DISCUSSION PAPER SERIES

No. 7701

**ESTATE TAXATION AND
INTERGENERATIONAL TRANSFERS**

Tullio Jappelli, Mario Padula
and Giovanni Pica

INTERNATIONAL MACROECONOMICS

Centre for Economic Policy Research

www.cepr.org

ESTATE TAXATION AND INTERGENERATIONAL TRANSFERS

Tullio Jappelli, Università di Napoli Federico II, CSEF and CEPR
Mario Padula, Università Ca'Foscari di Venezia and CSEF
Giovanni Pica, Università degli Studi di Salerno and CSEF

This Discussion Paper is issued under the auspices of the Centre's research programme in **INTERNATIONAL MACROECONOMICS**. Any opinions expressed here are those of the author(s) and not those of the Centre for Economic Policy Research. Research disseminated by CEPR may include views on policy, but the Centre itself takes no institutional policy positions.

The Centre for Economic Policy Research was established in 1983 as an educational charity, to promote independent analysis and public discussion of open economies and the relations among them. It is pluralist and non-partisan, bringing economic research to bear on the analysis of medium- and long-run policy questions.

These Discussion Papers often represent preliminary or incomplete work, circulated to encourage discussion and comment. Citation and use of such a paper should take account of its provisional character.

ABSTRACT

Estate Taxation and Intergenerational Transfers

We estimate the effect of estate taxation on bequests exploiting a sequence of Italian reforms culminated with the reduction of estate taxes in 1999 and their abolishment in 2001. To perform our exercise, we use the 1993-2006 Survey of Household Income and Wealth, which has data on real estate transfers and information on potential donors as well as recipients. Our sample includes data on 34,885 owners of real estate wealth and 120,686 potential donors. Differences-in-differences estimates indicate that the abolition of estate taxes has increased the propensity to transfer real estate wealth by about 2 percentage points, and square meter transferred by about 4 points.

Tullio Jappelli
Department of Economics
Università di Napoli Federico II
Via Cintia Monte S. Angelo
80126 Napoli
ITALY

Email: tullioj@tin.it

For further Discussion Papers by this author see:
www.cepr.org/pubs/new-dps/dplist.asp?authorid=106354

Mario Padula
Department of Economics
Università Ca'Foscari di Venezia
Cannaregio, 873
30121 Venice
ITALY

Email: mpadula@unive.it

For further Discussion Papers by this author see:
www.cepr.org/pubs/new-dps/dplist.asp?authorid=153027

Giovanni Pica
Department of Economics
University of Salerno
Via Ponte Don Melillo 5
I-84084 Fisciano (SA)
ITALY

Email: gio.pica@gmail.com

1. Introduction

Most developed countries, including the U.S. and the vast majority of European countries, tax intergenerational transfers. Two main taxes are levied on bequests and gifts: the estate tax, which is levied on the total estate of the donor, regardless of the characteristics and number of recipients, and the inheritance tax, which is levied on the share of transfers received by recipients. Even though in OECD countries the yield of transfer taxes hardly exceeds 1 percent of total government revenues, estate taxes are the subject of intense quarrels both in the U.S. and Europe because of their potential effects on capital accumulation and intergenerational wealth mobility (Gale and Slemrod, 2001). However, the policy debate lacks reliable estimates of the effect of transfer taxes on the propensity to bequeath, and therefore fiscal revenues, wealth transmission and intergenerational mobility.

Few empirical studies have attempted to estimate the tax elasticities of bequests, and to our knowledge all focus on the U.S., see Kopczuk (2009) for a recent survey. Estimating the effect of transfer taxes on bequests is difficult because suitable data are hard to find. Some studies use information provided by fiscal revenues and tax rates, while others rely on microeconomic data on wealth accumulation. Time series studies encounter the problem that changes in fiscal revenues and tax rates tend to be correlated with other variables. In cross-sectional studies it is hard to disentangle the effect of taxes on bequests from potential confounding effects, including tax avoidance and unobservable preference traits (for instance, preference for thrift or work).

In this paper we estimate the effect of transfer taxes on bequests using Italian survey data and exploiting the variability in tax rates induced by a sequence of reforms which reduced substantially estate, inheritance and gift taxes in 1999 and ultimately abolished them in 2001. The cancellation of taxes did not affect all households equally, because the reform had no impact on relatively poor donors who were already exempt from estate taxation prior to the reforms. This allows us to cast our analysis in a quasi-experimental framework and to identify the effect of the reform comparing the change in transfers given by individuals affected by the reform with the change in transfers of individuals not unaffected by the tax change.

We use a series of repeated cross-sections drawn from the 1993-2006 Bank of Italy Survey of Household Income and Wealth (SHIW), each of which is representative of the Italian popula-

tion. The surveys include information on the number and size (in square meters) of real estates received as inheritance or as gift and, for respondents and spouses, data on parents' education and occupation. Thus we can merge information on donors and recipients to study if the cancellation of estate taxation has affected intergenerational transfers. The availability of data on donors and recipients is crucial in this context, because the decision to transfer and how much to transfer is affected by both donors' as well as recipients' characteristics.

Our results point to a negative and statistically significant relation between the propensity to bequeath (and donate) real estate wealth, the amount of wealth transferred and estate taxes, in agreement with previous literature. Our estimates suggest that the propensity to transfer wealth increases by 2 percentage points after the tax abolishment, and square meter transferred by between 2.5 and 7 points. The coefficients are precisely estimated and statistically different from zero. The relatively small effect of transfer taxes confirms previous findings.[1] This result has important implications not only for countries that are considering reforming estate taxation, but also to assess the validity of theories of intergenerational transfers and the effect of taxation on the intergenerational transmission of wealth.

The richness of the data and the specific characteristics of the tax reform provide three advantages for spotlighting the effect of transfer taxes on the intergenerational transmission of wealth. First, the quasi-experimental setting allows us to estimate the causal impact of the cancellation of transfer taxation on bequests. Second, we analyze microeconomic data with information on both potential donors and recipients. Finally, our sample is representative of the Italian population at large. With the notable exception of Kopczuk and Slemrod (2001), previous literature has relied on estate tax files data, which are reported only by those that actually pay them, and therefore focuses on a selected group of rich households. However, as we shall see, our estimates share with existing studies also some drawbacks, chiefly that we cannot distinguish the effect of taxes on reported bequests from the effect of misreporting. In particular, it is conceivable that after the reform recipients are more likely to report to have received an inheritance or a gift. Furthermore, since we have data only on transfers in the form of real estate (not on total transfers),

---

[1] Kopczuk and Slemrod (2001) find an elasticity of -0.16 of reported transfers with respect to taxes for those who die with a will. They also find that the effect of taxes is stronger for those who die at more advanced ages. Their results are stronger when they use aggregate data and more fragile in their pooled cross-sectional analysis. Joulfaian (2006) uses federal government estate tax collections data and finds an elasticity of just below -0.1.

we cannot rule out that after the reform donors are more willing to transfer wealth in the form of real estate, rather than in other forms, such as liquid assets.

The remaining of the paper is organized as follows. Section 2 reviews the theoretical and empirical literature on bequest taxation. Section 3 describes the Italian tax reform and Section 4 the data. The empirical strategy is discussed in Section 5, and the empirical results are presented in Section 6. Section 7 concludes and provides policy implications.

