and its impact on equality of opportunities. From that point of view, the current estate tax is in a good place. It applies to a very small number of individuals with large net worth. When the exemption is at the current \$5+ million level (and, with proper planning through the use of marital deduction and nontaxable gifts estates needn't be taxable way above that level), many of the considerations that were important in the past lost their bite. In particular, issues of small businesses being subject to taxation, liquidity constraints etc. are no longer an appealing argument when just about 5,000 of 2 million decedents are subject to the tax. Portability of marital deduction addressed the remaining concern about treatment of spouses. While reasonable people might disagree about the appropriate tax rate and exemption, economic evidence leaves enough room to accommodate a range of views. For the estate tax as such, the standard advice of simplification and base broadening (via addressing existing avoidance opportunities and curtailing some of the abusive valuation strategies) perhaps coupled with compensating rate reduction is prudent.

One of the arguments that has been used to justify the presence of estate taxation since its onset was its as a role to backstop of other forms of taxation. The discussion of interaction with capital gains tax suggests that this is the role that the estate tax plays in that case, although it is the self-inflicted damage resulting from granting step-up benefits. More generally though, in the world where income is hard to observe or where people do not realize their income, a tax on wealth or estates may serve as a substitute for income tax. This is not an unreasonable view of the US in the past. When much of wealth is held in a corporate form, with earnings retained rather than paid out as dividends or realized as capital gains (for example, because a closely held firm

is retained until death of the taxpayer), individual income tax is effectively avoided for extended periods of time. Before 1986, when individual income tax rates were high, the incentives to realize income were weak. This pre-1986 incentive not to realize is visible in the influential Piketty and Saez (2003) series of top income shares that shows 4.1 percentage point increase (from the base of 9.1%) in the share of income going to the top 1% between 1986 and 1988 when the relative incentives for corporate vs pass-through treatment changed and motivated conversions from C- to S-corporations (Gordon and Slemrod, 2000). My recent work using data from Norway (Alstadsæter et al., 2015) that allows to allocate business profits to shareholders as they accrue rather than when they are realized, documents that a tax reform that resulted in heavier taxation of capital gains and dividends led to an increase in retention of earnings within firms and massive decrease in visibility of income on individual income tax returns: top income shares are understated by 50% as the result (in contrast, accounting for accrual of business profits made little difference when taxation of dividends was light). While international tax avoidance issues remain important, it seems likely that as the result of a general shift toward pass-through entities, the US has gotten much better in taxing income after 1986 so that the backstop to avoidance role of estate taxation is no longer an appealing argument.

Gift tax. Taxation of inter vivos gifts is necessary to support an effective system of estate taxation. Integration of gift and estate taxation via unified credit is imperfect though and leaves much room for tax planning. First, gift tax rates are effectively lower than estate rates due to the difference in tax exclusive vs tax inclusive base. The lower rate was apparently an intentional decision of the Congress at the time the gift tax was introduced in 1932 that was intended to stimulate prepayment of tax liability by making gifts rather than bequests. Be as it may, this is not an appealing argument for this disparity. There is no clear reason why the tax should distort the decision whether to give inter vivos or at death, and there are good reason not to distort since it creates opportunities for tax planning. Furthermore, the unified credit itself encourages gifts because the value of past transfers is not adjusted to reflect inflation or the return on them so that giving an asset before it appreciates uses up smaller part of the credit. Accumulating transfers to reflect their present value

using some assumed safe rate of return (e.g., on 10-year Treasuries) would reduce the magnitude of this distortion. In the discussion of capital gains above, it was noted that the current treatment of capital gains under gift and estate tax is different. Harmonizing this treatment would eliminate yet another margin of distortions (and it is pretty intuitive that granting step-up to inter vivos gifts is not an appealing approach so that harmonizing would need to go in the direction of some form of taxing capital gains at death).

