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Charitable bequests and wealth at death

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IZA DP No. 7014

Charitable Bequests and Wealth at Death

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November 2012

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Institute for the Study
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Charitable Bequests and Wealth at Death

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ABSTRACT

Charitable Bequests and Wealth at Death*

Charitable bequests are a major source of income for charities but surprisingly little is known about them. The aim of this paper is to propose a multi-stage framework for analysing the bequest decision and to examine the evidence for Great Britain provided by new data on estates. The novelty of the framework is that it distinguishes between the different steps that lead to a charitable bequest. Our new data for Britain have the advantage of covering the whole population, in contrast to much of the US literature based on the small fraction of the population covered by estate tax returns. We focus on the relationship with wealth at death, on the form of the bequest, and on the different causes to which people bequeath.

JEL Classification: D12, D31, D64, L31

Keywords: charitable donations, bequests, wealth, death, estate tax, NGOs

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1. Introduction

Giving to charity at death is an age-old phenomenon, and its importance is likely to grow in the future. For individuals, how one leaves one's wealth is a decision unlike all others. For charities, bequests represent a major source of income: in the UK, legacies make up about a quarter of total donated income for the top 500 fundraising charities (CAF 2004: 22). Many governments are seeking to encourage charitable giving, and understanding its determinants is of considerable policy relevance.

The aim of this paper is to propose a multi-stage framework for analysing the bequest decision and to examine the evidence about charitable giving at death for Great Britain provided by new data on estates. The novelty of the framework is that it distinguishes between the different steps that lead to a charitable bequest. The potential donor must first have wealth to leave; the donor has to make a will; the will has to include a charitable bequest; the bequest may be conditional rather than absolute; and the bequest may be a specified amount or a residual share. In covering these different steps, it is important that our new data for Britain cover the whole population. This is in contrast to much of the US literature based on estate tax returns which relate only to the upper tail of the distribution of estate size at death: for example the study by Joulfaian (2000) covers only 3 per cent of all decedents. Moreover, in contrast to studies based on US estate tax data, our data make use of the fuller information about donor intentions available from reading the accompanying wills.

Section 2 identifies the different steps and sets out the multi-stage framework. Section 3 describes the estate data. These data are rich in terms of population coverage, but contain limited information about personal characteristics. We therefore focus in Sections 4-6 on three main aspects.

The first is the influence of the *size of the estate* on the probability of giving. Wealth is likely to affect differently the different steps in making a charitable bequest: for example, the propensity to make a will may be expected to rise with wealth and then level off, whereas the propensity to make a charitable bequest may rise more steadily with wealth. Are these the patterns that prevail? Almost nothing is known in the UK about the relationship between bequeathing to charity and the level of wealth at death. Wedgwood (1929) famously documented charitable bequests in wills published in *The Times* newspaper, but the nature of his sample raises obvious questions concerning the representativeness of the data. Dawson et al (2003) studied all estates passing through probate in Northern Ireland in 1937, 1967 and 1997, but did not consider the estate values at all. Aldous (2005) considered wealth only

briefly, grouping estate values into four categories, but his analysis was based on just 911 estates. Even in the US, where the literature is far more extensive, the restriction of the great bulk of studies to estate tax returns means that knowledge is limited only to the variation in charitable bequests among the large estates that result from just a small proportion of all deaths.

One obvious reason why giving may rise with wealth is the existence, in the UK, of progressive estate taxation. Under the UK Inheritance Tax (IHT), the excess of an estate above the allowance (£300,000 for most of the period in question) is subject to a 40 per cent marginal rate of tax. This means that the "price of giving" (the amount by which the inheritance of other beneficiaries is reduced) falls from 1 to 0.6 when the tax-free threshold is exceeded. (A further tax concession was announced in the 2011 Budget.) The sizeable US literature on individual bequest behaviour (reviewed in Atkinson, Backus and Micklewright, 2009) has been particularly concerned with this aspect (e.g. Harriss, 1949, Boskin, 1976, and Joulfaian, 2000). It is for this reason that these studies have limited their attention to the upper part of the wealth distribution, using samples of the estate and gift tax returns carried out by the Internal Revenue Service (IRS). As explained in Section 4, the single rate of tax in the UK, together with other considerations, means that we are restricted in what we can say about the effect of tax on UK charitable giving. However, we are able to explore whether the propensity to bequeath shows evidence of a sharp rise in the neighbourhood of the tax-free threshold as predicted by a simple theoretical model that is included in Section 2.

The second focus of our paper is on the *form* of the charitable bequest, and this is the subject of Section 5. The intention of the donor to make a bequest does not necessarily mean that the charity benefits. Many people have had the experience of learning that they are potential beneficiaries from a will but in the end receive nothing. Charitable bequests may be conditional, rather than absolute. Bequests may take the form of a share of the residual estate after other legacies have been paid, and this residual may be zero. The literature based on simply the estate tax data considers only the actual amount bequeathed that is received by charities. Here we are able to make use of the additional information from the accompanying wills. Do bequests become more certain in value as estate size rises, donors feeling more able to bequeath absolutely and to bequeath specific amounts?

The third focus of the paper is on the *destination* of the bequest. In Section 6 we examine the pattern of giving by cause, a subject that has received little attention in the existing literature on charitable giving, whether inter-vivos or at death (see, for example, the survey in Andreoni 2006). Aggregate data from UK charity accounts show which causes

benefit most from legacies. For example, cancer charities and animal charities rely heavily on charitable bequests, whereas this is not the case for charities devoted to overseas development (CAF 2004). Dawson et al (2003) have shown the interesting changes in the pattern of causes over the years 1937, 1967 and 1997 in Northern Ireland. But the existing literature contains little analysis of the variation with estate size. Do the causes favoured by the wealthy differ from those favoured by people with only modest estates? Or do the wealthy just 'add on' further causes?

The conclusions and our contribution are summarised at the end of the paper.

2. A Multi-stage framework for charitable bequeathing

Making a charitable bequest is the result of several distinct steps. First, the person has to die with significant assets. Second, the person has to make a will. A substantial proportion of people in the US and the UK die intestate (without making a will). In the US, 40 per cent of all persons aged 50 or over are estimated not to have made a will (AARP, 2000). In the UK, it has been estimated that about 60 per cent of the adult population (of all ages) are in this position.[1] Third, the will has to include a charity as a potential beneficiary. The word "potential" is important, since in many cases the charitable bequest is conditional (for example, on the person's partner having pre-deceased the testator). The fourth stage therefore distinguishes between absolute and conditional bequests. Finally, the bequest may take the form of a specific asset or cash sum or it may be a share in the residual estate.

The different stages are summarised in Figure 1. It is on the (0,1) nature of these decisions that we focus. The first theoretical models of the bequest decision (for example, Yaari, 1964) did not highlight the corner solution where bequests were chosen to be zero, but whether or not we are at a corner is important, as has been shown in the macro-economic literature, where Ricardian equivalence depends on there being "operative inter-generational transfers" (see, Blanchard and Fischer, 1989, Chapter 3). In the model proposed here, a person may be at a corner in making no bequests, or in making no charitable bequests.

Figure 1 near here

[1] The figure comes from an internet survey of 2,000 adults in 2009 (with results 'weighted to nationally representative criteria'). http://www.unbiased.co.uk/find-a-solicitor/media/press-releases/-/page/151/

Each of the stages may be influenced by different considerations, as will be the amount of the bequest. The first stage involves the leaving of a significant estate. Many people leave minimal, zero, or negative amounts at death. In the case of Great Britain, in a typical recent year, just under half of all decedents leave property of a size and type to require a "grant of representation". The conditions under which a grant is required are described in the next section. While the conditions are not only based on the size of the estate, it seems reasonable to assume for the purposes of the present analysis that those estates not requiring a grant are not "significant".

Leaving a significant estate reflects both conscious decision-making and unpredictable events (see e.g. Kopczuk, 2007). There is a very large literature on the former, of which we can make little use, since for the full population of deaths we only observe age (in the majority of cases) and gender. It does however seem likely that the relative importance of the two sets of considerations changes as a person ages, with "deliberate" bequests increasingly replacing "unintended" bequests. Whether or not deliberate bequests increase with age depends on the much-debated life-cycle pattern of wealth-holding. It also depends on the extent to which assets are used up by medical and care home expenses in the period prior to death.

The second stage is that of making a will. Here we can take account of both age (and gender) and the size of estate. For some, this will be a matter of choice: the individual is content with the law of succession that applies to intestate estates, or at least with his or her own perceptions of the law. Here an intestate estate is no different from the case where a will is made and no money is left to charity. But death intestate represents a 'surprise' for other decedents who intended to leave a charitable bequest – the zeros here hide unrealised charitable intent. In practice intestacy may be rare in the wealthy estates covered by the estate tax data in the US but can be expected to be more common in data like those used in this paper that are not limited to high levels of wealth.[2] Since making a will is not typically reversed, there are good reasons to expect the proportion dying intestate to fall with age.

The third stage is that of making a charitable bequest. It seems likely that the propensity to make charitable bequests rises with estate size, and we are interested in how rapidly the propensity rises and whether it approaches an upper limit. As noted in the Introduction, the estate size affects the "price" of giving; with the Inheritance Tax in the UK,

[2] Of the 38,015 decedents with estate tax returns filed in the US in 2007 (when the threshold for filing was $2m), 1,617 had no wills (4.3 per cent). (We are grateful to David Joulfaian for this information.)

the effective price of a charitable bequest relative to a bequest to one's heirs falls from a factor of 1 to 0.6 when the tax-free threshold is exceeded. We should therefore expect a jump at this estate size in the propensity to make charitable bequests.

The fourth stage involves conditionality. We emphasise this stage for two reasons. The first is that it is missed by studies based on estate and gift tax returns. Bequests that are conditional do not appear in data based on these sources where the conditions are not met; and no distinction can be drawn between bequests that were absolute and bequests that were conditional and the conditions were satisfied. Although the data will measure correctly the amount of wealth transferred to charities (for estates above the tax threshold) they may be seen as understating the full extent of the charitable intent of the decedents concerned. The second reason is that the conditions are likely to depend on family circumstances. Almost any model of the bequest decision emphasizes that the willingness to make a charitable bequest is likely to vary with an individual's marital status and dependents, and age: 'the conjecture, of course, is that married and younger persons have more, and more dependent, dependents: spouses and younger children' (Boskin, 1976: 46). Boskin's results were in fact ambiguous on the impact of marriage – data for 1957-9 showing that the married bequeathed more to charity (ceteris paribus) and data for 1969 data showing the reverse. Later authors in general concur that the married give less at death to charity. The IRS estates tax data in the US for 1995 show sharp differences in the bequest propensity: 7 per cent of married decedents bequeath to charity, 25 per cent of the widowed, and 43 per cent of single (Havens et al 2006: 545).[3] Conditional on marital status, dependents, age, wealth, and other characteristics, gender is estimated to have little impact in some studies (e.g. Boskin, 1976 and Joulfaian, 2000) while women are found to give less in others (e.g. Joulfaian, 1991).