2. The effect of estate taxation on bequests

Economists disagree on the appropriateness and efficiency of bequest taxes, providing arguments in favor or against taxation. Estate taxes are believed to inhibit capital accumulation and economic growth, threaten the survival of family businesses and depress entrepreneurial activities. Advocates of estate taxes emphasize the positive effect on redistribution, and highlight the negative externality associated with wealth concentration. In this vein, Kopczuk (2009) argues forcefully that societies where people are too rich represent a danger for democracy, and that in family business beneficiaries don't have always the skills to handle the fortunes of the donors.

Despite the importance of this debate, in the paper we limit ourselves to a narrower issue, that is, whether existing estate taxes affect bequests. While the effect of estate taxes on wealth accumulation depends on individual's preferences and the particular bequest motive considered, the next section shows that the theoretical impact of estate taxes on net bequests is unambiguously negative, except for the case of accidental bequests.

2.1. Estate taxation and transfer motives

Bequests might be accidental, altruistic, strategic, and also arise when consumers derive utility from terminal wealth. The simplest case to be considered is one in which bequests result from people saving for retirement or for health-related expenditures. Since life is uncertain, people have positive assets when they die, even in the absence of explicit bequest motives, see Hurd (1989) or Hubbard, Skinner and Zeldes (1995). Neglecting the possibility that estate tax revenues

are redistributed to future generations, in these models estate taxes mechanically reduce the inheritance left to future generations, but have no effect on parents' wealth accumulation and amount transferred. Thus, when bequests are accidental, the elasticity of bequests with respect to estate taxes equals zero.

A second possibility is that potential donors derive utility from their own consumption and from terminal wealth, a situation that is known as "joy-of-giving". Carroll (2002) has proposed a variant of this approach, pointing out that at the top of the wealth distribution bequests may be motivated by a "capitalist spirit", so that wealth itself enters the utility function. To illustrate the case, let's assume, as in Atkinson (1971) and Blinder (1975), that consumers maximize the following utility function:

$$U = \int_0^T \frac{c(t)^{1-\gamma}}{1-\gamma} e^{-\rho t} dt + \beta \frac{b_T^{1-\delta}}{1-\delta} e^{-\rho T} \qquad (1)$$

where ρ is the discount rate, γ the elasticity of the marginal utility of consumption, δ the elasticity of the marginal utility of bequests, β the intensity of the bequest motive, T the length of life and b_T bequests net of estate taxes; furthermore we assume $\gamma > 0$, $\delta > 0$, $\rho > 0$ and $\beta \geq 0$. The intertemporal budget constraint can be written as:

$$\int_0^T c(t) e^{-rt} dt + \frac{b_T}{1-\tau} e^{-rT} = W \qquad (2)$$

where r is the interest rate, τ the tax rate on bequests, and W the sum of initial wealth and the present discounted value of lifetime income. Maximization of (1) subject to the intertemporal budget constraint (2) delivers the following first order conditions:

$$c(t)^{-\gamma} e^{-\rho t} - \lambda e^{-rt} = 0 \qquad \text{for all } t$$

$$\beta b_T^{-\delta} e^{-\rho T} - \frac{\lambda}{1-\tau} e^{-rT} = 0$$

where λ is the Lagrange multiplier associated with the intertemporal budget constraint.

If $\delta = \gamma$, we obtain the following expressions for $c(t)$ and b_T:

$$c_t = c(0)e^{\frac{(r-\rho)t}{\gamma}} \tag{3}$$

$$b_T = c(0)\left[\beta(1-\tau)e^{(r-\rho)T}\right]^{\frac{1}{\gamma}} \tag{4}$$

and substituting in the budget constraint we obtain an expression for initial consumption:

$$c(0) = \frac{r - \frac{1}{\gamma}(r-\rho)}{1 - e^{-\left(r-\frac{1}{\gamma}(r-\rho)\right)T}\left(1 - \left(r - \frac{1}{\gamma}(r-\rho)\right)\beta^{\frac{1}{\gamma}}(1-\tau)^{\frac{1-\gamma}{\gamma}}\right)}W \tag{5}$$

Combining (4) and (5) it is immediate to check that an increase in the estate tax rate τ reduces net bequests, i.e.:

$$\mathrm{d}b_T / \mathrm{d}\tau < 0.$$

The negative effect of taxes on net bequests applies also if $\delta \neq \gamma$. Furthermore, Gale and Perozek (2001) show that the negative effect of taxes on net bequests carries over to the case of altruistic donors who care about their own consumption and the utility of their children, and transfer wealth to their heirs until the marginal utility of their consumption equals the marginal utility of increasing children's consumption.[2] The negative effect of estate taxes on net bequests also arises when bequests are a payment for the services that donors receive from recipients, as in

---

[2] The altruistic model suggests that bequests should be directed to the less fortunate children, and that the division of consumption within generations should be independent of the division of income. In practice one observes very often that bequests are divided equally, and that the division of income and consumption are not independent (Altonji, Hayashi and Kotlikoff, 1992). Thus, empirically the altruistic model of bequests is not supported by the data.

Bernheim, Shleifer and Summers (1985), because estate taxes raise the pre-tax price of the services and lower their demand (Gale and Perozek, 2001).

Even though the effect of taxes on net bequests is not ambiguous, the sign of the effect on gross bequests depends on how parents' wealth accumulation decision respond to estate taxes. In the joy-of-giving model described above, if the elasticity of the marginal utility of bequests is lower than the elasticity of the marginal utility of consumption ($\delta < \gamma$), consumption is a necessity while bequests are a luxury good. In this case an increase in taxes reduces gross bequests and increases consumption. Conversely, if bequests are the luxury good ($\delta > \gamma$), the proportion of lifetime wealth spent on bequests increases with wealth. In this case an increase in taxes increases gross bequests and reduces consumption. More generally, as pointed out by Kopczuk (2009), the effect of estate taxes depends on individual preferences and the particular bequest motive considered. The reason is that higher estate taxes impose both substitution and income effects. While the former reduces the incentives to accumulate, the latter reduces households consumption in all periods and therefore raises savings.[3]

2.2 Empirical evidence

There is relatively little empirical evidence on the effect of estate taxes on bequests. One crucial reason is the lack of data on donors. The few existing studies address the question of how estate taxation affects the overall size of estates. Kopczuk (2009) points out that this question "while straightforward to ask, is extremely difficult to answer," and for two reasons. The first is to find a statistical design that is able to establish a causal link from estate taxes to the size of bequests. The second is that when taxes increase individuals' attempt to avoid taxes also increases,

---

[3] Kopczuk and Slemrod (2001) simulate a model in which the utility function of the donor depends on wealth transferred and the horizon is uncertain, showing that in an empirical analysis the behavioral response of estate taxation changes with wealth. When bequests are altruistically motivated, the effect of estate taxes on saving depends on the parents' ability to commit to the level of future transfers (Gale and Perozek, 2001), although some simulation analyses show that an estate tax might reduce wealth accumulation and the capital stock (Caballè, 1995). Finally, when bequests are a payment for the services that the donor receives from the recipient, the effect of the estate tax on the size of the estate depends on the parent's price elasticity of demand for services and is in general ambiguous (Gale and Perozek, 2001).

so that any estimate of a change in estate taxes on the size of estates reflects the impact of taxes on wealth accumulation but also that on tax avoidance.