Integration with income tax As mentioned before, Canada taxes capital gains at death and it does so by including them in the income tax base for the terminal return. The short-lived income-inheritance tax introduced in the U.S. in 1894 (and later deemed unconstitutional) included inheritance in the income tax base. Some countries include gifts in the income tax base. One can tax estates or inheritance separately or one can integrate this form of taxation with income tax (see Batchelder, 2009, for a discussion). The appealing feature of such an approach is that, if integration takes place on the donee side, it allows for employing the progressive income tax structure to adjust tax liability according to the ultimate recipient's circumstances. This would be a dramatic change from the current system but it is a coherent alternative possibility.

6 Conclusions

After years of changes, the estate tax is nowadays very different then it was 15 years ago. It applies to 1/10th of the population that it used to, although the decline in revenue has been somewhat less dramatic. The increase in exemption and the fact that it is now indexed for inflation, makes many of the concerns that were raised in the past much less relevant. For example, when a couple with just basic planning involving using available exemption and portable marital deduction can shelter \$10 million from taxation, few small illiquid businesses are likely to be affected. Some of the preferences in the estate tax have been designed for a different population and could be reformed to broaden the base and possibly finance lower rates. Seen in isolation, this tax collects revenue in a way that does not appear grossly inefficient and plays, arguably useful, role of targeting wealth concentration. Its most glaring inefficiencies have to do with its interactions with other components of the tax

system: capital gains most importantly but also to some extent with gift taxation. Elimination of step-up in basis at death should be high on policy agenda and preferred approach to replacing it is constructive realization rather than usually proposed carryover basis. There is no clear justification for exempting any capital gains at death and to the extent that this approach is pursued, it would again result in similar distortions as step up. The preferred approach to exempting some capital gains, if one needs to do that for distributional reasons, would be to introduce lifetime exemption. Such an approach could be implemented in a similar way that unified credit integrates exemptions for gift and estate tax purposes.

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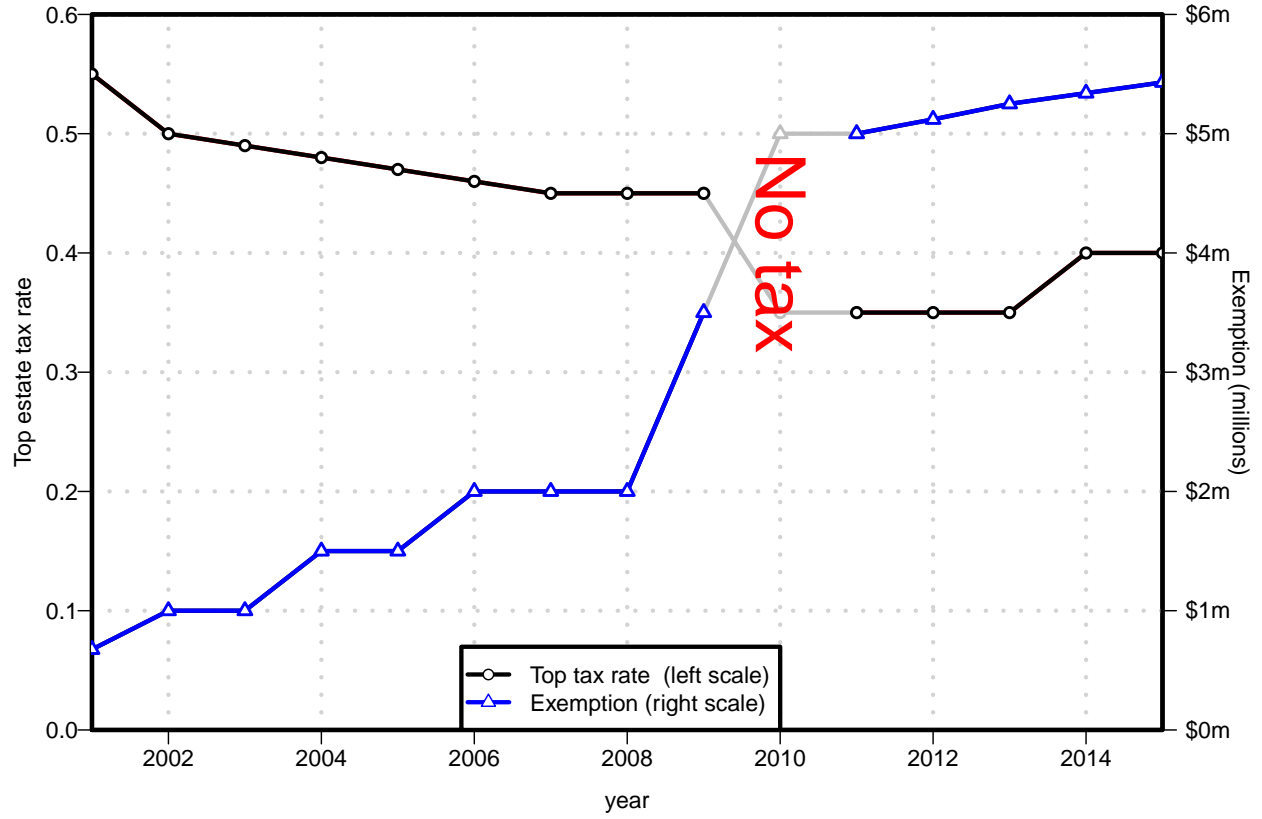
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Figure 1: Top tax rate and exemption



