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# The gender (tax) gap in parental transfers. Evidence from administrative inheritance and gift tax data

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# Abstract

This study examines how inheritance and gift taxation, in combination with gendered parental transfer behavior, exacerbate gender wealth inequalities. Tax systems can help reproduce gender differences if men and women benefit differently from tax exemptions. This might happen when men and women receive different types of assets, only some of which are tax exempt. To investigate gendered parental transfer behavior and gendered tax rates, we draw on German administrative data on inheritance and gift taxation. Women are less likely than men to receive parental transfers, the value of such transfers tend to be lower, and women tend to receive different types of asset. Moreover, we identify a gender tax gap of 2% for inheritances and 22% for gifts. Our analyses suggest that men benefit more from tax exemptions on business assets. This study adds the tax system as another factor implicated in the reproduction of gender wealth inequalities.

Key words: wealth, gender inequality, taxation, family, generations, stratification, Germany

JEL classification: J16 economics of gender, D64 intergenerational transfers, H220 Taxation and Subsidies: Incidence

# 1. Introduction

Wealth is key to understanding economic inequality today. It is distributed unequally and increasingly decisive in shaping socio-economic status (Killewald et al., 2017; Hällsten and Thaning, 2022). Moreover, wealth is not only implicated in the reproduction of social stratification, it is central to our understanding of gender inequality (Deere and Doss, 2006). Ample research has documented that, on average, women own less wealth than men

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(Sierminska *et al.*, 2010; Ruel and Hauser, 2012; Kukk *et al.*, 2022). Despite an uptick in female labor market participation in recent decades, women continue to earn less than men and are therefore less likely to accumulate wealth from savings. Furthermore, a growing share of wealth is not generated from savings but received in transfers. In fact, in 2010 more than half the total private wealth stock was passed on from generation to generation in the form of inheritances, bequests and gifts in France, Germany, the UK and the USA (Alvaredo *et al.*, 2017). Given women's disadvantages in labor market returns, wealth transfers play a more significant role in wealth accumulation for women than for men (Deere and Doss, 2006).

Intergenerational transfers and their taxation are part of a highly contested social and political arena (Beckert, 2004). Countries regulate testators' rights to allocate their property, relatives' claims to such property and the state's rights to appropriate the property of deceased citizens in the form of taxes. It is here, in the inheritance tax system, that privilege and power are institutionalized. Usually, tax rates and schedules are determined by various personal circumstances and asset characteristics. Notably, the final tax payment is often the result of myriad exemptions in tax law. For instance, some benefit from generous tax systems are written gender-neutrally, tax systems may exhibit *implicit* gender bias, for example, if men and women benefit differently from tax exemptions because of gender-related economic behavior (Stotsky, 1996).

Despite the central role of taxes in the political discussion on reducing wealth inequality (Schechtl and Tisch, 2023), tax policy only lurks in the background of sociological studies on wealth and stratification (Spilerman, 2022). This study investigates gender wealth inequalities from a fiscal policy perspective. We aim to bring together the literature on the gender wealth gap, intergenerational transfers, as well as taxes and gender equity to examine the following question: *How does the inheritance and gift tax system, in combination with gendered parental transfer behavior, shape gender wealth inequalities?* We argue that modern gift and inheritance tax rules contribute to the gendered distribution of wealth because men tend to receive tax-exempted transfers more than women. For example, most countries treat the transmission of family businesses preferentially, and most business heirs are men.

Why should we care about the role of inheritance and gift taxes in gender wealth inequalities? Building on previous literature, we argue that owning wealth means more than simply being better off. Wealth entails several social, economic and political functions (Spilerman, 2000; Fessler and Schürz, 2018). Wealth provides security. It can serve as a buffer against adverse income shocks. Wealth can generate income and bring prestige and status. At the top, wealth may buy economic and political influence. The gendered ownership of a society's wealth stock therefore not only affects women's well-being, but also perpetuates a gendered social order (Deere and Doss, 2006). To develop measures to achieve more gender equality, we first need to understand the constraints that women face in accumulating wealth. Prior research has shown that these constraints are manifold and need to be investigated and tackled individually (Chang, 2010). Among the various obstacles, fiscal policy is particularly neglected. Because of the central role of transfers in wealth accumulation, we argue it is vital to study how parents' transfer behavior in interaction with the tax system shapes gender differences in parental transfers. The tax system may ultimately

reproduce gender wealth inequality and serve as a guardian of privileged access to status and power.

To study empirically the extent to which parental transfers are gendered and the degree to which the tax system exhibits an implicit gender bias, we draw on German gift and inheritance tax records that cover the entirety of parental wealth transfers for which the authorities assessed taxes between 2007 and 2020 (N = 511034). We apply two different methodological approaches. First, we document gender differences in parental transfers and in effective tax rates. Most importantly, we identify what we call the *gender tax gap* in parental transfers, following the well-established gender pay gap and gender wealth gap. Second, to shed light on the conditions governing this gap, we estimate ordinary least squares regressions to predict the effective tax rate in terms of characteristics of both the donor and the receiver of the respective transfer.

Our analyses show that women were less likely than men to receive parental transfers, the value of the transfers received by women was lower, and women and men differed in the asset types they received. Regarding taxes, we identified a gender tax gap in inheritances of 2% to women's disadvantage. Controlling for the percentile rank in the transfer distribution, the absolute difference between women's and men's effective inheritance tax rate was 0.08 percentage points. For gifts, we identified a gender tax gap of 22%. In absolute terms, women on average paid 0.55 percentage points more than men on received gifts of similar value. Our regression analyses and descriptive statistics about gendered parental transfers provide insights into explanations of these gaps. Gender differences in the types of asset transferred seem partly to explain the gender gaps in the effective gift tax rate. Furthermore, we show that the gender tax gap in parental transfers increased along the transfer distribution and was larger if the donor was male.

This study's main contribution is to introduce the tax system as another factor contributing to gender wealth inequalities. Most prior research focused on labor market characteristics, such as earnings or occupational classes, and family processes, such as intergenerational transfers to explain the gender wealth gap (Ruel and Hauser, 2012; Schneebaum *et al.*, 2018; Waitkus and Minkus, 2021; Tisch and Gutfleisch, 2022). Only recently have scholars started to study the role of legal professionals in the production of gender wealth inequalities (Bessière, 2022; Bessière and Gollac, 2023). We complement this literature by highlighting that systematically gendered individual behaviors create implicit gender bias in taxation, reproducing gender wealth inequalities.

