The Age of Inheritance: How Demographic Change Shapes How Often, from Whom, and When We Inherit

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Abstract

We argue that demographic change increased the number of inheritances people can expect to receive across their lifetimes. Declining fertility leads to fewer competing heirs, while extended longevity introduces more complex effects. To quantify the impact of these processes, we use a micro-simulation method based on life expectancies, fertility, and union parameters from birth cohorts in Spain spanning the years 1720-2020. We simulate how many members of kin pass away during people's lifetimes, and which other kin is alive at the time each kin member dies. Applying Spanish inheritance rules, we use this information to determine how many inheritances people could expect to receive, and with how many kin they would have to share inheritances. Disregarding descendants who pass away prematurely, we find that the inheritances people can expect to receive rose from around 0.46 complete inheritances for those born in the 18th and 19th century, to around 1.25 inheritances for birth cohorts from the end of the 20th century. These trends are primarily driven by larger shares received from parents, but distant kin start to matter in recent cohorts too. The modal age of expected inheritance is simulated to have increased from around age 35 to around age 60.

Highlights:

- Declining fertility reduces the number of heirs available when people pass away
- The number of inheritances people can expect to receive increased considerably
- Simulations show that inheritances from parents are shared with less people today
- Inheritances from distant kin, like aunts or uncles, are starting to matter too
- The modal age of inheritance is simulated to have increased from 35 to 60

Significance statement:

Demographic change has huge consequences for inheritances and wealth, but demographic research has not yet addressed this question. This is the first study to quantify the impact of increasing longevity and declining fertility on the number and share of inheritances people can expect to receive across their lifetimes. We use a simulation approach applied to Spanish birth cohorts from 1720-2020. But, since our results are driven by trends that are common to high-income countries (i.e. declining fertility), these results are relevant across high-income countries. Our results show the huge effects that demographic changes have on the number and share of inheritances people can expect to receive across their lifetimes.

This article examines how demographic shifts—specifically increased longevity and declining fertility—have influenced the number of inheritances individuals are expected to receive over their lifetimes. Inheritance and family wealth play an increasingly significant role in shaping individual success (Hällsten & Thaning, 2022; Killewald et al., 2017; Spilerman, 2000). In many high-income countries, the total wealth held by households has been steadily increasing over the last decades (Piketty & Zucman, 2014), which will further strengthen the essential role that wealth, and inheritances, play for people's well-being and opportunities in life.

By referring to the "age of inheritance," the title of this study reflects both a specific objective—to understand changes in the age at which individuals receive inheritances—but also our conclusion that the total number of inheritances people are expected to receive over their lifetimes will have more than doubled for people born around the year 2000 compared to people born 100 years earlier. This accelerated growth in the number of inheritances a person may receive from their ancestors is driven by demographic changes. Declining fertility means that people have to share inheritances of parents between less siblings than before. In addition, if childlessness increases, people might increasingly receive inheritances from other family members like uncles or aunts. This thesis is illustrated using the case of Spain, a country with one of the world's highest life expectancies and with fertility rates that have remained far below replacement level for more than four decades.

Our paper is structured around the following main research question: Did the number of inheritances people can expect to receive across their lifetimes, and the share of those inheritances, change across birth cohorts? We innovate by giving, for the first time, an empirical answer to this question.

We do so by applying a microsimulation model to the demographic context of Spain covering birth cohorts from 1720 to 2020. This kinship model relies on disaggregated fertility parameters and mortality risks (Devolder, 2002). Ideally, we would have individual-level data on complete kin networks that spans several centuries to observe these processes directly. However, such data exists only for the very few countries with complete and permanent population registers, like Sweden (Kolk et al., 2023), and even in such countries data covers recent decades only. Microsimulation offers a powerful alternative that allows us to select relevant country-contexts and to cover a considerable time period capturing the major demographic changes of the last centuries.

Our approach is purely demographic: we focus on kinship relationships and the likelihood of being the sole or partial heir of a deceased relative. In other words, we simulate, for each deceased relative, whether the respondent would be entitled to receive an inheritance (applying current Spanish inheritance rules) and with how many people the respondent would have to share this inheritance. We provide some insight into financial aspects related to the age of inheritance using very basic information, but leave estimations that capture the value of inheritances for future research.

Our results indicate that the number of complete inheritances that people are expected to receive during their lifetimes more than doubled for cohorts born at the end of the 20th century, compared to those born during the 19th century. However, these inheritances are received at a much later age, with the modal age at inheritance increasing from around age 35 to around age 60. These changes are likely to further strengthen the importance of wealth and inheritances in society compared to other economic resources (Piketty & Zucman, 2014), to increase wealth inequality, and to transform how economic well-being develops across the life course (Killewald et al., 2017; Spilerman, 2000).

Demography and Inheritance

There are various strands of literature that have considered aspects of how inheritance relates to demographic behaviour. In an important contribution, Goody (1976) analysed the differences between historical African and Eurasian inheritance systems. In African societies, property typically followed gender-based lineages, where spouses maintained separate ownership of their assets. When a person died, their property would return to their birth family rather than passing to their spouse or children. This contrasted with Eurasian societies, where patrilineal inheritance was common. In these systems, both sons and daughters could inherit family property, though women's assets were often transferred to their husband's family upon marriage, what Goody called 'divergent devolution'.

Research has also highlighted how inheritance systems -whether they divide property equally among heirs (partible inheritance) or favour a single heir (unequal inheritance)- significantly shape both family structures and broader social dynamics. This relationship has been studied across various contexts, from contemporary rural Africa (Caldwell 1981) to historical European societies. A classic economic argument (O'Brien 1996) compares England and France: England's primogeniture system, which passed land to the eldest son, created a class of landless younger siblings who migrated to cities, providing cheap labour for industrialization. In contrast, France's equal inheritance system—strengthened by the 1789 revolution—kept land divided among all children, tying people to small agricultural plots, hampering labour mobility.

Economists have examined both the motivations behind intergenerational transfers, whether gifts or bequests, and the effects of economic dynamics on the proportion of a country's wealth that is inherited and on trends in inequality. For example, Becker (1981) developed a comprehensive framework that considers both *inter vivo* transfers and bequests, and how these transfers relate to altruistic or selfish motivations, and can strengthen family relationships. Piketty (2011) focused on macro effects and how inheritance can either reinforce or diminish wealth inequality, depending on the level of the rate of growth and the rate of return of the capital.

Neoclassical economic models frequently examine patterns of wealth accumulation, particularly how demographic factors like death rates and birth rates influence the proportion of total wealth held by households that comes from inheritance (Klimaviciute, Onder, and Pestieau 2019). Sociologists have emphasised how the transmission of wealth across generations goes through many other pathways too, including social and cultural capital (Pfeffer & Killewald, 2018). Another important area of research examines inheritance taxation and its relationship to broader wealth taxation systems (Cremer and Pestieau 2011). While scholars have debated both the economic and ethical implications of inheritance taxes, for example Erreygers and Vandevelde (1997), most acknowledge that such taxes face significant public opposition. This is reflected in the general trend across countries toward reducing tax rates on both gifts made during life and inheritances received after death.

More relevant to our study, recent research has begun exploring how demographic changes affect the availability of kin. These studies mostly focus on how many and what types of kin are alive when people are of a given age. For instance, Jiang et al. (2023) propose a model that shows how net fertility levels determine the average number of living relatives a person has. Alburez-Gutierrez, Basellini, and Zagheni (2025) showed how the experience of losing an adult child has become less common across birth cohorts. Kolk et al. (2023) utilize the Swedish population register to reconstruct real genealogies centred on individuals born between 1917 and 2017. While their study does not address the question of inheritance, its significance lies in showing that considerable variability in the number of relatives exists, both living and deceased—a complexity that traditional approaches to studying kinship networks (which normally use data such as surveys, censuses, analytical models, or macrosimulations) struggle to capture.

Two articles have connected research on kinship to wealth, and more specifically to the age at which people receive inheritances. Zagheni and Wagner (2015) use demographic equations to compute how old daughters are when their mother dies. They show that the average age at which mothers die increased across birth cohorts, but stabilized from birth cohorts born in the 1970s onward. They also use empirical data from the US to confirm that the mean age at which people receive an inheritance remained roughly stable across the period 1987-2010. Hexel, Alburez-gutierrez, and Zagheni (2024), use kinship microsimulation models combined with survey data to show that the value of inheritances people receive increases with their age, how this differs between Black and White individuals, and that few people in the US today can expect to receive an inheritance before middle adulthood.

Hence, even though our knowledge about the availability of kin is increasing, studies connecting this strand of research with questions of inheritance have focused on the age at which people inherit, and did so covering relatively short periods of time. More importantly, no study has estimated the consequences that the changing availability of kin has for the number of inheritances, and what share of these inheritances, people are expected to receive across their lifetimes.

There are good reasons to expect that changing mortality and fertility have impacted the number and share of inheritances people are expected to receive across high income countries. Declining fertility means that older birth cohorts transfer wealth to younger cohorts that are smaller in number. In other words, a birth cohorts' wealth is shared by a smaller group of people, implying that people have to share inheritances with fewer kin. In more practical terms, having fewer siblings (due to declining fertility) entitles people to inherit a larger share of their parents' wealth. In addition, if childlessness increases, aunts, uncles or other more distant kin could also become more common kin members to inherit from. At the same time, declining fertility also means that people have fewer distant kin to inherit from.

Postponement of fertility and increasing longevity also implies that parents pass away when children are older (Zagheni and Wagner, 2015). Longevity can also prevent people from passing away before their parents (Alburez-Gutierrez, Basellini, and Zagheni, 2025), and hence increase the share of a given birth cohort that receives an inheritance from parents.

We aim to show these arguments hold, and their relative importance, using a microsimulation model. As we will elaborate further in the next section, a key strength of our microsimulation model is its capacity to incorporate a wide range of biological, demographic, and social heterogeneity factors for extended time periods. This capability enables a more accurate assessment of kinship variability and, consequently, a more precise calculation of changes in the number of inheritances people can expect to receive across their lifetimes.

Methodology: Model and Data

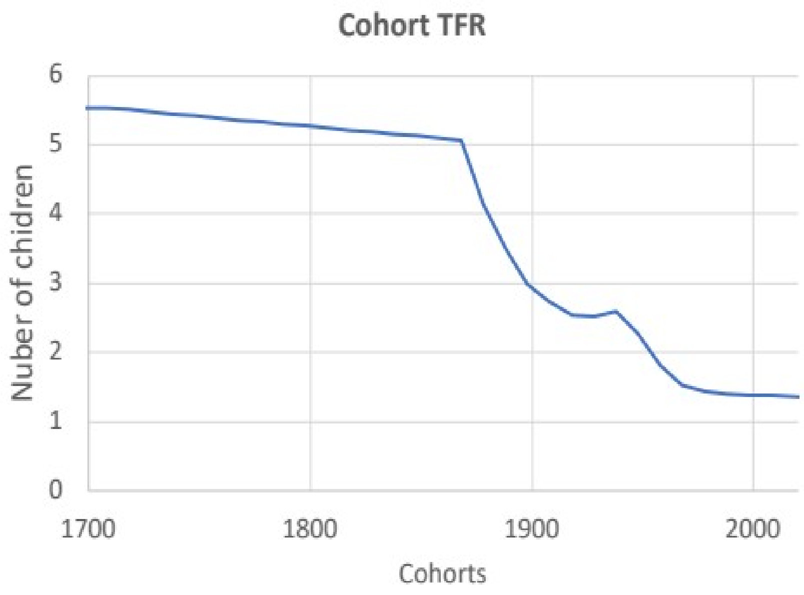
KINFERT: Kinship Microsimulation Model

We employ a kinship microsimulation developed by Devolder (2002) to simulate kinship networks and the age at which each kin member dies (See also Devolder et al., 2020). The model's inputs are age and parity specific fertility parameters; sex and age-specific probabilities of union formation, separation and re-partnership; and sex-specific mortality risks. For our article, we compiled these parameters from multiple sources covering Spanish birth cohorts from 1720 to 2020. The Online Appendix presents a detailed description of all input data, and a concise presentation of the fertility module of the microsimulation model. We extrapolate fertility and mortality schedules for cohorts born after 1980.