The final stage concerns the form of the bequest – whether specific or residual. Where the total amount bequeathed is known with certainty when the decision is taken, then it does not matter whether the charity receives a specified B or (B + X) – X, where X are other bequests. But typically there is considerable uncertainty about the size of the estate, the valuation of assets, and the tax regime.

Theoretical model

The US literature has mostly modelled bequest behaviour as an extension of the standard theory of consumer choice. For instance, Boskin (1976) modelled utility as a

[3] Other dependents are sometimes found to have a negative effect too, although it should be noted that their presence is typically measured by the mention in the will of bequests to them, which hardly seems ideal.

function of own consumption, C, other bequests, X, and charitable bequests, B (where we have simplified by omitting lifetime transfers or charitable gifts). Utility, U(C,X,B), is assumed to be maximised subject to a lifetime wealth constraint, such as

$$C + X + B = W - T(X) \qquad (1)$$

where W denotes lifetime wealth and T(X) denotes the estate duty payable, which depends only on X, charitable bequests being assumed fully exempt. It is assumed that the marginal tax rate is a non-decreasing function, thus ensuring that the budget constraint is convex. This model has been elaborated (see for example Watson, 1984), but we remain close to the simple formulation in order to highlight the different stages of decision-making that are the main novelty in this paper.

Such a model leaves out many important considerations. It does not, to begin with, provide a basis for analysing the decision of making a will. Without introducing transaction costs, we cannot explain why people die intestate.[4] (There may be an indirect explanation via the second and subsequent stage decisions.) The model is one of individual behaviour whereas conditionality of bequests may be the result of a joint decision of husband and wife (allowing for the survivor to retain all the couple's assets until the second death). It is the first and third stages of our framework – the dying with significant assets and the leaving of a charitable bequest – where the model is potentially informative. The corner conditions for utility maximisation are

$$U_x \leq \lambda(1+T') \text{ and } X = 0; \text{ and } U_B \leq \lambda \text{ and } B = 0 \qquad (2)$$

where λ is the marginal utility of own consumption (C is assumed strictly positive). It should be noted that where there is a tax-exempt range the first condition does not involve the marginal tax rate. Such a progressive estate tax plays therefore no role in the first-stage decision (given the assumption of a convex budget constraint). It is assumed that there is level of lifetime wealth so low that no one leaves any bequests. Where X=B=0, the value of λ is $U_c(W,0,0)$, which is assumed to be a declining function of W. If we further assume that $U_X(W,0,0)$ and $U_B(W,0,0)$ are increasing functions of W, then as we consider higher values of W, there will come a point where people begin to leave a positive estate. The level of wealth at which this happens, and whether X or B becomes positive first, depends on preferences.

[4] The approach assumes that individuals have complete freedom to dispose of their wealth at death. This is broadly the case in the England and Wales (the situation in Scotland differs somewhat) although legislation can impede this freedom ex-post and threaten charitable bequests if the deceased is deemed to have unreasonably failed to make sufficient provision for his or her family (Hannah and McGregor-Lowndes 2008). Testamentary freedom is more limited in other countries with legal systems that embody the Napoleonic code and this may encourage intestacy.

The simplest case is that of people who have no other heirs and set X=0. Let us assume that there is a single preference parameter, γ, measuring the weight given to charitable bequests relative to own consumption, with a survival function $F\{\gamma\}$ (so that a proportion $F\{\gamma\}$ have values in excess of γ). For any given wealth level, W, there will be a proportion $F\{\gamma^*(W)\}$ of the population who make charitable bequests, where this proportion increases with W. The estate tax has no effect.

Where people have heirs, we have to consider the weight given to charitable bequests, not only relative to own consumption, but also relative to bequests to heirs. There are several possibilities. Those who give more weight to charitable bequests will at first follow a pattern similar to that described above, and then, at a higher W, begin to set X positive. Those who give more weight to their heirs will, as W rises, first set X positive and then, at a higher W, begin to make positive charitable bequests. From this we can see that the proportion making charitable bequests is an increasing function of lifetime wealth and that the form of this function depends both on the functional form of the utility function U *and* on the distribution of taste parameters.

The position is further complicated by the progressive estate tax. In the simplest case, as in the UK, there is a single tax rate, t, above the tax threshold, T_0. Once the estate tax threshold is reached, the first order condition for determining the choice of X involves λ multiplied by (1-t). This means that there is a range of W where the utility-maximising person keeps the value of the bequest to their heirs equal to the threshold, with increases in W being concentrated on C and B. Where B=0, this means that U_B/λ is rising faster than it otherwise would, and hence the proportion making charitable bequests is also rising faster. X begins to increase once again when W has reached a level such that $U_x = \lambda(1-t)$ is consistent with X greater than T_0, and U_B/λ reverts to its previous rate of increase. There may therefore be a range around the tax threshold where the proportion making charitable bequests rises more sharply.

The implications for our empirical analysis are that the propensity to leave an estate is an increasing function of W and is not a function of the tax, where there is a positive exemption level. The propensity to make a charitable bequest rises with W, and is influenced by the tax system in the way just described. It has to be remembered however that we do not observe W; we observe W-C.

The model described above is that underlying much empirical work but it has severe limitations. To begin with, the formulation assumes that the utility derived from bequests – whether charitable or to relatives – is of the "pure warm-glow" variety (Andreoni, 1990). The

donor is simply concerned with the sum left. No account is taken, in the case of heirs, of their circumstances. In the case of charitable bequests, no account is taken of the likely benefits from the use of the funds. The theory takes no account of the "public good" motive for giving (Becker, 1974). We have however to consider such richer motives if we are to examine giving by cause. A second major objection is that the model assumes a degree of foresight that is simply unrealistic in most cases. Wills are often drawn up many years before death and are only occasionally reviewed. As is pointed out by Dawson et al, the reality is "that 10, 20 or 30 years may elapse between a testator making a will and his death, during which time his circumstances have changed beyond recognition. He may no longer own a particular item of property that was specifically bequeathed. He may be significantly better off. Some of the beneficiaries may already be dead" (2003: 35-6). Their research for Northern Ireland found that over a quarter of wills were made more than 10 years prior to death (2003: 52).

In view of these limitations, the model provides a starting point, but no more, for our empirical analysis.

3. Data on estates and charitable bequests in Great Britain

Wedgwood (1929) took his data from the listing of estates in *The Times*. The source of these newspaper listings, which continue today, are the reports provided by a commercial company, Smee & Ford Ltd., which informs those charities that subscribe to its legacy notification service of the bequests that they will receive. To do this, Smee & Ford read all grants of representation and accompanying wills. They also read grants for persons who die intestate. We make use of exactly the same source. Our data refer to 253,706 estates in Britain processed by Smee & Ford during the 12 months August 2007 to July 2008.[5]

Our data relate to all estates in Britain (but not Northern Ireland) that go through probate: i.e. estates for which a 'grant of representation' is issued by the Probate Service. A grant of representation is not required if all assets were held jointly with another person e.g. a spouse (since in this case the assets pass automatically to the surviving joint owner) and may not be required if the estate is small in value. The law permits certain assets up to a value of £5,000, such as a bank or building society account, to be dealt with without production of a grant of representation, although estates smaller than £5,000 may nevertheless pass through

[5] A fuller account of the data and our analysis is given in Atkinson, Backus and Micklewright (2009).

probate if the executors so choose and will have to if the assets they contain are not all within the permitted group.

The estates not requiring a grant of representation are not necessarily small. Joint property, such as a house, may have a substantial value. The threshold for the transfer of assets applies per asset rather than to the total estate so in principle an estate composed of several accounts of under £5,000 each could be administered without a grant. However, there are good reasons for treating the non-requirement for probate as an indicator that there is not significant wealth available for charitable bequests. If the only property is joint property, then it is unlikely to be available for charitable donation.[6] We have been advised by Her Majesty's Revenue & Customs (HMRC) that the 'small estate' category probably accounts for the large majority of all estates that do not go through probate. HMRC noted that an investigation of the estates of widows and widowers above the inheritance tax threshold showed that probate had not been sought for only about 4 to 8 per cent of the late spouses' estates – in the great majority of cases, the estate had passed through probate on the first death. We shall therefore treat the category of estates not requiring probate as equivalent to 'insignificant wealth' for the purposes of our investigation of charitable bequests. For the same reason we drop estates of net value less than £5,000 (see below).

For each estate, we have the following information: gender, date of death, whether or not the decedent was testate, the number of charitable bequests, the form that each bequest takes and the charitable cause concerned, the value of the estate and (in England and Wales) whether the deceased was a foreign national. In England and Wales, the age of the deceased is recorded for 90 per cent of estates below the IHT threshold and for almost no estates above it. The age is recorded for all Scottish estates. (In total, age is coded for 77 per cent of all estates.) Both gross and net values of the estate are recorded in the data. The net value is the gross value less outstanding debts, including funeral expenses and any mortgage loan on a property. It is these 'net' values that we analyse, and these are the values of the estate before any inheritance tax is deducted: i.e. the estates are net of debts but gross of tax. About 80 per cent of our sample died in the tax-year 6 April 2007 to 5 April 2008 when the tax-free allowance for IHT was £300,000.[7] The values of most estates that are below the IHT threshold are recorded after rounding up to the nearest £1,000 while those above the threshold

[6] If the owners are 'joint tenants', then the house must pass to the surviving owner when one of them dies irrespective of the terms of their wills. Only if the couple are 'tenants in common' can they dispose of their share in their wills as they see fit. Joint tenancy is more usual in Britain than tenancy in common (see e.g. Dawson et al 2003: 40).

[7] The last death in our sample was on June 18, 2008.

are recorded to the nearest £1. The data suggest that executors may also report rounded figures when estates are low in value: there are over 3,000 estates of £5,000 but only 700 of £6,000. Estate value is missing in only 0.5 per cent of cases.