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Figure 2: Number of tax returns

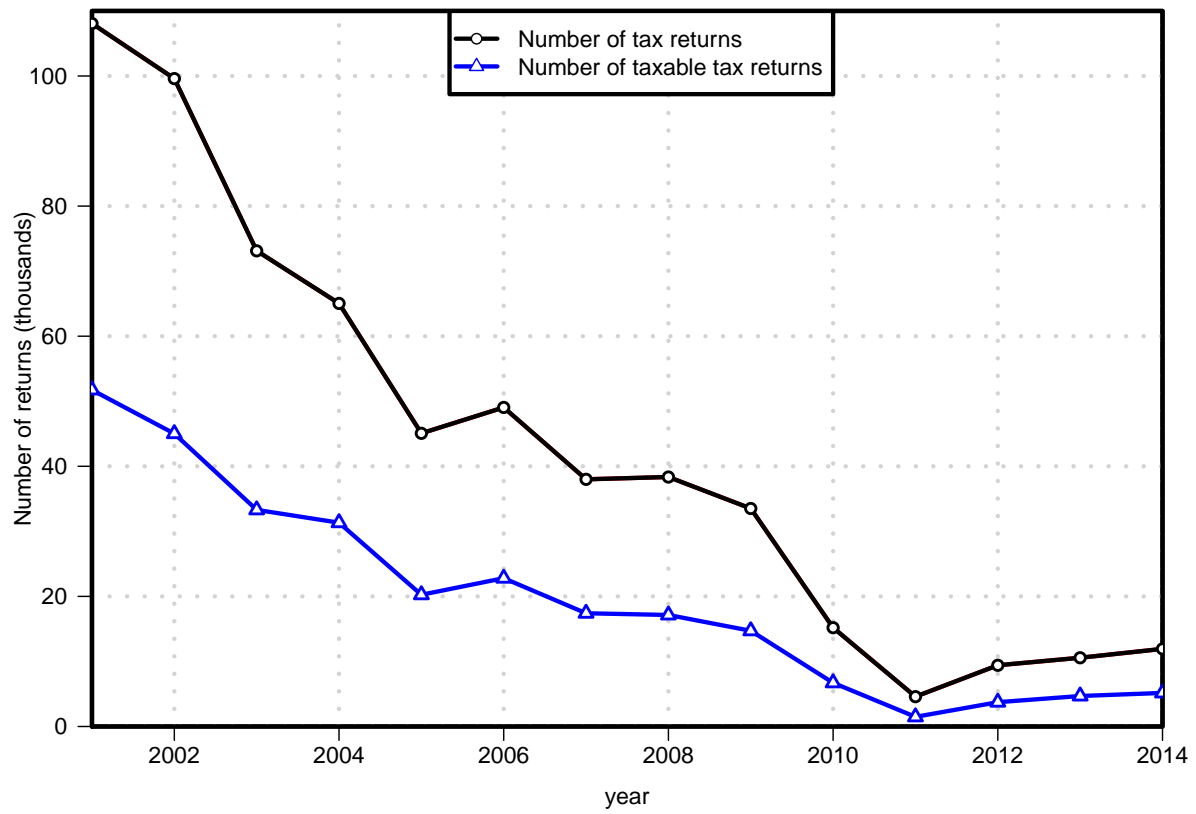


