Estates, bequests, and inheritances in Sweden - A look into the Belinda databases

Mikael Elinder, Oscar Erixson,
Sebastian Escobar and Henry Ohlsson

Estates, bequests, and inheritances in Sweden
A look into the Belinda databases

Mikael Elinder, Oscar Erixson, Sebastian Escobar and Henry Ohlsson

Estates, bequests, and inheritances in Sweden

A look into the Belinda databases

Mikael Elinder[*][†], Oscar Erixson[*][†], Sebastian Escobar[*], and Henry Ohlsson[*]

[*]Department of Economics, Uppsala University
[†]Research Institute of Industrial Economics (IFN)

November 25, 2014

Abstract

The objective of this paper is to describe two new administrative Swedish databases, referred to as the Belinda databases. Together, these databases contain the most detailed individual-level data on estates, bequests, and inheritances currently available. We present descriptive statistics for the key variables in the databases to give a picture of the size of estates, the content of the bequests, and who the recipients of the inheritances are. The statistics may serve as a point of reference for other scholars, but also as an illustration of the various research possibilities that the databases provide and how the data can be matched with other administrative registers. We also, briefly, describe the institutional context regarding intergenerational transfers in Sweden, including the inheritance law and the inheritance tax.

1 Introduction

The objective of this paper is to describe two new administrative Swedish databases, referred to as the Belinda databases.[1] Together, they contain the most detailed individual-level data on estates and inheritances currently available. By presenting descriptive statistics for the key variables in the databases we provide a picture of the size of estates, the content of the bequests, and who the recipients of the inheritances are. The statistics may serve as a point of reference for other researchers, but also as an illustration of the various research possibilities that the databases provide.

Data on intergenerational transfers of high quality are scarce. Studies on the causes and consequences of bequests have relied primarily on three sources of data: household surveys (McGarry and Schoeni, 1995, Wolff, 2002, Laitner and Ohlsson, 2001, Light and McGarry, 2004, Hochguertel and Ohlsson, 2009, Horioka, 2009), tax records (Holtz-Eakin et al., 1993, Joulfaian and Wilhelm, 1994, Wilhelm, 1996, Joulfaian, 2004, Kopczuk, 2007, Bø et al., 2013) and probate records (Menchik, 1980, 1988, Tomes, 1981, Judge and Hrdy, 1992, Arrondel et al., 1997, Brunetti, 2006). While data on estates and inheritances from surveys tend to be coupled with errors such as recall biases, underreporting, and non-response, tax and probate records suffer from the fact that they cover only specific sub-samples of estates (either those which are sufficiently large to be liable to taxation or those which are brought to probate court), which makes it difficult to draw conclusions for the population at large. This is unfortunate given the size and economic significance of the transfers (Kotlikoff and Summers, 1981, Piketty, 2011, Ohlsson et al., 2014).

A yet largely unexploited source of information on intergenerational transfers is estate inventory reports. In Sweden and in many other countries the law prescribes that an estate inventory report should be filed for every individual who passes away. The purpose of an estate report is often to serve as a basis for calculating inheritance or estate taxes and the division of the deceased's property. In Sweden the estate report should, for these reasons, contain the deceased's complete balance sheet of assets and debts at the time of death together with the monetary amounts received by the decedent's legal heirs and beneficiaries of wills and life insurances. Since 2001 the Swedish Tax Agency (Skatteverket) is responsible for collecting and keeping a register on the estate reports, the so-called Inheritance Tax Register.

Statistics Sweden (SCB) was commissioned by Professor Henry Ohlsson at the Department of Economics, Uppsala University, to collect and organize the data from the Inheritance Tax Register.[2] SCB has produced three databases, which have been named the Belinda databases. The first database, hereafter denoted Belinda-Population, contains estate report data for the entire population of deceased Swedes during the period 2001-2005, approximately 400,000 decedents. The second database, hereafter denoted Belinda-Sample contains very detailed information on assets of decedents, who passed away in 2004 and

---

2005, in the Linda database. The Linda database covers a representative sample of three percent of Swedish population.[3] And finally, the third database (Gåvodatabasen) contains data from the gift tax register on all taxable gifts made in Sweden during the period 2002-2004. The gift database will, however, not be further described in this paper.

The Belinda databases are unique in that they cover detailed information on all estates and bequests in a country for several years. Another attractive feature of the databases is that they could be linked to other Swedish administrative registers. These features provide researchers with unique possibilities to answer both old and new questions related to bequests and inheritances.

The outline of this paper is the following. In Section 2 we provide an overview of the institutional background. The focus is on the inheritance laws governing the decedents and the recipients of the transfers. In this section, we also describe the Swedish inheritance tax: how transfers were taxed prior to 2005 and how the tax was repealed. Section 3 details the Belinda databases with a focus on their structure and content. In Section 4, we provide descriptive statistics with respect to the key variables in the two databases. In Section 5, we conclude with a few remarks on the data and their possibilities. Details regarding access to the data and some practical tips to users of the data are presented in an appendix.

2   Institutional background

In this section we give an overview of the institutional details concerning inheritances and bequests in Sweden. We start by giving a description of the Swedish inheritance law. We then continue and describe the estate inventory report as it provides the basis for the Belinda databases and finally, we end the section with a description of the Swedish inheritance tax. References to more comprehensive studies on these issues includes Lodin (2009), Brattström and Singer (2011), Ohlsson (2011), Molin and Svensson (2012), Du Rietz et al. (2012) and Henrekson and Waldenström (2014).

2.1   Inheritance law in Sweden

The default succession scheme in Swedish inheritance law is based on the genetic relationship between the deceased and the heirs. Closer relatives inherit before more distant relatives. The deceased's relatives are classified into three parentelic groups of legal heirs. The law states that each group has to be empty of heirs before continuing to the next. Moreover, it follows from the law that, if the heir is deceased, the inheritance is passed on to the heir's descendants, who then become legal heirs. The default of the succession rule is that the estate is divided in equal shares between the legal heirs. If a legal heir has passed away, his or her offspring share the portion of the passed away heir.

The first parentelic group contains the descendants of the deceased, i.e. children, grandchildren and so on. The heirs in this group are the direct heirs and

---

[3]For a detailed description of the Linda database, see Edin and Fredriksson (2000)

the children are the first in line to inherit.[4] The second group consists of the deceased's parents, siblings, and their descendants (i.e. nephews and nieces). The relatives in this group will inherit the estate if there are no heirs in the first group. The third parentelic group includes grandparents and their children (i.e. aunts and uncles). First cousins are not legal heirs. See Table 1 for a summary of the parentelic groups.

Besides the parentelic groups there are specific rules for surviving spouses. The spouse inherits the deceased's estate with full ownership unless they had common children, or if the deceased had a will stipulating differently. If the deceased and the surviving spouse have common children the estate is transferred to the surviving spouse. However, the spouse does not receive full ownership of the deceased's estate but rather the right to dispose it freely for the remainder of his or her life. This means that the spouse is free to spend the inheritance but prohibited to bequeath it. The common children are defined as direct heirs with a postponed right to inherit (*Efterarvingar*) as they have to wait for their second parent to pass away until they receive the inheritance from the first deceased parent. The deceased's children who are not common with the surviving spouse (*Särkullbarn*) will, on the other, hand inherit immediately when their parent passes away. These children could however cede their inheritance to the surviving spouse, i.e. the stepparent. They are then, similarly to common children, referred to as direct heirs with postponed right to inherit and will receive the inheritance from their parent when the stepparent passes away.

If there is no spouse or no legal heirs in any of the three parentelic groups and no will, the estate will go to a public fund, The Swedish Inheritance Fund (Allmänna arvsfonden).

Unlike married spouses, cohabiters (*Sammanboende*) do not inherit each other by default according to Swedish inheritance law. That is irrespectively of whether or not they have common children. The common children will always receive their inheritances at the death of the first parent if the parents were cohabiters. They could, however, cede their inheritances in favor of the surviving parent and thereby, postpone their inheritance until the death of the surviving parent.

The default succession scheme can be set aside by a will. A will is a legally binding document declaring the deceased's last wish on how the estate should be divided. However, legal heirs in the first parentelic group has right to reserved portions (*Laglotter*). The reserved portion implies that a direct heir is always entitled to a minimum of 50 percent of what he or she would have received in the absence of the will. A will that violates the reserved portion is not invalid. To get the reserved portion the heir must request an adjustment of the will (*Jämkning av testamente*). This should take place within six months after the will becomes public. To assure that the deceased does not circumvent the rule of reserved portions, the inheritance law regards inter vivos gifts as inheritances received in advance.