We trim the sample by dropping 8,239 estates where the date of death was before 1 January 2005 and, as noted above, another 4,555 that are below £5,000 in value. This leaves us with a sample of 240,912 estates. Table 1 shows descriptive statistics for the resulting sample. The mean age at death, 79 years, is 3 years below the median, reflecting the negative skew in the distribution, and the 10^{th} percentile is only 61 years. The median estate is £146,000, and the mean £221,338, reflecting the strong positive skew, the top percentile being £1,345,789. If we take £300,000 as the IHT threshold, then 17.5 per cent of the estates in our data are above this level.

Table 1 near here

Where the will contains a charitable bequest, Smee & Ford record the type of each bequest into one of three categories: (i) 'effects' or items (e.g. clothes, jewellery, or a teddy bear collection), (ii) 'pecuniary', i.e. a bequest of a sum of money, financial assets (e.g. shares) or real property (houses and land), and (iii) a residuary share, i.e. a share of the value of the estate that remains after all pecuniary legacies and legacies of specific items to heirs (and other charities) have been paid. Pecuniary and residuary share bequests are further distinguished into those that are unconditional ('absolute') and those that are conditional e.g. that only take effect if the spouse predeceases. ('Effects' bequests are all treated as absolute.) In total, the dataset contains information on 107,639 charitable bequests made by 33,487 decedents.

These data represent a large and rich source of information. Their attractions are that they relate to the population of estates passing through probate rather than to a sample, that the value of the estate is almost always coded, that testate estates can be identified, and that the presence of all charitable bequests are recorded together with their type and the causes to which they are made. The use of such a large dataset allows us to estimate with considerable precision how charitable bequests vary with wealth at death, not only at the relatively modest asset levels possessed by many people when they die but also for much higher estate values. For example, our dataset contains some 15,000 individuals with estates valued at probate at over £0.5m.

At the same time the data have at least two major limitations. First, we only very rarely observe marital status, a variable found to be most important by Aldous (2005). Nor do we observe any other details about the individual's family, such as whether they have children or other surviving relatives.[8] These characteristics may enter in two different ways. To the extent that they influence charitable intentions, we are missing an important determinant; on the other hand, to the extent that they work via the conditionality of bequests, their omission is less serious for our analysis of charitable intent. Second, the value of any charitable bequest is recorded only if the bequest is (i) a specific sum of money, (ii) is made unconditionally, and (iii) was made to a Smee & Ford client (or a small number of other charities). This means that we observe the *presence* but not the *value* of the bequests of specific items or residuary shares (we observe the value for only 5.5 per cent of all bequests). (Nor can we calculate the latter since we do not observe the size of any legacies made to the deceased person's heirs.) We know from other sources that the average charitable legacy from residuary bequests is much larger than the average cash legacy (Radcliffe 2002: 61). This means that we focus in what follows on the propensity to bequeath.[9]

4. Wealth and charitable giving

The first stage concerns those who left significant wealth at death, defined here as those leaving estates that required a grant of representation and where the estate was of £5,000 or more. We measure the probability of leaving significant wealth by comparing the observations in our sample with the national population data on deaths by age and gender. There is however the immediate problem that our sample of estates processed in a 12 month period (August 2007 to July 2008) relates to deaths occurring over a much longer period, which even with trimming extends from 1 January 2005 to 18 June 2008). Given the regularity of the death rate in Britain over this period, we can expect that the number of estates going through probate in a 12 month period is a good approximation of the number of deaths requiring probate in a 12 month period. The following estimates are approximate in that we compare the observed data with the 560,038 deaths in Great Britain in the calendar year 2007.

[8] Both types of information are recorded on the IHT return that must be made for each estate passing through probate. These returns were drawn on in the construction of the dataset used by Aldous but they are not made available to Smee & Ford. (Where marital status is recorded, the information comes from the will.)
[9] In Atkinson, Backus and Micklewright (2009, Appendix) we provide some limited analysis of the amounts bequeathed where these are known.

The top half of Figure 2 shows estimates separately for Scotland, where we observe age at death for all estates in our sample, and England and Wales, where age at death is missing for a quarter of cases. (We exclude the 3 per cent of deaths occurring below age 40.) The figures for England and Wales are therefore under-estimated as the denominators used to calculate the probabilities are based on complete population data. It is therefore re-assuring to see a gap between the two series that is roughly constant, suggesting that the missing data result in little bias in the picture obtained for England and Wales of the change in the probability with age.[10]

The probability of leaving significant wealth rises sharply with age. In England and Wales, the percentage rises by over 15 points between age 40-44 and age 95-99. The bottom half of Figure 2 shows that the rise is at first similar for men and women before that for men falls behind, only to rise sharply at later ages (the figures refer to England and Wales only). It should be noted that the age pattern is different from that of median wealth among the living population indicated by the Wealth and Assets Survey carried out in 2006/8, which peaks at age 55-64 (Office for National Statistics, 2009, page 11).

Figure 2 near here

Making a will

Of the 240,912 estates covered by our data, 36,014 (14.9 per cent) are where people died intestate. If the 57 per cent of deaths not covered by our data were all cases of intestacy, then the overall rate of intestacy would be some 63 per cent. This figure for Great Britain is lower than that of 77 per cent given by Dawson et al (2003: 50) for Northern Ireland in 1997, although it is likely to be an over-estimate as some of those decedents not covered by our data will have made wills but no probate was required.

Who are the people who made wills? Table 2 shows in the third column the percentages testate by estate range. (We show three different stages in the table; we return below to the other columns.) The probability of dying testate, conditional on possessing significant wealth, rises from under 75 per cent in the lowest ranges to 90 per cent plus in the top third of the distribution. The relationship is graphed in Figure 3. (As with Table 2, we show all stages 2 to 4 of our multi-stage framework.) The vertical line shows the median £146,000. In view of the skew in the distribution, the bottom part of the figure focuses on

[10] The estimates for Scotland for ages 40-44 and 45-49 are based on denominators of about 1,000 deaths only and the estimate for age 100+ on just 350 deaths.

estates below £500,000. The percentage in our sample making a will rises very sharply from about 50 per cent for estates below £10,000 to nearly 80 per cent for estates at around the level of the bottom quartile of estate size, £60,000, then rises more slowly to 90 per cent for estates of around £200,000 – a level not far short of the top quartile. This rise – although not necessarily its pattern – is scarcely surprising. What is remarkable is that some people die leaving estates of over £1 million without making a will. The figure of 3.3 per cent may be compared with that of 4.3 per cent among deaths resulting in estate tax returns in the US in 2007 when the threshold for filing was $2m.[11]

Table 2 near here

Figure 3 near here

How does does testacy change with age? And are men more likely to die intestate than women? Among those persons recorded as dying at age 50-54, as many as 51.6 per cent are intestate, reflecting in part the 'surprise' that death may represent at that age. By age 85-90, increased age-specific mortality has concentrated minds and only 10 per cent of decedents are intestate. The rise in testacy with age and the fact that men on average die at a younger age (see Table 1) helps explain why the overall testacy rate is lower for men (82.0 per cent) than for women (87.8 per cent). But Figure 4 shows there are still gender differences within age groups. (The graphs are restricted to estates in England and Wales for which age at death is recorded.) For those aged 55 to 64, the percentage dying intestate is 10 percentage points higher for men. We cannot control for marital status but with this proviso it does appear that men dying at below average ages are less likely to have made a will than women of the same age.

Figure 4 near here

Making a charitable bequest

Having made a will, the next step is to whether to include a charitable bequest. Overall, 16 per cent of testate estates did so. Given the testacy rate of 85 per cent and our calculation that the data cover some 43 per cent of all deaths, this implies that 6 per cent of deaths in Britain in 2007 resulted in a charitable bequest. This compares well with the

[11] See footnote 2.

estimate of about 5 per cent from Radcliffe (2002). (It should be borne in mind that some estates that do not pass through probate also contain bequests to charities.)

How does the propensity to bequeath to charity vary with the size of the estate? Table 2 (column 4) shows that there is indeed substantial variation. For the smallest estates, 1 in 10 make a charitable bequest; for those over £1 million it is more than 4 in 10. The rise is not smooth. The propensity to bequeath to charity rises little through the bottom half of the distribution, something seen most clearly in the lower part of Figure 3. The rise is then particularly noticeable around the IHT threshold, £300,000 for most of the estates in our sample. For the range from £250,000 to £299,999, the percentage is 17 per cent; by the time we reach £500,000 to £999,999, the percentage has virtually doubled. We return to this below. As may be seen from Figure 3, the increase in the proportion continues above £1 million: a half of all testate estates of £3m or more contain charitable bequests.[12] The £1m level is similar in US dollar terms to the threshold for estate tax filing in the US in 2004-5. Were we to be limited to data with that minimum value for estate size we would miss most of the variation in the propensity to bequeath to charity. The percentages of large estates containing a charitable bequest in our data may be compared with those in the US recorded in the IRS data. In 2004, 17 per cent of estates with less than $2.0 million in gross value contained a charitable bequest, rising to 44 per cent in estates with $20 million or more (Raub 2008: 126). The US figures appear lower than those for Britain but we should note that they refer only to bequests that were realized.

It is a common belief that women are more likely to give to charity than men and this appears to be the case for inter-vivos giving in the UK, with women about 1.2-1.3 times more likely to report giving when asked about donations in the previous month (Micklewright and Schnepf 2009). Our data show this sort of differential is repeated in giving at death: the proportion of testate estates containing charitable bequests is 14 per cent for men compared with 18 per cent for women. The propensity to bequeath is higher for women within all but the youngest age group – see the middle panel of Figure 4. It is indeed the case that a smaller proportion of men make bequests than women. It should be noted that our figures includes both absolute *and* potential conditional bequests; we are not restricting attention only to bequests that were realised. So the gender differential is not attributable to men being more likely to have a surviving spouse (and hence for charitable bequests not to be activated). It is notable that the percentages bequeathing do not change much with age.

[12] The two standard error confidence intervals for the percentages with a charitable bequest in the top two ranges of estate size are about +/- 4 points.