Three studies attempt to estimate the relation between estate taxes and bequests. Holtz-Eakin and Marples (2001) use data from the Health and Retirement Survey (HRS) and construct separate tax calculators for the Federal Estate Tax and each of the 50 State Death Taxes. The calculators are then used to impute an individual measure of projected estate taxes, using total assets as the tax base. Net worth is then regressed on this measure of taxes, controlling for other determinants of wealth accumulation. Holtz-Eakin and Marples recognize that their measure of estate taxes is endogenous, and use as instruments state of birth and state-by-state variation in the shape of the estate tax schedule. Even though the parameters estimates are sensitive to model specification, they find a negative relationship between wealth accumulation and the estate tax.

Kopczuk and Slemrod (2001) use estate tax return data from 1916 to 1996 to investigate the impact of the estate tax on reported estates. They find that an aggregate measure of reported estates is negatively correlated with summary measures of the level of estate taxation, holding constant other influences. As they note, the negative correlation reflects the impact of the estate tax on both wealth accumulation and avoidance, so the evidence is consistent with higher estate taxes increasing tax avoidance or reducing saving by the donor.[4] Joulfaian (2006) also uses US aggregate time series on federal revenues from the estate tax. His sample spans the 1951-2001 period, and also his findings suggest that estate taxes have a dampening effect on the reported size of taxable estates. From a quantitative point of view, all three papers reach fairly similar conclusion on a negative but small elasticity of estates on estate taxes, between -0.2 and -0.1.[5] None of these papers, however, is able to distinguish the effect of taxes on wealth accumulation from the effect on estate avoidance.

With respect to previous studies, our paper relies on microeconomic data with information on both donors and recipients. With the notable exception of Kopczuk and Slemrod (2001), all previous studies rely on estate taxes, which are reported only by those that actually pay them. This restricts the analysis to a selected group of rich households. Instead, our study is conducted

---

[4] They also show estate tax rates that prevailed at age 45 (or 10 years before death) are more clearly negatively associated with reported estate size than the rate prevailing in the year of death.
[5] This implies that if the marginal tax rate increases from 10 to 11 percent (a 10 percent increase) the size of bequests falls by between 1 and 2 percent.

on a sample that is representative of the whole Italian population. Our paper has also two important limitations. In common with previous studies, we cannot distinguish the effect of tax avoidance. Furthermore, we have information on the number and size (in square meters) of real estate transfers, but not on total bequests. This implies that we are not be able to distinguish the effect of the reform on the size of bequests from the effect on the composition of bequests. We elaborate more on these issues when discussing the results in Section 6.

3. The tax reform

Studying intergenerational transfers in Italy is interesting for two reasons. First, in Italy the ratio of real estate to total wealth is quite large, over 85 percent for the 60+. The largest portion of real estate is the house of residence; at age 60 the owner occupancy rate is 75 percent, and later in life it is not common for the elderly to sell the house or to move to smaller units. Thus, many elderly leave a bequest, and it is of course an open issue to what extent bequests are accidental or voluntary. Second, bequests and gifts play an important role in the process of wealth accumulation. About 40 percent of homeowners and at least one third of the population at large has received sizeable intergenerational transfers. Using data on reported transfers, Guiso and Jappelli (2002) estimate that the average transfer value is 26,000 euro, accounting for a share of intergenerational transfers in total wealth that varies between 25 and 35 percent, depending on whether the interest accrued on the transfer is included. In principle, estate taxation might therefore affect substantially wealth inequality and intergenerational mobility.

As shown in Table 1, before the sequence of reforms that abolished estate taxes, the Italian regime – regulated by law 346/1990 – consisted of two taxes. A first tax was levied on the total estate of the donor, with an exemption threshold of approximately 125 thousand euro (250 million lire). A second tax was levied on the shares received by the recipients, provided they were not direct relatives of the donor or spouse. Both taxes were organized in several brackets with a highly progressive tax rate (from 3 to 27 percent). No transfer taxes were levied at the local level. In practice, as in other OECD countries, despite relatively high tax rates, fiscal revenues from

transfer taxes were rather low (less than 1 percent of total revenues), because of tax avoidance and evasion (OECD, 2000).[6]

Between 1999 and 2000 estate taxation was eliminated in three steps. The first reform was implemented in 1999, raising the exemption level that applied to the donors' total estate from 125 thousand euro to 175 thousand euro (350 million lire). In 2000 a second reform ruled that the exemption applied to the share received by each recipient, and not to the total estate, effectively further raising the exemption. Moreover, above the exemption threshold, the tax became a flat rate of 4 percent for the spouse and direct relatives, 6 percent for relatives up to fourth degree and members of the stepfamily up to third degree, and 8 percent for other recipients. In the final step, the estate tax was abolished at the end of 2001.

The tax change induced by the first two reforms (1999-2000) was quite substantial, especially for households at the top of the wealth distribution. An example illustrates its effect. Consider the case of two siblings inheriting an estate valued 500 thousand euro, corresponding to the top decile of the wealth distribution. Before the reform, with an exemption of 175 thousand euro, the total tax due was 0.15×(500-175)=22,750 euro. In 1999 the exemption applied to the inheritance received by each of the two recipients (see Table 1), and the estate received was taxed at a lower rate, so that the resulting tax due was reduced to 0.04×(500-2×175)=6,000 euro. After 2001 no tax was due, on bequests or gifts.

The tax reform affected a large fraction of the households population, essentially all those with estates above the exemption threshold of 125 thousand euro. In Figure 1 we plot the wealth distribution in year 2000. Since median wealth was only slightly above the exemption level (160 thousand euro), the cancellation of estate taxes benefited almost half of the population.

Since the exemption threshold was in place before 1999, the reform has a clear testable implications. The new tax regime should have increased the propensity to bequeath of the rich (those above the exemption level) relatively to the poor, who were already exempt before 1999. Therefore the differential impact of the tax reforms across the wealth distribution allows us to

---

[6] That fiscal revenues from estate taxes are low in several OECD countries is perhaps not surprising. Though there is ample variation in the estate taxes legislation, exemptions are quite common. In the UK and in Ireland as well as in the U.S. transfers between spouses are exempt. Deductions for family members are also available in the Netherlands, in Switzerland and in Spain, while Sweden abolished the inheritance taxes in 2005.

identify the impact of estate taxation on bequests and to estimate the tax elasticity of bequests in a standard difference-in-difference framework.

The only other paper that has looked at the consequences of the Italian cancellation of estate taxation is Bellettini and Taddei (2009). Their analysis focuses on a rather different issue, namely the effect of the cancellation on house prices. In particular, the authors show that in an overlapping generations model with intergenerational altruism a decrease in estate taxes can bring about an increase in real estate prices, and test this prediction using time series data on house prices and donations available in 13 Italian cities. They regress the change in house prices on city characteristics, a time trend and a post-reform dummy, and find that the abolition of estate taxation has been associated with a sizable appreciation of residential real estate prices (around 10 percent).

4. The data

The Survey of Household Income and Wealth (SHIW) provides a unique opportunity to test the effect of the tax reform on the propensity to bequeath or donate. Conducted biannually by the Bank of Italy, the survey spans pre- and post-reform years and, in each year, it is representative of the population. The survey includes about 8,000 households, and has detailed data on economic and demographic characteristics of household members. The survey also provides information on dwellings owned by the household, how they were acquired (outright purchase, built to order by the household, inherited or received as a gift) and their size (in square meters). Since gifts and bequests are treated equally by the tax code, our definition of transfers includes both. Most importantly for the present study, the survey includes selected characteristics (occupation, education, year of birth, and whether the parents are alive) of the parents of the respondent and spouse. This allows us to relate the transfer received to the characteristics of both donors and recipients.