It should be noted that people write wills for other reasons than to deviate

---

[4]In Sweden adopted children enjoy the same legal status as biological children: the adoptee inherits the adopter and its relatives in the same way as do the biological children. There is however no inheritance right between the adoptee and his or her biological family.

from the intestate succession default. The testator might, for example, have emotional preferences regarding the division of particular assets between the heirs that does not necessarily affect the values of the inheritance lots. Before the reform of the Marriage Act in 1988, it was common to write a will to protect the economic interests of a surviving spouse. It is also common that cohabitants name each other as beneficiaries in wills to protect the survivor from unnecessary financial strains following the estate division.

Life insurances and private pension insurances need a special comment. Payments from both life and private pension insurances accrue to the estate, unless they contain a beneficiary clause naming a beneficiary. In that case the payments from the insurance are not considered part of the estate and hence not an inheritance for the recipient.

Table 1: The default rules of the Swedish succession scheme

Relationship with deceased	Parentelic group	Inherit
Relative		
Children and children's offspring (grandchildren, grand grandchildren, etc.)	1	Directly[1]
Parents and parents' offspring (siblings, nephews and nieces, etc.)	2	If no heirs in parentelic group 1
Grandparents and grandparents' children (i.e. uncles and aunts	3	If no heirs in parentelic group 1 or 2
Non-relative		
Husband or wife	None	Directly[3]
The Swedish Inheritance Fund	None	If no heirs in group 1, 2, or 3 no surviving spouse and no beneficiary of a will.
Others e.g. cohabitants, stepchildren foster children, first cousins, friends and legal entities	None	Only if stated as beneficiary of a will or an insurance policy

Notes: [1]Postponed right to inherit if the surviving parent is married to the decedent, see text. [3]Inherits the estate with free disposal if there are common children, see Section 2.1.

2.2 The estate inventory report

The Swedish inheritance law prescribes that an estate inventory report should be filed for every individual who passed away in Sweden. This has been the rule since 1734. Historically, the main purpose of the estate report has been to serve as a basis for calculating the inheritance tax. The estate report is also a legal document confirming the heirs' right to represent the estate in juridical matters. It also helps in the division of the deceased's property by providing information about claims by outstanding debtors.

The estate report is commonly established by the relatives of the decedent. For large and more complicated estates the report is sometimes established

by law firms, banks or morticians (Ohlsson, 2007a). The report should be established within three months after the demise and be filed with the Tax Agency within one month after completion. Swedish citizens residing abroad and do not have real estate wealth in Sweden are exempted from the rule of estate report filing. Exemption from the rule of estate report filing is also given to decedents whose assets are only sufficient to cover funeral expenses and do not comprise real estate. In the latter case, a so-called estate notification (*Dödsboanmälan*) should be filed with the Tax Agency.

There are formal requirements regarding the information that the estate report should include. The decedent's name, address, personal identity number, date of death and marital status should appear in the report. If the deceased had a will it ought to be included as well. Also, If legal heir(s) claims their reserved portions this should be recorded. The report should moreover contain information on the decedent's assets (real and financial assets, consumer durables and private insurances) and debts. If the decedent was married, marital property and any separate property of the surviving spouse have to be reported. Moreover, the separate property of a cohabiting spouse is to be included among the assets.

The starting point for the valuation of assets and debts is that they should be declared at market values at the time of death of the deceased. The values should be supported by documentation from banks, financial intermediaries, real estate agents, etc. Prior to the repeal of the inheritance tax in 2004, special valuation rules applied to some assets for the calculation of the tax payment. Real estate was for example supposed to be listed at its tax-assessed value, which is supposed to be 75 percent of the market value, whereas the value of a co-operative apartment (*Bostadsrätt*) should correspond to the member's share of the value of the association. Moreover, any businesses of the deceased were valued at their estimated sales value. Regarding corporate stocks registered on a stock exchange, these were taken up at 80 percent of their full market value whereas unlisted stocks were assessed at 30 percent of their book value.

The estate report should also include the names, person identity numbers, and relationships with the deceased, of the estate trustees (*Dödsbodelägare*), i.e. the deceased's legal heirs and beneficiaries of wills. Regarding the legal heirs, it should be indicated in the report whether they are direct heirs or direct heirs with postponed right to inherit. It should also be noted in the estate report if the estate division of a previously deceased spouse affects the division of the current estate. The earlier estate report is to be added as an attachment to the current report if that is the case. If the deceased had an insurance policy with a beneficiary clause this should be mentioned in the report together with the name and identity number of the beneficiary as well as the value of the insurance payment.

As mentioned earlier, the estate report should be filed within one month after its completion. However, if new information about assets or debts that belong (or do not belong) to the estate is revealed after the completion, or if the report is coupled with other errors, the law prescribes that a so-called supplemental estate report (*Tilläggsbouppteckning*) following the same format as the original estate report, should be filed with the Tax Agency.

2.3 The Swedish inheritance and gift tax

Sweden has had a nearly 700 year's long tradition of taxing inheritances and bequests. Prior to December 2004, legal heirs and beneficiaries of wills in Sweden were subject to inheritance taxation according to the laws stipulated in the Inheritance and Gift Tax Ordinance (Lagen om arvsskatt och gåvoskatt: AGL). The main rule was that the inheritance became liable to taxation from the day the decedent passed away. Postponed inheritances were however exempted from this rule since they were taxed upon receipt. The law defined three classes of taxpayers (Class 1-3), depending on the heir's relationship to the decedent. Class 1 contained the deceased's children, their descendants and – before 2003 – spouses and cohabitants. Class 2 constituted all other heirs, and Class 3 legal entities such as public institutions, charities and foundations. For heirs in Class 1, amounts exceeding a basic deductible exemption of SEK 70,000 were taxed according to a progressive tax schedule of three marginal tax brackets: 10 percent, 20 percent and 30 percent.[5] These tax rates applied to classes 2 and 3 as well, but the deductible exemption for these classes was SEK 21,000. In Table 2 we report the tax schedules for the three tax classes. Inheritances received by charitable organizations and foundations supporting research and education were exempted from taxation.

The inheritance tax was accompanied by a gift tax. The gift tax applied to transfers that the deceased had made to the heirs during the years before the demise. This was to counteract donors shifting their wealth prior to death in order to minimize inheritance taxes. All gifts, and not only those related to intergenerational transfers, were liable to gift taxation. The gift tax rates were the same as the inheritance tax rates, but the basic deductible exemption amounted to SEK 10,000 annually.

The Tax Agency was responsible for collecting the inheritance tax. The sum of the heirs' tax payments constituted the tax payment that was to be paid by the estate.[6] The starting point for calculating the tax was the taxable part of the estate, which is the deceased person's estate, net of outstanding debts and, if the decedent was married, removal of the spouse's right to its marital property – usually half of the estate. The Tax Agency calculated the inheritance lots by dividing the taxable part of the estate according to a schematic distribution following the legal rules of the succession scheme and the terms of the decedent's will.[7] Beneficiaries of wills were prioritized in the distribution. The remainder of the estate was divided in equal portions between the legal heirs. Any prop-

---

[5]Children of widowed decedents commonly receive two inheritances when the last parent passes away. These were taxed separately. From each inheritance lot, SEK 70,000 was exempted from taxation. The exchange rate fluctuated around 8 SEK/USD, 9 SEK/EUR, and 14 SEK/GBP during the period 2001-2005. A USD bought more SEK in the beginning of the period and fewer in the end and so did GBP as well. The SEK/EUR rate was comparatively stable.

[6]The estate was not obliged to pay the tax on insurance acquisitions from beneficiary clauses. The beneficiary was responsible for paying the tax.

[7]Those in charge of the estate had the possibility to replace Tax Authority's schematic distribution with the actual distribution. The allotment and the valuation of assets had then to be in accordance with the inheritance law and the estate division document had to be handed in to the Tax Agency before it decided on the matter. The schematic distribution was however often preferred as it generally led to a lower tax payment (Du Rietz et al., 2012).

Table 2: The inheritance tax schedule

Inheritance (net of deduction)[1]			Tax payment		
Surviving spouse and Class 1					
	<	300 000			10%
300 000	-	600 000	30 000	+	20% within bracket
600 000	<		90 000	+	30 % within bracket
Class 2					
	<	70 000			10%
70 000	-	140 000	7 000	+	20% within bracket
140 000	<		21 000	+	30% within bracket
Class 3					
	<	90 000			10 %
90 000	-	170 000	9 000	+	20% within bracket
170 000	<		25 000	+	30% within bracket

Notes: All amounts in SEK. The amounts were not adjusted for inflation. [1]The deduction for surviving spouse was SEK 280,000 SEK. It was SEK 70,000 for heirs in Class 1 and SEK 21,000 for heirs in Class 2 and 3.

erty that the deceased had possessed with free disposal was divided between the previously deceased spouse's legal heirs and legatees. In practice, the Tax Agency divided the joint estate of the decedents into two parts: one from the first decedent and one from the second decedent, which were then distributed in equal portions between the heirs of the two decedents, respectively.