Inheritance Tax

As shown in the model in Section 2, we can expect a jump in the proportion of decedents making a charitable bequest when the taxable estate reaches the Inheritance Tax (IHT) threshold, which was £300,000 for most of the period covered by the deaths in our sample (see Section 3). As we have seen, for the range from £250,000 to £299,999, the percentage is 17 per cent; by the time we reach £500,000 to £999,999, the percentage has virtually doubled. At the same time, we need to allow for the effect of increasing wealth on the propensity – the doubling over this range of estate size is unlikely to have been due to any price effect alone. Moreover, it is also unlikely that such a change will appear as a jump in the data; instead we expect the shift in the propensity to take place over a range of wealth for two reasons.

First, the point at which IHT applies may in fact be well above the value of the IHT threshold. Assets left to a surviving spouse or civil partner are free of tax by law, and do not use up the tax-free allowance. A further complication is that from November 2007 – within the period covered by our data – the executors of an estate of a widow or widower could claim any IHT allowance that had not been used by the former spouse as a result of having left assets to their surviving partner. The unused allowance is granted at the current rate, effectively doubling the value of the tax-free threshold of an estate for many widows and widowers. Even before this change in the law, many estates larger than £300,000 in value were free of tax. HMRC figures for persons dying in 2005-6 show that less than two-thirds of estates above this size were subject to any IHT (although this is the figure after taking into account the reduction in tax liability due to any charitable bequests) (IHT statistics, Table 12.3).[13] In some cases tax will be due even if the estate is below the normal threshold: IHT takes account of gifts made in the 7 years before death. We do not observe marital status at death, the bequests made to a surviving partner, the bequests made by a former partner, or any gifts in the years before death – all information needed to calculate the tax liability for an estate.

The second consideration is that charitable bequests are determined in many cases at some time before death, as we have discussed earlier. The testator has therefore to form a view about the likely value of the threshold and tax rates in the future, but this may change substantially – as illustrated by the recent dramatic swings in estate tax threshold in the US:

[13] http://www.hmrc.gov.uk/stats/inheritance_tax/menu.htm

$2m in 2006-8, $3.5m in 2009, abolition of the tax in 2010, and re-introduction with a $5m threshold in 2011. (Up until December 2010, the level set several years previously for 2011 had been $1.5m.)

In Figure 5 we probe more carefully the change in the propensity to bequeath to charity around the standard IHT threshold of £300,000, focusing on testate estates of size £200,000 to £399,999 (of which there are 57,496 in our data). We use non-parametric regression to allow the shape of the relationship between estate size and the bequest propensity to be traced out in a flexible way. The data suggest an increase in the change in the propensity in the interval £275,000 to £325,000. We then estimate a parametric model (probit regression) for the probability of a charitable bequest as a piecewise linear function of estate size with knots at £275,000 and £300,000, constraining the parameter estimates for estate size below and above these levels to be the same.[14] The estimates are reported in the box in the diagram. We reject at the 5 per cent level (t=2.1) the null hypothesis that the parameter in the interval £275,000 to £325,000 is the same as that for larger or smaller estate sizes. Assume now that this steepening in the relationship is entirely due to the reduction in price produced by the tax. The predicted probability of a bequest at £325,000 is 2.1 percentage points higher than it would be in the absence of the reduction in price, implying an elasticity of the propensity to bequeath of only 0.27.[15]

Figure 5 near here

5. The form of the charitable bequest

For the charity to be certain of receiving a bequest it has to be absolute (and the estate has to have sufficient assets). Of all those testators leaving a charitable bequest, 73 per cent left an absolute bequest (they may also have left conditional bequests). This percentage is around 60 per cent for smaller estates but then rises to around 85 per cent for estates of over £1m – see Table 2 and Figure 3. (The fall for estates of over £3m is not statistically significant.) Greater wealth at death is associated with more absolute bequests. It is this rise in *absolute*

[14] This restriction is accepted with ease by the data – the unconstrained parameter estimates (and standard errors) are 1.591 (0.316) for estate size below £275,000 and 1.525 (0.489) for estates of £325,000 and above.
[15] Widening the estimation range from £100,000 to £499,999 produces similar parameter estimates and implied price elasticity (0.32); the constraint that the slope is the same above and below the knots is again accepted by the data and the expanded sample size (over 120,000 observations) produces more precise estimates – the null that the slope in the interval spanning the IHT threshold is no different is rejected more easily (t= 4.1). A change in the knots to £250,000 and £350,000 or £225,000 and £375,000 when using the expanded estimation range produces higher estimates of the elasticity, -0.38 and -0.46 respectively.

bequeathing that drives the overall increase in the propensity to bequeath to charity with estate size, as shown in the top half of Figure 6, which distinguishes between the two forms of bequest. (Since estates may contain both forms, the sum of the two estimates at any level of estate size exceeds the figure for the percentage of estates containing either form.) The percentage of charitable testators leaving an absolute bequest also rises with age – see Figure 4. It is not perhaps surprising that men are less likely, for reasons discussed, to make an absolute bequest: 64 per cent, compared with 78 per cent. The gap varies with age, opening up above the age of 65 and remaining substantial until the late 90s.

Figure 6 here

The other choice testators must make over the form of a bequest is whether to leave a specific amount (or item) to charity – a 'pecuniary' bequest – or a residuary share of the estate. The importance of this distinction has been brought out by Dawson et al: "the distinction between residuary gifts and all other types of gift is very important. Subject to a contrary intention in the will, the debts owing … together with the expenses of administration will firstly be borne by the residue, then out of pecuniary legacies and only as a last resort out of legacies of specific assets. … As a result the net residuary estate may be significantly less valuable … On the other hand, any unexpected increases in the value of the residue could be to the advantage of the residuary beneficiaries" (2003: 165). For the charities that are the potential recipients, residual bequests involve greater uncertainty. In particular, they are more vulnerable to falls in asset prices. But for the testator, bequeathing in this form provides insurance against uncertainty. The bottom half of Figure 6 reflects the decline in need for this insurance as estate size rises: the propensity to bequeath a specific sum to charity (or in a few cases a specific item) rises more quickly than the propensity to leave a residuary share (or shares).

Taking the two dimensions of the form of bequest together – absolute vs. conditional and pecuniary vs. residuary – the nature of bequeathing changes a great deal across the distribution of estate size. The proportion of all bequests that are both absolute and pecuniary rises from around 30 per cent in estates of £10,000 to £59,000 to between 55 and 60 per cent in estates of over £1m (Atkinson, Backus and Micklewright, 2009, Table 5). At the same time, the bequests that are both conditional and residuary fall from about 30-35 per cent of the total to 10-13 per cent.

As estate size rises, testators are therefore more certain in their form of bequeathing. This increase in certainty would appear only to benefit charities, but we should note that we have not been able to analyse the amounts concerned. An uncertain residuary share of a large estate may yield a greater expected sum for a charity than a certain pecuniary bequest. For the subset of pecuniary bequests for which we have information on their value, the median amount bequeathed is only £1,000 (Atkinson, Backus and Micklewright, 2009, Table A1).[16] As we noted earlier, other sources indicate that the average residuary bequest to charity is indeed much larger than the average pecuniary bequest.

6. Charitable bequests by cause

Of particular interest to both government policy-makers and charities is the distribution of giving by cause. If we return to the theoretical model of Section 2, we can see that the implications depend on the source of the utility derived from bequests. Where the utility is of the "warm-glow" variety, and the donor is simply concerned with the sum left, this is quite consistent with giving to a single cause, although it provides little guidance as to the choice of cause, since no account is taken of the likely benefits from the use of the funds. In contrast, the "public good" motive for giving may suggest a strategy of diversification. Where decisions may be made many years in advance, there is an evident risk that a particular cause may become redundant or its activities may have been taken over by government. Dawson et al (2003: 192) note that, over time, in Northern Ireland, the establishment of the National Health Service led to a switch from supporting core health services to giving to charities concerned with prevention.

The empirical literature on charitable bequests by cause is sparse. As was noted by Feldstein (1976: 102), the fourfold categorization of bequests by recipient used in the early IRS studies left the large majority in the residual category. Attention has however been drawn to the specialization of giving. In the study by Joulfaian (1991), of the 13,492 estates in the sample, 2,554 made charitable bequests. Of these, over half (1,307) reported only 1 category of recipient (out of 6). He describes this concentration as 'puzzling'. Some studies have looked at the number of causes to which bequests are made. The amount bequeathed to each cause has also been analyzed and both Boskin (1976) and Barthold and Plotnick (1984) found bequeathing to religious causes to be much less wealth elastic.

[16] Moreover, the evidence suggests that pecuniary bequests are unlikely to have been indexed from the date at which the will was made (Dawson et al. 2003: 168, Atkinson, Backus and Micklewright, 2009: 33).

In our British data, where the will contains a charitable bequest, Smee & Ford record the main cause of the charity concerned and of each charity if there is more than one bequest. A total of 20 categories of causes are identified. On average, people leave bequests to 2.3 causes, which may be compared with the mean number of bequests of 3.2 – the difference reflecting the fact that some people leave more than one bequest to the same cause. The modal value is one – 39 per cent of people leave bequests to a single cause, and a further 23 per cent of estates have bequests to two causes. In this sense, there is, as found in the US by Joulfaian (1991), considerable concentration. However, a minority of estates show a substantial amount of diversification: 9 per cent have bequests to six or more causes.

Figure 7 shows how the average number of causes per charitable estate – an estate with a bequest of any form to charity – in each estate band up to £2m. The figure rises from under 2 to over 3, and thereafter flattens out at higher levels of wealth (not shown). Those with more wealth at death are more diversified in their bequest behaviour. The graph also shows the average number of bequests, which rises more steeply, from about 2½ to 5. Higher levels of wealth at death are in part associated with giving to more causes but also with multiple bequests to the same causes.

Figure 7 near here

The wealthy leave bequests to more charitable causes but do they bequeath to *different* causes? Or do they just add on further causes while still leaving bequests to those favoured by persons with only modest estates? For each of the 20 causes identified in our data, Table 3 shows the percentage of all charitable estates that contain at least one bequest to the cause together with the percentages in large estates and in small estates, where large and small are defined as £500,000 or more and less than £40,000 respectively. (Together, the large and small estates account for 1 in 5 of all charitable estates.) We have sorted the causes on the basis of the figures in column (5), which show the percentage of large estates containing a bequest to the cause in question divided by the percentage of small estates with a bequest.