In the empirical estimates we focus on the 1993-2006 period which identical questions on transfers and the same information on respondents' parents, and select all households in which at least one parent of the head of the household (or of his/her spouse) is not alive at the time of the

survey.[7] Our sample includes data on 34,885 owners of real estate wealth and 120,686 potential donors. Results are similar using the full sample of 39,703 potential observations.

A first inspection of the data reveals that the fraction of households receiving a real estate as a bequest or gift lied slightly below 30 percent in the pre-reform years (1993-1998), and increased to almost 35 percent in the post-reform period (2000-06). The rising trend in transfers agrees with a previous study by Cannari and D'Alessio (2008), who find that the share of inter-generational transfers in total wealth increased from 30 to 34 percent between 1991 and 2002. The increase in transfers after 2000 is highly suggestive, but should not be taken as evidence of a causal relationship between the tax reforms and the propensity to bequeath, because other events and possibly survey design may affect bequests after 2000. However, the elimination of transfer taxes did not affect all households equally, because donors with an estate below 125 thousand euro were already exempt before 1999, and therefore were not affected by the tax reform.

Since potential donors' resources are not observed, we split the sample on the basis of donors' characteristics (occupation and education) that are arguably correlated with their lifetime wealth. In a first classification, we define as "high-occupation donors" families where at least one potential donor was either entrepreneur, manager, professional or self-employed during his or her working life. For instance, a married couple with two alive step-parents is classified as "high-occupation" if any of the four potential donors was in one of the four above mentioned occupations.[8] Although we don't observe the wealth distributions of donors, we can infer that it is correlated with the occupation split by inspecting the correlation between wealth and occupation for recipients (which instead is readily available). Indeed, in 2000 median wealth of recipients with high occupation is 268,235 euro, as opposed to 111,511 euro for those with low occupation. The difference is quite stable across years, lending support to our assumption that the sample split based on occupation is strongly correlated with unobserved donors' resources.

In Figure 2 we report the fractions of high- and low-occupation donors leaving a bequest (or making a donation). We define as high-occupation donor a group of potential donors in which at least one of the parents of the household head (or of his/her partner, or both) were in a "high" occupation (entrepreneur, manager, professional or self-employed). Before 2000, the fraction of

---

[7] Prior to 1993 data on donors are not available.
[8] Of course, other classifications are possible, and indeed we report sensitivity analysis on alternative group definitions (see section 6).

high-occupation donors transferring wealth was, on average, 32 percent, vis-à-vis 26 percent in the low-occupation group. After the reform the fraction increased to 40 percent in the high-occupation group, against 31 percent in the low-occupation group. Thus, the difference between high and low occupation donors increased by 2.4 percentage points after the reform. In Figure 3 we report the number of square meters transferred, conditional on a real estate transfer. Before 2000, high-occupation donors transferred, on average, 158 square meters, while low-occupation donors 117 square meters. After the reform, square meters transferred increased to 171 and 117, respectively,. Thus, after the reform the difference between the two groups increased by 13 square meters (about 8 percent of the pre-reform level). The descriptive analysis suggests that the tax change did not affect equally all potential donors, but seems to have affected high-occupation donors to a larger extent.

Table 2 provides summary statistics of the variables used in the estimation by donors' occupation: fraction of households receiving real estate transfers, square meters transferred, donors' and recipients' characteristics. Not surprisingly, high-occupation donors tend to have higher education as well, while donors' birth cohort does not differ significantly between high- and low-occupation groups. As for recipients' characteristics, the last rows of Table 2 show that households with high-occupation donors are more likely to be males, and have higher income and education. Thus, as expected, treatment and control groups differ along important characteristics, such as donor's education and recipients' gender, education and income. In the empirical analysis we will be able to control for differences in treatment and control groups due to time-invariant variables, such as gender and education. The next section further discusses how we control for residual heterogeneity between the two groups in our difference-in-difference estimates.

5. The empirical framework

We assume that the transfer decision of parent i in period t depends on parent's lifetime wealth net of taxes $(1-\tau)w^p$, parent's characteristics x^p, children's lifetime wealth w^k, and children's characteristics x^k:

$$y_{it}^* = \alpha_0(1-\tau_t)w_i^p + \alpha_1 x_i^p + \beta_0 w_i^k + \beta_1 x_i^k + \delta_t + \varepsilon_{it} \tag{6}$$

The variable y_{it}^* reflects the difference between the indirect utility of transferring wealth and the utility of not transferring, and it is not directly observed. Instead, we have data on whether an estate was inherited or donated and on the square meters of each estate transferred. Therefore, we use two outcome variables in our regression: a dummy equal to 1 if an estate was inherited or donated and the log of square meters transferred. The former regression captures the effect of the reform on the fraction receiving transfers (the extensive margin); the latter the effect of the reform on the size of transfers, conditional on a dwelling being transferred (the intensive margin). Since we have repeated cross-sectional data and the tax rate varies over time, we include in the equation a full set of year dummies (δ_t) to capture aggregate macroeconomic shocks.

As explained in Section 3, the reform provides an exogenous source of variation of the tax rate that we exploit to assess the causal link between taxes and intergenerational transfers in a quasi-experimental setting. Thus, we express equation (6) in a standard difference-in-difference framework, distinguishing between tax-payers affected by the reform (the treatment group that includes high-occupation donors) and unaffected taxpayers (the control group that includes donors with low-occupation). We assume that potential donors in the treatment group face an exogenous and unexpected reduction in transfer taxes, and check how their propensity to transfer changes relative to the donors in the control group.

We make equation (6) operational pooling data from pre- and post-reform periods and estimating the following equation:

$$y_{it} = \gamma M_i + \delta_t + \phi M_i \times POST_t + \alpha x_i^p + \beta x_i^k + \varepsilon_{it} \tag{7}$$

where y_{it} denotes either the dummy for making a transfer or the (log of) square meters transferred; M_i is a dummy equal to 1 for high-wealth parents (measured as high occupation); δ_t indicates a full set of year dummies; the matrices x^p and x^k include time-invariant parents' characteristics (such as education and cohort dummies), and recipients' characteristics (gender, area of residence, education). We disregard recipients' characteristics that are not observable by potential

donors at the time of the transfer. For this reason, in our baseline specification we don't include recipients' resources.

In equation (7) the coefficient γ measures the difference of the probability of making a transfers or square meters transferred between high and low-wealth parents; δ_t captures aggregate shocks to the propensity to transfer wealth common to both groups; ϕ – the main coefficient of interest – reflects the differential effect of the reform between the two groups. If taxes discourage transferring wealth to future generations, the parameter ϕ will be positive, reflecting a larger difference in transfers between high- and low-wealth groups after the reform.

In order to evaluate the effect of the reform on the extensive margin, we estimate a linear probability model. The reason is that all covariates in equation (7) are dummy variables. It is well-known that in the case where all independent variables are discrete variables for mutually exhaustive categories, the linear probability model is completely general and the fitted probabilities lie within the interval [0, 1].[9] In addition to being completely general in this context, the linear probability model also has the advantage of allowing a straightforward interpretation of the regression coefficients.[10] Since the error term of the linear model is heteroskedastic, standard errors are computed using White (1980) heteroskedasticity-robust variance matrix.

