A thesis presented for the degree of
M.Sc. in Economics

The Effect of Inherited Wealth on the Labor Supply of Heirs

An Empirical Analysis using GSOEP Data

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Abstract

This study investigates behavioral labor market responses of heirs after the reception of a wealth transfer. The analysis is based on a sample of prime age working individuals from the German Socio-Economic Panel Study in 2017 and contains information on inheritances on the personal level. First, a partial replication of Brown, Coile, and Weisbenner (2010) shows no effect of inheritances and gifts onto the probability to exit the labor market. Second, the focal area of the analysis changes to those individuals who leave a job by means of an active decision. The results indicate a positive correlation to inter-vivos gifts, although small in amplitude. Inheritances show no significant impact on the probability to actively leave a job.

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1 Introduction

Over the past decade, wealth transfers in form of inheritances attracted large interest in economic research as they play an important role for the persistence of economic inequality through generations (Piketty and Zucman, 2015). At the same time, there is increasingly robust evidence of behavioral labor market responses from individuals receiving a wealth shock in form of a lottery win or an inheritance (see Cesarini et al., 2017; Bø, Halvorsen, and Thoresen, 2019). This study focuses on the following research question: do heirs reduce their labor supply as a reaction to the wealth transfer they receive? To address the matter, a comprehensive set of panel data from the German Socio-Economic Panel (GSOEP) is used. GSOEP data from 2017 (.v34) contains wide-ranging information on both general individual wealth and inheritances and is therefore particularly suitable for the research question at hand.

The core part of this study is a partial replication of "The Effect of Inheritance Receipt on Retirement" by Jeffrey R. Brown, Courtney C. Coile and Scott J. Weisbenner which was published in 2010 in *The Review of Economics and Statistics* (Brown, Coile, and Weisbenner, 2010). Using a sample of elderly workers from the Health and Retirement Study (HRS) they find robust evidence, that heirs in the US have on average a higher probability to exit the labor market and a lower expected retirement age. To capture the aforementioned behavioral responses, the methodological design aims at measuring the effect of a wealth transfer onto the individuals' probability to exit the labor market. For the empirical analysis, a probit model is applied and the underlying sample population for the replication approach consists of prime age working individuals for the years 2010 to 2017. The results indicate no short-term reactions of employees after receiving a gift or an inheritance regarding the probability to exit the labor market. The findings are robust for different specications of the wealth shock and for subgroup analysis. However, exiting the labor market is not an event of choice for many and could be due to, e.g., lay offs by the employers, leaving no sensible room for influence by a wealth shock. To address the issue, an additional analysis is applied and the focus shifts from individuals who exit the labor force to individuals who leave a job by means of an active decision, regardless of the outcome being a direct job change or unemployment. In that case, the results indicate a positive correlation with inter-vivos gifts that have been received within the last three years, although the amplitude of the effect is small. Inheritances, on the other hand, show no significant impact on the probability to actively leave a job. These results are in line with the few studies that have been conducted for the case of Germany. Using GSOEP data, Doorley and Pestel (2016) find small reactions to inherited wealth in the working hours of woman in their sample, but

no reaction for men - not even in desired hours of work. Changing the focus to expected retirement entry age, Crusius and von Werder (2017) show that heirs plan to retire around five month earlier, willing to invest around a quarter of the wealth transfer to achieve that. Although further research in the field is desirable, policy makers should take the behavioral responses of heirs into account when reforming the taxation of intergenerational transfers of wealth. Realistically, the combination of two factors will enhance the role of private wealth for labor market and especially the retirement decision of the future working population in Germany. On the one hand, the qualifying age for the statutory pension system will likely rise to balance out the demographic trend of an aging population. On the other hand, the demand to design more flexible retirement entryways has been stated by economic experts repeatedly (see e.g. Sachverständigenrat, 2019, p. 127). In the end, both of these trends could increase the relative difference in retirement age and overall labor market participation between those that inherit wealth and those that do not.

From here, the remaining parts of the thesis are organized as follows. First, Section 2 gives an overview of the economic theory and literature body regarding potential reactions in the labor market behavior of heirs. Next, Section 3 starts with a description of the data, followed by the sample restrictions and some descriptive statistics. In Section 4 the setup of the statistical model is explained and followed by a detailed description of the used variables. In Section 5 the regression results are presented and subsequently discussed and contextualized in Section 6. Finally, Section 7 gives a short summary and concludes.