Figures 1a and 1b show how two of the main indicators used in the microsimulation developed across time in Spain: Cohort TFRs and life expectancy at birth. Across the study period, cohort total fertility rates started declining in the late 19th century from over 5 children to around 2.5 in the early 20th century, and to levels below 1.5 for the late 20th century cohorts. These declines are primarily produced by decreases in higher parities, but childlessness also increased steadily across birth cohorts (and decreased temporarily for the early 20th century cohorts; see Online Appendix). Life expectancy started increasing from around 30 for the 18th century cohorts, to 50 by the early 20th century, and close to 90 for the most recent birth cohorts.

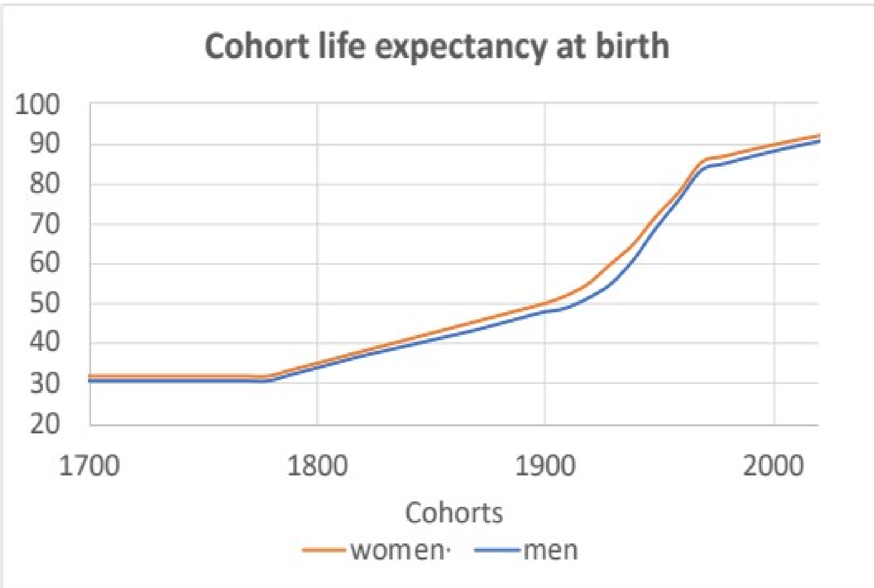
Drawing on the various macro-level indicators, the model constructs kinship networks for hypothetical ‘egos’ born at ten-year intervals between 1720 and 2020. Each network encompasses an expanded set of individuals across twenty distinct kinship categories of ego, plus their partners. Approximately 22 000 kinship networks are created for each birth cohort of hypothetical ‘egos’ born in the 18th century and about 11 000 networks for those born at the dawn of the 21st century, with decreasing numbers in between. Network numbers are calibrated to mirror the historical evolution of Spanish births.

Figure 1a. Birth Cohort fertility rates in Spain



Source: Authors elaboration of Devolder and Reeve (2018) for the birth cohorts 1870-2000, with a simple retropolation back to cohort 1720 and projection forward to cohort born in 2020.

Figure 1b. Birth cohort differences in life expectancy in Spain



Source: Authors elaborations of Blanes Llorens (2007).

The simulation proceeds at the individual level, and starts by linking each ego to a mother and a father. After that, the simulation sequentially generates descending, ascending, and lateral kin. Distinct algorithms and parameter sets are applied according to the direction of the simulation—downward, upward, or lateral. Partner selection is based on age-cross-tabulated partnership-formation probabilities. Offspring are produced via a detailed fertility microsimulation model that integrates biological and social parameters, that allows for the customization of fertility by birth order, and implements various waiting times between reproductive events to generate realistic heterogeneity in progeny (see Online Appendix; Annex 1). Upward genealogical simulation is the most complex stage, as it requires the prior creation of complete cohorts of potential mothers with full partnership and reproductive histories. Subsequently, we randomly select a mother from this pre-simulated pool by sampling one of the births simulated to occur in egos' or other ascendants' year of birth. Devolder, Spijker, and Zueras (2020) review comparable models, both macro- and micro-based, and present the implementation of our kinship microsimulation model.

Once complete kinship networks are simulated, we select the relatives in ego's kinship network who died during ego's lifetime according to the simulation. For each of these persons, we check whether ego is expected to inherit from them, and what share ego can expect, depending on the presence of other family members of that person still alive at the simulated time of passing. By summing across all kin that pass away during ego's lifetime, we determine how many inheritances ego is expected to receive, and what share, based on current Spanish inheritance rules, which are outlined in the next section.

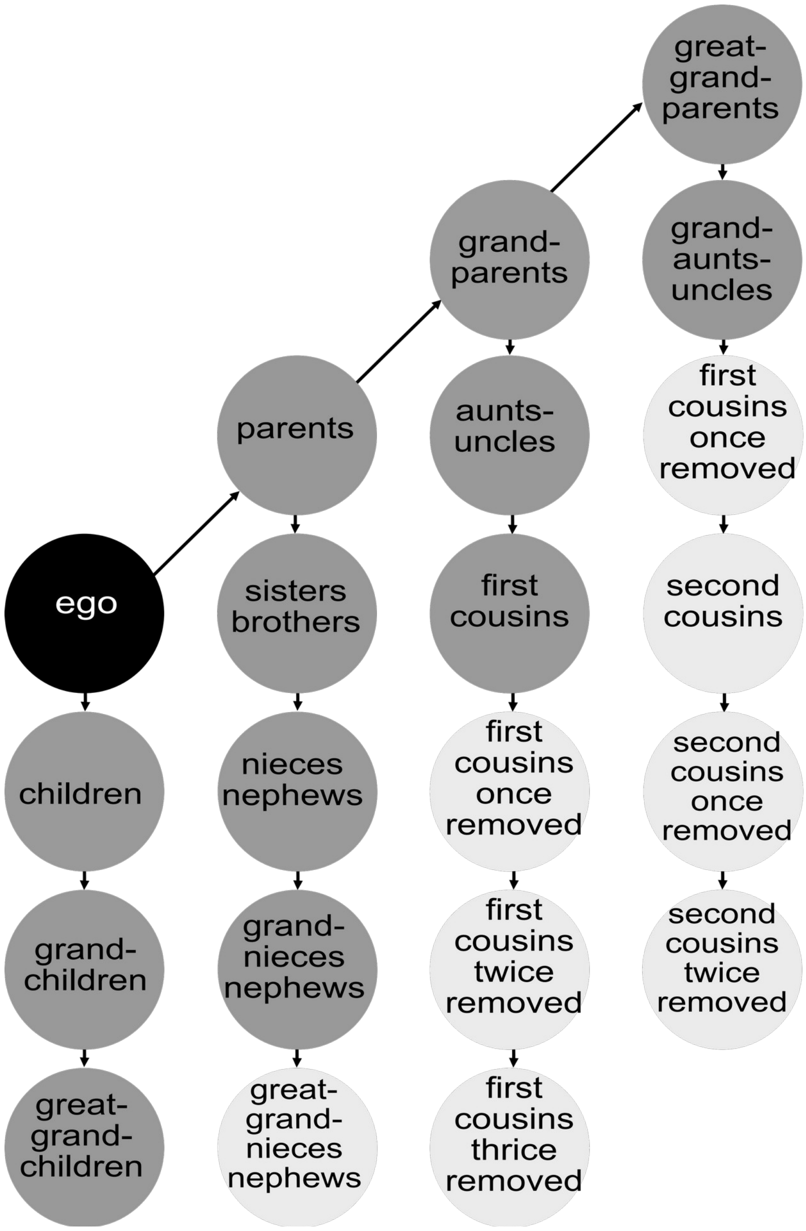
Inheritance Laws

Our model constructs virtual family trees centred on groups of egos born between 1720 and 2020. These genealogies include all of ego's biological relatives (Figure), as well as their last partners. To assess the probability of inheritance, we generate relatives up to the fourth degree for all members of the genealogical trees. This is in accordance with Spanish law, corresponding to the 1981 Civil Code, which specifies that if no relatives up to the fourth degree are alive when a person passes away, nor the last partner, that person's wealth will go to the state. Some European countries are more restrictive and exclude first cousins (Nordic and some Eastern countries), while others extend the search for heirs to the sixth degree (France or Italy for example), or even impose no limit on the degree of kinship (Germany with the 'parentelen' system). Note that various Autonomous Communities in Spain have their own inheritance laws, which can differ from the Civil Code considered here.

Ego's relatives up to the fourth degree are the possible "decedents" (a legal term referring to a person who has recently died and from whom ego can or will inherit). We ignore here great-great-grandparents and great-great-grandchildren, whose probability of being contemporaries of ego is nil. These potential people from which ego can inherit are shown in dark grey in Figure 2.

However, people from which ego can inherit may also be competitors of ego for other inheritances. For example, ego may inherit from siblings, but only if they have no living descendants or ascendants. Conversely, ego will inherit from a nephew or niece, who have no living descendants, if their spouse and parents, who are ego's sibling, are deceased. The relatives displayed in lighter grey in Figure 2 are only potential competitors who can "deprive" ego of an inheritance if they are alive at the death of the decedent considered. Therefore, we also simulate their lives in order to consider all the relatives that can either leave an inheritance to ego or be competitors to receive a given inheritance. We do exclude certain relatives from the last group using the same rule mentioned above: we only simulate kin who could have been contemporaries of ego.

Figure 2. Consanguinity tree with decedents up to the fourth degree



Note: *In dark grey:* Ego's blood relatives up to the fourth degree of kinship, excluding great-great-grandparents and great-great-grandchildren who cannot be contemporaries of ego. *In light grey*: blood relatives that compete with ego for inheritance, when a relative of degree up to 4 dies, excluding other kin, such as descendants of great-grand-nieces or nephews, who also cannot be contemporaries of ego. Our simulation model also includes all partners of these individuals and the in-laws of ego's last partner, as they are also competitors for inheritance.

A key legal consideration is the order in which heirs are identified. In Spain, priority is given to the deceased's descendants (children, grandchildren, great-grandchildren). If there are no living descendants, direct ascendants (parents and grandparents) are next in line. If no ascendants are alive, the spouse is considered. If the spouse is deceased or divorced, the inheritance passes to siblings and their direct descendants. Finally, if none of these relatives are alive, aunts or uncles, grand aunts or uncles, grandnieces or nephews, and first cousins, become eligible to inherit.

The primary distinction compared to other European countries is in the treatment of the spouse. In Spain, children or parents typically inherit before the spouse, although in certain regions such as Catalonia, the spouse takes precedence over the parents. For example, in France, the spouse may receive partial priority, while in Nordic countries, the spouse takes full precedence. Additionally, variation exists between countries based on the type of union; in some cases, cohabiting partners are excluded, even if the union is civilly registered. In our simulations, we assume that if partners are alive, their union status entitles them to full inheritance rights (i.e. we do not consider possible differences between marriage and cohabitation).