As explained above, the diff-in-diff approach controls for any time-invariant differences between treatment and control groups. Of course, we still need to assume that other time-varying factors that we have possibly omitted don't affect the two groups differentially, acting as confounding variables. For this reason, in some specifications we also include the (log) of recipients' disposable income. While this may be rightly criticized because recipients' income is likely to be endogenous with respect to the transfer decision, it is important to check that the results are robust to the inclusion of time-varying controls that are correlated with unobserved heterogeneity.

An additional concern is that the diff-in-diff framework requires assuming that pre-reform trends in outcomes are the same for treatment and control groups. As discussed in Section 4, Figures 2 and 3 provide visual support for this assumption.

---

[9] In this case, the fitted probabilities are simply the average of the dependent variable within each cell defined by the different values of the covariates (Angrist, 2001; Wooldridge, 2001).

[10] The results of probit and logit models are very similar (the results are available upon request).

6. The effect of estate taxation on transfers

In this section we report regression results from the estimation of equation (7) to assess the effect of the sequence of tax reforms on whether any dwellings was transferred, either as a bequest or as a gift, and on the size of the transfers measured in square meters. Our approach thus investigates both the extensive and the intensive margins through which the tax reforms might have affected donors' decisions.

6.1. Extensive margin

Table 3 reports the results from estimating the linear probability model for whether a dwelling was transferred as a gif or bequest. The high-occupation donors are the treatment group, the group of households in which *exactly one* parent of the head and spouse (if present) is an entrepreneur, manager, professional or self-employed. The first column of Table 3 reports the results for the baseline specification, where we condition only on donors' occupation, a full set of time-dummies, and the interaction between the treatment group dummy (dummy for high-occupation donors) and a dummy that is equal to one after 1998.

Consistently with the evidence in Figure 2, the results show that the propensity to transfer real estate wealth is significantly higher for high-occupation donors.[11] The estimate of the coefficient of the interaction between the high-occupation dummy and the post-reform dummy shows that the probability of transferring increased by 2.5 percentage points for high- relative to low-occupation donors after the reform. The effect of the reform is sizable, as the probability of transferring has increased by 7.8 percent.[12]

In the other columns of Table 3 we expand the baseline specification with additional variables. In particular, in column 2 we control for donors' characteristics, such as birth cohort and education. In column 3 we further include recipients' characteristics, such as gender, area of residence and education, and in the final column we add the (log) of recipients' disposable income.

---

[11] The unreported time dummies coefficients confirm the time pattern of bequests (and donations) apparent from Figure 2. The effect of time is non-linear and peaks in 2004, two years after the abolition of the estate taxes.
[12] Before the reform the probability of transferring real estate wealth for the high occupation donors was 32 percent.

Notice that current income is not observable by donors at the time of the transfer. Additionally, as discussed above, it is likely to be endogenous, as transfers may affect future recipient's income. For these reasons, we cautiously include income only in the last specification to capture unobserved recipients' characteristics that may affect donors' behavior. Our coefficient of interest is always positive and significant and is quite stable across specifications. The value ranges between 0.020 and 0.021.

One potential problem of our empirical strategy is the identification of the treatment group. Some donors might have been wrongly included (or excluded) from the treatment group, which might jeopardize our evidence and bias our estimates of the effect of the tax reform. To address the issue, we adopt a sharper identification of the treatment group in Table 4, where we interact the post-reform dummy with a dummy for "very high" occupation, equal to one for households in which *at least two* parents of the head and spouse (if present) are entrepreneurs, managers, professionals or self-employed. In other words, we further split the high-occupation group into "high" and a "very high occupation" groups. As the incentive to transfer wealth after the reform is directly related to the level of donors' wealth, the effect of the reform should be larger for the latter group.

The results show that this is indeed the case. In the baseline specification, reported in the first column of Table 4, the coefficient of the interaction with the high occupation dummy drops to 0.013, while that of the interaction with the "very high" occupation dummy implies that for this group the propensity to bequeath increases by 4.6 percentage points. Controlling for donors' and recipients' characteristics does not alter the overall picture, and confirms a sizeable and statistically detectable effect of the tax changes on transfers. Additionally, including this finer classification of donors further corroborates our identification strategy, and shows that our results are not driven by pre-existing diverging trends in the propensity to bequeath across treatment and control groups.

Differences between treatment and control group might also arise on the extent of the transfers. Among those who transfer their real estate wealth through a donation or a gift, we expect the effect of the tax change to be stronger for wealthier households, and therefore the size of the transfers to increase for the high-occupation group after the reform. The next section investigates this possibility.

6.2. Intensive margin

Table 5 measures the size of transfers with the log of square meters transferred, thus evaluating the effect of the reform on the size of the transfers conditional on a dwelling being transferred. The first column of Table 5 reports results from the baseline specification that shows the unconditional diff-in-diff coefficient as in the first column of Table 3. The coefficient on the high parental occupation dummy is positive, indicating that wealthier donors makes larger transfers. The interaction between the post reform and the high occupation dummies shows the number of square meters transferred increased in the treatment relative to the control group by 7% after the reform. Adding donors and recipients controls, as we do in the other columns of Table 5 attenuates the effect, but leaves the overall picture unchanged. Only in column 4, where we control also for the income of the recipients, statistical significance disappear. Thus, the abolition of the estate taxes seems to have affected both extensive and the intensive margin of transfers.

Table 6 shows results splitting the treatment group into high and very high occupation groups. The effects on the high occupation group are similar to those presented in table 5, though less precisely estimated. Instead, the effects on the very high occupation group are slightly larger in magnitude, ranging from 0.087 to 0.059 in columns 1-3, and statistically significant. Only in column 4 the coefficient of the interaction between the very high occupation dummy and the post-reform dummy drops to 0.037 and loses statistical significance. Overall, Table 6 shows that we cannot statistically distinguish the effect between the two groups of donors, implying that the effect of the tax change on the intensive margin is more evenly spread across households who responded to the increased incentive to donate.

6.3. Robustness tests

In this section we present a battery of robustness checks summarized in table 7 that reports only the main coefficient of interest, namely the interaction between the high-occupation dummy and the post-reform dummy, separately for the intensive (upper panel) and extensive (lower

panel) margins. All specifications include parents' characteristics (year of birth, education and occupation), and recipients' characteristics (such gender, area of residence, education) as in the third column of the previous tables.

In column 1 we restrict attention to the waves close to the reform, i.e. years 1998-2000-2002. The reason is that our identification strategy is based on the discontinuity due to the sequence of reforms that took place around 2000, and therefore we want to exclude the possibility that other reforms or macro shocks took place during the time span under scrutiny and affected differentially the control and treatment groups, possibly acting as confounding factors. The coefficient estimates in the first column of Table 7 shows that the effect on the intensive margin is slightly higher than the one we obtain in Table 3 (0.039), while the effect on the extensive margin is positive but smaller (0.035) and less precisely estimated.

An alternative concern is due to the fact that the reform takes place over a three-year time span, from 1999 to 2001. Therefore the post-reform dummy includes year 2000 in which transfer, though lower than in 1999, were still in place. For this reason, column 2 of Table 7 shows results dropping the transitional year 2000. Again, the effect on the intensive margin is robust while the coefficient on the extensive margin becomes smaller and less precisely estimated.