Gifts to legal heirs that had taken place during ten years before the deceased's death were to be considered inheritances in advance according to AGL. The Tax Agency added these transfers to the heir's inheritance lot and taxed them jointly. Heirs have the possibility to partly or completely cede the inheritance to their descendants (usually the deceased's grandchildren).[8] The AGL made ceding attractive because each grandchild was entitled to the basic the inheritance tax exemption. This reduced the total tax bill. Empirical estimates indicate that this strategy was widely used for tax minimizing purposes (Ohlsson, 2007b). Had the heir ceded a part of the inheritance, the tax payment was calculated from the inheritance lot reduced with the ceded amount. For beneficiaries of cedes, the Tax Agency taxed the received amounts according to the same scheme that applied to inheritances (see Table 2).

2.3.1 The repeal of the AGL

After a proposal by the Property Tax Committee (SOU, 2003:3) the Social Democratic Government decided to repeal the inheritance and gift tax for spouses and cohabitants from January 1, 2004. And, in the Budget presented

---

[8]It is required that the ceded amount should be equally shared between the heir's descendants.

to the parliament on September 20, 2004, the Government announced that the AGL was to be repealed completely starting at January 1, 2005.[9] However, of concern of the bereaved relatives of the many Swedes who passed away in the Asian Tsunami on December 26, 2004, the Parliament passed a law in April the following year on inheritance tax exemption for the period December 17–31, 2004, implying that the AGL was effectively abolished on December 17.

At present, there is no systematic research on what factors contributed to the repeal of the AGL (Du Rietz et al., 2012). The motivation for the repeal provided by the Government was that the inheritance and gift taxes generated low revenues relative to their costly administration. It should be noted however that the legislation had long been criticized by the major business organizations in Sweden – The Confederation of Swedish Enterprise (Svenskt Näringsliv) and The Swedish Federation of Business Owners (Företagarnas Riksorganisation) – for complicating transfers of family firms. Escalating tax values on real estate in the early 2000's had also led to a public debate about the AGL, as many heirs, especially widows, had difficulties affording the increasingly large tax payments (Silfverberg, 2005).

3   The Belinda databases

In this section we give a schematic description of Belinda-Population and Belinda-Sample. The reader is encouraged to consult Appendix A for an instruction of how to get access to the data as well as for a more practical guide to the databases. In Figure 1 we give an overview of the data by showing how the databases and their components are related.

3.1   Belinda-Population

Belinda-Population contains information on all estates of Swedes who passed away over the period from July 2001 to December 2005 and for whom an estate report or an estate notification was filed with the Tax Agency. The reason for why the database begins in July 2001 is that the Tax Agency since then is responsible for keeping a register on estate reports. Before July 2001, the estate reports are not easily available as they were filed at any of the 48 the district courts (Tingsrätterna) which are scattered around Sweden.

For the decedents, Belinda-Population constitutes three sub-databases, which can be linked to each other through the deceased's person identity number. The sub-database (Avliden) contains data on all legal variables appearing in the estate report (see section 2.2) and the value of the estate. The values of assets and debts making up the estate are reported in two separate databases: Total Tillgångar (for assets) and Total Skulder (for debts). For both assets and debts there is information on the values that constitute the separate property of the deceased. For married decedents and decedents who were cohabitants there is

---

[9]The AGL had been evaluated in several governmental reports of the Swedish tax system over the years preceding the repeal. The reports had proposed a series of adjustments to the existing rules, including reductions of the tax rates and reforms of the valuation principles (see for example (SOU, 2002:52); (SOU, 2003:3) and (SOU, 2004:66).

Figure 1: Structure of the Belinda databases
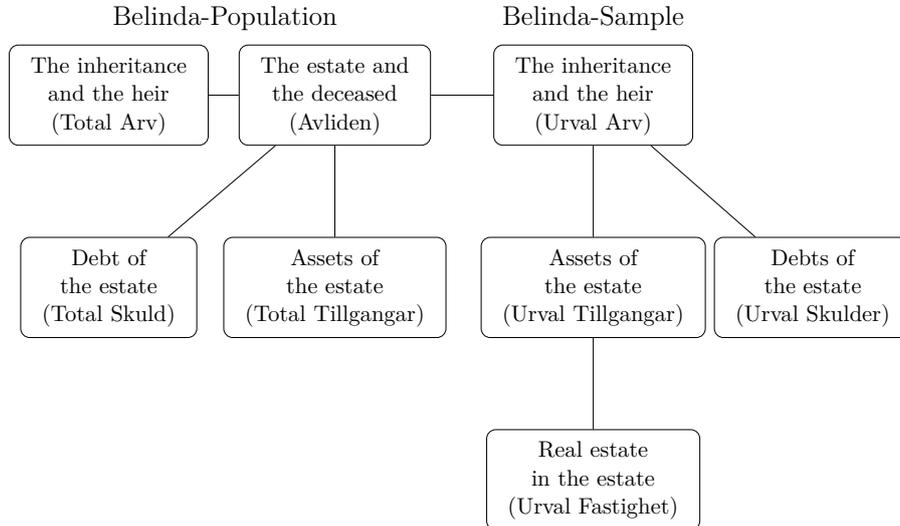
Notes: The figure describes the data structure and how they are linked to each other. The first line describes its content and the second line is the name of the dataset.

also information on the separate property of the surviving spouse. Although the requirement is that the types of assets comprising the estate should be listed in the estate report this information is not included in the database; the Tax Agency was primarily interested in the aggregate amounts for calculating the inheritance tax. Moreover, because the Tax Agency's incentives to keep track on monetary variables in the estate reports disappeared after the repeal of the AGL, the data on economic variables is of poor quality from December 17, 2004 and onwards.

The recipients of transfers (i.e. legal heirs, beneficiaries of wills or insurance policies, and recipients of cedes) are reported in a sub-database denoted Total Arv. The case number assigned to each estate report in the Inheritance Tax Register links the decedents to the heirs.

Total Arv contains information on characteristics of the recipients from the estate reports, e.g. person identity number, relationship, etc. Data on the values of transfer receipts, i.e. inheritances, ceded amounts and receipts from cedes, are collected from the Inheritance Tax Register. The values of insurance acquisitions from beneficiary clauses are also reported in the database. Moreover, from the tax register there is data on the value of the deduction that applied to each inheritance as well as the values of taxable gifts received during the ten years preceding the demise.[10] Data on the resulting tax payments with respect to inheritance and insurances acquisitions, exceeding the tax thresholds, are reported as well.

---

[10]The deductible amount reported in the database may differ from the standard deduction (e.g. SEK 70,000 for direct heirs). This is because the heir have received a part of the inheritance previously and have then paid (a part of) the inheritance tax.

For cases where the estate of a previously deceased parent affects the division of the current estate there is information on the amounts received from the previously deceased parent, i.e. the postponed inheritance. This is commonly the case for children to widows or widowers.

3.2 Belinda-Sample

The basis of the Belinda-Sample is a representative sample of decedents who passed away in 2004 and 2005. It covers the decedents in the LINDA database, which is a panel covering a sample of around 300,000 individuals, representative for the Swedish population. Employees at SCB coded the information in the estate reports of these decedents manually. The motivation behind Belinda-Sample is twofold. First, by covering individuals who passed away during the year before and the year after the repeal of the inheritance tax, the database enables researchers to study questions related to inheritance taxation. Second, the database provides more detailed information about the assets and debts of the decedents than does Belinda-Population. This allows researchers to study more thoroughly questions regarding the composition of peoples' financial portfolios at death.

The structure of Belinda-Sample is as follows. The decedents are identified through a variable named Urval in the sub-database Avliden, in Belinda-Population. The deceased's assets are reported in two separate sub-databases: Urval Tillgångar and Urval Fastighet. Urval Tillgångar details the type and the values (tax and market values) of the deceased's financial assets (e.g. bank holdings, stocks, bonds, etc.) whereas Urval Fastighet contains similar data on the real estate wealth (i.e. possession of houses, co-operative flats and agricultural property). Both databases report whether the particular asset is separate or joint property of the deceased or a surviving partner. Data on the debts are reported in the database titled Urval Skulder. Similarly to the two databases on assets, Urval Skulder details both the type of debts (bank and student loans, funeral expenses and expenses for preparing the estate report) as well their monetary values. For decedents who passed away in 2004, before the tax repeal, the aggregate sum of assets and debts in the Urval databases matches the values of the corresponding variables in Total Tillgångar and Total Skulder. This is not the case for decedents who passed away after the tax repeal however, since the Tax Agency has only occasionally reported economic values after December 2004, when the inheritance tax was abolished.[11]

4 Descriptive statistics

In this section we present descriptive statistics with respect to the key variables in Belinda-Sample and Belinda-Population. There are three main purposes of this: First, to provide a point of reference for other researchers working with the

---

[11]For decedents in the sample there are two variables that could be used to construct unbiased estimates of population aggregates (and the variance of that estimate). Readers interested in constructing such aggregates are advised to consult Edin and Fredriksson (2000) for a detailed description.

data. Second, to illustrate the wide range of variables available in the databases and the possibilities they provide for research on various topics. Third, to provide a picture of estates, bequests, and inheritances in Sweden.