# 2. Wealth, intergenerational transfers and gender

In what follows, we highlight how intergenerational transfers increasingly determine wealth levels, socio-economic status and wealth functions. We then argue that intergenerational transfers are decisive for understanding gender wealth inequality and gendered access to security, prestige and power.

#### 2.1 Intergenerational transfers

Wealth transfers are distributed even more unequally than total wealth (Nolan *et al.*, 2021). Across several OECD countries, low-income households are persistently less likely to receive an inheritance, and if they do, the amount received is lower (Morelli *et al.*, 2021). Inherited wealth as a fraction of total wealth has increased over recent decades. That is, a

rapidly growing share of the wealth stock is passed from generation to generation, leading to an increasing detachment of individual labor effort and wealth possessions (Piketty and Zucman, 2015; Alvaredo *et al.*, 2017). It is estimated that inherited wealth accounts for between 50% and 60% of the entire private wealth stock in affluent countries, such as France, Germany, the UK and the USA today (Alvaredo *et al.*, 2017).

Because of their increasing relevance in determining wealth positions, intergenerational transfers are vital in shaping individual access to wealth functions. Who gets to enjoy the economic security of having a wealth buffer in the event of income loss; who shrugs off sky-rocketing rentals by owning their own home; who can obtain the social status that comes with expensive brands and goods; and ultimately, who can exert influence in economic and political decision-making? Each aspect becomes a function not only of who earns and saves income, but who receives substantial wealth transfers.

We follow Bessière and Gollac's line (2023) that the stratifying power of intergenerational transfers is not only implicated in the vertical ordering of individuals. It also entails an essential dimension of horizontal, and ultimately intersectional, disadvantage in life chances: wealth transfers are key to understanding gender wealth inequality.

#### 2.2 Reproduction of the gender wealth gap

Women own less wealth than men. The gender wealth gap has been documented convincingly across many countries (Deere and Doss, 2006; Sierminska *et al.*, 2010; Ruel and Hauser, 2012; Frémeaux and Leturcq, 2020; Bessière, 2022). It is worth noting, however, that just like wealth in general, gender wealth gaps differ along the wealth distribution. That is, the average gender difference in wealth is determined primarily by gender wealth inequality at the top of the distribution (Schneebaum *et al.*, 2018).

What drives the gender wealth gap? Previous research pointed to gender differences in labor market attachment, in the sense that women earn less than men, are less likely to achieve managerial positions (Christofides *et al.*, 2013), are particularly underrepresented in top income positions (Yavorsky *et al.*, 2019), and are more likely to reduce the paid labor they perform after childbirth (Musick *et al.*, 2020). In short, sticky floors and glass ceilings prevent women from achieving similar career progress to their male pendants (Bishu and Alkadry, 2017). Thus, women will be less able to accumulate wealth from savings (Ruel and Hauser, 2012). This focus on gendered labor market returns masks the significance of wealth transfers for the gender wealth gap, however. Given the female disadvantage in accumulating wealth from labor earnings, wealth transfers are often seen as particularly decisive for women's ability to acquire wealth (Deere and Doss, 2006).

Past research showed that gifts are more unequally distributed among women and men than inheritances (Dunn and Phillips, 1997; Light and McGarry, 2004). McGarry (2016) and Loxton (2019) find that although daughters and sons tend to receive similar total amounts, daughters receive financial gifts at higher rates in the USA. This holds only for unmarried daughters, however. In contrast, daughters in France, Germany and Korea receive fewer financial transfers and smaller amounts than sons (Deindl and Isengard, 2011; Leopold and Schneider, 2011a; Wong, 2013; Bessière and Gollac, 2023). Furthermore, Leopold and Schneider (2011b) for Germany and Bessière and Gollac (2023) for France show that women and men receive different types of asset.

If the importance of inherited wealth for wealth accumulation is increasing and women are less likely to accrue wealth from surplus income, then intergenerational wealth transfers are pivotal in determining gendered access to wealth, especially at the top of the distribution. Yet it would be foolish to assume that the political arena—legal requirements or tax regulations—is not implicated in shaping gendered wealth transfers. Ultimately, the political and economic power wielded by top-wealth holders might manifest itself in the hidden, cryptic rules of intergenerational wealth transmission. While explicit regulations against women's succession at the top is highly uncommon nowadays, implicit patterns might still serve to maintain a particular gendered order (Bessière and Gollac, 2023).

Bessière and Gollac (2023) illustrate impressively how notaries and lawyers contribute to the gender wealth gap by applying *reversed accounting*. That is, instead of first calculating the rightful share of each heir of an estate and only then dividing the assets and calculating potential compensation, notaries make the structuring assets, such as a business or a family home, the keystone of all calculations. First, it is decided who will receive the structuring assets, and then acceptable compensations are negotiated, often to the disadvantage of women (Bessière and Gollac, 2023, p. 114). We broadly follow their approach of studying the law in practice and try to shed light on the state's role—embodied in the taxation of intergenerational transfers—in reproducing gendered access to wealth. We do so by arguing that, ultimately, the combination of gendered parental transfer behavior and the tax system serves as guardian of the gendered gateway to security, status and power.

# 3. Taxation

## 3.1 Taxation and gender equity

When studying gender and the state, feminist research has focused on the role of social policies in the social reproduction of gender inequality (Orloff, 1996). One often neglected institutional factor in the debate on gender inequality is fiscal policy, including taxation (Grown, 2010). Tax systems reflect a plethora of decisions based on economic constraints, political power, fairness considerations and ideology, including about gender. Tax systems may exhibit both explicit and implicit gender bias (Stotsky, 1996). Explicit gender bias arises if tax law treats men and women differently. Tax law reflects implicit gender bias if it has different implications for women and men because of gendered social arrangements and economic behavior (Stotsky, 1996). Both forms of bias might be exhibited in direct (e.g. income, wealth, estate or inheritance taxes) or indirect taxes (e.g. VAT or selected excise taxes).

