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**Article**

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## Estate Taxation

### Wojciech Kopczuk\*

Taxation of estates and inheritances is one of the most controversial issues in tax policy. While this type of taxation is viewed by some as an integral part of a system that guarantees equality of opportunities, others describe it as a "death tax" and argue that it is both inherently unfair to levy a tax at death and that it is particularly costly to do so, highlighting its adverse effect on wealth accumulation, discrimination against savers, negative consequences for the survival of small businesses, and a multitude of avoidance opportunities.

From an economist's point of view, estate taxation touches on a wide array of important topics. It is a form of a tax on

capital. It is heavily progressive, with U.S. federal tax rates currently approaching 50 percent and exceeding 70 percent in the past. It is closely tied to the propagation of inequality and the impact of redistribution. It affects the intergenerational mobility of wealth. Its impact and its cost depend on the presence and nature of a bequest motive. How individuals plan for leaving an estate depends also on their acceptance and attitudes toward their own death, thus providing a natural place for looking for examples of the importance of psychological considerations. The U.S. estate tax is nominally a tax on individuals, but its incidence depends on family structure and interrelationships. The tax has been dubbed a "voluntary tax," highlighting that tax avoidance and administration issues are also very important.

Estate taxation has figured in economic research in three different ways. First, one may be interested in understanding how the actual estate tax affects

economic decisions. Second, there is an important theoretical question regarding the role that this type of taxation should play in the tax system. Third, the existing data on estate taxpayers provides a source of information that can shed light on central economic, but non-tax, issues. In my research, I have pursued each of these directions.

In a few of my papers, I looked at how transfer taxation affects economic decisions. The notion that the estate tax forces people to make difficult late-in-life, even deathbed, decisions, has its place in the political discourse about the tax, but is it really true? Using linked estate and income tax data, I studied how estates of people who suffered from a lengthy illness differ from estates of those who died instantaneously.<sup>1</sup> I found that the size of the reported estate (of wealthy estate taxpayers) is as much as 20 percent lower for decedents whose terminal illness lasted months or more, but I also showed that

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this effect is unlikely to be explained by medical expenses or lost wages. Instead, I found strong evidence pointing to a flurry of estate planning activity following the onset of a terminal illness, that results in a reduction in the value of the reported taxable estate and therefore tax liability.

How strongly do estates respond to estate taxation? By exploiting more than 80 years of IRS data covering multiple tax regimes, and age variation of estate tax decedents, Joel Slemrod and I estimate an elasticity of reported estates with respect to the net-of-tax rate of about -0.16, suggesting that the estate tax does in fact reduce reported estates, either because it curtails wealth accumulation or induces tax avoidance, or both.<sup>2</sup> Note, though, that (as has been argued in the taxable income elasticity literature, including my own work) both avoidance and wealth accumulation channels entail similar short-term efficiency costs, although the longer-term implications are likely very different.<sup>3</sup> In another joint paper, we also show that the estate tax has important implications for charitable contributions.<sup>4</sup> Finally, we demonstrated that the reported timing of death is sensitive to tax considerations: in a four-week period surrounding estate tax reforms, more taxable deaths are observed during the “low-tax” regime than during the “high-tax” regime.<sup>5</sup> We were, unfortunately, unable to conclude how much of this response represents the strength of willpower of tax-averse individuals and how much reflects cheating by their beneficiaries, but this finding provides another example of the variety of behavioral responses that individuals pursue in response to tax incentives.

From the theoretical point of view, one way of thinking about taxation of estates is as a tax on capital. Under the standard model of perfect altruism, the question of how to tax estates reduces to the question of how to tax capital with infinitely lived agents, and there is a large and growing literature on the subject. However, the relationship between a tax on estates and a tax on wealth or capital income depends crucially on the nature of the bequest motive. Any theoretical analysis of estate taxation requires taking

a stand on the nature of intergenerational links. Unfortunately, despite a lot of research on this topic, there is no consensus regarding the types of bequest motive or even the prevalence of *any* bequest motive. Joseph Lupton and I revisit the influential work of Michael Hurd,<sup>6</sup> who demonstrated that people with and without children have similar consumption patterns in the old age, thereby putting in question the possibility that they have different bequest considerations.<sup>7</sup> We relax the assumption that children are a deterministic indicator of a bequest motive, and instead show that consumption patterns of the elderly are explained by a parsimonious structural two-type model with both bequest-motive and non-bequest types. We estimate that the first group constitutes three-fourths of the population but that for most people the difference between the bequest and non-bequest consumption patterns is small, and only at the very top of the wealth distribution do these differences become economically important. Overall, we find no evidence that having children is an important indicator of the presence of a bequest motive.