In our depictions, we distinguish between the donors and donees of the transfers. To provide a richer characterization of the individuals we have coupled the data with variables from other administrative registers such as the Swedish Birth Register and the Integrated Database for Labour Market Research (LISA).

4.1 The decedents

Just over 90,000 individuals passed away in Sweden during each of the years in the dataset. It corresponds to about one percent of the annual total number of inhabitants in Sweden during the period. In this section we focus on decedents who passed away in 2003. The analysis is based on 88,139 decedents. It is slightly less than the total number of deceased in Sweden in 2003. The reason is that we only consider decedents for whom an estate report or an estate notification has been filed with the Tax Agency.[12]

The data show that people leave a substantial amount of wealth when they pass away. The aggregate value of the estates that were transferred from final decedents to heirs (other than spouses) in 2003 was SEK 12.5 billion (about USD 1.5 billion). This corresponds to 0.5 percent of the Swedish GDP that year. In the following sections we describe the economic as well as the legal characteristics of these transfers.

4.1.1 The estates

In Table 3 we present descriptive statistics for the estate, both for the total number of decedents and separately by the their marital status. 84 percent of the decedents leave positive estates. The average estate amounts to SEK 251,452. Table 3 also shows that estates of married and never married decedents are similar in size (SEK 324,091 and 321,536, respectively) and substantially larger than the estates of widows and divorced (SEK 190,489 and 174,538, respectively). From a comparison of the mean and the median as well as from the Gini coefficient it is noted that the estate distribution is right skewed. This finding accords with the findings in the previous literature on estates and bequests (Davies and Shorrocks, 2000).

In Table 4 we present descriptive statistics for the legal variables in the estate reports and demographic characteristics of the decedents. The table is divided into five columns. In the first column we report the statistics for all decedents and in the preceding columns we present them conditional on the deceased's relationship with the first heir in the succession order. In other words: in the second column we report the statistics for decedents who had a surviving spouse while in the third, fourth and fifth columns we report them for decedents with heirs in the first, second or third parentelic group respectively. The last column reports the statistics for decedents with heirs outside the succession order.

---

[12]Estates subjects to ongoing legal processes appear in the database, but are not included in the analysis. Moreover, we have excluded decedents for whom information on the person identity number is lacking.

Table 3: Characteristics of the estates, by the deceased's marital status

	Total	Married	Widowed	Never married	Divorced
Mean	251,452	324,091	190,489	321,536	174,538
Median	110,817	209,864	81,091	97,869	31,831
Gini	0.60	0.52	0.62	0.64	0.68
Estates with positive value (%)	84	89	88	77	66
Observations	88,139	29,988	35,462	11,760	10,929

Estates in 2003. Economic variables are reported in 2003 price level.

The table shows that 22 percent of all decedents have a written will. It is lower than what has been reported in studies on will writing from other countries. In the United States, for example, 40-50 percent of the living population, and as many as two thirds of those older than 70 years have a will (Rossi, 1990, Schwartz, 1993, Goetting and Martin, 2001, Lee, 2000). From the table it can be noted that the incidence of wills is lowest among decedents with heirs in the first parentelic group (15 percent). The most likely reason for this is that the deceased's preferences regarding the estate division and the default succession scheme coincide for this group. Erixson and Ohlsson (2014) show that few parents have wills declaring that the estate should be unequally divided between their children. As noted in Section 2.1 the succession rule default is that estate goes to a public fund if the deceased does not have a surviving spouse or legal heirs. The last column shows that almost 2,000 decedents fall within this group. The high incidence of wills in this group may indicate a reluctance to let the money go to this fund.[13]

We see that 19 percent of the decedents have an insurance policy with a beneficiary clause. The incidence is highest among decedents with a surviving spouse. Previous gifts are recorded in only 4 percent of the estate reports. It should be noted however that this number refers to taxable gifts. Decedents may have given nontaxable amounts or unreported amounts. The incidence is highest among deceased with heirs in the first parentelic group. The decedents have on average 1.75 children. Decedents with heirs in parentelic groups 2 and 3 and in the no family relation category have no children. This follows directly from how the table is constructed as, if they would have had children, they would have been reported in the column for parentelic group 1 or in the column for spouses (if married). A comment on the number of donees is needed. The variable summarizes the number of persons affected by the estate division directly or indirectly, i.e. it does not only include direct heirs but also those who have received cedes from direct heirs and beneficiaries to life insurance policies. This explains why the average number of donees to married decedents is 3.77 even though a surviving spouse usually inherits the entire estate. It also explains why there are on average more donees than children in the column for the first

---

[13]The 35 percent of the those who pass away without heirs that do not have a will correspond to 679 individuals. This matches the number stated by the public fund on their homepage http://www.arvsfonden.se/om-arvsfonden

parentelic group even though wills are uncommon.

The share of men in the population is 48.5 percent and the average age at death is 79 years.

Table 4: Legal and demographic characteristics of decedents, by relationship of first heir in the succession order

| | Total | Spouse | Parentelic group | | | No family |
			1	2	3	relation
Will (%)	21.95	22.40	15.39	36.14	34.86	65.22
Insurance (%)	18.86	28.33	14.37	13.62	21.10	8.66
Previous gifts (%)	4.20	2.56	6.09	1.90	1.83	2.72
Number of children	1.75	1.97	2.21	0.00	0.00	0.00
Total number of donees	3.88	3.77	3.11	6.85	3.20	3.06
Men (%)	48.50	68.97	33.52	51.38	72.48	47.54
Age of deceased	79.21	76.34	82.33	75.09	62.41	82.15
Observations	88,139	29,815	43,287	12,975	109	1,952

Notes: Statistics are in percent, unless otherwise is stated. Decedents in 2003. Average number of donees refers to the number of persons mentioned in the estate inventory report (see discussion in text, Section 4.1.1). Number of children refers to the number of children in the estate inventory report. Parentelic group 1 includes children, grandchildren etc. Parentelic group 2 includes parents and siblings. Parentelic group 3 includes grandparents, aunts, and uncles.

4.1.2 Division of joint property for married decedents

Table 5 shows the composition of assets and the division of joint property for a married couple at the time of the death of the first spouse.

The married couple's wealth is divided into four categories: separate property and joint property of the deceased and separate property and joint property of the surviving spouse. As noted in Section 2.1 separate property is included in the division of property between spouses. The property can be separate because of a pre-nuptial agreement (*Äktenskapsförord*) or because the individual has inherited the wealth with the restriction that it should be separate property. Table 5 shows that separate property accounts for only less than 10 percent of total property.

The shares of survivor and decedent after division of the joint property

amounts to SEK 406,782,330 and 385,138, respectively.[14] For the decedent this amount is the estate.[15] The discrepancy in values between the spouses depends on the separate property, which is larger for the surviving spouse than for the deceased spouse (SEK 39,683 vs SEK 18,040). The value of the (net) joint property before estate division is SEK 369,604 for the decedent and SEK 367,099 for the survivor.

Table 5: Assets and debts of married couples, at the death of the first spouse

| | Deceased spouse | | Surviving spouse | |
	Separate property	Joint property	Joint property	Separate property
	Before division of joint property			
Assets	27,705	456,621	407,666	43,561
Debts	9,665	87,016	43,073	3,878
Net worth	18,040	369,604	364,593	39,683
	After division of joint property			
Net worth	18,040	367,099	367,099	39,683
	Total share (the estate)		Total share	
Net worth	385,138		406,782	

Notes: All statistics are means. Married decedents in 2003 with non-negative value of the estate. The number of observations is 28,254. Economic variables are reported in 2003 price level. The joint properties of the deceased and surviving spouse are divided equally.