Columns 3 and 4 report results separately for old and young recipients. The positive effect of the reform on the intensive margin found in Table 3 seems to be mostly driven by the effect on young recipients (column 4). It is not surprising that the reform did not affect old recipients, as their received transfers earlier in life, and whose parents did not have enough time to react to the reform. The bottom panel in columns 3 and 4 show that the effect on the extensive margin is not significantly different from zero for both young and old recipients.

Finally, columns 5 and 6 show results separately for male and female recipients. Both the effects on the intensive and extensive margins are positive and significant for males and non significant for females, possibly owing to the smaller sample size or the higher propensity to transfer real estate wealth to males, as opposed to dowries (which often take forms other then real assets) directed to females.

19

6.4. Interpretation

Overall, the descriptive evidence and the regression results suggests that the abolition of transfer taxes that took place between 1999 and 2001 has increased real estate intergenerational transfers. Our evidence indicates that the effect took place mostly at the extensive margin, raising the fraction of donors by about 2 percentage points. This effect is robust to various specification changes and seems to be stronger for wealthier donors (in the "very high" occupation group) and for male and young recipients. As to the intensive margin, after the reform the number of square meters transferred increases by around 4 square meters in the high relative to the low occupation group, and by around 6 square meters in the "very high" group. However, the coefficient of square meters is not statistically significant in all specifications, and fails to pass some of the robustness checks.

With our data, however, we cannot establish if the increase in the fraction of donors reflects a genuine increase in the propensity to transfer (a wealth effect), or a change in the composition of transfers (a tax avoidance effect), or a combination of the two. It might well be that after the reform donors are more willing to transfer wealth in the form of real estate, rather than in other forms, such as financial wealth. However, since in Italy the ratio of real estate assets to total wealth exceeds 85 percent for the 60+, it is likely that at least part of the increase in the propensity to bequeath real estates is a genuine effect.

As with other studies, our estimates should be interpreted with care because the reform coefficient measures also a potential misreporting effect. In particular, the increase in reported transfers following the cancellation of the transfer tax might be partly due to the fact that after the reform recipients are more willing to declare that they have received an inheritance in the past. The fact that reported transfers increase already in the years following the reform suggests that such misreporting effect might play a role in explaining the data.

With these important caveats, and to the extent that the estimates do not reflect only a tax avoidance effect, our findings imply that at least some of the bequests are not accidental, although we cannot claim support for a particular bequest motive. Insofar as the increase in transfers around 2000 is a genuine effect, the findings suggest that the elimination of estate taxes has

raised the incentives of rich households to transfer wealth to their descendants and amplified wealth inequalities.

7. Conclusions

In this paper we analyzes a sequence of Italian estate tax reforms that culminated with the abolishment of estate taxation in 2001. Before that year, estate tax applied only above a threshold of 125,000 euro. The reform provides a quasi-natural experimental framework that we exploit to assess the link between estate taxes and bequest. While about half of Italian households was already exempt before the reform, the richest segment of the population was exempt only afterwards. Besides the quasi-experimental design, our study has the further advantage that we combine data on the entire population of potential donors (not just those who make transfers or pay the tax) with information on potential recipients (not just those who have received a bequest). Our results show that estate tax reform had a positive impact on the probability of leaving a bequest of 2 percentage points, which implies a 7.8% increase. Additionally, the tax semi-elasticity of the square meters transferred is just around 4%. These effects are not directly comparable with previous empirical findings, but are broadly in line with the results in Kopczuk and Slemrod (2001) and Joulfaian (2006).

Our evidence implies that tax change has had a non-negligible effect on households choices, but results need to be taken cautiously. First, even if we have some information on donors, in that improving upon the available literature, the information is limited. Second, we focus exclusively on real estates, not on overall estates. Second, we focus on square meter transferred (and on whether any transfer took place), and not on actual amounts (the dollar size of estates). Finally, as in previous literature, we cannot distinguish between the wealth and tax avoidance effects induced by transfer taxes.

References

Altonji, Joseph G., Fumio Hayashi, and Laurence J. Kotlikoff, (1992), "Is the Extended Family Altruistically Linked? Direct Tests Using Micro Data", *American Economic Review* 82, 1177-98.

Angrist, Joshua, (2001). Estimation of Limited-Dependent Variable Models with Binary Endogenous Regressors: Simple Strategies for Empirical Practice, *Journal of Business and Economic Statistics*, 19 (1), 2–16.

Atkinson, Anthony B. (1971), "Capital Taxes, the Redistribution of Wealth and Individual Savings," *The Review of Economic Studies* 38, 209-27.

Bellettini, Giorgio and Filippo Taddei (2009), "Real Estate Prices and the Importance of Bequest Taxation." Torino: Carlo Alberto Notebooks No. 107.

Bernheim, Douglas B., Andrei Shleifer, and Lawrence H. Summers (1985), "The Strategic Bequest Motive," *Journal of Political Economy* 93, 1045–76.

Blinder, Alan S. (1975), "Distribution Effects and the Aggregate Consumption Function," *Journal of Political Economy* 83, 447-475.

Caballé, Jordi, (1995), "Endogenous Growth, Human Capital, and Bequests in a Life-Cycle Model," *Oxford Economic Papers* 47:1, 156-81.

Carroll, C. D. (2000), "Why Do the Rich Save So Much?," in J. Slemrod (ed.) *Does Atlas Shrug? The Economic Consequences of Taxing the Rich*. Harvard University Press and Russell Sage Foundation, New York.

Gale, William G., and Joel B. Slemrod (2001), "Rethinking the Estate and Gift Tax: An Overwiev", in W. G. Gale, J. R. Hines Jr., and J. Slemrod (eds.), *Rethinking Estate and Gift Taxation*. Washington;: Brookings Institution Press.

Gale, William G., and Maria G. Perozek (2001), "Do Estate Taxes Reduce Saving?" in W. G. Gale, J. R. Hines Jr., and J. Slemrod (eds.), *Rethinking Estate and Gift Taxation*. Washington;: Brookings Institution Press.

Guiso, Luigi and Tullio Jappelli (2002), "Private Transfers, Borrowing Constraints and the Timing of Homeownership," *Journal of Money, Credit and Banking* 34, 315-339.

Holtz-Eakin, Douglas, and D. Marples (2001), "Distortion Costs of Taxing Wealth Accumulation: Income Versus Estate Taxes," NBER Working Paper No. 8261.

Hubbard, R. G., Jon Skinner, and Stephen Zeldes (1995), "Precautionary Saving and Social Insurance," *Journal of Political Economy* 103, 360–99.

Hurd, Michael. D. (1989), "Mortality Risk and Bequests," *Econometrica* 57, 779–813.

Joulfaian, D. (2006), "The Behavioral Response of Wealth Accumulation to Estate Taxation: Time Series Evidence," *National Tax Journal* 59, 253–68.

Kopczuk, Wojciech, and Joel Slemrod (2001), "The Impact of the Estate Tax on the Wealth Accumulation and Avoidance Behavior of Donors," in W. G. Gale, J. R. Hines Jr., and J. Slemrod (eds.), *Rethinking Estate and Gift Taxation*. Washington;: Brookings Institution Press.

Kopczuk, Wojciech, (2009), "Economics of Estate Taxation: Review of Theory and Evidence," Columbia University, mimeo.

OECD (2000), *Revenue Statistics 1965-1999*. Paris: OECD.

White, H., (1980). A Heteroskedasticity-Consistent Covariance Matrix Estimator and a Direct Test for Heteroskedasticity," *Econometrica*, 48, 817–838.