A tax system might exhibit explicit gender bias if it specifies specific tax-free allowances depending on the sex of the taxpayer. For example, in the Netherlands, until 1984, a married man was entitled to a larger tax-free allowance than a married woman (Stotsky, 1996). In Morocco, married men were entitled to take tax-free allowances for dependent spouses, but married women must prove that they are the heads of their households to receive these allowances (Grown, 2010). The explicitly different treatment of women and men has often been used to incentivize specific behaviors. For example, until 2012, the Indian tax system exhibited explicit bias in favor of women to incentivize women's labor market participation. Women could receive a higher exemption for income tax than men (Coelho *et al.*, 2022).

More often, tax systems exhibit implicit gender bias. For example, VAT may exhibit implicit gender bias if certain goods are exempted or taxed at a reduced rate. Higher tax rates on alcohol and tobacco, for example, implicitly discriminate against men, who disproportionately consume these goods (Grown, 2010). Thus, implicit biases may result from gender differences in consumption patterns reflecting specific gendered behavior.

Whereas explicit biases can be identified easily by studying tax law, implicit gender biases are more difficult to detect and require statistical analyses of tax incidence. In the past the literature focused on gender biases in income taxes and whether joint filing in contrast to individual filing produces inequality between family types and genders (Schwarz, 2012; Schechtl, 2021a). Studies on gender bias in inheritance taxation are lacking, however. Similar to gender bias in VAT induced by gender differences in consumption behavior, inheritance and gift tax systems might exhibit implicit gender bias if women and men receive different types of assets subject to different tax exemptions. To better understand whereby implicit gender biases could occur, we summarize the general design elements of inheritance taxes in what follows.

#### 3.2 Taxation of intergenerational wealth transfers

The inheritance tax system embodies social, economic and historical ideas on how the intergenerational transmission of wealth in society should take place (Beckert, 2004). Naturally, the scope and design of tax systems are always an arena of political controversy and a core battleground of interest groups and parties (Campbell, 1993). Yet the taxation of intergenerational wealth transfers might be a particularly contested domain because of the high stakes involved for wealthy families (Beckert, 2022). Ultimately, this is where the transmission of status and influence to offspring—and the family's legacy—is secured.

Usually, tax rates and schedules are determined by various personal circumstances and asset characteristics. In Germany, all inheritances below 400 000 euros are tax-exempt if the heir is a direct descendant, with more distant relatives being entitled to less generous exemptions (Glogowsky, 2021). Similarly, tax rates increase progressively with the amount of wealth transferred. Most importantly, the final tax payment is often the result of myriad additional exemptions in tax law. Those who know—or have access to knowledge networks such as lawyers and family offices—about specific clauses entrenched in the tax system will most likely benefit (Tait, 2019). Previous research on navigating asset separation in marital dissolution processes suggests that access to such tacit knowledge depends on gender (Bessière, 2022).

But not all wealth transfers are treated equally. In many countries, it makes a difference whether wealth is transferred upon death (as an inheritance) or during someone's lifetime (as a gift) (Morelli *et al.*, 2023). Usually, countries permit some gift annuities that can be transferred without much scrutiny. On the other hand, inheritances and bequests are often regulated more thoroughly, with most systems trying to ensure a minimum share for every offspring and a complete determination of assets and goods. A key challenge for wealthy testators is thus the correct timing of wealth transmission.

But time is not the only important dimension. Not all *transfers* are treated equally because not all *wealth* is created equally. Wealth can take many forms, such as cash, real estate, land or businesses. And different asset types are treated differently by the tax authorities. To be clear, the monetary amount matters as lower transfers are usually exempted, and tax rates increase progressively (Drometer *et al.*, 2018; Schechtl, 2021b). Moreover, because taxes are higher on distant kin and non-relatives, the relationship between testator and beneficiary is also relevant. But asset types matter in relation to gifts and inheritances, everything else being equal.

The family home is commonly exempted from wealth transfer taxes. More specifically, many countries allow the parents' home to be transferred to the children without accruing tax—or at least have an additional exempted amount for that purpose (OECD, 2021). For instance, France, Germany, Spain and the UK all have some preferential treatment of the primary residence (Causa *et al.*, 2020). Yet owner-occupied housing is not the only asset category that can be transmitted (almost) tax-free to the next generation.

Business assets benefit from generous exemptions, too. Family firms are often treated preferentially because they employ workers and thus contribute to the overall health of the economy (Henrekson and Waldenström, 2016). A key argument here is that firms might have to lay off employees if they face a substantial tax burden when ownership passes to the successor. Again, family-owned businesses are thus largely exempt or treated preferentially in almost all major developed economies. Typically, heirs must retain ownership for a minimum period after succession and maintain the workforce to be exempted from inheritance tax (OECD, 2021).

Germany is no exception to this international pattern. That is, intergenerational transfers of business assets are largely exempt from inheritance taxation altogether if heirs comply with certain regulations (Bach and Mertz, 2016). In general, heirs can exempt 85% of their business value if they refrain from selling the business for a period of 5 years after the transfer and keep the number of employees constant. However, the business exemption can increase to 100% if the heir complies with this regulation for at least seven years. Since 2016, the generosity of the tax exemption for business transfers has decreased among businesses worth 26 million euros or more.

In fact, before 2016 generous exemptions for business assets were declared unconstitutional by the German Supreme Court because they would violate the principle of equality before the law. The court even highlighted inheritance taxation as an instrument of the welfare state and its responsibility to impede disproportional concentration of wealth among the few (Bundesverfassungsgericht, 2014). The government thus had to adapt business exemptions before mid-2016. This uncertainty in tax exemptions regarding the transfer of business assets led to major spikes in gifts of businesses in the years up to 2016 (Statistisches Bundesamt, 2023). Yet even with the new legislation adopted that year, business asset transfers remain mostly untaxed.

To sum up, not all wealth transfers are treated equally, but men and women are treated equally if they receive similar wealth transfers. So why would asset types and wealth transfer taxes matter for gender inequality, intergenerational transfers and the gender wealth gap? We argue that the beneficial tax treatment in the transmission of assets implicitly favors men because they are more likely to receive tax-exempted assets. Prior research showed that daughters are less likely than sons to be chosen as heirs of the family business (Wang, 2010). We therefore expect differences in the asset types daughters and sons receive. If women receive cash while men receive tax-free asset types, the tax system would exhibit implicit gender bias and thus would increase the gender wealth gap even if men and women receive *similar amounts of total wealth*.

## 4. Data and method

#### 4.1 Data

To examine gendered parental transfer behavior and gender differences in taxes on these transfers, we draw on administrative inheritance and gift tax data in Germany. The advantage of these tax data is that they cover all intergenerational transfers (inter vivos gifts and inheritances) for which the authorities assessed taxes between 2007 and 2020. Only official tax data provide an opportunity to examine gendered tax incidences directly.