In Spain, partners inherit only if the in-law parents are deceased. Consequently, our model reconstructs the partner's ascendant family tree to identify in-laws who might have served as heirs if alive at the partner's time of death, as per Spanish law. Additionally, we simulate the partners of all of ego's blood relatives to determine potential heirs when assessing ego's inheritance from a particular individual.

The distribution of inheritance shares varies across countries too. In Spain, heirs of the same degree of kinship are entitled to equal shares, and if one of them is deceased, their descendants inherit her or his share equally, although there are differences of treatment between whole and half-blood relatives, and also between close kin and kin of the third of fourth degree. This principle of equality is common across Europe. By contrast, Islamic law often allocates a double share to male heirs compared to female heirs. Other inheritance systems, particularly in Africa, deviate significantly from these norms, with some following matrilineal patterns (daughters exclusively inherit from their mother) or patrilineal patterns (only sons inherit from their father). Additionally, in some cases, the family of origin of the deceased's spouse may take precedence if there are no living descendants. For a comprehensive comparative overview of intestate inheritance laws, see Reid, de Waal, and Zimmermann (2015).

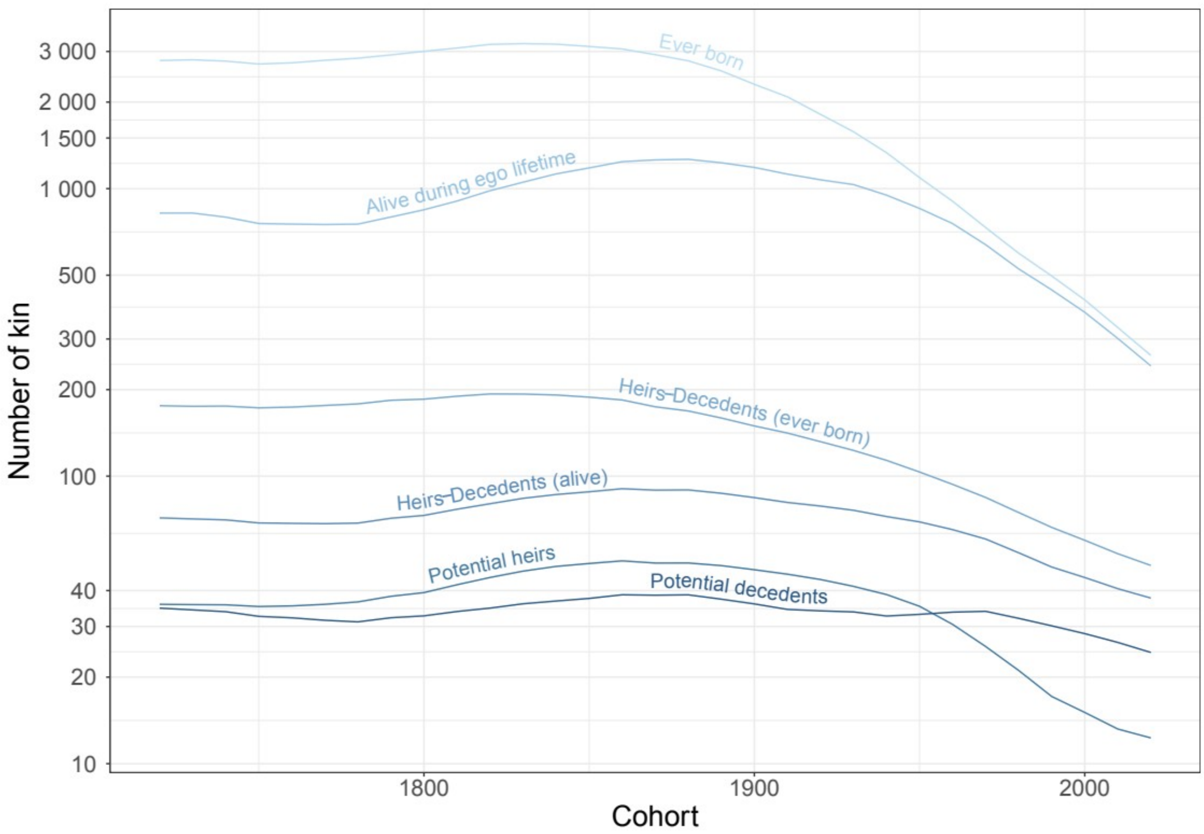
Simulating Relatives

Figure presents the average number of relatives that comes out of the simulation of consanguinity trees for cohorts born in Spain between 1720 and 2020 (calculated for each decade of birth). The average total number of relatives is around 3,000 for egos born before 1850, then decreases at an increasingly rapid pace until the generations born at the beginning of the 21st century, to below 300 (line labelled "Ever born"). This more-than-exponential reduction is essentially explained by the fall in fertility, with an accelerated decrease for relatives with double levels of progeny (such as grandchildren, nieces or nephews, or first cousins) or triple (great-grandchildren or great-nieces or nephews), as also explained by Jiang et al. (2023).

The other lines of Figure 3 show various subgroups of relatives: those that were alive during ego's lifetime ("Alive during ego lifetime"), relatives to whom ego can leave an inheritance ("Potential heirs"), relatives who can leave an inheritance to ego ("Potential Decedents"), and the latter two groups combined ("Heirs-Decedents" either ever-born or alive during egos' lifetime).

Interestingly, the number of relatives from whom ego can inherit—those who die before ego and fall within four degrees of kinship ("potential decedents")—remains relatively stable at 30 to 40 for generations born between 1720 and 1980. Among birth cohorts born in the late 20th century, this declines slightly to 25 potential people ego could inherit from. It is this group of relatives that is of interest in our analysis, and for whom we determine whether ego or other relatives are expected to receive their inheritance when they pass away.

Figure 3. Mean number of kin per ego, simulated Spanish cohorts born from 1720 to 2020



Note: *Ever born*: Total number of simulated kin in ego's consanguinity tree plus ego's last partner; *alive*: Kin from the previous group who were alive at any point during ego's lifetime; *Heirs-Decedents (ever born)*: Total number of kin who could potentially be either ego's heirs or ego's decedents (represented by the darker grey in the consanguinity tree). *Heirs-Decedents (Alive)*: Kin from the previous group who were alive at some point during ego's lifetime. *Potential Heirs*: Kin from the previous group who were alive at the time of ego's death. *Potential Decedents*: Kin from the same group who died before ego. The scale is in base-10 logarithms. R packages *ggplot2* and *geomtextpath* used for generating the plot and its labels.

Looking for "Decedents"

To determine whether ego is expected to inherit from a given person, we use a search module that generates additional data for each relative, as shown in Table 1. Each row of Table 1 corresponds to a relative from whom ego inherits, nested within a genealogical tree (the "Family" column). For example, the ego central to the first genealogical tree (Family 1) was born in 1720 and died at age 24, having had five "decedents". The first person from whom ego is expected to inherit is the father, who died at age 32, when ego was 9. The inheritance share is 0.125, which means that there are 7 other heirs, probably the living siblings. On the contrary, ego in the third family, who died in the first year of life, had no "decedent". Using this data, we can sum across inheritances, or across the shares of each inheritance ego is expected to receive, and simulate changes across birth cohorts. We explain this procedure in more detail in the next section.

Table 1. Inheritance data for egos from simulated Spanish cohorts

Family	cohort	sex	egoAgeDeath	nInheritances	indInheritance	share	inheritKin	ageDeath	ageEgo
1	1720	M	24	5	1	0.125	father	32	9
1	1720	M	24	5	2	0.031	grand father	64	11
1	1720	M	24	5	3	0.031	grand mother	66	13
1	1720	M	24	5	4	0.500	child	0	19
1	1720	M	24	5	5	0.500	child	0	21
2	1720	M	66	3	1	0.250	father	32	14
2	1720	M	66	3	2	0.500	child	2	37
2	1720	M	66	3	3	0.250	mother	65	46
3	1720	M	0	0	1	0.000	*NA*	*NA*	*NA*

Note: *Family*: Identifier for the consanguinity tree; *cohort*: Ego's year of birth; *sex*: Ego's gender; *egoAgeDeath*: Age of ego at the time of her/his death; *nInheritances*: Total number of inheritances received by ego; *indInheritance*: Index of the inheritance received; *share*: Proportion of the inheritance received by ego; *inheritKin*: Type of kinship relation between ego and the decedent; *ageDeath*: Age of the decedent at the time of death; *ageEgo*: Age of ego at the time of the decedent's death.

Measuring the Intensity of Inheritance

Drawing a direct analogy to classic fertility and mortality indicators, we introduce two sets of cohort measures for inheritances: the first based on gross inheritance rates and the second on net ones, that account for mortality. We focus on the latter in our analysis, but need to calculate a measure free of mortality first. We label this gross measure as the Total Inheritance Rate (TIR) which quantifies the hypothetical total number of inheritances received, or the total of shares received by the end of life. This indicator is similar to the Total Fertility Rate (TFR), in the sense that it is a sum of age-specific inheritance rates.

Subsequently we weight each age's inheritance rate by the probability of ego's survival to that age, to compute net indicators that are directly comparable to the Net Reproduction Rate or the Life Expectancy at birth, and we will draw on this comparability to facilitate interpretation. The Net Total Inheritance Rate reports either the expected number of inheritances or the expected sum of shares received by newborn egos over the entire span of life.

Information from Table 1 allows us to compute two Total Inheritance Rates similar to the classical TFR, using either the number (TIR_n¿ or the shares (TIR_s¿ of inheritances received by egos:

$TIR_n = \int_0^{\varpi} i_n(x)\,dx$ and $TIR_s = \int_0^{\varpi} i_s(x)\,dx$

> Where $i_n(x) = I_n(x)/E(x)$ is the rate of inheritance at age x, with $I_n(x)$ the number of inheritances received at age x and $E(x)$ the number of egos of the cohort surviving until age x; $i_s(x)$ is the equivalent rate based on the sum of shares received instead of the number.

Both TIRs have the same interpretation as the TFR: the total number of inheritances received, or the sum of shares received, if the persons survive until the end of the event age range. For fertility, the range for women is up to age 50, and the interpretation is: the mean number of children for all the individuals who survive until age 50, which is a substantial subset of the total population. But for inheritances, the event range is up to the maximum age ϖ, and represents the mean number of inheritances (or mean sum of shares) accumulated over the whole lifespan until the age the last person of the cohort dies. However, as only a small share of each cohort survives until that age, we should calculate indicators that take mortality into account. With this aim we compute I_0^nwhich captures the Net Number of Inheritances received by egos during their lifetime, while considering mortality:

$$I_0^n = \int_0^{\varpi} i_n(x) l(x) dx$$

Where $l(x)$ is the probability of surviving up to age x. I_0^s can be computed in the same way, using the $i_s(x)$ rates for sum of shares[1].

This indicator is the equivalent of the Net Reproduction Rate (R_0) or the Life Expectancy at birth (e_0¿.In that sense, I_0^n can be labeled as the Inheritance Expectancy at birth. When using shares, we can compute I_0^s which can be labeled as the Sum of Shares Expectancy at birth. In our analysis, we focus on these two "net" measures of expected inheritances.

Results

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[1] Note that with cohort data, we do not need life tables and these indicators can be computed directly, as $E(x) = E(0) l(x) = B . l(x)$, where B is the number of births (in our model B is the number of egos at birth), and therefore: $I_0^n = \frac{1}{B} \int_0^{\varpi} I_n(x) d x$

shows the main result of our simulation: the development of the two net rates of inheritance across Spanish birth cohorts.[2] Across these three centuries of birth cohorts, the Net Number of Inheritances has remained remarkably stable, averaging about three expected (partial) inheritances per individual. The Net Sum of Shares (i.e. the number of complete inheritances), however, followed a very distinct trajectory: falling from 1.1 to 0.72 for cohorts born between 1720 and 1920, then rising again to approximately 1.26 for those born around 2000. The interpretation of these trends does not solely depend on the total number and share of inheritances people are expected to receive, but also on who people inherit from, an issue we consider in the next section.