Table 3 near here

There is a clear pattern in the table and the answer to the question posed above is that the wealthy tend to add on causes: there is no cause for which the ratio in the final column is less than 1.0, indicating that the percentage of large estates containing a bequest falls notably

below that for small estates. Animal welfare is the only cause where decedents with large estates have a lower propensity and the difference is very slight; in both cases around 1 in 4 estates contain a bequest. Conditional on bequeathing to charity, those with large and small estates are also equally likely to give to cancer research. Of the five most popular causes overall, the only one where the ratio for large to small estates approaches 2.0 is nursing/care.

The five causes with the highest values of the ratio – 3.0 or over – are human rights, the environment, culture, education, and the residual category 'other causes'. (Note that none of these are among the five most popular causes for those with large estates, and one – human rights – is among the least popular.) The percentage of the wealthy decedents leaving bequests to causes grouped under this last heading is particularly high for very large estates – 1 in 5 charitable estates of £2m or more contain a bequest to charities classified in this group. This represents about 1 in 10 of all estates of this size, including those with no charitable bequests. The residual category includes bequests to charities for which Smee & Ford have been unable to identify the charitable purpose, for example a bequest to a charitable trust named after the decedent where there is no indication as to the cause that the charity serves. In this way, the wealthy may be able to bequeath to charity but have considerable influence over the use of the assets bequeathed through appointment of chosen trustees prior to the date of death. The cause with the biggest ratio between large and small estates is education. Given that a bequest to charity is made, large estates are over 4½ times more likely than small estates to contain a bequest to this cause. And taking into account all testate estates, including those with no charitable bequests, large estates are about 15 times more likely to have a bequest to education than small estates, whereas they are only about 3½ times more likely to contain a bequest to an animal charity.[17]

7. Conclusions

Our main findings may be summarised as follows:

- To understand giving to charitable causes, it is necessary to consider a multi-stage process: leaving significant wealth at death, making a will, including a charitable bequest, the conditions under which a bequest materialises, and the form in which it is made;

[17] There are only modest differences between men and women in the pattern of support for different causes (Atkinson, Backus and Micklewright , 2009, Table 10).

- The different stages in the decision process are influenced differently by the variables that we have considered: age, gender, and the variable on which we have focused in particular, estate size;

- The proportion of decedents *leaving significant wealth* rises steadily with age at death; from age 65 to 90, it is higher for women;

- The percentage *making a will* rises with age, is higher for women, and at first rises sharply with estate size – although it is still only 90 per cent for estates of around £200,000, a level not far short of the top quartile of the distribution of wealth at death;

- Overall, 16 per cent of those making a will *included a charitable bequest*; the percentage rises substantially with estate size – from 10 per cent for the smallest estates in our data to 50 per cent for the largest of over £3m in size; there is some suggestion of a sharper increase around the Inheritance Tax (IHT) threshold, consistent with a price elasticity of the propensity to bequeath of about 0.27;

- Higher wealth at death is associated with testators being more likely to leave an *absolute bequest*, free of conditions, and more likely to leave a bequest of a *specific amount* to charity, as opposed to a bequest of a *residual share* of the estate. (Overall, of those making a charitable bequest, 73 per cent left at least one bequest that was absolute.) It is the rise in absolute bequeathing that accounts for the rise in the bequest propensity with estate size;

- The larger estates typically add further *causes*; while large charitable estates are only a little more likely to contain bequest to some of the most popular causes (and no more likely for animal charities), other causes – most notably education – are much more likely to be favoured by the wealthy.

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Table 1. Distribution of age at death and estate size

	(1) All	(2) Men	(3) Women
Age at death			
mean	79	76	82
10th percentile	61	58	65
25th percentile	73	69	76
median	82	79	84
75th percentile	88	85	90
90th percentile	93	90	94
99th percentile	99	97	100
Estate size (£s):			
mean	221,338	231,848	212,910
10th percentile	22,000	21,000	22,000
25th percentile	58,900	53,000	64,000
median	146,000	141,000	149,587
75th percentile	255,000	255,500	254,000
90th percentile	404,296	416,231	395,504
99th percentile	1,345,789	1,474,567	1,237,808

Notes: Sample size is 240,912 observations. The 'All' figures for estate size include 1,722 observations for which gender is missing; of the remainder, 45.6% are men.

Table 2. Testacy and charitable bequeathing by estate size

(1) Estate range (minimum value, £k or £m)	(2) number of estates	(3) % of estates that are testate	(4) % of testate estates with a charitable bequest	(5) % of charitable estates with an absolute bequest
5	5,806	52.9	10.7	57.3
10	22,458	71.8	12.5	65.3
25	17,187	75.6	12.4	58.5
40	15,470	78.1	12.7	56.5
60	13,642	79.3	12.4	64.3
80	13,934	81.5	11.5	65.9
100	34,570	85.5	12.2	68.6
150	31,154	89.6	13.8	71.0
200	24,144	91.8	15.3	74.1
250	20,415	92.5	17.3	75.3
300	17,530	93.7	22.0	78.7
400	8,709	94.7	27.0	80.1
500	11,622	95.4	32.9	83.1
1m	3,118	96.3	41.2	84.8
2m	571	97.0	43.1	88.8
3m	582	98.6	51.0	79.2
All	240,912	85.1	16.3	72.7

Notes. Sample size is 240,912 observations. The first number in the third column, 52.9, means that 52.9% of individuals with estates worth between £5,000 and £9,999 are testate.

Table 3: Bequeathing by cause

(1)	(2)	(3)	(4)	(5)
Cause	% of charitable estates with a bequest to the cause			Ratio of (4) to (3)
	All estates	<£40k	≥£500k	
Animal	24.9	25	24.2	1.0
Cancer Research	22.8	21.7	22.7	1.0
Hospices/Hospitals	25.4	22.5	27.1	1.2
Medical Research	17.1	14.6	19	1.3
Religious	7.6	6.8	9	1.3
Worship	26.4	20.9	31.3	1.5
Physical Disability	14.8	12.2	19.4	1.6
Family Issues	0.3	0.3	0.4	1.6
Child Welfare	9.9	7.8	13.4	1.7
Mental Health	3.5	2.7	4.7	1.7
Rescue Services	11.7	8.5	15.2	1.8
Nursing/Care	20.3	14.8	28.4	1.9
Aged	6.9	5.6	11.2	2.0
Overseas Aid	8.9	5.9	12.4	2.1
Services	6.3	4.3	9.8	2.3
Human Rights	1.8	1.1	3.2	3.0
Other	6.4	3.6	11.2	3.1
Environment	4.6	2.2	7.5	3.4
Culture	6.6	3.1	12.6	4.0
Education	3.7	1.8	8.6	4.7

Notes: Rows are ordered by the values in the last column in ascending order. There are 3,947 charitable estates of less than £40,000 and 5,424 of more than £500,000. In total, 33,482 estates contained a charitable bequest. The first number in column (2) indicates that among all estates that contain a charitable bequest, 24.9% include at least one bequest to a charity working for animals.