The data cover not only the amount (in euros) and the type of transfers (inheritance versus gift), but also the amount of transfers separately for each asset type (real estate, land, business and other assets), the amount of tax exemptions and taxes and socio-demographic characteristics of both the donor and the receiver (e.g. gender, birth date and family relationship between donor and receiver). The tax authorities need information on the amount of wealth transfers separately for each asset type because the German tax system—just like in many other countries—specifies both personal tax exemptions and material tax exemptions. The former applies to the taxable person. The German inheritance tax system determines that individuals may receive 400 000 euros from each parent every 10 years, tax-free, regardless of whether it is received as inter vivos transfer or inheritance. The material tax exemption applies to the taxable object, such as a family business, forest land, furniture or the family home. The German inheritance and gift tax system offers generous tax exemptions for business assets, such as agriculture and forestry and shares in partnerships and corporations (Bach and Mertz, 2016).

It is important to note that these administrative data do not provide information about the absolute number and volume of transfers because only those transfers are assessed that the tax authorities expect to exceed tax exemptions. Within 3 months, recipients of an inheritance or a gift must inform the tax authorities about the received transfers (asset type and value of transfer) as well as about previous gifts from the same donor (asset type, value and date) and their degree of relationship. In the case of inheritances, the registry offices inform the tax authorities about deaths and the financial institutions then report the assets of the deceased. Only if the tax authorities conclude from the self-reported and third-partyreported information that the total value of all transfers from the same person is likely to exceed the tax exemptions, they will request a tax return. Our dataset thus covers the universe of transfers for which the authorities assessed taxes. Combining a national representative survey (SOEP) and the administrative data, Bach et al. (2014) estimate that the administrative data cover 31% of all transfers, accounting for 73% of the total transferred wealth in 2010. This highlights the skewed distribution of transfers. The average values of transfers per decile and gender are reported in Appendix 1 for inheritances and Appendix 2 for gifts.

Because we are interested in gender differences in taxes on intergenerational transfers, and tax exemptions vary by the relationship status between donor and receiver, we restrict our sample to parental transfers. Between 2007 and 2020, the tax authorities filed 513 130 cases of transfers from parents to their children. Because of some missing values with regard to actual assessed taxes, our sample decreases to 511 034 parental transfers. Of those, 271 087 were gifts and 239 947 were inheritances.

#### 4.2 Variables

We use the value of the transfers before tax to examine gender differences in the average and total amount of parental transfers. To measure gender differences in taxes on parental transfers, we calculated the effective tax rate for each transfer by dividing the actual assessed tax by the transfer value before any deduction. We also use variables indicating the value of the different asset types making up the transfer. We differentiate between business, land, real estate and other wealth.

For most descriptive analyses, we pool the years 2007–2020 but use the assessment year as control variable in the regressions. To examine gender differences along the transfer distribution we generate percentiles separately for each year of the observation period. Although socio-demographic variables are sparse in the tax data, we can use the gender of the donor and the gender of the receiver (female or male), the donor's age and the receiver's age, and a dummy variable indicating whether the receiver lives in eastern Germany.

#### 4.3 Analytical approach

This study aims to advance the explanation of gender wealth inequalities by introducing the tax system as yet another factor. Empirically, we examine gender differences in parental transfers in Germany and identify the gender tax gap. Although we focus on Germany, we argue that similar patterns can be expected in other countries as tax exemptions such as business exemptions are common across the OECD (OECD, 2021).

Our analytical approach comprises three steps. First, we descriptively explore gender differences in parental transfers. We not only look at gender differences at the mean but also explore gender differences in the number of transfers and the total sum of transfers for which the authorities assessed taxes. Furthermore, we examine whether women and men receive different types of assets. When interpreting the results, it is important to consider that the data cover only the top of the parental wealth distribution.

Second, we identify gender gaps in transfer taxes by comparing the effective tax rates of women and men. We do this at the mean but also along the parental transfer distribution. The effective tax rate measures the average rate at which wealth transfers are taxed.

Third, we use multi-variable ordinary least squares regressions to analyze how individual characteristics are related to the average effective tax rate. Here we aim to better understand the gender tax gap. We differentiate between inheritance tax and gift tax in all analyses. Appendix 3 summarizes the variables in the regression models.

# 5. Results

#### 5.1 Gender differences in parental transfers

To better understand gender differences in parental transfers, Table 1 depicts the number of transfers, the average amount, and the total sum of transfers pooled over the years 2007–2020, separately for gifts and inheritances. The last two columns represent measures of gender differences. We show both the ratio (calculated as male divided by female) as well as the gap (difference between female and male divided by male). On average the value of gifts women received is 10% smaller than the value of gifts men received. The average gender inheritance gap is smaller, at 7%. Importantly, women not only received transfers of smaller amounts but were also less likely to receive a transfer at all. Men received 1.4 times as many gifts as women and 1.1 times as many inheritances. Thus, gender differences were less

					Gap:
		Female	Male	Ratio:	((female-male)/
Туре	Statistic	(in 1000)	(in 1000)	male/female	male)*100
Gift	Ν	113	160	1.43	-29.87
Inheritance	Ν	116	124	1.08	-7.09
Gift	Mean	1004	1115	1.11	-9.91
Inheritance	Mean	772	828	1.07	-6.73
Gift	Sum	117310465	186 390 339	1.59	-37.06
Inheritance	Sum	88 705 897	102 293 946	1.15	-13.28

Table 1. Gender differences in parental transfers, 2007-2020

pronounced for inheritances than for gifts. Looking at the total sum, women received 37% less in gifts and 13% less in inheritances over the years 2007–2020.

We now turn to gender differences in the type of assets women and men received. Tables 2 and 3 show gender differences in the number of transfers, the mean value and total sum for each asset type for gifts and inheritances, respectively. Women and men differed remarkably in the asset types they received.

For gifts, men were especially more likely than women to receive forest/land (ratio = 2.78) and business wealth (ratio = 2.11). Gender differences were less pronounced for real estate and other wealth (ratio = 1.32 and ratio = 1.35). Interestingly, the average value of gifts consisting of business wealth was larger for women. Thus, although daughters were less likely to receive business wealth at all, if they did receive a business, it was of higher value than those received by sons, on average. Daughters received, on average, real estate of higher value, too. However, the average values of forest/land and other wealth were lower for daughters than for sons.