Figure 4. Net Number and Net Sum of shares of Inheritance for simulated Spanish cohorts born from 1720 to 2020

Note: *Net number*: values of I_0^n. *Net share*: values of I_0^s. R packages *ggplot2* and *geomtextpath* used for generating the plot and its labels.

[2] Implicitly, $e_0=\int_0^{\varpi} l(x)\,dx$ is calculated assuming that all years of life have the same value of one, when I_0^n or I_0^s and $R_0=\int_0^{\varpi} f(x)\,l(x)\,dx_0$ associates a value that varies with age, $f(x)$, the fertility rates by age for female births.

Kin We Inherit From

Figure 5 breaks down results according to the type of kin egos are expected to inherit from. Starting first with the Net Number of Inheritances displayed on the left, we observe that the decline in mortality significantly altered the type of kin people "inherit" from. For egos born in the first half of the 18th century, the primary contributors to the total number of "inheritances" were children or grandchildren who died prematurely, accounting for nearly 40% of the total. However, as infant mortality rates historically decreased, these premature losses became rare, as also documented by Alburez-Gutierrez, Basellini, and Zagheni (2025).

Today, the most common scenario is that egos outlive their parents, leading to a significant increase in inheritances from this group, which now represents around 75% of all decedents. Consequently, the relative stability of the Net Number of Inheritances received over time conceals a major generational shift—from inheritances egos are expected to receive from children to those that egos are expected to receive from parents.

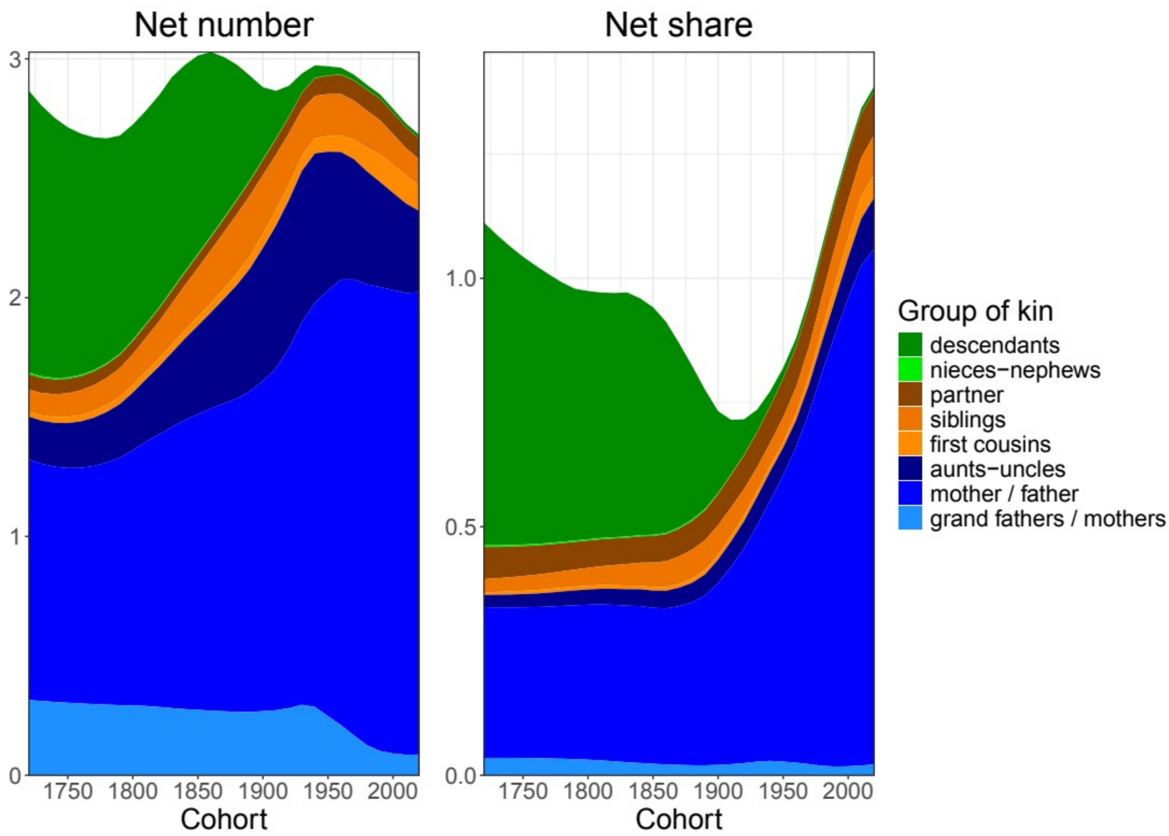
Remarkably, the number of inheritances received from aunts, uncles, and great-aunts/uncles rose for cohorts born up to around 1930, but slightly declined subsequently. This pattern reflects two successive demographic shifts: initially, falling mortality extended the lifespans of these kin (mirroring the upward trend in parental inheritances) and subsequently, declining fertility reduced the number of siblings in the parental generation, thereby decreasing the pool of aunts and uncles available to leave inheritances.

Direct inheritances from grandparents declined among cohorts born after 1950, even though Spain's mortality rates had started falling already since the late nineteenth century. This pattern reflects increased parental longevity: grandparents' estates are now more often transferred to surviving parents rather than directly to grandchildren. The apparent timing lag arises because the grandparents and parents of post-1950 cohorts were born during periods of relatively higher mortality—about sixty and thirty years before ego, respectively—so the reduction in direct grandparental inheritances represents a delayed response to those earlier improvements in survival.

The right panel of Figure 5 breaks down the trend in the Net Sum of Inheritance Shares egos can expect to receive. The trend observed, an initial decline followed by a marked increase, is again attributable to the replacement of inheritances received from children with inheritances received from parents. If we ignore inheritances egos could receive from descendants, i.e. those that are likely to not represent any transfer of wealth, we observe a marked increase in the net share of inheritances egos can expect to receive during their lifetimes: from around 0.46 complete inheritances for individuals born in the 18th century, to around 1.25 complete inheritances for individuals born at the end of the 20th century. This trend is primarily driven by the increasing share of inheritances received from parents.

An interesting observation is that the sum of shares received from aunts, uncles, cousins and siblings increases considerably for the most recent birth cohorts, even though this was not visible for the number of inheritances received. Overall, the number of total inheritances received from lateral kin increased from an average of 0.06 in the 18th century, to around 0.2 total inheritances received from distant kin for birth cohorts born in the late 20th century.

Figure 5. Expected net number and net sum of shares of inheritance at birth by kin types, simulated Spanish cohorts born from 1720 to 2020



Note: *Descendants*: children, grandchildren and great-grandchildren. *Nieces-nephews* group includes grand-nieces / nephews. *Aunts-uncles* group includes grand aunts / uncles. *Grandfathers / mothers* group includes great grandfathers / mothers. R packages ggplot2 and patchwork used for generating the plots.

Evolution of the Share Received of Each Inheritance

The differences between trends in the total number of inheritances received and trends in the sum of shares of inheritances received reflects variations in the number of surviving relatives who hold equivalent genealogical positions to ego at the time of the decedent's death. Figure 6 shows trends in the average share of inheritance received from a given type of relative, thereby providing an indirect measure of the number of individuals with whom ego must divide the inherited estate. Typically, egos share inheritance with other kin, unless the decedent was the spouse. In that case ego inherits all the estate when there are no living descendants or in-law ascendants (hence the stable line at 100% for partners).

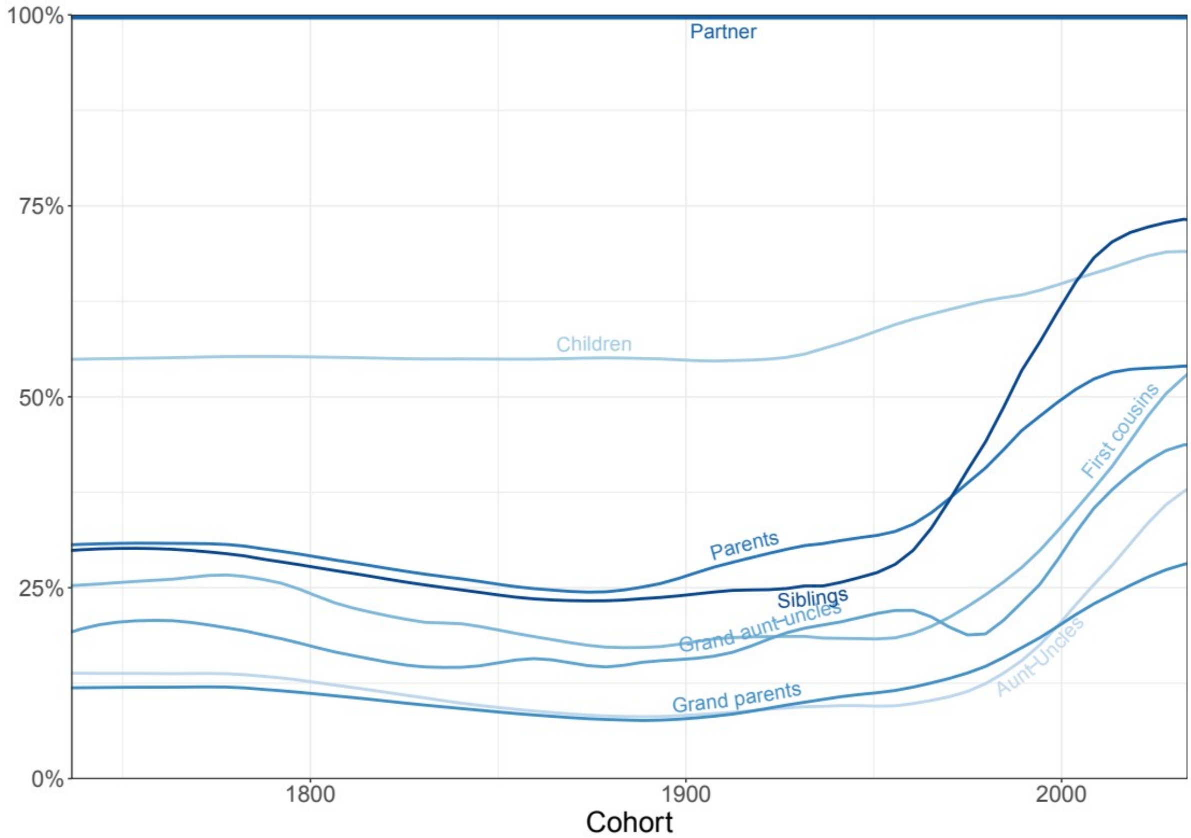
Mean shares for most types of kin remained roughly constant throughout cohorts born before the second half of the 20th century, while they increased considerably for those born during the second half of the 20th century. This is also the case for the share of inheritances received from parents, which is the most important driver of our main result that recent birth cohorts can expect more complete inheritances (i.e. a higher sum of shares) than older birth cohorts. Shares of inheritances received from parents increased from around 25% for birth cohorts from the late 1800s to 50% for birth cohorts born in the early 2000s. In other words, where most inheritances from parents were shared, on average, with three other siblings (or their descendants) in the past, such inheritances are now shared, on average, with one sibling.