Figure 1. Multi-stage framework for charitable bequests

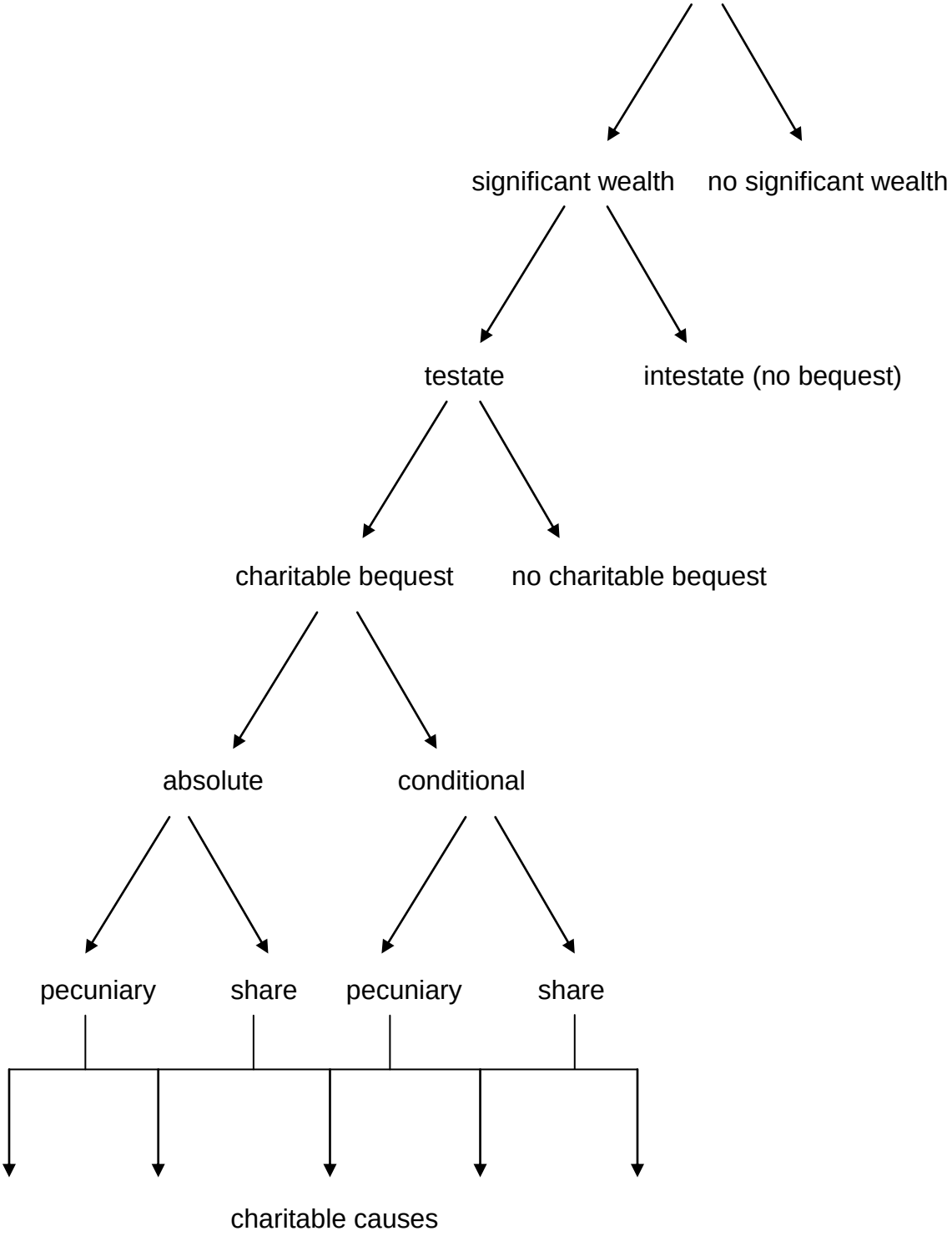
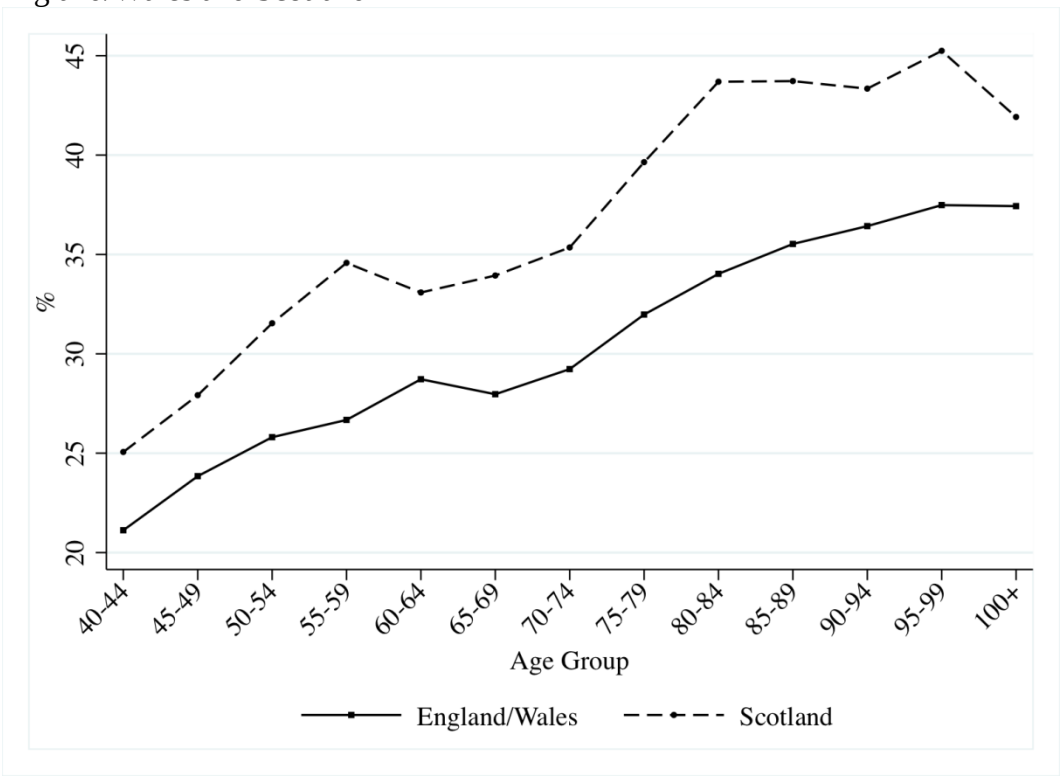
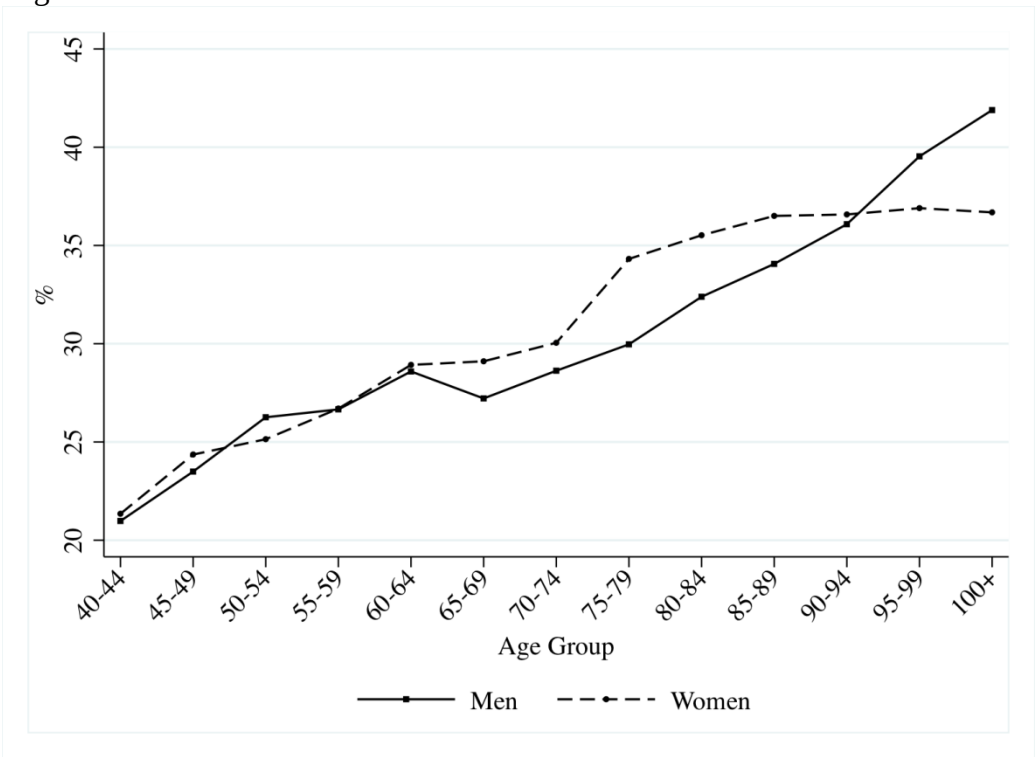


Figure 2. Percentage of decedents with 'significant' wealth

a) England/Wales and Scotland



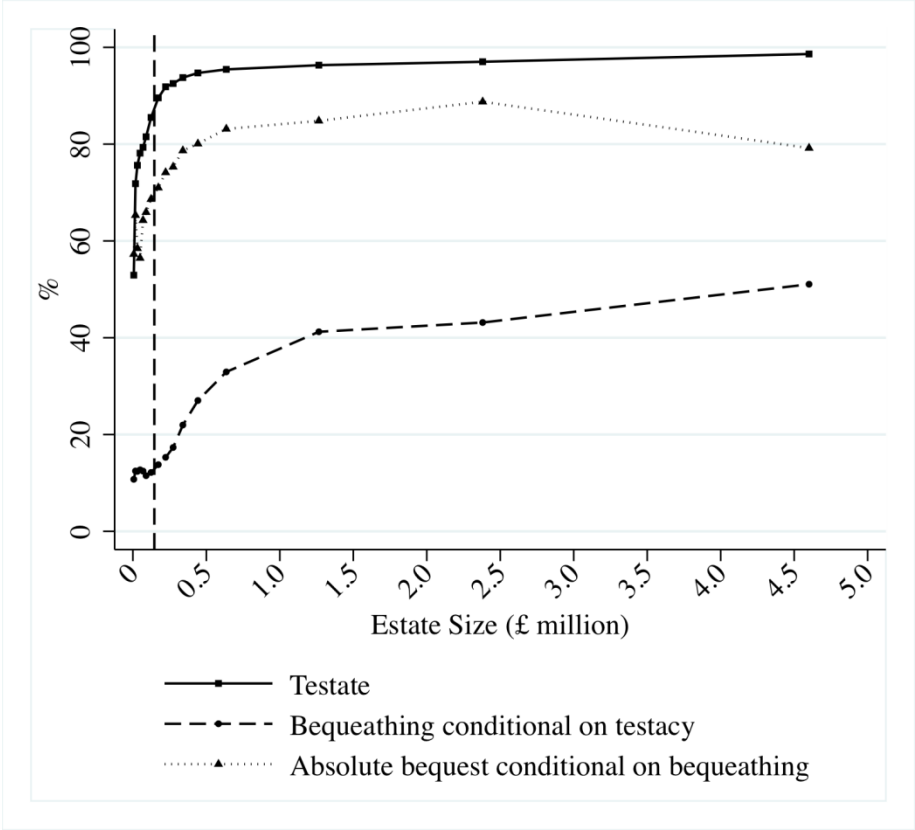
b) England/Wales



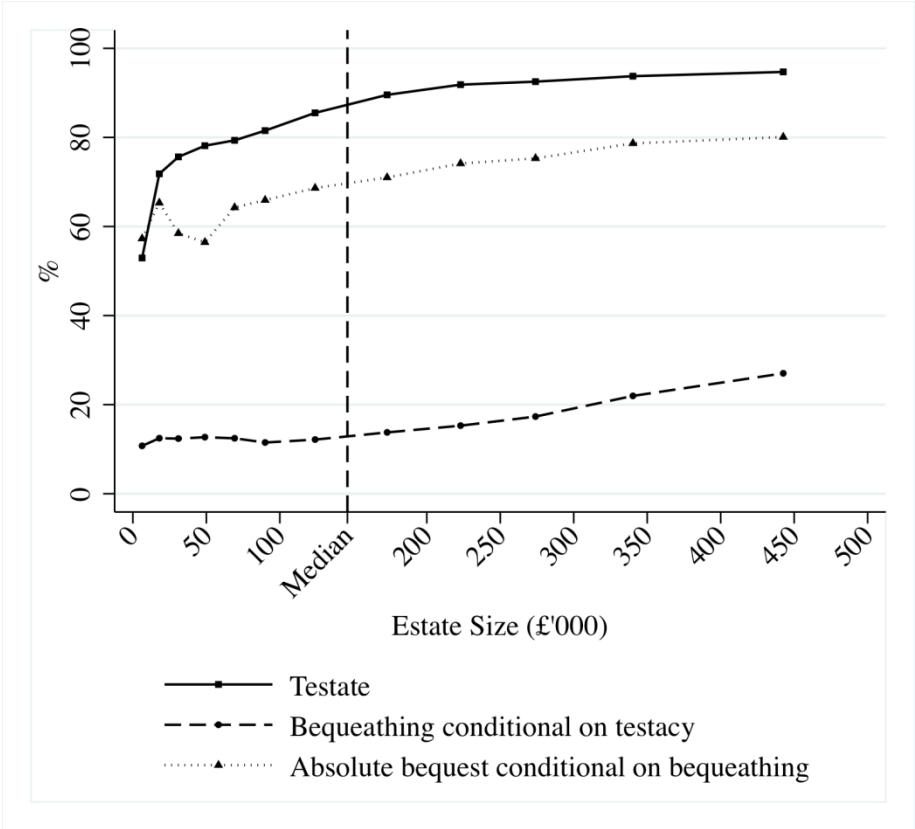
Notes. The denominators relate to 488,103 deaths in 2007 of persons aged 40+ in England/Wales and 53,963 in Scotland and are taken from Office for National Statistics (2008, Table 4) and General Register Office for Scotland, Vital Events Reference Tables 2007, Table 6.4 (together with personal communication with the Office to provide a breakdown for the number of deaths at age 85+).