For inheritances, gender differences are much smaller for all asset types but the patterns are similar. Daughters received less forest/land and business wealth. The average value of business wealth, forest/land and other wealth was lower for daughters than for sons.

To better understand which asset component is related to gender inequality, Figure 1 depicts the normalized gender ratios in the number of transfers, average value and total sum for each asset type. It becomes clear that forest/land and business wealth are distributed more unequally between women and men than combined transfers. Furthermore, real estate transfers seem to play an equalizing role.

To summarize, we found remarkable gender differences not only in the likelihood of receiving gifts but also in the average value. We also find gender differences in the asset types received, with men being more likely to receive asset types that benefit from generous tax exemptions, namely business wealth and forest/land. Gender differences are less pronounced for inheritances than for gifts.

## 5.2 Gender tax gaps in parental transfers

We now turn to an examination of gender differences in the effective tax rate. Table 4 shows that, on average, women paid higher taxes on both inheritances and gifts. For gifts, the tax rates are smaller than for inheritances. Women paid on average 3.02% on gifts and

Asset type	Statistic	Male (in 1000)	Female (in 1000)	Ratio: male/female
Business	Ν	37	18	2.11
Business	Mean	2485	3326	0.75
Business	Sum	93 057 240	59 082 067	1.58
Forest/land	Ν	17	6	2.78
Forest/land	Mean	211	130	1.62
Forest/land	Sum	3 579 309	797 544	4.49
Other	Ν	70	52	1.35
Other	Mean	807	646	1.25
Other	Sum	56 567 366	33 491 570	1.69
Real estate	Ν	65	50	1.32
Real estate	Mean	356	377	0.95
Real estate	Sum	23 284 156	18 670 525	1.25

Table 2. Gender differences by asset type, gifts

*Note:* N = Number of gifts that include the type of asset described. Mean = Mean of gift component conditional on having received the respective asset type.

Asset type	Statistic	Male (in 1000)	Female (in 1000)	Ratio: male/female
Business	Ν	19	16	1.2
Business	Mean	719	647	1.1
Business	Sum	13 699 028	10 537 967	1.3
Forest/land	Ν	19	17	1.1
Forest/land	Mean	40	28	1.4
Forest/land	Sum	760 961	481 940	1.6
Other	Ν	114	106	1.1
Other	Mean	532	487	1.1
Other	Sum	60 476 590	51 489 331	1.2
Real estate	Ν	91	84	1.1
Real estate	Mean	367	362	1.0
Real estate	Sum	33 469 391	30 346 085	1.1

Table 3. Gender differences by asset type, inheritances

*Note*: N = Number of inheritances that include the type of asset described. Mean = Mean of inheritance component conditional on having received the respective asset type.

4.42% on inheritances, whereas men paid 2.49% on gifts and 4.35% on inheritances. In other words, the average gender tax gap on gifts amounts to 22% and on inheritances to 2%. We also calculated total tax rates (total tax divided by total amount of transfers in the observation period) and found a total gender tax gap of 18% for gifts and 1% for inheritances. But do the identified gender tax gaps vary along the transfer distribution? In other words, do women pay more taxes than men at similar transfer levels?

To answer these questions, Figures 2 and 3 depict the local polynomial smooth of the effective tax rate on the distribution of parental inheritances and gifts by the gender of the

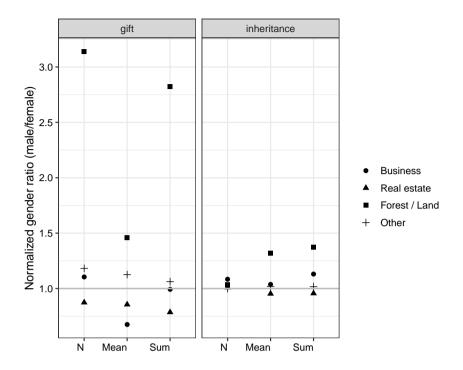


Figure 1. Normalized gender ratios in parental transfers by asset type (2007-2020).

	Female	Male	Ratio: male/female	Gap: ((female-male)/ male)*100
Average effective tax rate, gifts	3.02	2.49	0.82	21.53
Average effective tax rate, inheritance	4.42	4.35	0.98	1.69
Total tax rate, gifts	2.52	2.13	0.85	18.28
Total tax rate, inheritance	10.14	10.03	0.99	1.13

Table 4. Gender differences in effective tax rates, 2007–2020

receiver, respectively. Overall, the inheritance tax distribution reveals a clear progressive pattern. That is, higher-value inheritances are taxed at higher rates. The picture changes in relation to gift taxes, which indicate a wave-like distribution. Generally, inheritance taxes are higher than gift taxes across the entire distribution.

Figure 2 shows hardly any gender differences in the effective tax rate for inheritances, except at the top of the inheritance distribution. Women in the upper 20% of the inheritance distribution have a statistically significant higher effective inheritance tax rate than

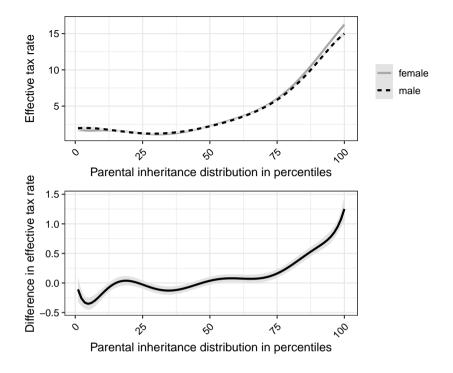


Figure 2. Effective tax rate and its gender difference along the inheritance distribution (2007–2020).

men. At the bottom of the distribution, women pay less inheritance tax than men and in the middle, women and men pay about the same.

If we look at gifts (Figure 3), however, we identify a substantial gender gap in the effective gift tax rate along the whole parental gift distribution. That is, at each percentile of the gift distribution women pay more taxes than men, on average. This gap varies in size along the distribution. The gap is larger at the bottom and at the top. In the middle of the distribution the gap amounts to less than 0.5 percentage points.