2 Theory, literature and hypotheses

Before looking at existing empirical literature and results, the goal of this section's first part is to cover the basic economic theory and rational behind the research question.

2.1 Basic economic theory

In classic economic theory agents gain utility from consumption and leisure time. These agents maximize their utility by choosing their labor supply, consumption and savings behaviour, subject to a budget constraint that has to be met. Every one of these choices comes with an opportunity cost: working more hours or a second job will e.g. lower the total utility of leisure time spent with family or friends, as there will be sacrifices in that dimension. Following that thought process, a sizable cake of unearned income out of an inheritance or gift is likely to influence these calculations, that is at least if it was not (fully) anticipated and incorporated in the calculations already. Technically, the newly gained wealth decreases the marginal utility of additional income, while increasing that of leisure time. In much the same way an income effect takes place as result of a price change on any market, that first changes the agents' incomes and then results in a change in the demand. And although results of classic economic theory come with strong assumptions, the prediction seems plausible: Imagine a sudden income shock so large, the receiver will never again have to work to provide for anything in her life. And although the spectrum of possible responses is large, there is at least a reasonable chance she will (temporarily) stop working, to focus on other things in life. A similar response, although smaller in amplitude, is likely even for windfalls of a more common size - at least if one assumes that there is some form of disutility from work.

So when can the agents' adaption to the unearned income be expected? In a world with perfect certainty and economic agents acting fully rational, windfalls that can be expected like inheritances or gifts, would lead to a downward shift in the individual's labor supply not just after they are received, but starting from the moment the expectation is formed. The adaption in behaviour will be permanently and smoothed over the whole life-cycle. In effect, there would be no chance to observe the labor supply effect to inheritances after they are actually received by means of econometric methods. A model of this style is e.g. set up by Heckman and MaCurdy (1980) to model female labor supply.

However, there is good reason to believe that windfalls like inheritances and even gifts are not subject to perfect foresight, but are instead somewhat uncertain in most of the cases. First of all, while in Germany as in many European countries parents cannot (fully) disinherit their children, the timing of the transfer is still

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uncertain. Additionally, even with relatively robust expectations of a future wealth transfer, agents will be subject to credit constraints before they actually do receive the windfall and consequently will not always have the possibilities to ex-ante adjust their labor supply to an optimum including the inheritance.

Additionally to the timing, there is uncertainty over the size of inheritances, as that will usually depend - besides other factors - on the timing of the inheritors death. Moreover, not every parent will fully share information about their wealth with their children. Deaton (1991) includes these uncertainties in his model framework: it includes a discount factor and credit constraints to address the timing uncertainty. At the same time agents' income is subject to the possibility of shocks representing uncertainty of the size of the inheritances.

Applied on today's society, the measurable effect of a shock of unearned income will vary with the individual's actual situation in life. To regularly employed individuals, the situation is closest to what is described in the arguments above. In this situation, agents still have the possibility to react in multiple ways, e.g. through the internal margin of labor supply by reducing their hours of work. Or they choose the more drastic measure via the external margin, resulting in a (temporary) exit from the labor force. Also, they could change their job against a different one or work as volunteers. Regarding the timing of all these outcomes, frictions on real world labor markets could prevent immediate reactions altogether, depending on the possibility to change the hours worked or the likelihood to find the desired job.

On the other hand, to someone who is unemployed a wealth transfer could increase the reservation wage and thus delay the reentry into the labor market, if the windfall is relatively small. In case of a higher transfer it might even work as a driver back into the labor market, to avoid the strict qualifying rules preventing government transfers in that case. Existing studies on the effect of wealth onto the transition into employment are e.g. Stancanelli (1999), Bloemen and Stancanelli (2001) and Bloemen (2002), showing a rise in reservation wages as a result from wealth in the UK and the Netherlands.

The situation for self-employed individuals is different again, as they get the chance to invest in their business and hire more workers or are at least less likely to go bankrupt with the additional wealth compared to before.

Due to the aforementioned reasons of various effects in potentially different directions, most empirical studies do restrict their estimation sample targeting one of these groups at a time. For this study, the focus of the following analysis will be on the regularly employed and the workers. Arguably, that case is the most relevant for modern societies, as negative incentives on labor market participation of heirs could harm the general economic prosperity as a negative externality.

After discussing the basis on which to expect effects from transfers of unearned in-

come onto the labor market behaviour of heirs, the first hypothesis to test in the following analysis can be formulated:

>   Hypothesis 1: Inheritances reduce the labor market participation of employed heirs.