Wooldridge, Jeffrey M., 2001. *Econometric Analysis of Cross Section and Panel Data*. Cambridge (MA): MIT Press.

Figure 1
The wealth distribution of Italian households (thousands of euros)

Median wealth in year 2000: €161,000
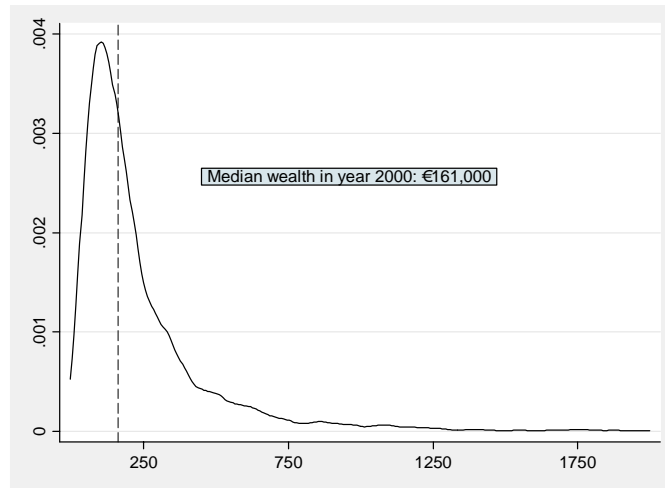
Note. The wealth distribution refers to the year 2000 and is estimated using a Kernel density function. Source: SHIW 2000.

Figure 2
Fraction of households receiving real estate as a bequest or as a gift, by parental occupation
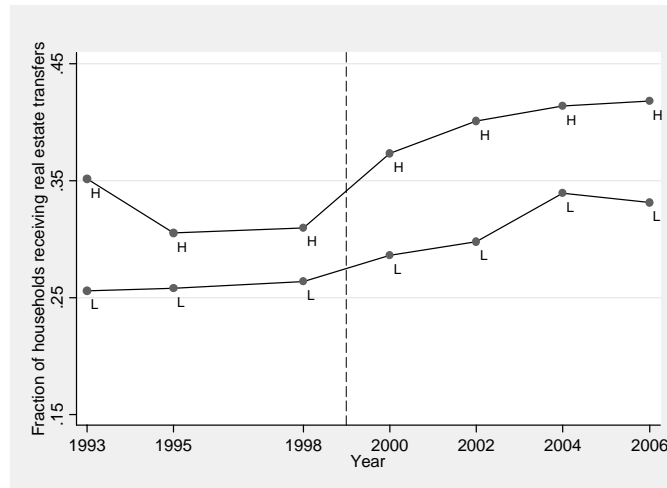
Note. Households with high-occupation potential donors are defined as households where at least one parent of the head and spouse (if present) is an entrepreneur, manager, professional or self-employed.

Figure 3
Square meters received as a bequest or as a gift, by parental occupation
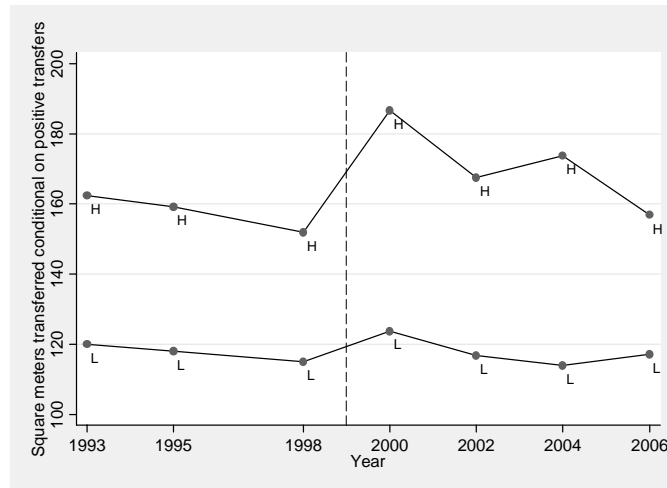
Note. Households with high-occupation potential donors are defined as households where at least one parent of the head and spouse (if present) is an entrepreneur, manager, professional or self-employed.

Table 1
The reforms of estate taxation in Italy

	Tax base	Exemption	Tax rate		Note
Law 346/1990	Total donor's estate	125.000 euro for total estate	**Brackets**	**Tax rate**	An additional progressive tax is levied on the share of the estate received by recipients who are not direct relatives of the donor or spouse
			125-175	3	
			175-250	7	
			250-400	10	
			400-750	15	
			750-1500	22	
			1500+	27	
Law 488/1999	Total donor's Estate	175.000 euro for total estate	**Brackets**	**Tax rate**	An additional progressive tax is levied on the share of the estate received by recipients who are not direct relatives of the donor or spouse
			175-250	7	
			250-400	10	
			400-750	15	
			750-1500	22	
			1500+	27	
Law 342/2000	Estate share received by each recipient	175.000 euro for each recipient	4% for spouse and direct relatives 6% for relatives up to fourth degree and stepfamily up to third degree 8% for others		Tax rates on gifts are 3%, 5% and 7% respectively.
Law 383/2001	The inheritance tax was abolished in October 2001				

Table 2
Sample statistics

	Low-Occupation Donors			High-Occupation Donors			Full sample		
	Mean	St. dev.	*N*	Mean	St. dev.	*N*	Mean	St. dev.	*N*
Transfers									
Fraction of households receiving a dwelling as a bequest or a gift	0.29	0.46	20,541	0.36	0.48	14,344	0.32	0.47	34,885
Square meters transferred (conditional on positive transfers)	117.60	90.76	6,032	165.49	196.64	5,169	139.70	151.16	11,201
Donors' characteristics									
High education	0.10	0.29	20,541	0.17	0.38	14,344	0.13	0.33	34,885
High occupation							0.41	0.49	34,885
Born before 1900	0.36	0.48	16,918	0.39	0.49	13,677	0.38	0.48	30,595
Born in 1901-20	0.43	0.49	16,918	0.41	0.49	13,677	0.49	0.42	30,595
Born after 1920	0.21	0.41	16,918	0.19	0.40	13,677	0.21	0.40	30,595
Recipients' characteristics									
Male	0.68	0.47	20,540	0.75	0.43	14,344	0.71	0.45	34,884
Log of HH income	10.16	0.60	20,538	10.33	0.64	14,332	10.23	0.63	34,870
High education of HH	0.31	0.46	20,541	0.42	0.49	14,344	0.35	0.48	34,885
North	0.44	0.50	20,540	0.44	0.50	14,344	0.44	0.50	34,884
Centre	0.22	0.42	20,540	0.21	0.41	14,344	0.22	0.41	34,884
South	0.34	0.47	20,540	0.35	0.48	14,344	0.34	0.47	34,884

Note: Donors with high education: at least one parent of the head and spouse (if present) has high school or college education. Donor with high occupation: at least one parent of the head and spouse (if present) is an entrepreneur, manager, professional or self-employed.