Our main result that the sum of shares of inheritances received increased across egos lifetimes (right panel of Figure 5) is therefore attributable to both an increase in the number of inheritances received (left panel of Figure 5) and also attributable to an increase in the share of inheritances received when parents pass away (Figure 6).

Whereas the former is driven by reductions in premature mortality, as children now generally outlive their parents, the latter is determined by reductions in family size.

Figure 6 also shows that shares increased even more dramatically for inheritances received from more distant kin due to the multiple progeny principle: the number of first cousins exceeds the number of children. This is so because the former is the end product of two reproductive processes: ego's grandparents have children who are ego's aunts and uncles, who in turn have children who are ego's first cousins. This explains why reductions in fertility have had a bigger impact on shares of inheritances received from distant kin than from closer kin. It also explains why the contribution of distant kin to the Net Sum of Shares of Inheritances received increased even if the Net Number of Inheritances received from distant kin slightly decreased among recent birth cohorts (Figure 5). Interestingly, the share of inheritance received from siblings is the one which increased most, rising from 25% in the past to nearly 75% in recent times. This change corresponds to the "sibship size effect", as explored by Preston (1976) and Schoen (2019), which differs from the multiple progeny effect: the average number of siblings declines at a much faster rate than the average fertility level, largely due to the homogenization of family sizes.

Figure 6. Mean share of inheritance by type of kin, simulated Spanish cohorts born from 1720 to 2020



Note: R packages ggplot2 and *geomtextpath* used for generating the plot and its labels.

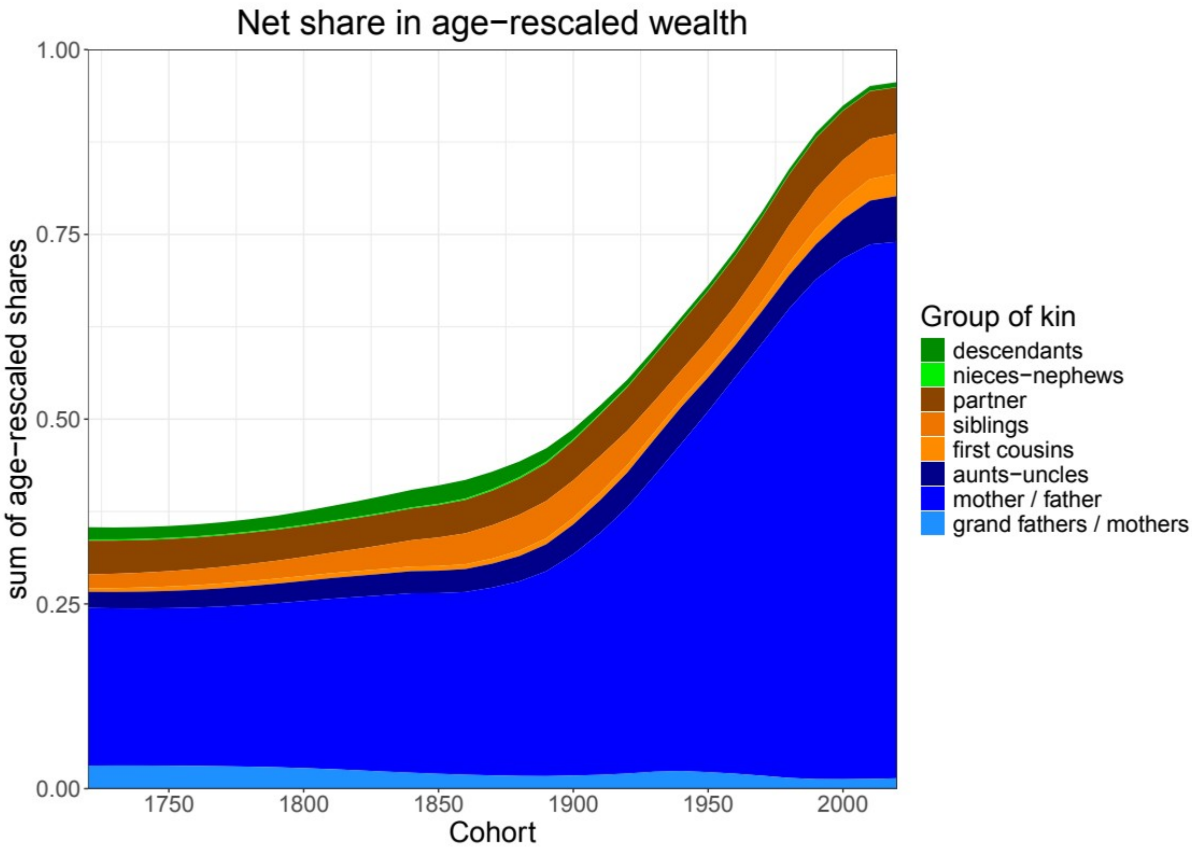
The Age of Decedents and Wealth Amounts Transferred

To better interpret the changes in the sum of shares of inheritances received, we employ data on wealth that permit us to determine how the relative value of inheritances changes depending on the age of the person that passes away. This approach accounts for both the generational transition of inheritances received from children to parents noted above, as well as changes in the age at which relatives pass away.

To do this, we first derive an age profile of net wealth from household survey data disaggregated by the age of the household reference person, as reported in the Spanish Household Financial Surveys of 2020 (Gavilán, 2024). Although these data refer to households rather than individuals -tending to overstate personal wealth and excluding children who rarely serve as household reference persons- they furnish a useful relative age-profile. Because we need to apply this age profile uniformly across the entire period, we use relative levels of wealth. We calculate the relative level of wealth held at a given age as follows: “median net wealth at age x” / “median net wealth at age 54” (see Annex 2). We acknowledge this back-of-the-envelope calculation has major limitations, but consider this extension useful for the interpretation of results.

Figure shows the results of multiplying each decedent’s inheritance share by these age-specific multipliers derived from the 2020 Spanish survey. As expected, relative net wealth inherited from descendants is negligible compared with transfers from ascendants. In addition, inheritances from collateral kin account for an increasing proportion of total transfers, reflecting larger shares received but also their generally younger age and correspondingly higher wealth relative to the parental generation (who already depleted more wealth before passing away). Overall, the average sum of inheritances people are expected to receive throughout their lifetimes roughly tripled over the past two centuries in this simulation. This conclusion is likely to be strengthened even further if we consider that more recent generations of decedents hold more wealth than those of several decades ago (Piketty & Zucman, 2014).

Figure 7. Expected age-rescaled sum of share of inheritance at birth, simulated Spanish cohorts born from 1720 to 2020



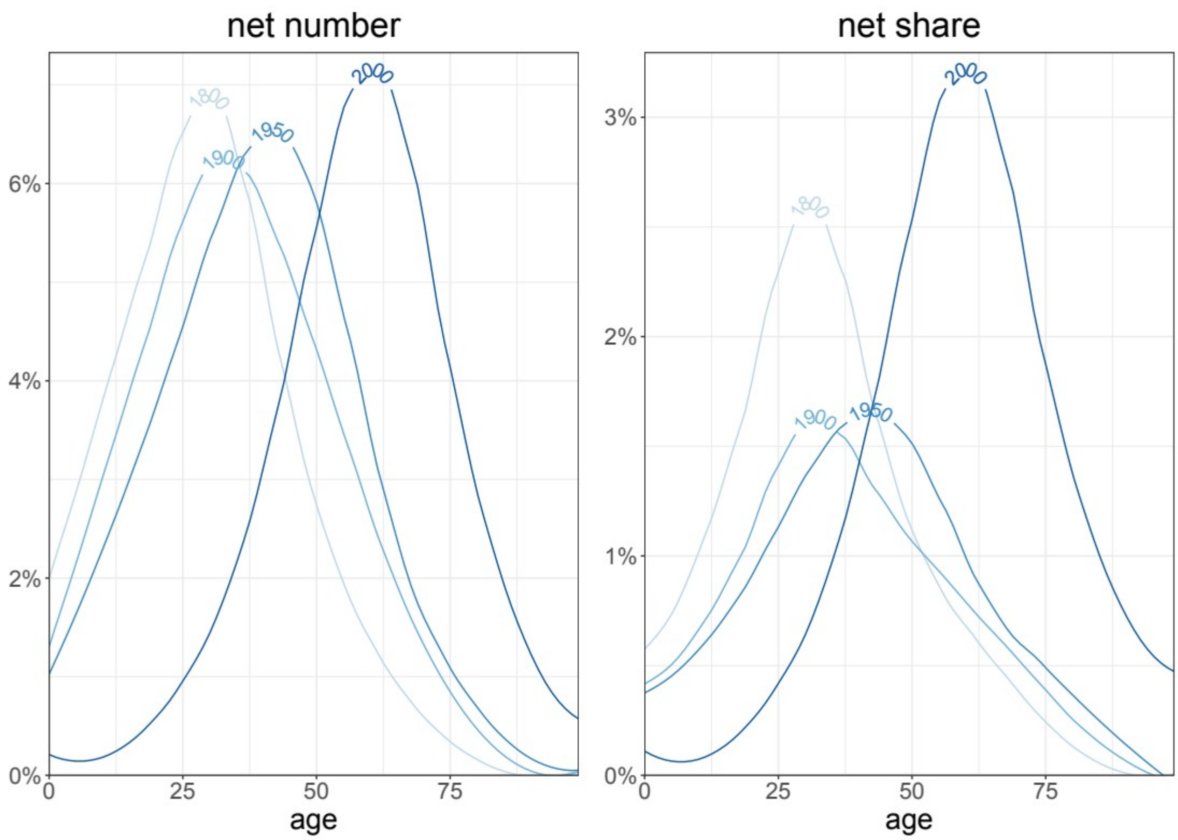
Note: Each share of inheritance is multiplied by a rescaled amount of net wealth by age corresponding to Spanish household financial data by age for year 2020, setting net wealth at age 54 equal to one. R packages *ggplot2* used for generating the plot and its labels.

Additional Analyses

We provide various sets of additional analysis that are important for understanding the impact of the changes documented above. This analysis calculates: changes in the age at which people receive inheritances, variation in the number and shares of inheritances received, and an estimate of how common inheritances from distant relatives are.

Firstly, our simulations allow us to calculate the distribution of ages at which people receive an inheritance. Figure 8 shows how the modal age for receiving inheritances has risen from 30 to 60 years across the last two centuries. This postponement accelerated for cohorts born in the latter half of the 20th century, with the modal age increasing from 40 to 60 years within the past 50 years.

Figure 8. Net rates by age for the number and the sum of shares of inheritances, simulated Spanish cohorts born in 1800, 1900, 1950 and 2000



Note: The rates presented are net rates in the sense that the numerators are the numbers of egos at birth. R packages *ggplot2*, *patchwork* and *geomtextpath* used for generating the plots and labels.

Secondly, our microsimulation approach allows us to calculate variation in the number and total shares of inheritances received. Figure A2 in the Online Appendix shows the median number and sum of shares received by egos from each birth cohort (solid line) as well as various percentiles of the distribution (indicated by the colours). Where 75%

of birth cohorts from the early 20th century is simulated to receive between 0.25 and 1.5 total inheritances, this range increased to 0.7 and 2.2 for later birth cohorts.

Another notable finding is that the share of individuals who received no inheritance was substantially higher in earlier cohorts. Specifically, over 37.5% of the total population born before the 19th century received nothing, and this figure exceeded 25% for those born before the 20th century. This can be explained by the high proportion of children who died before their parents.