4.1.3   Estate size and age

Figure 2 shows the relationship between the size of the estate and age of the decedent. Each bin in the figure contains all individuals of that specific age, in years, and the estate value for the bin refers to the average calculated over the individuals within the bin. It appears as if individuals accumulate wealth until death unless, they pass away at very high ages. The figure indicates steady accumulation of wealth up until the mean age in the population of decedents (about 80). This finding contrasts with the prediction of the life-cycle model, that people spend their accumulated savings in retirement and pass away with zero wealth, but is in line with the findings in the previous empirical literature on the age-wealth nexus. Similar patterns of wealth accumulation have been interpreted as if people have a desire to leave bequest (Kopczuk, 2007). It should

---

[14]The joint property of the deceased and surviving spouse is divided equally.

[15]Note that the mean estate in Table 5 does not match the mean estate for married decedents in Table 3. There are two main reasons for this. First, exceptions to default rules of estate division, which have been used to calculate the variables in Table 5, may apply. Some surviving spouses may have received more than half of the joint property. Second, the samples differ slightly. In Table 3, estates of decedents with negative wealth are zero, since net debts are not inherited. In Table 5, decedents with negative net wealth are excluded, otherwise the net of assets and debts does not match the estate size.

Figure 2: Relationship between estate size and age of decedent
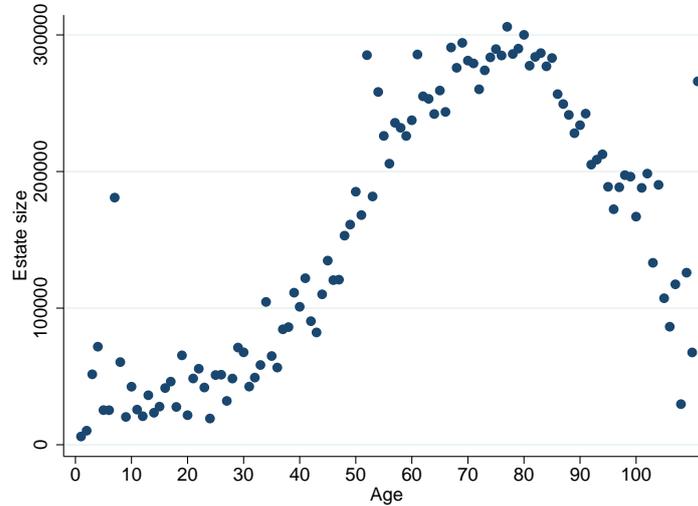
Notes: Mean estate size by decedent's age. All decedents in 2003. Estate size is reported in 2003 price level. Each age-bin is one year.

be noted that the bins in the upper and lower ends of the diagram consists of very few observations. This explains the outliers and the noise in these regions. Also, cross sectional representations of this kind are most likely biased by the relationship between longevity and wealth as well as by cohort effects.

4.1.4 Assets of the estate

Belinda-Sample, described in Section 3.2, contains information on the assets that comprises the estate. The mean value of these assets and their share of the total value of assets in the estate are presented in Table 6.

Before discussing the table, a note on the computation of its values is necessary. The categories in the table are aggregates over sub-categories of asset types. In the data, financial assets such as stocks, bonds, etc., are, for example, divided into several categories according to how they are taxed. Also, to determine which assets that belonged to the decedent and which assets that belonged to a surviving spouse (and in the case of a deceased widow or widower: that belonged to the previously deceased) we use the default rules of division of joint property in Sweden. The default rule does not always apply, but it gives a good approximation of the actual values. We evaluate the approximation with Belinda-Population, which contain information on total value of assets for decedents in 2004. The total asset value of Belinda-Sample, calculated using the default rule, matches the asset value in Belinda-Population in 85 percent of the cases.[16] It should also be noted that the values of the assets are given in tax value. In other words the total value of assets indicated is lower than the market

---

[16]If we allow for an difference of maximum SEK 100.

value as some assets are not taxed to the full amount. This also affects the asset category's share of the total value. For instance, cash (in Bank holdings) is in market value while stocks (in Financial assets) are reported at 30 or 80 percent of their market values.

The average tax value of all assets in the sample is SEK 917,077. It may seem high compared to the values reported for married decedents in Table 5. The reason for the high values is most likely that the sample size makes the estimates sensitive to outliers. The maximum value of assets in the sample is 82 million but the median is only 250,216. There is a similar pattern for the individual assets as well. Financial assets makes up 39 percent of the total assets and their average value are SEK 358,099. The second largest asset group is bank holdings constituting one third of the assets and its average value is SEK 301,174. 21 percent of the total asset value consist of real estates, with an average value of SEK 197,102. Inventories and insurances constitute the smallest asset classes (3 and 4 percent of the estates) and amounts on average to SEK 24,962 and 35,681, respectively. Note that insurances with beneficiary clause are not included in the estate and therefore not included in the assets of Table 6.

Table 6: Components of the estates

	Value	% of Total
Real estate	197,102	21
Bank holdings	301,174	33
Inventories	24,962	3
Financial assets[1]	358,099	39
Insurances	35,681	4
Total	917,077	100

Notes: All amounts represent mean tax values and are calculated using Belinda-Sample. Economic variables are reported in 2003 price level. The variables are constructed using decedents in 2004 and the default rules for division of joint property. Only insurances without beneficiary clause included.[1]Excluding bank holdings.

4.2 The donees of transfers

In this section we describe the donees of the transfers. The Belinda databases contain data on more than 1 million donees. As pointed out earlier, not all of these individuals are direct heirs. Some are included in the data because they get a postponed right to inherit at the death of their first parent, because they are legatees or beneficiaries to a life insurance policy or because they have received a cede from a direct heir.

4.2.1 The transfers

Table 7 shows the characteristics of heirs by their relationship to the decedent. All columns but *Spouse* and *Total* are conditional on the decedent not being

married.

The majority of the donees are either spouses or relatives in the first or second parentelic groups. Children account for almost a quarter of the observations in the first group and thereby constitute the largest share. In the second parentelic group, nephews and nieces are in majority. Few donees are in the third parentelic category or outside the succession order.

Spouses receive the largest inheritances (SEK 259,902), which is natural as they almost always inherit the entire estate. The average inheritance among children is SEK 62,062. Notably, neither the average inheritance of surviving spouses nor the average inheritance of children is liable to inheritance taxation. The inheritances of grandchildren are quite small, SEK 10,562 on average. But 65 percent of the grandchildren in the data have received cedes. The average cede is SEK 28,037.

The inheritance of cohabitants amounts to SEK 98,404. The reason that it is smaller than the inheritance of spouses is, most likely, that the reserved portions of the decedent's children (if any) restrict the size of the bequest to a cohabiting spouse. Cohabitants receive the, by far, largest life insurance payments. Since these insurances are omitted from the estate and thus, can be used to circumvent the reserved portions, this finding indicates that life insurances are used to ensure the financial security of cohabitants.

Table 7: Characteristics of received transfers, by donee's relationship to the decedent

| | Spouse | Parentelic group 1 | | | | Parentelic group 2 | | | |
		Child	Grandchild	Other[1]	Parent	Sibling	Nephew or niece	Other[2]
Inheritance	259,883	62,062	10,562	19,130	47,843	78,958	41,708	17,327
Positive inheritance (%)	72.68	50.24	19.06	26.24	40.85	53.13	50.07	27.18
Gifts	142	1,939	1,064	0	0	147	429	195
With previous gift (%)	0.05	1.41	0.44	0.00	0.00	0.19	0.33	0.18
Insurances (value)	3,829	1,930	331	137	2,797	1,340	583	257
Insurance (%)	3.97	2.15	0.66	0.59	2.85	1.45	1.23	0.73
Cedes received	105	59	28,037	19,620	98	1,832	7,754	14,979
Receiving cedes (%)	0.17	0.12	64.51	51.27	0.12	2.43	14.28	48.13
Observations	29,824	95,889	32,190	2,210	3,229	16,547	39,264	24,500

Means. All columns except spouse and all are conditional on there not being any spouse inheriting. Heirs in 2003. Economic variables are reported in 2003 price level. [1]The category consists mainly of great grandchildren. [2]The category consists of mainly of grandchildren to decedent's siblings.

Table 7: Characteristics of received transfers, by donee's relationship to the decedent (cont.)

	Parentelic group 3		Outside succession order				
	Grandparent	Uncle/Aunt	Cohabitant	Step child	Legal entity	Other	Total
Inheritance	7,996	113,735	98,404	133,392	83,065	136,664	61,143
Positive inheritance (%)	66.67	53.52	35.37	68.11	57.44	72.89	38.56
Gifts	0	0	479	1,986	1,231	198	1,003
With previous gift (%)	0.00	0.00	0.38	2.08	0.84	0.05	0.70
Insurances (value)	0	1,371	21,831	1,078	1,806	136	1,481
Insurance (%)	0.00	2.34	11.68	1.32	2.55	0.18	1.69
Cedes received	0	0	0	0	9,068	1,159	11,260
Receiving cedes (%)	0.00	0.00	0.00	0.00	20.33	2.66	19.27
Observations	3	256	2,115	530	6,671	6,547	342,405

Means. All columns except spouse and all are conditional on there not being any spouse inheriting. Heirs in 2003. Economic variables are reported in 2003 price level. [1]The category consists mainly of great grandchildren. [2]The category consists of mainly of grandchildren to decedent's siblings.