For an intuitive interpretation of the relationship between the gender tax gap and gender inequality in transfers, let us look at one example. At the eighth decile, women and men received about 500 000 euros in gifts, on average. The average gift tax rate for women at the eight decile was 2.65% and for men 2.00%. Therefore, women paid on average about 13 250 euros in taxes, while men paid only 10 000 euros. At this decile, the tax system increased the gender transfer gap by 3,250 euros or about one-tenth of the estimated gender wealth gap in Germany (Sierminska *et al.*, 2010).

How can we explain that the gender tax gap varies along the transfer distribution? To better understand this variation, in Figure 4, we look at the composition of transfers by decile and gender. For inheritance, we found hardly any gender differences in the composition of transfers. For gifts, however, we found that in all deciles except the top, the share of

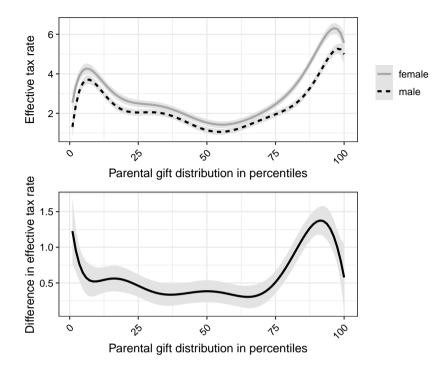


Figure 3. Effective tax rate and its gender difference along the gift distribution (2007–2020).

business wealth in gifts is larger for men than for women. It seems that the gendered transfer of business wealth contributes to the gender tax gap.

Figure 4 also helps us to understand the differences in the shape of the gender tax gap between inheritances and gifts. Whereas the different asset types are quite equally distributed between daughters and sons in inheritances, they are less equally distributed in gifts. This explains why Figure 2 shows hardly any gender differences in the average tax rate, while Figure 3 does.

#### 5.3 Regression results

To further explain the gender tax gap in parental transfers, we now turn to our regression results. Tables 5 and 6 display the results of ordinary least squares regressions. Model 1 (M1) includes only a dummy variable indicating whether the receiver is female (=1) or male (=0) and a continuous variable indicating in which percentile the transfer lies. Including the latter gives a sense of tax progressivity, as the tax rate should increase with transfer value. Our model thus compares men's and women's effective tax burdens, holding constant the level of wealth transfer. In Model 2 (M2), we further include dummy variables for each asset type to examine the role of tax exemptions. Finally, in Model 3 (M3), we include not only dummy variables for each asset type, but also the age of the donor and receiver, the gender of the donor, a dummy variable indicating whether the receiver lives in a western state of Germany, and interactions of all variables with the gender dummy for the receiver.

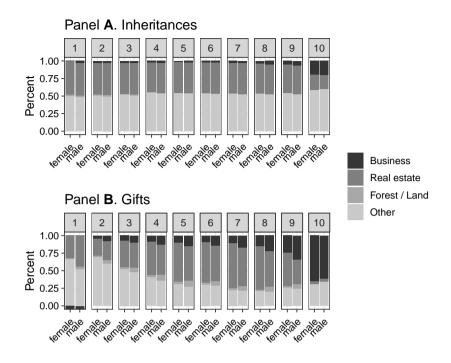


Figure 4. Composition of transfers by gender and deciles.

We start by interpreting the regression, specifying the effective gift tax rate as the dependent variable. Controlling only for the wealth transfer percentile rank, the average gender gap in the effective gift tax rate amounts to 0.55 percentage points. Thus, on average, women's effective tax rate at similar wealth transfer levels is 0.55 percentage points higher than men's (M1). Controlling for asset type, the average gender tax gap is reduced to 0.35 percentage points (M2). Including all other variables (M3), this average gap does not decrease much more. Because the last model includes various interaction terms with the variable indicating whether the receiver is female, we estimate the average gender gap by calculating predictive margins.

For each percentile, the average effective tax rate is predicted to increase by 0.01 percentage points, thus indicating tax progressivity. Interestingly, we find a statistically significant interaction term of progressivity and gender of the receiver. Progressivity is higher for female than for male receivers. In other words, the gender gap in effective gift tax rates increases along the transfer distribution, with women at the top of the distribution being disadvantaged compared with men receiving similar wealth transfers. This has been highlighted already in the bivariate Figure 3.

The negative coefficients of business, land and real estate transfers in M2 reflect the large exemptions in the German tax system. We did not find gender differences in the relationship between receiving land and other assets and effective gift tax rates (M3). This indicates that land and other transfers do not contribute to the explanation of the gender gift tax gap.

	M1 (b)	M1 (se)	M2 (b)	M2 (se)	M3 (b)	M3 (se)
Female receiver	0.549***	0.02	0.352***	0.02	0.480**	0.17
Gifts, percentile	0.0113***	0.00	0.0325***	0.00	0.0287***	0.00
Business (indicator)	010110	0.00	-2.442***	0.04	-2.138***	0.05
Business (indicator) $\times$ female receiver				0.0.	-0.448***	0.08
Land (indicator)			-1.441***	0.04	-1.260***	0.05
Land (indicator) $\times$ female receiver				0.0.	0.0853	0.09
Other wealth (indicator)			1.372***	0.04	1.235***	0.04
Other wealth (indicator) $\times$ female receiver					0.127	0.08
Real estate (indicator)			-1.432***	0.04	-1.147***	0.04
Real estate (indicator) $\times$ female receiver					-0.752***	0.08
Female donor					0.0220	0.03
Female donor $\times$ female receiver					-0.338***	0.05
Age (receiver)					0.0656***	0.00
Age (receiver) $\times$ female receiver					-0.0102***	0.00
Age (donor)					0.00333**	0.00
Age (donor) $\times$ female receiver					0.00848***	0.00
West					0.659***	0.05
West $\times$ female receiver					-0.188*	0.08
Gifts, percentile $\times$ female receiver					0.00719***	0.00
Intercept	2.812***	0.05	2.734***	0.06	-0.623***	0.12
N	271 087		271 087		255 949	
$R^2$	0.02		0.09		0.11	
Gender gap	0.549		0.352		0.348	
<i>P</i> value (gender gap)	0.00		0.00		0.00	

*Notes:* Results of OLS regression controlling for year of assessment. \*P < 0.05, \*\*P < 0.01, \*\*\*P < 0.001. Estimated gender gap (and p-values) in bold.