Discussion

Economic and sociological research has documented how wealth is becoming increasingly important in society for economic and other forms of well-being (Hällsten & Thaning, 2022; Killewald et al., 2017; Spilerman, 2000). The total amount of wealth held by households relative to their annual income has risen rapidly in high-income countries across the last decades (Piketty & Zucman, 2014). Inheritances are therefore likely to become more and more important for economic inequality as well as inequality of opportunity. In this article, we showed how demographic changes are likely to increase the importance of inheritances in society even further.

Using an innovative microsimulation approach applied to the Spanish legal and demographic context, we simulated the number of relatives that die during people's lifetimes, and whether people are expected to inherit from these relatives. We determined possible inheritance based on whether other relatives are simulated to be still alive at that time and by applying Spanish laws on inheritances. This simulation showed how the number of relatives who people can expect to inherit from increased considerably across birth cohorts of the last three centuries.

Disregarding inheritances from children and other descendants that likely do not represent considerable economic value, the number of inheritances people can expect to receive increased from around 1.7 in the 18th century to around 2.8 inheritances for people born in the late 20th century. If we consider also the share of these inheritances people are expected to receive (i.e. by considering other relatives that can also expect part of the inheritance), trends are even more dramatic: from 0.46 complete inheritances for individuals born in the 18th century, to around 1.25 complete inheritances for individuals born at the end of the 20th century. Most of this dramatic increase in the "sum of shares of inheritances" people can expect to receive occurred across birth cohorts born in the 20th century. Another important change is that the modal age at which people can expect to receive increased from age 30 to age 60 across the time period studied.

Increases in the number and total share of inheritances people can expect to receive were primarily driven by parents. On the one hand, people have become more likely to outlive (both) their parents. On the other hand, people have fewer siblings to with whom they are expected to share inheritances from parents with. For the most recent birth cohorts, we also observed an increase in the importance of inheritances that are expected to be received from more distant kin: aunts, uncles, siblings and cousins. Even though these events became slightly less common over time due to declining fertility, the share of inheritances people can expect to receive from distant kin increased dramatically. Overall, this trend led to an estimated increase of 0.06 total inheritances received on average from distant kin in the 18th century, to around 0.2 total inheritances received from distant kin for birth cohorts born in the late 20th century.

There are many consequences related to these developments, but we focus here on discussing the impact they could have on the importance of inherited wealth in society compared to other forms of wealth and income. When individuals accumulate more and larger inheritances across their life course, this means that inherited wealth, all else equal, will become more important compared to savings and income. Similar to the concerns expressed about the general increasing importance of wealth (Piketty & Zucman, 2014), this strengthens the importance of inherited versus (relatively more) obtained economic resources. This is likely to further strengthen inequality of opportunity (Spilerman, 2000) and economic inequality more generally, given the less equal distribution of wealth compared to income.

It has to be noted that our analysis was purely demographic and based on simulations. This considerably limits the claims we can make about the actual impact of demographic changes on wealth-to-income ratios and wealth inequality. It therefore remains to be seen whether the predicted patterns are also observed empirically. Future studies can look into these issues by empirically observing wealth transfers accumulated across people's lives and how this changed across time. However, there are good reasons to believe that the processes documented here are indeed impacting the importance of wealth in high-income societies.

First of all, it could be that inheritances have become smaller over time, counteracting the effect of accumulating more inheritances. However, increasing wealth-to-income ratios make that an unlikely scenario, and lead to the expectation that, were we to use actual data on wealth, that trends over the 20th century would be even more pronounced. A second possibility is that the age profile of the decedents changed in such a way that it reduced the amount people inherit. But, additional analysis considering the changing age at which people die provided even stronger results (see Figure 7). A final possibility is that people's inheritance behaviour changes as people are expected to inherit more often and larger quantities. For instance, our simulations indicated that inheritances from distant kin are increasingly likely among recent birth cohorts. The actual impact on received inheritances could change if such distant kin decide to alter the established order of inheritance through wills or if childless people are more likely to consume their wealth at older ages themselves.

This latter scenario is realistic. However, the main result of this paper was primarily driven by the changing number and share of inheritances received from parents. There are, to our knowledge, no signs yet that parents are becoming more likely to exclude their children from inheritances or reduce their share of inheritances. The key role played by inheritances from parents also makes our results applicable to other contexts. In our simulation we applied the inheritance laws of Spain to our simulation, which considers kin up to the fourth degree. Results might therefore be different in countries where a different order of inheritance exists. However, given the strong norms to leave inheritances to children, it is likely that our results are also applicable to other high-income countries, in particular those that have experienced persistently low fertility rates.

Another important result from our analysis is that the modal age at which people can expect to receive inheritances has shifted dramatically from age 30 to age 60 across the time period studied. This is a finding earlier research had also documented for recent time periods (Hexel, Alburez-gutierrez, and Zagheni, 2024; Zagheni and Wagner, 2015). One consequence of this trend is that the financial dependence of many individuals on their parents is likely to extend to later ages, which possibly also implies more in-vivo transfers compared to inheritances. Another consequence is that the point in the life cycle at which people receive inheritances today are different than in the past. Where inherited wealth could have served as starting capital for older generations, younger generations are likely to receive inheritances close to retirement. With increasing pressures on pension systems, many people might start to look at their parents' wealth as a safety net for their retirement. However, these are questions for future research to answer.

The main contribution of this paper has been to show that demographic changes are likely to have a major impact on the quantity of inherited wealth. In short, even though it might seem intuitive that as birth cohorts become smaller over time, the transfer of wealth across generations is ever more concentrated among fewer individuals, we used microsimulations to show that this impact is indeed likely to be considerable. The demographic changes of the last centuries and decades likely led to an increase in the number of inheritances people accumulate during their lifetimes, as well as the amount people receive once they inherit. Even though our simulation was based on demographic changes and inheritance laws from Spain, the largely shared demographic trends across high-income countries, and the importance of inheritances from parents for the trends observed, this conclusion is likely to hold across a wide variety of contexts.

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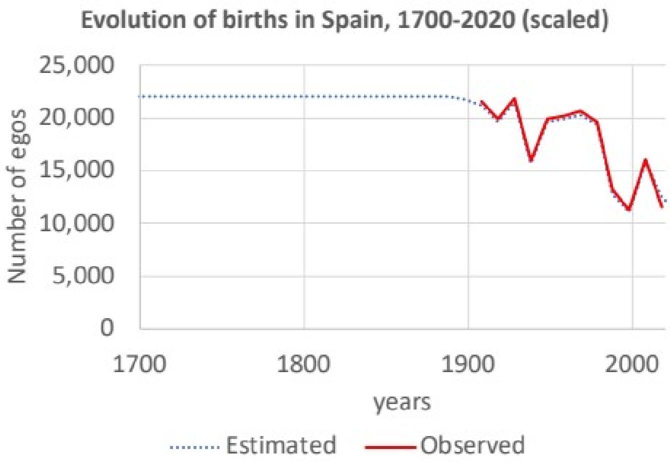
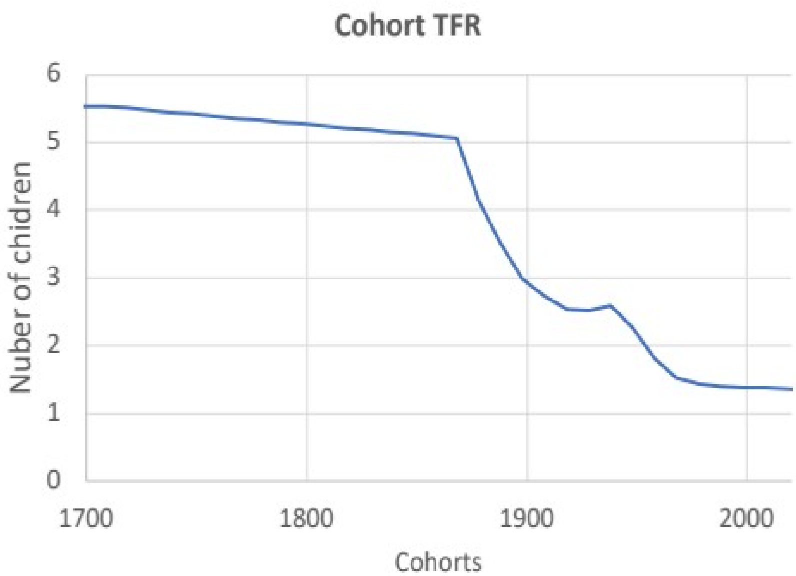
Online Supplementary Material

Annex 1. Spanish demographic regimes data for cohorts born in 1720-2020

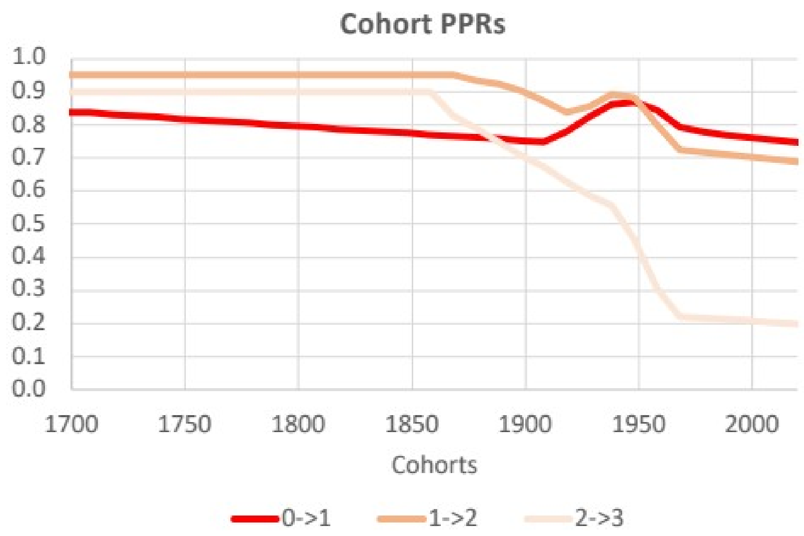
The simulated egos represent the Spanish population from 1720 to 2020. Initially, the number is set at 22,000 for the period 1720-1890 and then adjusts proportionally to the observed births numbers in Spain thereafter.



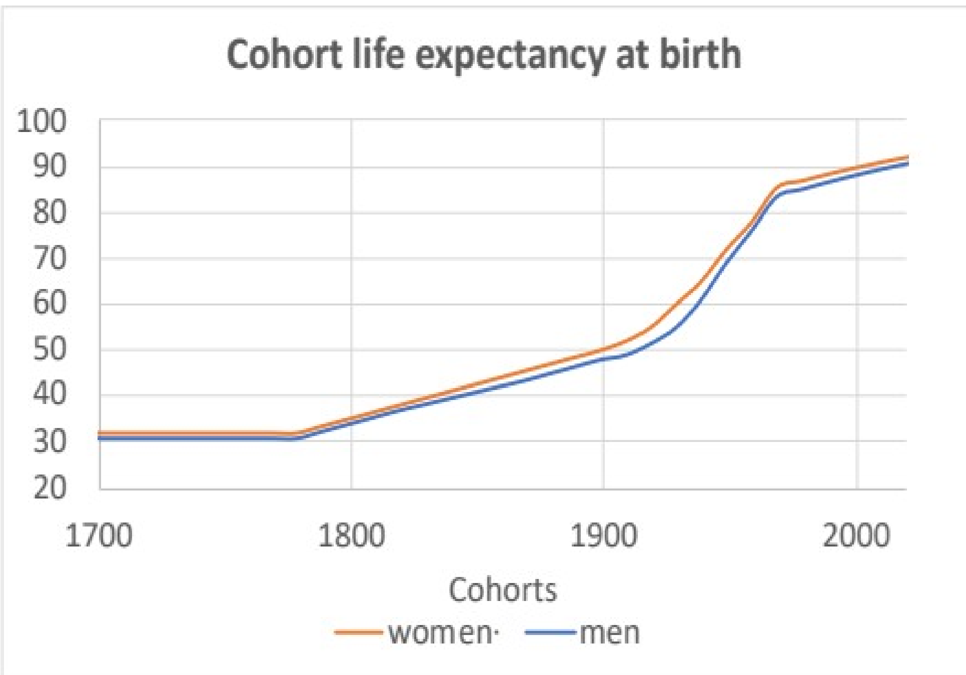
Cohort TFR estimates are based on (Devolder 2018) for the birth cohorts 1870-2000, with a simple retropolation back to cohort 1720 and projection forward to cohort born in 2020.