Table 8: Characteristics of transfers received by children who inherit a widowed parent

	From most recently deceased	From previously deceased
Inheritance received	62,680	68,691
Positive inheritance (%)	54.08	71.09
Taxable gifts	2,356	6,269
Receiving taxable gifts (%)	1.70	4.47
Cedes	10,774	11,497
Ceding (%)	12.17	18.30
Inheritance tax payment	3,656	4,318
Paying tax (%)	19.83	34.33
Taxable insurances	1,517	0
Receiving insurance (%)	1.98	0.00
Insurance tax payment	193.89	0.00
Age (heir)	56.24	
Years since previously deceased died		8.31
Observations	69,152	27,889

Notes: Means. Heirs in 2003. Economic variables are reported in 2003 price level.

4.2.2 Inheritances from parents to children

As noted in the previous section, the most common form of inheritances are those that are received from a parent.

In Table 8 we show some characteristics of the inheritances received by children. The values reported here differ from those reported in Table 7. This is because, in the previous table as all children are included, while the current only includes children to widows and widowers. As noted in Section 2.1 children receive the postponed inheritance from the previously deceased parent at the death of the last parent. In the data, approximately 40 percent of those who inherit a widowed parent receives a postponed inheritance at the same time. Upon receiving the second inheritance the heir is about 56 years old and the previously deceased parent passed away 8 years earlier. The average inheritance is SEK 62,680. Among those who receive a postponed inheritance as well as an inheritance from a previously deceased parent is slightly larger SEK 68,691. Note that the values on transfers from a previously deceased parent in Table 8 are conditional on there being a previously deceased parent affecting the current estate division. The average inheritance among the children is below the threshold for inheritance tax. Consequently, the tax payments are small: SEK 3,656 and 4,318 from the current and previously deceased parent, respectively. The children cede on average SEK 10,774 of the current inheritance and SEK 11,497 of the postponed inheritance.[17] These amounts are not conditional on

---

[17]These values may seem small considering that grandchildren to the decedent cedes

ceding. The fraction of heirs that cede at least a part of the inheritance from the currently (previously) deceased parent is 12 percent (18 percent) implying that the conditional means are substantially larger (approximately SEK 89,000 and 63,000 respectively). The value of previous gifts is on average SEK 2,356 from the now deceased parent and SEK 6,269 from the previously deceased. The share of heirs having received gifts is low; less than 2 percent (4 percent) have received from the currently (previously) deceased parent.

5 Concluding remarks

In this paper, we have aimed to describe the Belinda databases and provide a snapshot of key features of inheritances and bequest in 2003 (and sometimes also in 2004). The purpose has been to facilitate for other researchers to use the Belinda databases. In total, the databases consist of more than 80 variables describing important aspects of bequest and inheritances. It is worth to repeat that it is possible to match the Belinda databases with other Swedish administrative registers.

At the present there are five studies using the Belinda databases in combination with other administrative registers to investigate various topics related to the determinants and consequences of bequests and inheritances. Erixson and Ohlsson (2014) use Belinda-Population to test several theories of bequest motives by studying to what extent parents divide their estates unequally between their children. In order to study the determinants of unequal division the authors link data on an extensive set of economic and demographic variables from several administrative registers (LISA, the Tax Agency's Income and Wealth Registers, the Multi-Generation Register, etc.) to the parents and the children in the database. In a related study, Erixson and Ohlsson (Forthcoming) use the same database to investigate the importance of the system of reserved portion by calculating the fraction of parents who are restricted by the system in their decisions regarding the distribution of the estate. Moreover, Erixson (2014) uses Belinda-Population (and partly also Belinda-Sample) to identify heirs inheriting before and after the repeal of the inheritance tax in 2004, which generated exogenous variation in inheritance, in an attempt to estimate the casual effect of inheritance on health. In the study, panel data covering several health outcomes from the Swedish Patient Register, Cause of Death Register and the LISA database are linked to the recipients of inheritance. Escobar (work in progress) investigate the importance of liquidity constraints for peoples' decision to become entrepreneurs by exploiting that inheritance resolves these constraints. For the analysis, he links Belinda-Population with panel data on business holdings from the Swedish Firm Register and Individual Data Bases (FRIDA). In a recent study, (Ohlsson et al., 2014) study the evolution of inherited wealth in Sweden over the past 200 years. The authors use data from Belinda-Population and Belinda-Sample to compute the aggregate inheritance flows for the years

---

amounting to SEK 30,000 on average (see Table 7). The reason is that the averages are unconditional and 65 percent of the grandchildren receive cedes, but only 12 percent of the parents cede. Note that grandchildren are only present in the data if they receive cedes or inheritances.

2002-2005.

Before closing we want notify readers that want to access the data to consult the appendix for a description of the procedures that should be undertaken. There we also share practical knowledge that may assist researchers in their work with the data.

References

Arrondel, L., A. Masson, and P. Pestieau (1997). Bequest and inheritance: Empirical issues and france-us comparison. In G. Erreygers and T. Vandevelde (Eds.), *Is Inheritance Legitimate? Ethical and Economic Aspects of Wealth Transfers.* Springer.

Bø, E. E., T. Thoresen, and E. Halvorsen (2013). Adjustment costs and reciprocal altruims as moderations of the carnegie effect. *mimeo,* presented at the 8th Norwegian-German Seminar on Public Economics (CESifo and Norwegian Center for Taxation).

Brattström, M. and A. Singer (2011). *Rätt arv: Fördelning av kvarlåtenskap.* Iustus förlag,.

Brunetti, M. J. (2006). The estate tax and the demise of the family business. *Journal of Public Economics 90*(10), 1975–1993.

Davies, J. B. and A. F. Shorrocks (2000). The distribution of wealth. In A. B. Atkinson and F. Bourguignon (Eds.), *Handbook of income distribution*, pp. 605–675. Elsevier.

Du Rietz, G., M. Henrekson, and D. Waldenström (2012). The swedish inheritance and gift taxation, 1885 – 2004. In M. Henrekson and M. Stenkula (Eds.), *Swedish Taxation: Developments since 1862.* Palgrave Macmillan.

Edin, P.-A. and P. Fredriksson (2000). Linda-longitudinal individual data for sweden. *Department of Economics Working Paper,* Uppsala University (2000:19).

Erixson, O. (2014). Health responses to a wealth shock: Evidence from a swedish tax reform. *Department of Economics Working Paper,* Uppsala University (2014:3).

Erixson, O. and H. Ohlsson (2014). Equal sharing as choice, social norm, and legal requirement. *Department of Economics Working Paper,* Uppsala University (2014:1).

Erixson, O. and H. Ohlsson (Forthcoming). Förmögenhet – mina pengar eller släktens? *Ekonomisk Debatt* (Journal of the Swedish Economic Association).

Goetting, M. A. and P. Martin (2001). Characteristics of older adults with written wills. *Journal of Family and Economic Issues 22*(3), 243–264.

Henrekson, M. and D. Waldenström (2014). Estate division: Equal sharing as choice, social norm, and legal requirement. *IFN Working Paper* (936).

Hochguertel, S. and H. Ohlsson (2009). Compensatory inter vivos gifts. *Journal of Applied Econometrics 24*(6), 993–1023.

Holtz-Eakin, D., D. Joulfaian, and H. S. Rosen (1993). The Carnegie conjecture: Some empirical evidence. *The Quarterly Journal of Economics 108*(2), 413–435.

Horioka, C. Y. (2009). Do bequests increase or decrease wealth inequalities? *Economics Letters 103*(1), 23–25.

Joulfaian, D. (2004). Gift taxes and lifetime transfers: time series evidence. *Journal of Public Economics 88*(9), 1917–1929.

Joulfaian, D. and M. O. Wilhelm (1994). Inheritance and labor supply. *Journal of Human Resources 29*(4), 1205–1234.

Judge, D. S. and S. B. Hrdy (1992). Allocation of accumulated resources among close kin: inheritance in sacramento, california, 1890–1984. *Ethology and Sociobiology 13*(5), 495–522.

Kopczuk, W. (2007). Bequest and tax planning: Evidence from estate tax returns. *The Quarterly Journal of Economics 122*(4), 1801–1854.

Kotlikoff, L. J. and L. H. Summers (1981). The role of intergenerational transfers in aggregate capital accumulation. *The Journal of Political Economy 89*(4), 706–732.