Table 3
Probability of making a transfer

	(1)	(2)	(3)	(4)
High parental occupation	0.062	0.064	0.065	0.067
	(0.007)***	(0.008)***	(0.008)***	(0.008)***
High parental occupation × post reform dummy	0.025	0.021	0.020	0.021
	(0.010)**	(0.011)*	(0.011)*	(0.011)*
High parental education		0.051	0.045	0.051
		(0.008)***	(0.009)***	(0.009)***
Father born before 1900		-0.004	-0.003	-0.008
		(0.008)	(0.008)	(0.008)
Father born 1901-1920		-0.012	-0.009	-0.008
		(0.007)*	(0.007)	(0.007)
Recipient resident in the Centre			0.018	0.017
			(0.007)***	(0.007)**
Recipient resident in the South			0.030	0.020
			(0.006)***	(0.006)***
Male recipient			-0.034	-0.027
			(0.006)***	(0.006)***
High education of recipient			0.017	0.029
			(0.006)***	(0.006)***
Log income of recipient				-0.031
				(0.005)***
Constant	0.272	0.274	0.281	0.597
	(0.007)***	(0.011)***	(0.013)***	(0.055)***
Observations	34885	30595	30594	30581
Years effects	YES	YES	YES	YES
R-squared	0.01	0.01	0.02	0.02

Note: The dependent variable is a dummy equal to one if a real estate is received as bequest or gift, and zero otherwise. Robust standard errors in parentheses. One star denotes significance at the 5 percent level; two stars at the 1 percent level.

Table 4
Probability of making a transfer.
Distinguishing between high and very high parental occupation

	(1)	*(2)*	*(3)*	*(4)*
High Parental Occupation	0.057	0.058	0.056	0.058
	(0.009)***	(0.009)***	(0.009)***	(0.009)***
Very High Parental Occupation	0.069	0.071	0.073	0.076
	(0.009)***	(0.010)***	(0.010)***	(0.010)***
High parental occupation × post reform dummy	0.013	0.008	0.008	0.009
	(0.012)	(0.013)	(0.013)	(0.013)
Very high parental occupation × post reform dummy	0.046	0.042	0.040	0.042
	(0.014)***	(0.014)***	(0.014)***	(0.014)***
High parental education		0.052	0.046	0.054
		(0.008)***	(0.009)***	(0.009)***
Father born before 1900		-0.004	-0.003	-0.008
		(0.008)	(0.008)	(0.008)
Father born 1901-1920		-0.013	-0.010	-0.009
		(0.007)*	(0.007)	(0.007)
Recipient resident in the Centre			0.018	0.016
			(0.007)***	(0.007)**
Recipient resident in the South			0.031	0.020
			(0.006)***	(0.006)***
Male recipient			-0.035	-0.028
			(0.006)***	(0.006)***
High education of recipient			0.017	0.030
			(0.006)***	(0.006)***
Log income of recipient				-0.032
				(0.005)***
Constant	0.272	0.274	0.281	0.606
	(0.007)***	(0.011)***	(0.013)***	(0.055)***
Observations	34885	30595	30594	30581
Years effects	YES	YES	YES	YES
R-squared	0.01	0.01	0.02	0.02

Note: The dependent variable is a dummy equal to one if a real estate is received as bequest or gift, and zero otherwise. Robust standard errors in parentheses. One star denotes significance at the 10 percent level; two stars at the 5 percent level, three at 1 percent level.

Table 5
Square meters transferred

	(1)	(2)	(3)	(4)
High parental occupation	0.191	0.173	0.157	0.129
	(0.018)***	(0.019)***	(0.018)***	(0.018)***
High parental occupation × post reform dummy	0.070	0.040	0.043	0.025
	(0.023)***	(0.024)*	(0.024)*	(0.023)
High parental education		0.311	0.192	0.113
		(0.019)***	(0.020)***	(0.019)***
Father born before 1900		-0.067	-0.006	0.036
		(0.018)***	(0.018)	(0.017)**
Father born 1901-1920		0.012	0.033	0.021
		(0.015)	(0.015)**	(0.015)
Recipient resident in the Centre			-0.088	-0.072
			(0.015)***	(0.014)***
Recipient resident in the South			-0.125	-0.018
			(0.013)***	(0.013)
Male recipient			0.081	0.005
			(0.012)***	(0.012)
High education of recipient			0.201	0.083
			(0.014)***	(0.014)***
Log income of recipient				0.289
				(0.011)***
Constant	4.582	4.617	4.511	1.601
	(0.019)***	(0.026)***	(0.030)***	(0.115)***
Observations	11201	9884	9884	9877
Years effects	YES	YES	YES	YES
R-squared	0.04	0.07	0.11	0.18

Note: The dependent variable is the log of square meters transferred. Robust standard errors in parentheses. One star denotes significance at the 10 percent level; two stars at the 5 percent level, three at 1 percent level.

Table 6
Square meters transferred.
Distinguishing between high and very high parental occupation

	(1)	*(2)*	*(3)*	*(4)*
High Parental Occupation	0.143	0.114	0.104	0.083
	(0.022)***	(0.023)***	(0.022)***	(0.022)***
Very High Parental Occupation	0.241	0.232	0.211	0.177
	(0.023)***	(0.024)***	(0.023)***	(0.022)***
High parental occupation × post reform dummy	0.069	0.041	0.041	0.026
	(0.028)**	(0.029)	(0.028)	(0.027)
Very high parental occupation × post reform dummy	0.087	0.055	0.059	0.037
	(0.031)***	(0.032)*	(0.031)*	(0.030)
High parental education		0.318	0.198	0.119
		(0.019)***	(0.020)***	(0.019)***
Father born before 1900		-0.066	-0.005	0.036
		(0.017)***	(0.018)	(0.017)**
Father born 1901-1920		0.009	0.031	0.019
		(0.015)	(0.015)**	(0.015)
Recipient resident in the Centre			-0.090	-0.073
			(0.015)***	(0.014)***
Recipient resident in the South			-0.123	-0.018
			(0.013)***	(0.013)
Male recipient			0.075	0.001
			(0.012)***	(0.012)
High education of recipient			0.202	0.085
			(0.014)***	(0.014)***
Log income of recipient				0.286
				(0.011)***
Constant	4.582	4.615	4.513	1.629
	(0.019)***	(0.026)***	(0.030)***	(0.114)***
Observations	11201	9884	9884	9877
Years effects	YES	YES	YES	YES
R-squared	0.04	0.08	0.12	0.18

Note: The dependent variable is the log of square meters transferred. Robust standard errors in parentheses. One star denotes significance at the 10 percent level; two stars at the 5 percent level, three at 1 percent level.

Table 7
Robustness checks

	(1)	(2)	(3)	(4)	(5)	(6)
	Only years 1998 and 2000-02	*Excluding 2000*	*Old recipient (age >= 60)*	*Young recipient (age < 60)*	*Male recipient*	*Female recipient*
Dependent variable: dummy equal to one if a real estate is received as bequest or gift						
High parental occupation × post reform dummy	0.039 (0.017)**	0.022 (0.012)*	0.007 (0.016)	0.025 (0.015)*	0.021 (0.013)*	0.028 (0.022)
Observations	13351	26191	13918	16676	22071	8523
R-squared	0.01	0.02	0.02	0.02	0.02	0.01
Dependent variable: log of square meters transferred						
High parental occupation × post reform dummy	0.035 (0.037)	0.040 (0.025)	0.051 (0.036)	0.036 (0.031)	0.058 (0.028)**	0.037 (0.043)
Observations	4217	8440	4373	5511	6895	2989
R-squared	0.11	0.10	0.15	0.08	0.10	0.11

Note: All specifications include parents' characteristics (such as year of birth, education and occupation), and recipients' characteristics (such gender, area of residence, education). Robust standard errors in parentheses. One star denotes significance at the 10 percent level; two stars at the 5 percent level, three at 1 percent level.