However, the coefficients for the interaction terms of real estate and business assets are negative and statistically significant. This indicates that the gender gift tax gap decreases if business assets or real estate are part of the transfer. In other words, gender differences are smaller (for business assets) or even reverse (for real estate) if the transfer includes business assets or real estate. Thus, our results indicate that gender differences in the asset types of the gift explain parts of the gender gift tax gap. Men and women benefit differently from tax exemptions because they receive different assets, leading to the gender tax gap.

Looking at socio-demographic characteristics, we found that the gender tax gap in gifts is smaller if the donor is female and decreases with the receiver's age. However, the gender tax gap in gifts increases with the age of the donor. Surprisingly, the gender gap is smaller in the western parts of Germany than in the eastern states. These results indicate that the tax system, in interaction with the donor's characteristics, reproduces gender wealth inequality. Especially transfers from male donors seem to contribute to the gender tax gap in gifts.

We now turn to the interpretation of Table 6, depicting the regression results predicting the effective inheritance tax. The gender gap in the effective tax rate at the mean amounts

	M1	M1	M2	M2	M3	M3
	(b)	(se)	(b)	(se)	(b)	(se)
Female receiver	0.0804***	0.02	0.0669***	0.02	-0.0708	0.18
Inheritance, percentile	0.119***	0.00	0.123***	0.00	0.119***	0.00
Business (indicator)			-0.383***	0.03	$-0.558^{***}$	0.04
Business (indicator) × female receiver					0.463***	0.06
Land (indicator)			-0.210***	0.03	-0.311***	0.04
Land (indicator) $\times$ female receiver					0.223***	0.05
Other wealth (indicator)			0.652***	0.04	0.822***	0.05
Other wealth (indicator) $\times$ female receiver					-0.378***	0.08
Real estate (indicator)			-1.446***	0.02	-1.386***	0.03
Real estate (indicator) $\times$ female receiver					-0.0885	0.05
Female donor					-0.114***	0.03
Female donor $\times$ female receiver					-0.0548	0.04
Age (receiver)					-0.0115***	0.00
Age (receiver) $\times$ female receiver					-0.00309	0.00
Age (donor)					0.0276***	0.00
Age (donor) $\times$ female receiver					0.00216	0.00
West					0.117	0.06
West $\times$ female receiver					0.0355	0.09
Inheritance, percentile $\times$ female receiver					0.00849***	0.00
Intercept	-0.883***	0.04	-0.590***	0.05	-2.210***	0.13
N	239 947		239 947		229733	
$R^2$	0.38		0.39		0.39	
Gender gap	0.080		0.067		0.070	
<i>P</i> value (gender gap)	0.00		0.00		0.00	

Table 6. Regression resu	ult: effective inheritance tax
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*Notes*: Results of OLS regression controlling for year of assessment. \*P < 0.05, \*\*P < 0.01, \*\*\*P < 0.001. Estimated gender gap (and p-values) in bold.

to 0.08 percentage points, controlling for the percentile rank of the transfer. In other words, women's average effective inheritance tax rate is 0.08 percentage points higher than men's. Although statistically significant, this gap is comparatively small (the gender gift tax gap was 0.55 percentage points). Adjusting for the other variables (M2 and M3), the gap decreased to 0.07 but remained statistically significant.

Examining progressivity, we found for each percentile that the average effective inheritance tax rate increases by 0.12 percentage points, indicating higher progressivity than for gifts. Again, we find a statistically significant interaction term of progressivity and gender of the receiver, indicating that the gender gap in the inheritance tax rate increases with higher transfers, which is in line with the bivariate results in Figure 2.

The negative business, land and real estate coefficients reflect the tax exemptions (M2). Our results differ from our findings on effective gift tax rates regarding the interaction terms with the receiver's gender. Here, we did not find gender differences in the relationship between receiving real estate and effective inheritance tax rates. In contrast, the coefficients for the interaction terms with land and business assets are positive and statistically significant. The coefficient for the interaction term with other assets is negative and statistically significant. This indicates

that for transfers comprising business and land, gender differences in the effective inheritance tax rate tend to be larger (and to the advantage of women) but smaller for transfers including other assets (to their disadvantage). We did not find evidence that the socio-demographic characteristics of donor and receiver are related to the gender inheritance tax gap.

# 6. Discussion

Wealth is distributed unequally between households and countries, but also between social groups, such as race, class and gender. Besides savings from labor income, wealth transfers play a decisive role in wealth accumulation. Given women's weaker attachment to the labor market, wealth transfers might be particularly decisive for women's wealth accumulation (Deere and Doss, 2006). Therefore, this study focused on gender as a stratifying factor for wealth transfers. In many countries, wealth transfers are subject to taxation (gift, inheritance or estate taxes). Whereas wealth taxes tend to decrease wealth inequality between households, it is unclear how taxes on transfers are linked to gender wealth inequality (Jakobsen *et al.*, 2020). Therefore, this study asked how the inheritance and gift tax system in combination with gendered parental transfer behavior shape gender inequalities in parental transfers.

Answering the call for more sociological studies on the relationships between tax policy, wealth and stratification (Spilerman, 2022), we empirically examined not only gendered parental transfer behavior but also gender differences in inheritance and gift tax incidences by studying effective tax rates with German administrative tax data (2007–2020). We find that women are less likely to receive parental transfers on which the authorities assessed taxes and that the value of the transfers are lower, too. Additionally, women and men differ in the type of assets they received, with men receiving more business wealth. Importantly, gender differences are more pronounced for gifts than for inheritances. One explanation of this finding might be that there are hardly any restrictions regarding gifts but German inheritance law guarantees a statutory share of inheritances for every child. In addition, gifts are more likely to comprise business assets, which are more likely to be transferred to sons rather than to daughters.

Moreover, we showed that the inheritance and gift tax system reproduces gender inequalities in parental transfers. We identified a gender tax gap in inheritances of 2%. In absolute terms, women's effective inheritance tax rate is 0.08 percentage points higher than men's adjusted for the transfer's percentile rank. For gifts, we identified a gender tax gap of 22%. Adjusted for the transfer's percentile rank, women's rate was, on average, 0.55 percentage points higher than men's. Bivariate and regression analyses provided evidence that gender differences in the asset types included in the transfer help to explain the gender tax gaps in gifts. Moreover, we showed that the gender tax gap increases along the transfer distribution for both gifts and inheritances. The gender tax gap in gifts was larger if the donor was male rather than female.