Laitner, J. and H. Ohlsson (2001). Bequest motives: a comparison of sweden and the united states. *Journal of Public Economics 79*(1), 205–236.

Lee, J. (2000). Planned bequests: Decision to have a will and distributive preferences among the very old. Dissertations Abstracts International, DAI-A 62/06, p. 2194. (UMI No. 3018236).

Light, A. and K. McGarry (2004). Why parents play favorites: Explanations for unequal bequests. *American Economic Review*, 1669–1681.

Lodin, S.-O. (2009). *Professorn som blev näringslivstorped: min tid i skattepolitiken.* Ekerlids förlag.

McGarry, K. and R. F. Schoeni (1995). Transfer behavior in the health and retirement study: Measurement and the redistribution of resources within the family. *Journal of Human Resources 30*, 184–226.

Menchik, P. L. (1980). Primogeniture, equal sharing, and the us distribution of wealth. *The Quarterly Journal of Economics 94*(2), 299–316.

Menchik, P. L. (1988). Unequal estate division: Is it altruism, reverse bequests, or simply noise? *Modelling the Accumulation and Distribution of Wealth*, 105–116.

Molin, A. and U. Svensson (2012). *Bouppteckning & arvsskifte: praktisk handbok.* Björn Lundén information.

Ohlsson, H. (2007a). The equal division puzzle empirical evidence on intergenerational transfers in sweden. *Department of Economics Working Paper,* Uppsala University (2007:10).

Ohlsson, H. (2007b). Tax avoidance-a natural experiment. *Department of Economics Working Paper,* Uppsala University (2007:13).

Ohlsson, H. (2011). The legacy of the swedish gift and inheritance tax, 1884–2004. *European Review of Economic History 15*(3), 539–569.

Ohlsson, H., J. Roine, and D. Waldenström (2014). Inherited wealth over the path of development. *UCFS Working Paper* (2014:7).

Piketty, T. (2011). On the long-run evolution of inheritance: France 1820–2050. *The Quarterly Journal of Economics 126*, 1071–1131.

Rossi, P. P. H. (1990). *Of human bonding: Parent-child relations across the life course.* Transaction Publishers.

Schwartz, T. (1993). Testamentary behavior. *The Sociological Quarterly 34*(2), 337–355.

Silfverberg, C. (2005). Slopad arvs-och gåvoskatt. *Skattenytt 55*, 1–2.

SOU (2002:52). *Beskattning av småföretagare, del II. Generationsskiften.* Betänkande av 3:12 utredningen. Fritzes.

SOU (2003:3). *Egendomsskatter Dämpningsregel för fastighetsskatten och sänkt arvsskatt.* Fritzes.

SOU (2004:66). *Egendomsskatter. Reform av arvs- och gåvoskatter.* Slutbetänkande av Egendomsskattekommittén, Fritzes.

Tomes, N. (1981). The family, inheritance, and the intergenerational transmission of inequality. *The Journal of Political Economy 89*(5), 928–958.

Wilhelm, M. O. (1996). Bequest behavior and the effect of heirs' earnings: Testing the altruistic model of bequests. *American Economic Review*, 874–892.

Wolff, E. N. (2002). Inheritances and wealth inequality, 1989-1998. *American Economic Review 92*(2), 260–264.

A   Appendix

This appendix should be seen as a guide to the Belinda databases. In the first section we describe the procedures that researchers should undertake in order to get access to the data. In the second section we share some of the practical knowledge that we have acquired during our work with the material.

A.1   How to get access to the databases

Access to the data in the Belinda material will be granted for researchers through SCB. Swedish administrative individual-level data has restrictive access. According to Swedish law users of data on living and deceased persons are

required to get approval from an Ethical Review Board (Regionala etikprövningsnämnden).[18] Information about the procedure is described on the website: `http://www.epn.se/en/start/startpage`.

An application for usage of the Belinda data should be sent to Marcus Vingren at SCB. The application should include a summary of the research project (including scientific question(s), project description, overview of the research field, significance), a list of the demanded databases (or specific variables) and the approval from the ERB. The head of the Department for Welfare statistics (Välfärdsstatistiken) at SCB, then decides on whether or not access is granted. In the event of a positive application, the head of the research project will have to sign a confidentiality agreement where he or she agrees to follow the normal disclosure provisions.

The researcher does not get access to data on personal identity numbers of the subjects in the databases. SCB anonymizes the data by assigning each individual an identification number unrelated to the personal identity numbers. This identification number then makes it possible to match data from different administrative registers available at SCB that the researcher may require. SCB carries out the matching with respect to their registers. If the researcher wants to match data from registers governed by institutions other than SCB, e.g. The Swedish Board of Health and Welfare, the personal identity numbers and the identification numbers of the relevant research subject are sent by SCB to the concerned institution.

Access to micro data is provided through the MONA system, which is a closed server environment at SCB. In practice, this implies that the data remains on a server at SCB and, that the researcher reaches it from a Windows desktop by login in to the system through a secure internet connection. The main rule is that researchers are only allowed to access the MONA system from Sweden.

Statistics Sweden will charge researchers on a marginal cost basis.

A.2   Notes on Belinda-Population

A.2.1   The decedents

Data on the decedents are reported in the sub-database Avliden. Each decedent in the database is identified through his or her person identity number (or, for researchers working with the data, through the identification number assigned by SCB, denoted LopNr_PersonNrAvliden). It should be noted that a fraction of the decedents appear more than once in the database. The main reason for this is because a supplemental estate report has been filed with the Tax Agency. A decedent whose initial estate report has been filed after 2001 and for whom a supplemental report has been filed prior to 2006 will therefore appear twice in the database.

A deceased can also appear more than once if the initial estate report has resulted in a court matter, for example because an estate trustee has appealed the contents of the deceased's will. The variable ArendeTyp provides information about the type of errand that the estate is subject to. Each individual errand

---

[18]The ERB:s are located at the universities in Göteborg, Lund, Linköping, Umeå, Uppsala and at Karolinska Institutet in Stockholm.

is also assigned a unique identification number, which is given by the variable LopNr_ArendeNr.

The Tax Agency became responsible for registering estate reports in July 2001. However, the database contains also decedents who died over the period January 1-June 30 2001. That is because SCB has added information on these individuals from the Population Register. But, since there is no data available from the Inheritance Tax Register for these individuals they have been assigned the common LopNr_ArendeNr=580810.

A.2.2 The recipients of transfers

Information on the recipients of transfers is contained in the sub-database Total Arv. Each recipient is identified through his or her person identity number (or, for researchers working with the data, through the identification number assigned by SCB, denoted LopNr_PersonNrArvatagare). Person identity number is missing for about ten percent of the observations. These cases have been assigned the common identification number 20222 by SCB. The incidence of lacking person identity number is higher for distant relatives such as grandchildren, nephews and nieces, and recipients without genetic relationship with the decedent than for closer relatives. Heirs in parentelic group 3, i.e. legal entities, have also been assigned this identification number.

Similarly to the decedents, the recipients of transfers could appear several times in the database. It is for instance common that children appear as heirs with postponed right to inherit the estate of a previously deceased parent and as direct heir in the last parent's estate report. The heir thereby appears twice within the errand of the last deceased parent (as identified through ArendeNr). It should be noted however that, if both parents have died during the period 2001-2005, the heir appears a total of three times in the database: in the first deceased parents estate report as heir with postponed right to inherit (1) in the second deceased parent's reports as recipient of the previously deceased parent (2) and as a direct heir to the currently deceased parent (3).

It is also common that grandchildren appear multiple times in the database. This is commonly because they receive cedes from their parents in connection with the death of their grandparents. A grandchild could for instance appear four times in the data if all four grandparents die over the sample period.

There is no variable indicating the reason for why the recipient appears in the database. This has instead to be inferred from the variables in the database. It should be noted that the individual's recipient statuses may overlap. A legal heir could for instance also be named beneficiary in the deceased's will or be the beneficiary to a life insurance policy. Moreover, a legal heir with postponed right to inherit may receive inheritance through ceding by the surviving parent. And, a cohabiting spouse who appears in the data because he or she requires partition of joint property may, in addition, receive inheritance through a will.

2009:1   Sören Blomquist and Håkan Selin, Hourly Wage Rate and Taxable Labor
           Income Responsiveness to Changes in Marginal Tax Rates. 31 pp.

2009:2   Luca Micheletto, Optimal nonlinear redistributive taxation and public good
           provision in an economy with Veblen effects. 26 pp.

2009:3   Håkan Selin, The Rise in Female Employment and the Role of Tax
           Incentives. An Empirical Analysis of the Swedish Individual Tax Reform of
           1971. 38 pp.