Figure 3. Testacy, bequeathing to charity conditional on testacy, and absolute bequeathing conditional on charitable bequeathing, by estate size

a) £5,000 to £5 million



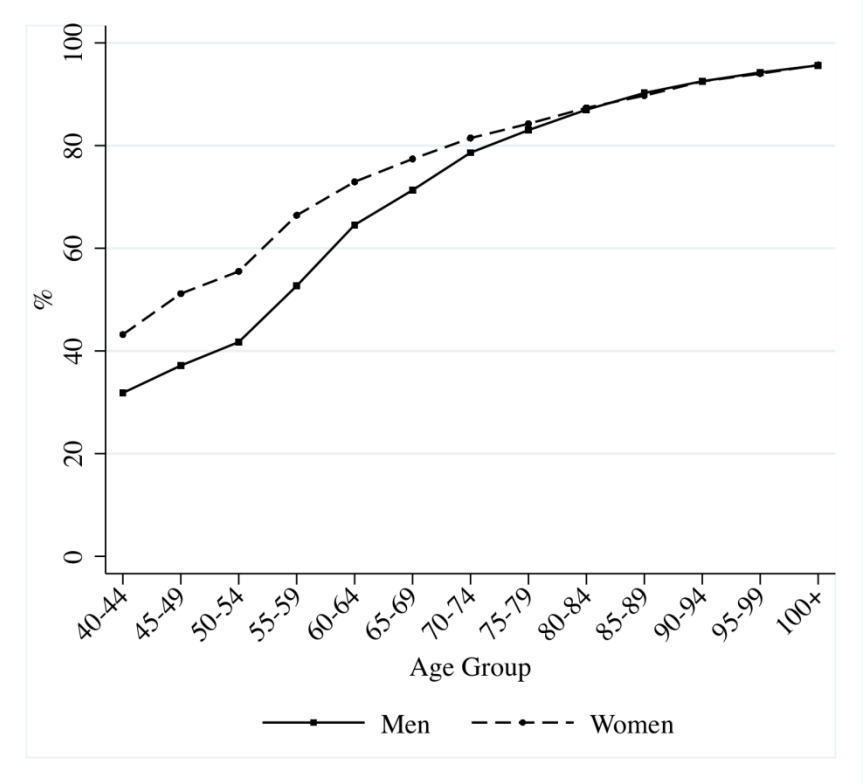
b) £5,000 to £500,000



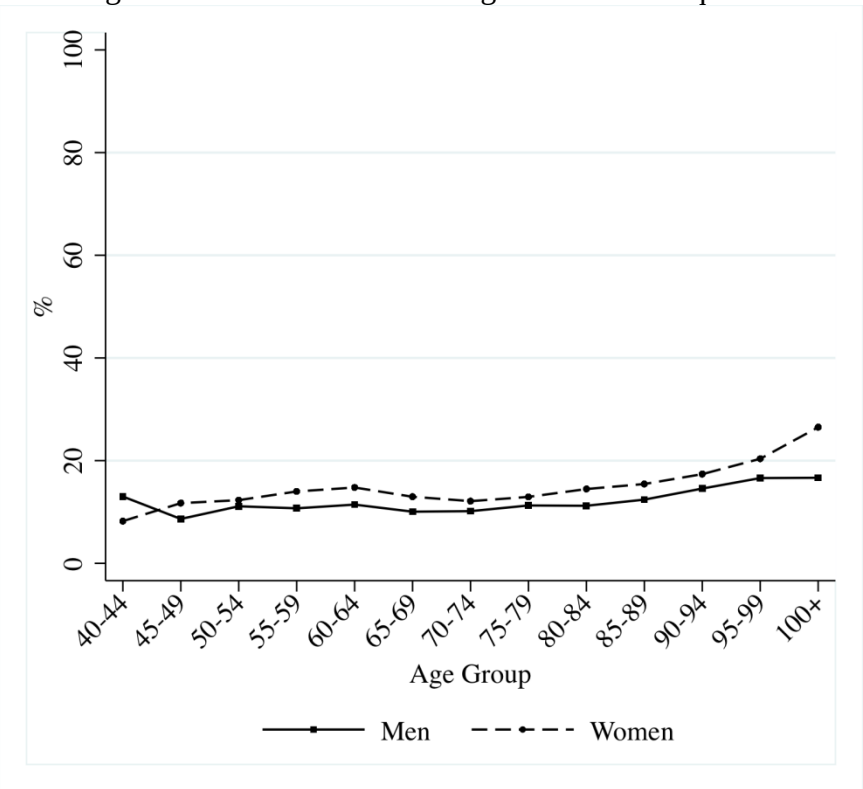
Notes: percentages are plotted against the median estate size in each of the ranges shown in Table 2. The dashed vertical line is at the overall median estate size.

Figure 4. Testacy, bequeathing to charity conditional on testacy, and absolute bequeathing conditional on charitable bequeathing, by age (England and Wales, estates below £300,000)

a) Percentage of estates that are testate



b) Percentage of testate estates containing a charitable bequest



c) Percentage of charitable estates containing an absolute bequest

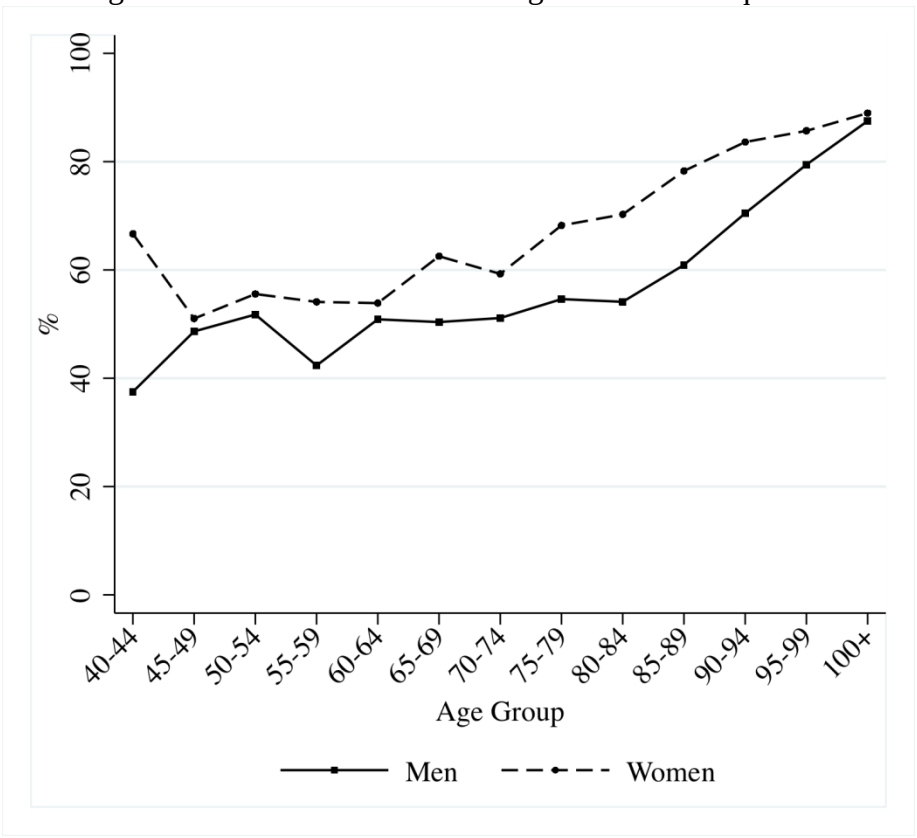
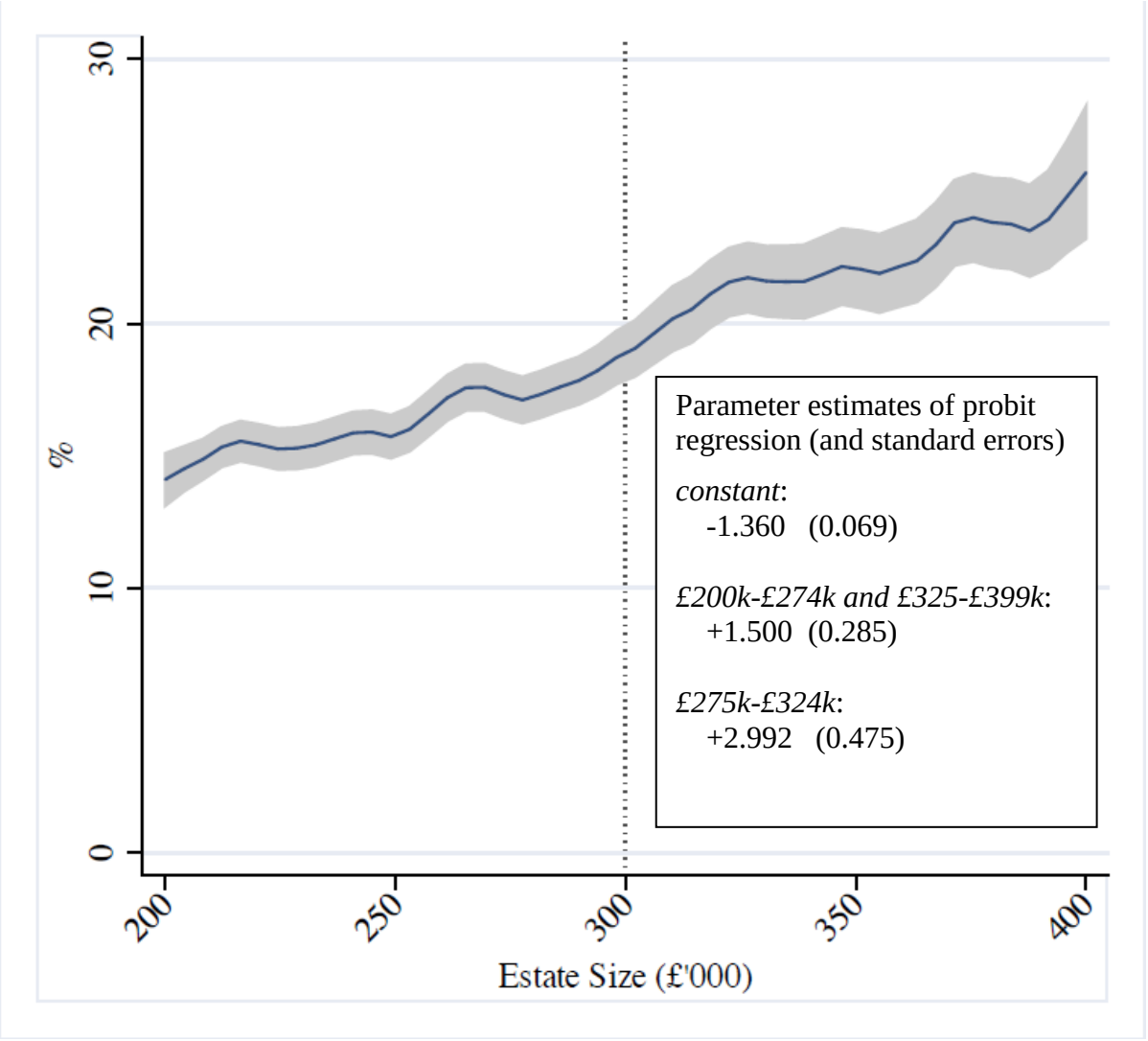