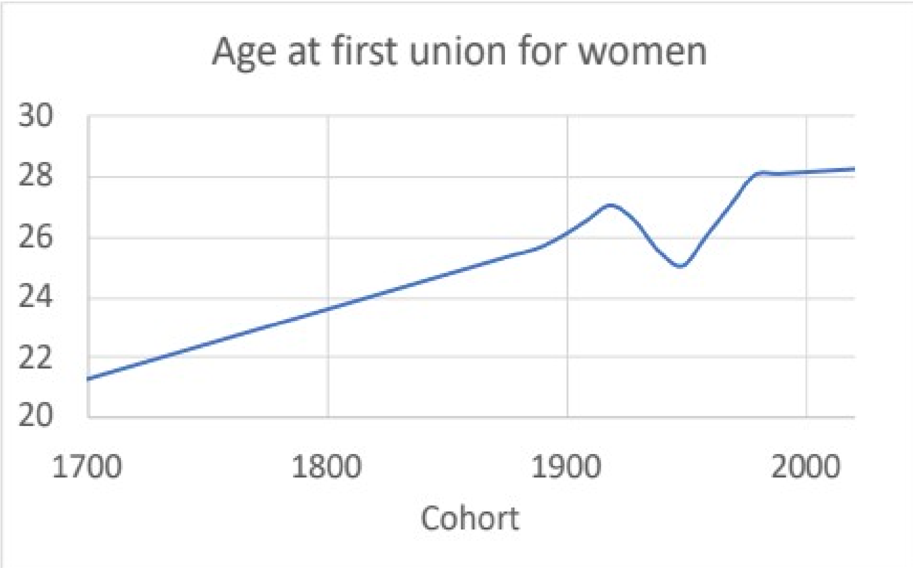
Fertility is in fact simulated at the parity level, with the values for the first three parities shown in the chart below.

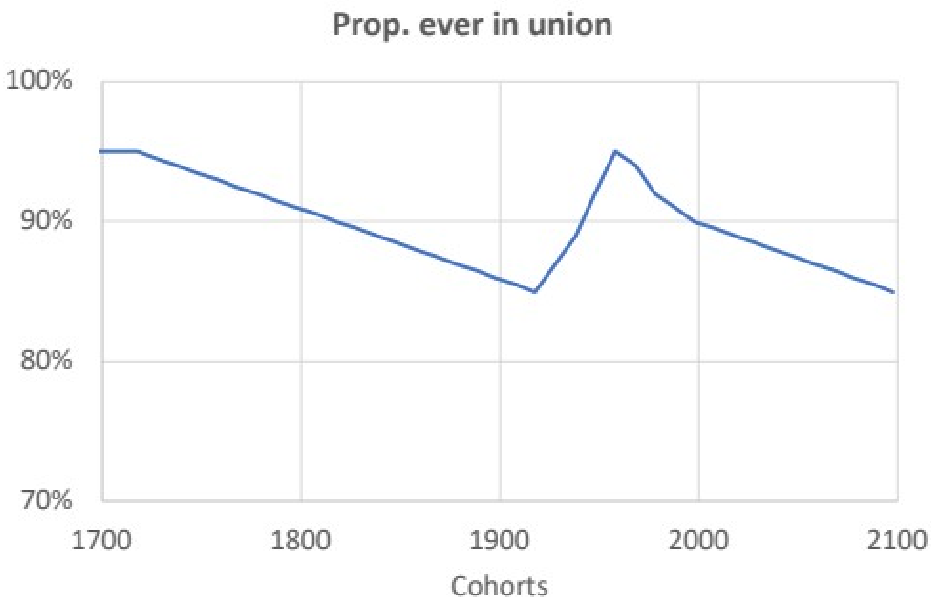


Cohort life expectancy for men and women are own estimates, based partially on (Blanes Llorens 2007). Internally the model uses the United Nations Life Tables model elaborated for the World Population Prospects, 2012 Revision, following the methodology described by Li, Lee, and Gerland (2013). We use the UN General model for all the simulations.

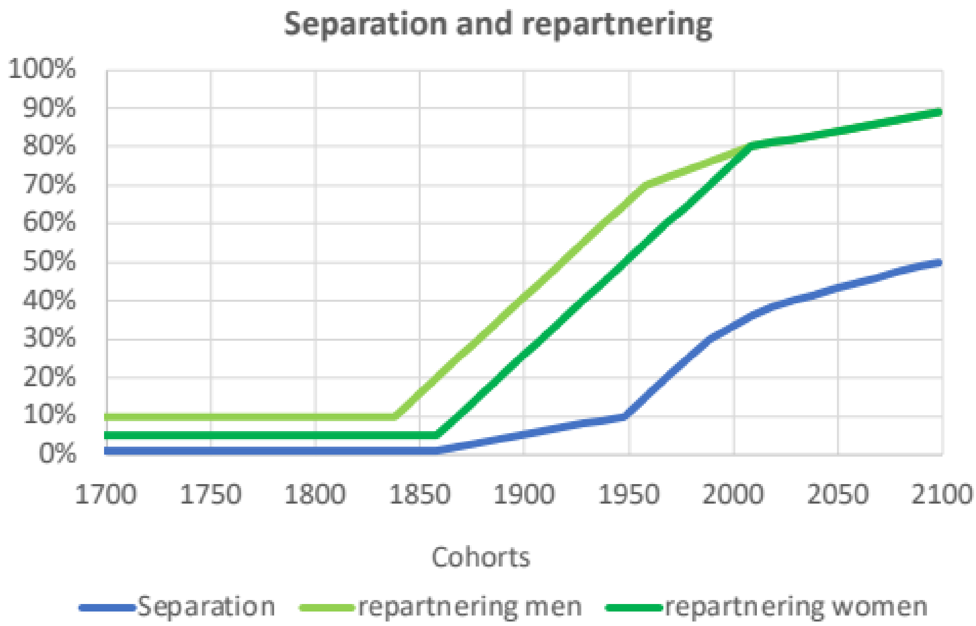


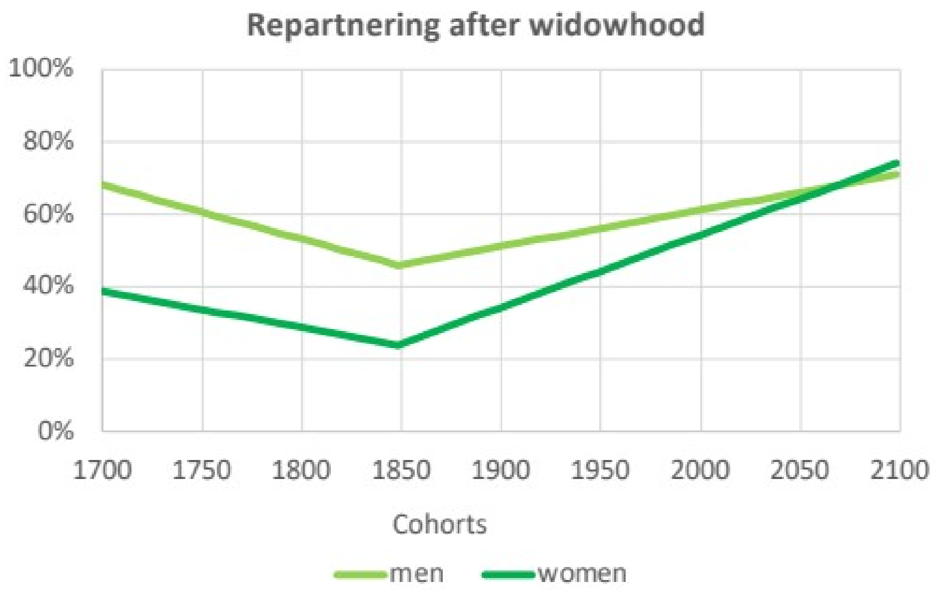
The model is also fed with information on age at first union for women and men as well as the final proportion of ever entering a union. Estimates here are based on (Devolder 2018). These values are used to generate the full set of age probabilities using the Coale and McNeil (1972) model.





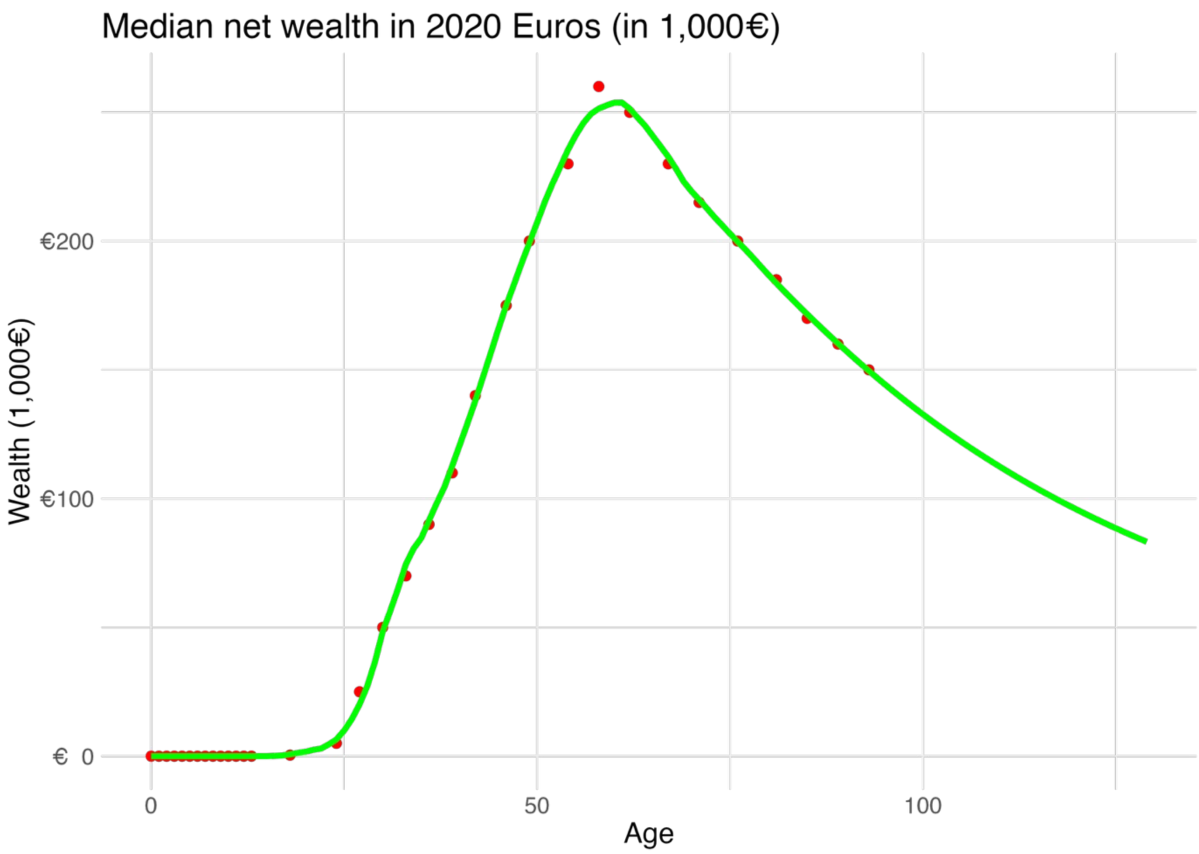
Estimates of proportion of couples separating, as well as probabilitiy of repartnering, either after a separation or after widowhood, are based on estimates made for (Esteve et al. 2018). These probabilities are converted internally into waiting time distributions using mathematical probabilistic models, like the Erlang model, log-logistic models, or the first marriage Coale & McNeill model.