One popular argument for taxation of estates is that a tax on “accidental” bequests, that is, on savings of non-annuitized individuals subject to stochastic mortality, is particularly efficient because it does not stimulate any behavioral response. I show that this reasoning is potentially misleading, because non-annuitization may be due to a market failure that can be addressed by government policy.<sup>8</sup> Theoretically, such an intervention could reduce or eliminate accidental bequests altogether and would be preferred to their taxation. I also show that estate taxation may provide implicit annuitization (the necessary and sufficient condition being that the present value of estate tax payments falls with age), and argue that it does so in practice. In principle, such an annuity should be welcome by individuals who do not have access to actuarially fair insurance markets.

Although the timing of death is uncertain, it does occur eventually with probability one, and a forward-looking

planner should have a contingency plan in place. As mentioned earlier, my research shows that much estate planning takes place shortly before death, suggesting that procrastination in this context is plausible. One possibility is that standard models do not accurately represent how people incorporate mortality risk in their behavior. Borrowing from the psychological literature on terror management theory, Joel Slemrod and I explore the consequences of utility-reducing fear in acknowledging one’s own mortality.<sup>9</sup> We equip agents with a fear function that increases with subjective mortality risk and the ability to repress information. We conclude that such agents are “behavioral;” in particular, we find that such individuals have an incentive to behave in a time-inconsistent fashion regardless of whether they actually repress information or not.

The U.S. federal estate tax was introduced in 1916. It has always applied to a relatively small group of the wealthiest decedents; applying at the peak of its coverage in the 1970s to over 7 percent of adult deaths, and at its minimum coverage to less than 0.5 percent. Its long history and its focus on the top of the distribution make estate tax statistics a natural source for studying long-term changes in wealth concentration. This is what Emmanuel Saez and I have done.<sup>10</sup> We relied on (unfortunately confidential) IRS micro databases that include all of the estate tax returns filed between 1916 and 1945, samples for a few years between 1962 and 1976, and annual samples starting in 1982, and supplemented this data with published tabulations for other years. We applied the estate-multiplier technique (that amounts to weighting individuals by the inverse of their mortality risk) and constructed estimates of wealth controlled by groups within the top 2 percent of the wealth distribution going back to 1916. Similar to findings from studies of the long-term evolution of income inequality for example, (Piketty and Saez, 2003),<sup>11</sup> we find that wealth concentration decreased rapidly in the 1930 and 1940s but there is no evidence of an increase in past 20 years. This latter result is particularly puzzling in light

of the sharp increase in income concentration over this period. However, these findings are consistent with the Survey of Consumer Finances (for broader wealth categories), as documented by John Karl Scholz.<sup>12</sup>

One potential explanation that we offer for the lack of an increase in wealth concentration is that increases in income concentration were driven by labor rather than capital incomes, so it may be that not enough time has passed for the increase in wealth accumulation concentration to materialize. Another potential factor is changing income mobility. However, Emmanuel Saez, Jae Song, and I study longitudinal Social Security earnings data that allow us to trace the same individual over long periods of time and therefore to understand how income mobility has evolved over the past 50 years (and with less detail since 1937). In our still preliminary work, we find no evidence that mobility of earnings has changed much over time.<sup>13</sup>

My work with Lena Edlund provides a different perspective for thinking about long-term changes in wealth concentration.<sup>14</sup> We observe that the gender distribution of estate taxpayers evolved over time. In particular, the number of women among the very wealthy estate taxpayers (top 0.01 percent) rose until the 1960s, but has been declining since the 1970s. We argue that the gender distribution of the wealthy group reveals the relative importance of self-made and inherited wealth. While women and men inherit from their parents about equally, entrepreneurship remains predominantly the domain of men. This notion is strongly supported by the Forbes 400 list of the richest Americans. There are of course many potentially confounding factors that can affect the number of women at the very top of the wealth distribution, such as bequests to widows, changes in gender-specific mortality and the age gap between spouses, community property rules and tax treatment of married couples that we discuss in detail. We reach the conclusion that the relative importance of self-made wealth in the twentieth century indeed followed a U-shaped pattern: it decreased

in the 1930s and 1940s, and has been increasing since the 1970s. Reconciling it with the flat wealth concentration series in the past 20 years therefore requires that the relative wealth from inheritances has been declining, while self-made wealth has been increasing. These findings are consistent with the pattern observed in the Forbes list, where the fraction of people classified as deriving their wealth from inheritance halved over the past 20 years, and with Census data about self-employment and the number of employers. The results also provide an important qualification to the interpretation of the drop in income and wealth concentration in the 1930s and 1940s: our findings suggest that entrepreneurial wealth declined during that period more than inherited wealth did. This is further supported by historical lists of the wealthy, which show that the importance of inherited wealth at the top of the wealth distribution peaked after World War II.

Whether the estate tax in the United States will remain an important issue depends on the fate of its ongoing phase-out that culminates in complete repeal scheduled to occur in 2010. As is well known, the repeal is part of a set of provisions that sunset in 2011, so that current law specifies that in 2011 the estate tax will revert to its 2001 version. Policymakers have provided researchers with a rich set of experiments that will help in years to come in understanding the effect of estate taxation itself and, perhaps more importantly, other economic decisions related to death and intergenerational transfers.