By providing evidence for implicit gender bias to women's disadvantage in the German inheritance and gift tax system, this study contributes to the literature on taxation and gender equity, which to date has focused primarily on income taxes (Grown, 2010; Coelho *et al.*, 2022). Our findings are related to prior research arguing that gender differences in capital income, in interaction with the typically lower taxation of capital income, contribute to gender wealth inequality (Coelho *et al.*, 2022). Adding to this literature, we showed that implicit gender bias arises in inheritance tax systems if transfer behavior is gendered. In other words, parents' gendered transfer behavior in interaction with the tax system reproduces gender inequalities in parental transfers, shaping the gender wealth gap. For example, the large tax exemptions on business wealth, which men are more likely to receive, reduce men's tax rates on gifts more than women's. Besides gender differences in the asset type of the transfer, gendered attitudes toward paying taxes and tax evasion, as well as tax consultancy, might also play a role in gendered tax incidence. Although prior research has already started to examine the role of tax advisers in reproducing gender wealth inequalities in France (Bessière and Gollac, 2023), we still lack knowledge about the extent to which gendered tax consultancy or gendered tax evasion affect the gender wealth gap in different countries. These are avenues for future research in taxation and gender equity.

This study also contributes to the discussion about the gender wealth gap by introducing the tax system as yet another factor in the explanation of the gender wealth gap. More specifically, we discussed theoretically how inheritance and gift tax systems might exhibit implicit gender bias (Stotsky, 1996) and empirically identified gender tax gaps for the German inheritance and gift tax system. If women have to pay higher tax rates than men on their transfers, even if they receive equal amounts of wealth, this results in increases in gender wealth inequalities, in particular because transfers seem to be more critical for women's than men's wealth accumulation. Because tax exemptions are high for close relatives, the consequences of the implicit gender bias most likely affect the gender wealth gap only at the top of the wealth distribution. However, prior studies highlighted that the gender wealth gap is larger at the top (Schneebaum *et al.*, 2018). Considering the functions of wealth, implicit gender bias in inheritance tax systems may help reproduce the gendered distribution of power. To summarize, our study highlighted that inheritance tax systems might have unintended consequences for gender wealth equality, especially at the top, due to the gendered economic behavior of the previous generation.

This study identified a gender tax gap in parental transfers in Germany, but are the findings transferable to other countries? The German inheritance tax system is comparable to systems in many other countries. Most inheritance and gift tax systems provide highly preferential treatment for transfers to close relatives and tax exemptions for specific assets, such as business wealth (OECD, 2021). Germany differs from other Western countries regarding the prevalence of traditional attitudes to gender, which might shape gendered transfer behavior. Although a couple's division of labor in Germany is often characterized by a 'male breadwinner/female part-time carer' model, traditional gender ideology is still more widespread in Germany than in other comparable countries (Rosenfeld et al., 2004). Given prior evidence that gender wealth inequalities are strongest at the top of the wealth distribution for different European countries (Schneebaum et al., 2018), however, we expect gender differences in transfers also to be especially pronounced at the top in other countries, which again might be related to a gender tax gap. Furthermore, gender differences in the likelihood of receiving the family business have been found for different countries (Wong, 2013). In future studies, gendered parental transfer behavior and the gender tax gap should be scrutinized in other countries. Country-comparative studies may further help to understand the gendered implications of inheritance tax systems.

The analyses presented in this study are limited in several ways. Because of our data source (administrative tax data), we can estimate the gender gap in transfers only for transfers on which the authorities assessed taxes but not for the whole transfer distribution. In other words, the identified gender gaps in transfers can be generalized only to roughly the top 30% of the wealth-transfer distribution (Bach *et al.*, 2014). However, prior studies

relying on survey data also suggest that sons had higher chances of receiving parental gifts than daughters (Leopold and Schneider, 2011a). Future research should examine the gender gap in transfers for the whole transfer distribution by combining, for example, survey data, which lack the upper tail, with tax data, which lack the lower tail. Another problem with administrative tax data is tax evasion. Individuals might not declare the correct value of gifts or inheritances received. However, banks and asset managers have an obligation to report a person's account balances after their death to the tax office. If tendencies toward tax evasion differ by gender our results might be biased. For inheritances, gendered tax declarations are unlikely because most families file a joint tax return. But if women were more likely to evade taxation by declaring lower than the actual values of received gifts, our estimates for the gender gap in gifts would be biased upward.

This study suggests that a fair inheritance tax system must take gender into account. It is therefore crucial to assess the extent to which taxes on financial transfers (estate, inheritance and gift taxes) reduce or exacerbate gender inequities and whether they exhibit implicit or explicit gender bias. Policymakers would thus be advised to consider the gendered implications of tax design when reforming inheritance and gift tax systems.

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# **Conflict of interest statement**

None declared.

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# Appendix

Appendix 1.	Descriptive	statistics	inheritances	by	decile
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Decile	Mean, male (in 1000 Euro)	SD, male (in 1000 Euro)	Mean, female (in 1000 Euro)	SD, male (in 1000 Euro)
1	61	148	61	288
2	201	44	200	44
3	288	52	288	52
4	349	65	349	65
5	397	74	398	73
6	455	83	456	83
7	535	98	535	98
8	664	126	659	128
9	936	214	936	217
10	4261	23 475	3863	17 570

Appendix 2. Descriptive statistics gifts by decile

Decile	Mean, male (in 1000 Euro)	SD, male (in 1000 Euro)	Mean, female (in 1000 Euro)	SD, male (in 1000 Euro)
1	-13	475	-1	114
2	33	12	33	12
3	80	21	80	21
4	143	33	142	33
5	213	46	214	46
6	297	64	297	64
7	378	84	377	85
8	505	129	503	128
9	820	316	794	309
10	8603	55 708	8901	58 629

Variables	Inheritance, mean	Inheritance, sd	Gifts, mean	Gifts, sd
Age, donor	81.70	11.05	69.07	12.36
Age, receiver	51.24	11.85	41.02	12.41
Indicator: Business included	0.14	0.35	0.20	0.40
Indicator: Real estate included	0.73	0.44	0.42	0.49
Indicator: Land included	0.15	0.36	0.08	0.28
Indicator: Other wealth included	0.91	0.28	0.45	0.50
Donor female	0.52	0.50	0.44	0.50
Receiver female	0.48	0.50	0.41	0.49
West Germany	0.95	0.21	0.92	0.27

Appendix 3. Descriptive statistics of variables in regression models

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