2009:4   Håkan Selin, Marginal tax rates and tax-favoured pension savings of the self-
           employed Evidence from Sweden. 32 pp.

2009:5   Tobias Lindhe and Jan Södersten, Dividend taxation, share repurchases and
           the equity trap. 27 pp.

2009:6   Che-Yan Liang, Nonparametric Structural Estimation of Labor Supply in
           the Presence of Censoring. 48 pp.

2009:7   Sören Blomquist, Vidar Christiansen and Luca Micheletto, Public Provision of
           Private Goods and Nondistortionary Marginal Tax Rates: Some further
           Results. 42 pp.

2009:8   Laurent Simula and Alain Trannoy, Optimal Income Tax under the Threat of
           Migration by Top-Income Earners. 26 pp.

2009:9   Laurent Simula and Alain Trannoy, Shall We Keep Highly Skilled at Home?
           The Optimal Income Tax Perspective. 26 pp.

2009:10   Michael Neugart and Henry Ohlsson, Economic incentives and the timing of
           births: Evidence from the German parental benefit reform 2007, 21 pp.

2009:11   Laurent Simula, Optimal Nonlinear Income Tax and Nonlinear Pricing:
           Optimality Conditions and Comparative Static Properties, 25 pp.

2009:12   Ali Sina Onder and Herwig Schlunk, Elderly Migration, State Taxes, and What
           They Reveal, 26 pp.

2009:13   Ohlsson, Henry, The legacy of the Swedish gift and inheritance tax, 1884-2004,
           26 pp.

2009:14   Onder, Ali Sina, Capital Tax Competition When Monetary Competition is
           Present, 29 pp.

2011:3   Alessandra Casarico, Luca Micheletto and Alessandro Sommacal, Intergenerational transmission of skills during childhood and optimal public policy. 48 pp.

2011:4   Jesper Roine and Daniel Waldenström, On the Role of Capital Gains in Swedish Income Inequality. 32 pp.

2011:5   Matz Dahlberg, Eva Mörk and Pilar Sorribas-Navarro, Do Politicians' Preferences Matter for Voters' Voting Decisions?

2011:6   Sören Blomquist, Vidar Christiansen and Luca Micheletto, Public provision of private goods, self-selection and income tax avoidance. 27 pp.

2011:7   Bas Jacobs, The Marginal Cost of Public Funds is One. 36 pp.

2011:8   Håkan Selin, What happens to the husband's retirement decision when the wife's retirement incentives change? 37 pp.

2011:9   Martin Jacob, Tax Regimes and Capital Gains Realizations. 42 pp.

2011:10   Katarina Nordblom and Jovan Zamac, Endogenous Norm Formation Over the Life Cycle – The Case of Tax Evasion. 30 pp.

2011:11   Per Engström, Katarina Nordblom, Henry Ohlsson and Annika Persson, Loss evasion and tax aversion. 43 pp.

2011:12   Spencer Bastani and Håkan Selin, Bunching and Non-Bunching at Kink Points of the Swedish Tax Schedule. 39 pp.

2011:13   Svetlana Pashchenko and Ponpoje Porapakkarm, Welfare costs of reclassification risk in the health insurance market. 41 pp.

2011:14   Hans A Holter, Accounting for Cross-Country Differences in Intergenerational Earnings Persistence: The Impact of Taxation and Public Education Expenditure. 56 pp.

2012:1   Stefan Hochguertel and Henry Ohlsson, Who is at the top? Wealth mobility over the life cycle. 52 pp.

2012:2   Karin Edmark, Che-Yuan Liang, Eva Mörk and Håkan Selin, Evaluation of the Swedish earned income tax credit. 39 pp.

2012:3   Martin Jacob and Jan Södersten, Mitigating shareholder taxation in small open economies? 15 pp.

2012:6   Spencer Bastani, Gender-Based and Couple-Based Taxation. 55 pp.

2012:7   Indraneel Chakraborty, Hans A. Holter and Serhiy Stepanchuk, Marriage Stability, Taxation and Aggregate Labor Supply in the U.S. vs. Europe. 64 pp.

2012:8   Niklas Bengtsson, Bertil Holmlund and Daniel Waldenström, Lifetime versus Annual Tax Progressivity: Sweden, 1968–2009. 56 pp.

2012:9   Firouz Gahvari and Luca Micheletto, The Friedman rule in a model with nonlinear taxation and income misreporting. 36 pp.

2012:10   Che-Yuan Liang and Mattias Nordin, The Internet, News Consumption, and Political Attitudes. 29 pp.

2012:11   Gunnar Du Rietz, Magnus Henrekson and Daniel Waldenström, The Swedish Inheritance and Gift Taxation, 1885–2004. 50 pp.

2012:12   Thomas Aronsson, Luca Micheletto and Tomas Sjögren, Public Goods in a Voluntary Federal Union: Implications of a Participation Constraint. 7 pp.

2013:1   Markus Jäntti, Jukka Pirttilä and Håkan Selin, Estimating labour supply elasticities based on cross-country micro data: A bridge between micro and macro estimates? 35pp.

2013:2   Matz Dahlberg, Karin Edmark and Heléne Lundqvist, Ethnic Diversity and Preferences for Redistribution: Reply. 23 pp.

2013:3   Ali Sina Önder and Marko Terviö, Is Economics a House Divided? Analysis of Citation Networks. 20 pp.

2013:4   Che-Yuan Liang, Optimal Inequality behind the Veil of Ignorance. 26 pp.

2013:5   Spencer Bastani, Sören Blomquist and Jukka Pirttilä, How Should Commodities Be Taxed? A Counterargument to the Recommendation in the Mirrlees Review. 26 pp.

2013:6   Tobias Laun and Johanna Wallenius, Social Insurance and Retirement: A Cross-Country Perspective. 37 pp.

2013:7   Johannes Hagen, A History of the Swedish Pension System. 140 pp.

2013:8   Etienne Lehmann, Laurent Simula and Alain Trannoy, Tax Me If You Can! Optimal Nonlinear Income Tax between Competing Governments. 29 pp

2013:9   Tobias Lindhe and Jan Södersten, Distortive Effects of Dividend Taxation. 21 pp.

2013:10   Jonas Poulsen, After Apartheid: The Effects of ANC Power. 42 pp.

2013:11   Spencer Bastani, Using the Discrete Model to Derive Optimal Income Tax Rates. 14pp.

2013:12   Lovisa Persson, Consumption smoothing in a balanced budget regime. 39 pp.

2013:13   Karin Edmark och Roger Gordon, Taxes and the Choice of Organizational Form by Entrepreneurs in Sweden. 48 pp.

2013:14   Linuz Aggeborn, Voter Turnout and the Size of Government. 48pp.

2013:15   Michihito Ando, How Much Should We Trust Regression-Kink-Design Estimates? 69 pp.

2014:1   Sören Blomquist, Anil Kumar, Che-Yuan Liang and Whitney K. Newey, Individual Heterogeneity, Nonlinear Budget Sets, and Taxable Income. 37 pp.

2014:2   Oscar Erixson and Henry Ohlsson, Estate division: Equal sharing as choice, social norm, and legal requirement. 45 pp.

2014:3   Oscar Erixson, Health responses to a wealth shock: Evidence from a Swedish tax reform. 44 pp.

2014:4   Che-Yuan Liang, Distribution-Free Structural Estimation with Nonlinear Budget Sets. 31 pp.

2014:5   Jesper Roine and Daniel Waldenström, Long run trends in the distribution of income and wealth. 151 pp.

2014:6   Mikael Elinder and Lovisa Persson, Property taxation, bounded rationality and housing prices. 38 pp.

2014:7   Henry Ohlsson, Jesper Roine and Daniel Waldenström, Inherited wealth over the path of development: Sweden, 1810–2010.88 pp.

2014:8   Spencer Bastani, Tomer Blumkin and Luca Micheletto, OptimalWage Redistribution in the Presence of Adverse Selection in the Labor Market. 17 pp.

2014:9   Magnus Henrekson and Daniel Waldenström, Inheritance Taxation in Sweden, 1885–2004: The Role of Ideology, Family Firms and Tax Avoidance. 43pp.

2014:10   Tomer Blumkin, Yoram Margalioth and Adi Sharoni, The Signaling Role of Corporate Social Responsibility. 35 pp.

2014:11   Mattias Dahlberg and Ali Sina Önder, TAXATION OF CROSS-BORDER LABOR INCOME AND TAX REVENUE SHARING IN THE ÖRESUND REGION. 13 pp.

2014:12   Tobias Lindhe and Jan Södersten, Dividend Taxation and the Cost of New Share Issues. 20 pp.

2014:13   Johannes Hagen, The determinants of annuitization: evidence from Sweden. 34 pp.