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<sup>3</sup> W. Kopczuk, "Tax Bases, Tax Rates,

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<sup>6</sup> M. Hurd, "Savings and Bequests," NBER Working Paper No. 1826, November 1989, and "Mortality Risk and Bequests," Econometrica, 57 (1989), pp. 360–99.

<sup>7</sup> W. Kopczuk and J. Lupton, "To Leave or not To Leave: The Distribution of Bequest Motives," NBER Working Paper No. 11767, November 2005, forthcoming in the Review of Economic Studies.

<sup>8</sup> W. Kopczuk, "The Trick is to Live: Is the Estate Tax Social Security for the Rich?" NBER Working Paper No. 9188, September 2002, and Journal of Political Economy, 111 (2003), pp. 1318–41.

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<sup>10</sup> W. Kopczuk and E. Saez, "Top Wealth Shares in the United States, 1916–2000: Evidence from Estate Tax Returns," NBER Working Paper No. 10399, March 2004, and National Tax Journal, 57 (2004), pp. 445–88.

<sup>11</sup> T. Piketty and E. Saez, "Income Inequality in the United States: 1913–1998," NBER Working Paper No. 8467, September 2001, and Quarterly Journal of Economics, 118 (2003), pp. 1–39.

<sup>12</sup> J. K. Scholz, "Wealth Inequality and the



*Wealth of Cohorts*,” May 2003, University of Wisconsin, mimeo.

<sup>13</sup> W. Kopczuk, E. Saez, and J. Song,

*“Earnings Mobility in the United States, 1937–2004: Evidence from Social Security Administration Data,”* work in progress.

<sup>14</sup> L. Edlund and W. Kopczuk, *“Women, Wealth and Mobility,”* NBER Working Paper forthcoming.

## Rules for Monetary Policy

Michael Woodford\*

Much of my recent research has sought to use economic analysis to determine the consequences of alternative rules for the conduct of monetary policy, and to formulate rules that will be desirable from the standpoint of individual welfare. Interest in the study of monetary rules has increased over the past decade, for reasons having to do with progress in central banking and progress in macroeconomic theory. On the one hand, many central banks—most notably, but not only, the “inflation targeting” banks—have increasingly come to organize their policy deliberations around an attempt to conform to specific targets or objectives, sometimes explicit quantitative targets. Moreover, central banks worldwide have increased the degree to which they discuss their decisions with financial market participants and the general public, and this too has increased the importance that the banks assign to having a clear framework to guide their deliberations. At the same time, the development of a new generation of quantitative macroeconomic models—that can be estimated using macroeconomic time series and have optimizing foundations that allow an explicit evaluation of outcomes in terms of individual welfare—has allowed

modern macroeconomic analysis to be brought to bear on the evaluation of stabilization policies, in the context of models with sufficient claim to quantitative realism to be of interest to policy-making institutions. My own work has sought to extend the analysis of optimal monetary policy rules in directions that bring the theoretical literature into closer contact with the practical concerns of modern central bankers.<sup>1</sup>

### Inflation Stabilization and Welfare

One goal of my research has been to clarify which kinds of macroeconomic stabilization objectives best serve economic welfare. Grounding the objectives of policy in consumer welfare has a number of advantages: one avoids the arbitrariness otherwise attendant upon the choice of a particular definition of “price stability,” “full employment” or other conventional objectives. And, it also makes possible a natural integration of the theory of optimal monetary policy with the theory of optimal taxation. Yet it is not immediately obvious what the conventional goals of monetary stabilization policy—especially the nearly universal emphasis that central banks place on maintaining a low and stable inflation rate—have to do with consumer welfare; after all, the arguments of household utility functions generally are assumed to be the quantities of various goods and services, but not their prices. Nonetheless, I have shown that in

familiar classes of sticky-price dynamic stochastic general equilibrium (DSGE) models—models that incorporate key elements of the current generation of empirical models of the monetary transmission mechanism, and even some relatively small complete macro models—it is possible to show that the expected utility of the representative household varies inversely with the expected discounted value of a quadratic loss function, the arguments of which are measures of price and wage inflation on the one hand and measures of real activity relative to a (time-varying) target level of activity on the other.<sup>2</sup> Thus, it makes sense to rank alternative monetary policies according to how well they stabilize (an appropriate measure of) inflation on the one hand, and how well they stabilize (an appropriate measure of) the output gap on the other. The theory clarifies both the appropriate definition of these stabilization objectives, and the appropriate relative weights to assign to them when a choice must be made between them.

The answer obtained depends, of course, on the structure of the economy.<sup>3</sup> In particular, inflation variability reduces welfare because of the presence of nominal rigidities; the precise nature of these rigidities determines the appropriate form of the inflation-stabilization objective. For example, if wages are flexible (or there are efficient contracts in the labor market), and price adjustments are staggered in the way assumed in the popular specification proposed by Guillermo Calvo<sup>4</sup> (with an equal prob-

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