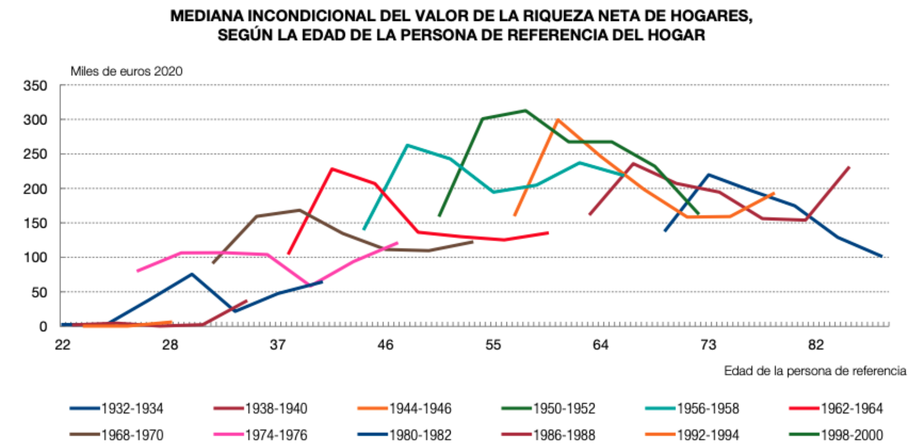


Annex 2. Profile of net wealth by age for Spain in 2020

We create an age-profile of median net wealth from sources which use the Spanish Family Financial Surveys. The data used correspond mainly to the 2020 survey wave (Gavilán 2024). We set the values for age less than 20 to almost zero. The value for ages more than 85 are extrapolated, following the declining profile starting at age 60.



Note: red dot are median net wealth by age of the household head, as approximated from the following plot by (Gavilán 2024). The interpolated and the extrapolated values are obtained by loess smoothing.

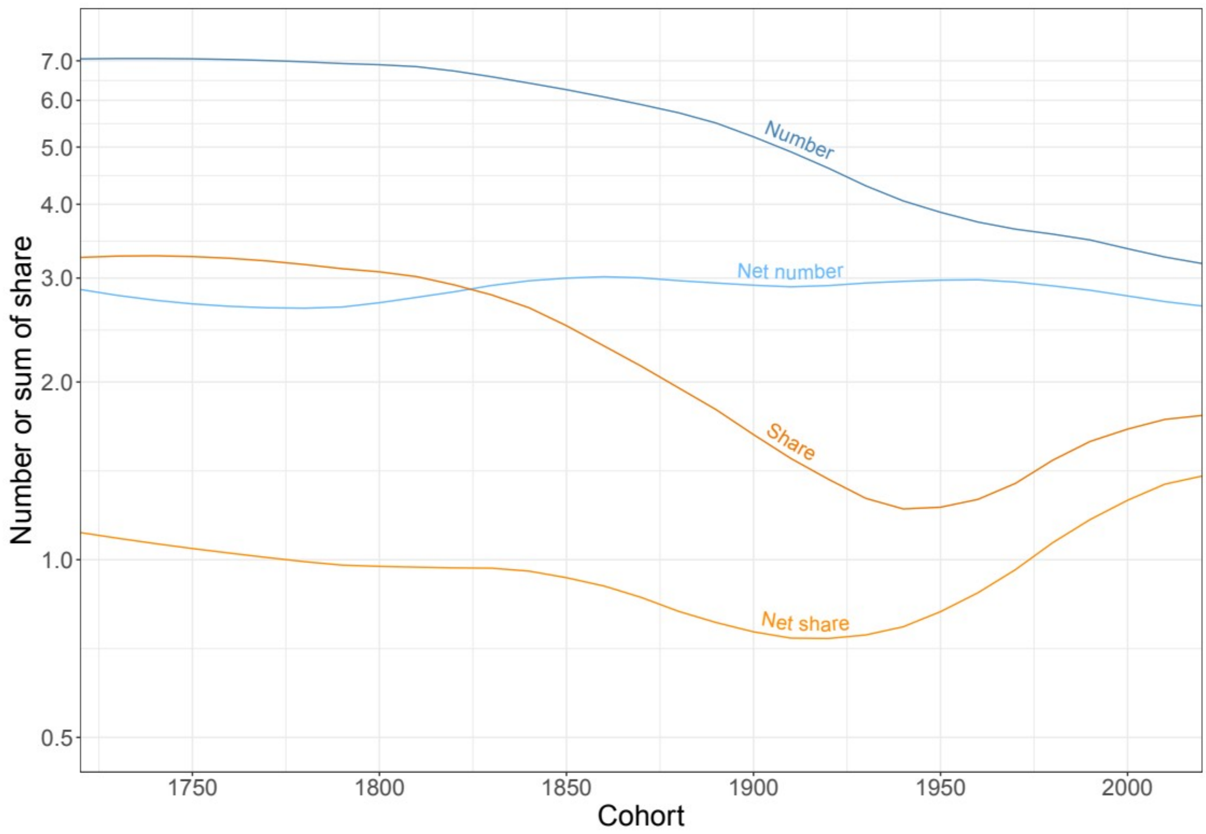


Fuentes: Banco de España, Encuesta Financiera de las Familias.

Note: Median net wealth for households, by age of the head, from Spanish Family Financial Surveys of 2020 (Gavilán 2024).

Annex 3. Figures not included in the main text.

Figure A1. Gross and Net Number or Sum of shares of Inheritance for simulated Spanish cohorts born from 1720 to 2020



Note: *Number*: values of TIR_n computed for birth cohorts of egos. *Share*: values of TIR_s. *Net number*: values of I_0^n. *Net share*: values of I_0^s. The scale is in natural logarithms. R packages *ggplot2* and *geomtextpath* used for generating the plot and its labels.

Figure A2. Distribution around the median value of the number and the sum of shares of inheritance per ego, simulated Spanish cohorts born from 1720 to 2020

Note: For each birth cohort, the chart shows the distribution split at the median: the 50% of egos with values below the median and the 50% with values above it. R packages *ggplot2*, *ggdist and patchwork* used for generating the plots.

Annex 4. Probability of inheriting from collaterals

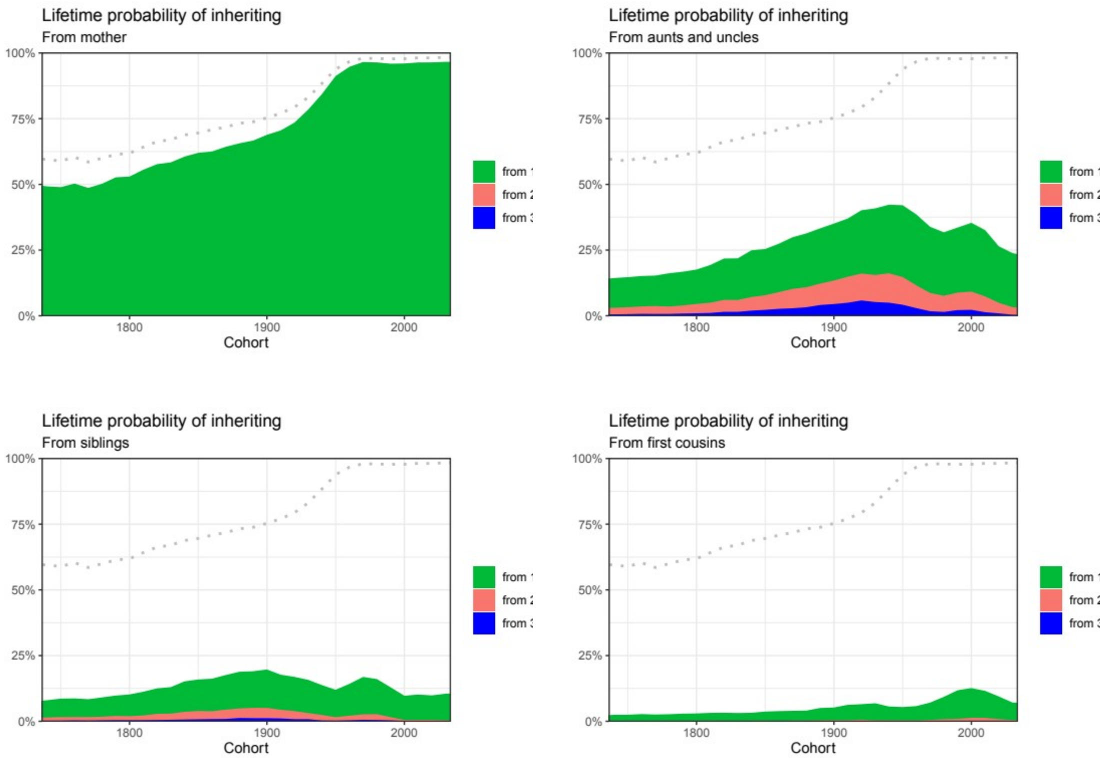
Error: Reference source not found presents the probabilities of inheriting at birth from various types of lateral kin. For each one, we add also as an upper limit the probability of inheriting at least once, for any relative. This provides insight into the evolution of inheritance likelihood from distant relatives, who are neither ancestors nor descendants of ego. The probability of inheriting from the mother is used as a benchmark, as its increase reflects improvements in mortality rates, and because its level is very close to the maximum probability, for any relative. It is interesting first to note that for egos born in the 18th and the 19th centuries, this probability of inheriting at least once, from any type of kin, was quite low, of less than 70%, due to the high infant and juvenile mortality. Nowadays this probability is close to 98%. However, we observe that, despite significant gains in lifespan, approximately 5% of children still pass away before their mother.

Among lateral relatives, aunts and uncles have the highest probability of being ego's decedents because they belong to the parents' generation. This probability rose steadily to the cohort born in 1950 -doubling to roughly 40 percent- as reductions in adult mortality extended aunts' and uncles' survival into the ego's lifetime and thus their chance of dying without leaving surviving descendants. For cohorts born at the start of the twenty-first century, the probability fell to about 25 percent, a decline largely attributable to lower fertility rates and the resulting contraction in the pool of potential aunts and uncles.

The next two groups of lateral relatives with the highest probabilities are ego's siblings and first cousins. Their general evolutionary pattern over time mirrors that of aunts and uncles, but their profiles are time-shifted to the left: siblings, being of the same generation as ego, share the same demographic regime, while first cousins belong to the next generation, benefiting from higher survival probabilities.

The combined effects of reduced mortality and lower fertility create a surprising outcome for egos born around the year 2000: they will be more likely to inherit from their first cousins than from their siblings. However, this is not a stable or enduring trend.

Figure A3. Probability of inheriting at birth for different type of kin, simulated Spanish cohorts born from 1720 to 2020



Note: Computed with a competing risk model with events ‘inheriting from…’ and ‘death’. The dotted line is the lifetime probability of inheriting at least once, of any relative. For each kin type, we compute the probabilities of inheriting from one, two or three or more relatives of the same type. R package ggplot2 used for generating the plots.

References

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