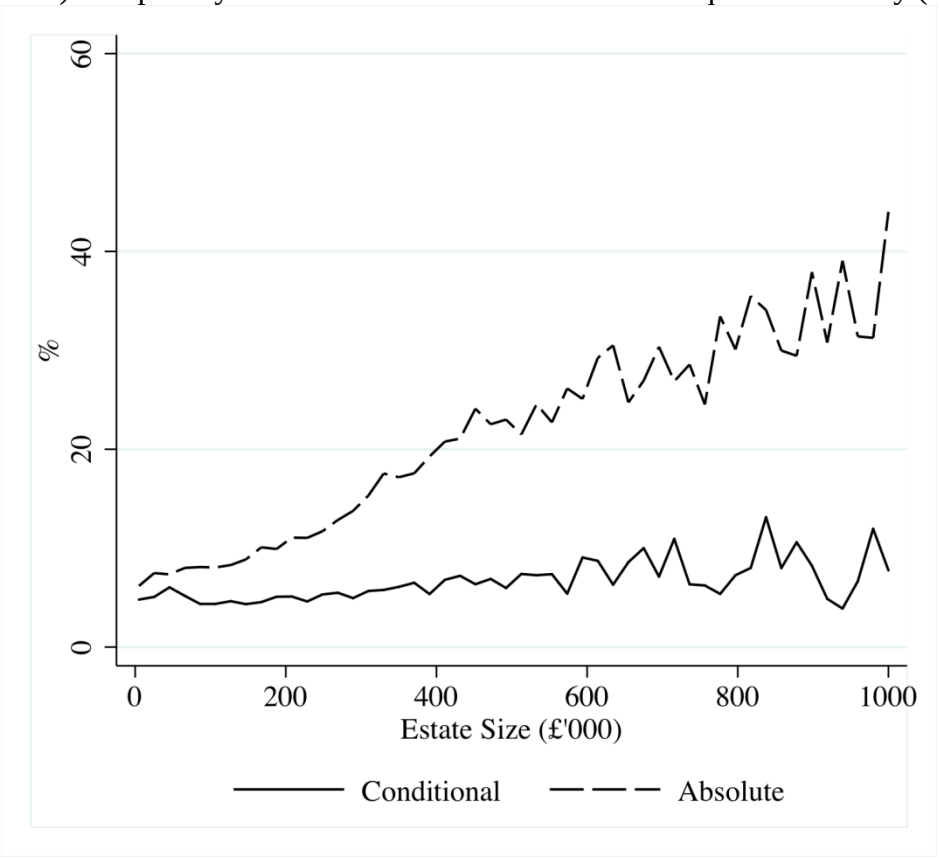
Figure 5. Propensity to make a charitable bequest conditional on testacy around the IHT (estates of £200,000 to £399,999)



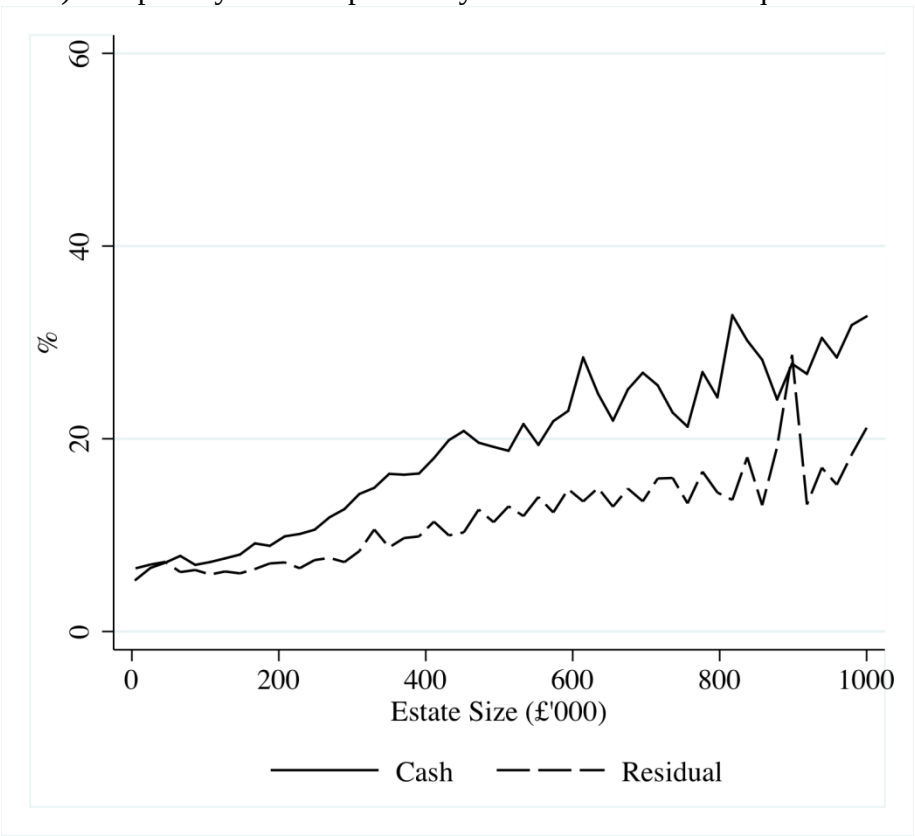
Notes. The vertical dotted line shows the IHT threshold in April 2007-April 2008. The main diagram shows results of a non-parametric regression of the percent probability of making a charitable bequest; the box reports results of a parametric probit regression described in the main text.

Figure 6. The form of charitable bequest by estate size (estates below £1,000,000)

a) Propensity to make absolute and conditional bequests to charity (testate estates)

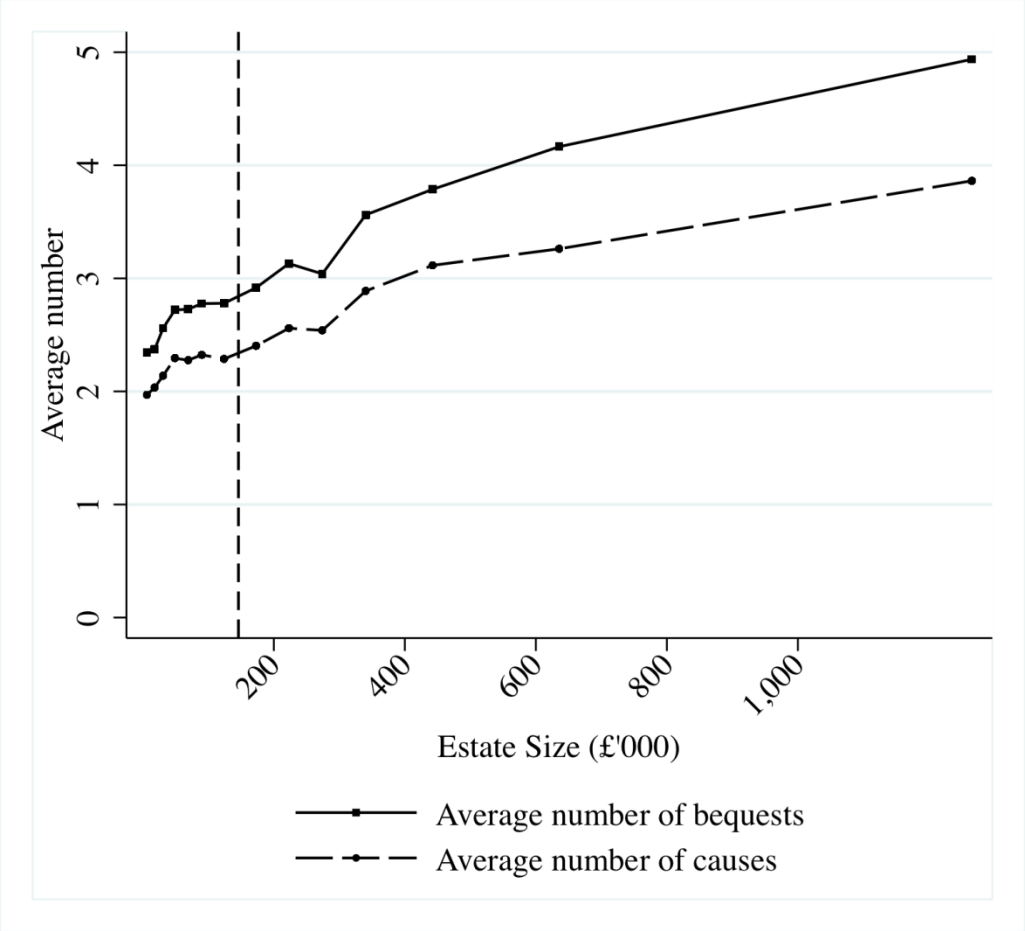


b) Propensity to make pecuniary and residual share bequests to charity (testate estates)



Notes: The diagrams show results of non-parametric regressions of the percent probability of making different types of charitable bequest.

Figure 7. Average number of bequests and number of causes by estate size (estates below £2 million)



Note: percentages are plotted against the median estate size in each of the ranges shown in Table 2.