Figure 3: Total gross estate and revenue

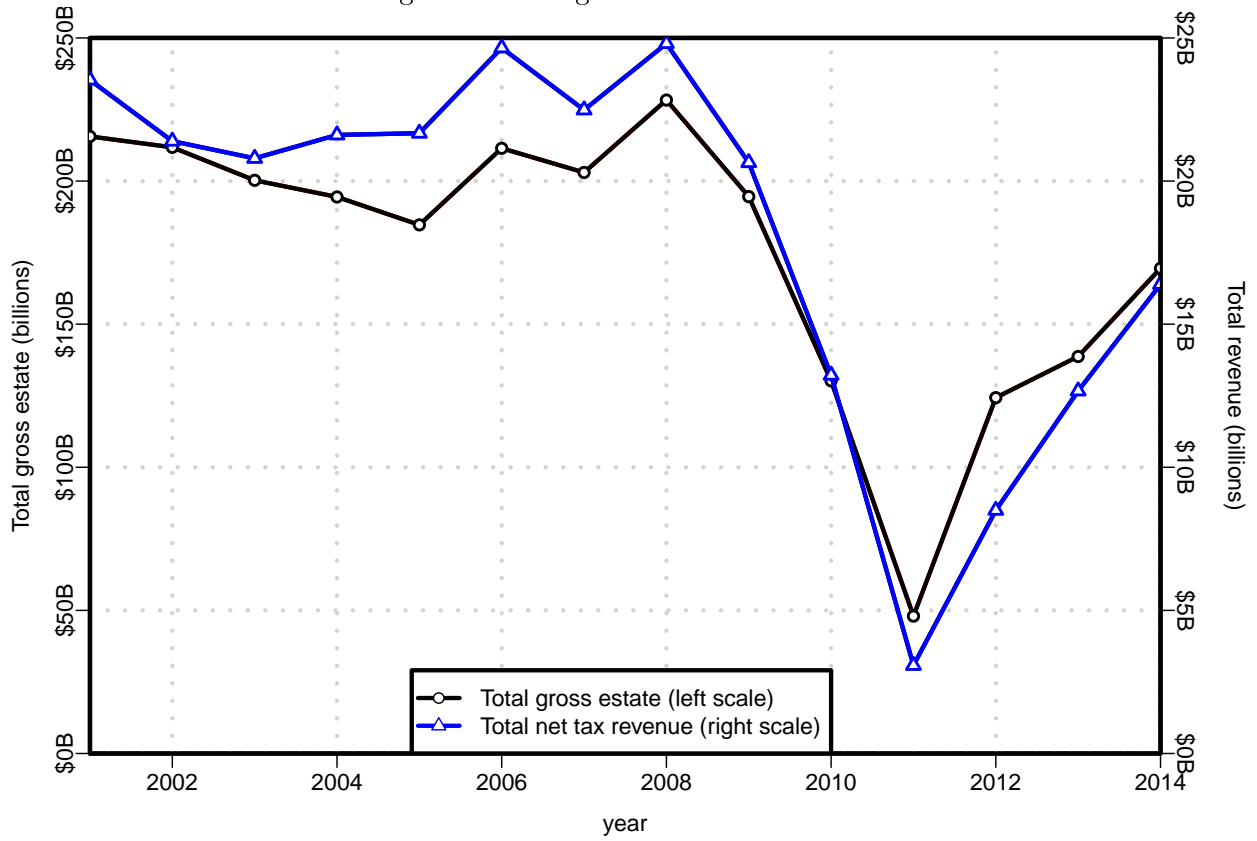


Figure 4: Number of tax returns above \$10 million