However, the ability to actually observe the effect could still be compromised by heirs being systematically different from the average population. Essentially, who inherits and how much, can safely be assumed not to be a random draw out of the underlying German population. As most inheritances are past by parents, to receive large inheritances or gifts, you will need a wealthy family in most of the cases. Theoretically, it would be possible for that group of heirs to have a different preference for leisure compared to the rest of the population. More likely is, that because of correlation between the educated and the rich in Germany, and social status of families being very persistently passed over to the next generation, the type of jobs heirs have might on average differ from the non-treated. Consequently, their reaction to unearned income could be different from the counterfactual event of distributing the windfalls to individuals that will in all likelihood never inherit significant wealth. A promising approach to test that, is to compare the behaviour of inheritors to that of lottery winners, which will be looked at in the literature review.

2.2 Literature and empirical results

After the introduction into the economic theory, the following section gives an overview of the existing empirical literature that is relevant to the research question of this study. After an overview of the methodological approaches and the main results, there will be an extra section about the role of expectations. At last, the existing results for the case of Germany, which partly happen to be on the basis of the GSOEP data as well, are presented.

Although research dealing with the labor supply effects of wealth shocks roots at least back to the 1990s, the literature is still somewhat limited and most of the studies with robust results - relying on larger data sets - have been published in recent years. This is especially the case for countries other than the US, as data from the US have been the basis for most of the prior research in that field.

2.2.1 Lotteries

Generally, the broader research field dealing with the effect of (unearned) wealth on labor supply can be divided into two main empirical approaches. The first one is to look at lottery winners, which comes at the clear advantage that it represents a true wealth-shock for the receiving individual. As the probability of ever winning the

lottery for any single person is somewhere close to zero, there will in all likelihood be no anticipation effects in a sample of lottery winners as individuals could not have calculated on ever having that wealth at their disposal, let alone incorporate such expectations in ex-ante spending behaviour. Consequently, in case of any change in labor market behaviour, the effect will be stronger without an anticipation effect, as the full effect must take place after the event has happened.

Additionally, lottery wins are unearned income, often very substantial in size and as exogenous as it gets to any labor market behaviour, from the point on where the individual participated in the lottery. Therefore, it addresses the concern of the wealth receivers being systematically different from the underlying population. After all, while participating in the lottery is maybe not a random event as well, there is little reason to believe the participants are significantly more wealthy than the average or might have better jobs. The downside of relying on lottery data is, that it is very hard to find samples of lottery winners, that are large enough to obtain serious results.

Cesarini et al. (2017) look in a comprehensive study at a large sample of Swedish lottery participants and find individual and household level reactions in labor earnings (extensive margin) and working hours (intensive margin) for lottery winners. The effects they find are of moderate size, with the relatively larger part of the reaction in earnings resulting from the hours reduction (ibid., p. 3944).

Imbens, Rubin, and Sacerdote (2001) conduct a famous study on participants of the Megabucks lottery in Massachusetts from 1984 to 1988, evaluating the effects of randomly assigned wealth on consumption and savings behaviour and labor earnings. They find a robust decline in earnings in the years following the lottery win: Winners invest around 11 percent of their windfall earnings into reducing pretax labor income.[1] As can be expected, the effect on individuals close to the usual retirement age is of more significant size than for other age groups, as these get the chance to retire earlier than previously expected (ibid., p. 791). This result is in line with what other studies find. Noteworthy is however: they do not find any difference in reaction to the lottery prizes between men and woman in their sample - which also holds true for the aforementioned study of lottery winners by Cesarini et al. (2017) in Sweden. For studies looking at the effect of inheritances, this is often different.

At least, Picchio, Suetens, and van Ours (2017) find reductions in working hours for lottery winners in the Netherlands, but no changes in the probability of being employed. The main effect takes place for winners of large prizes above half a million Dollar, who in sum earn 23,000 Dollar less of income over the three years following

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[1] The estimates for the labor income effect rely on data of the winners tax records. Note that lottery winners received their prizes in yearly rates rather than a one time payoff, which might have a different effect from receiving a large transfer in a single payment.

the lottery win (ibid., p. 1702).

2.2.2 Inheritances

The second and more common approach is to use inheritances to estimate the labor market effects of unearned income, thereby effectively assuming them to be a wealth-shock as well. The first contributions to that literature were made by Holtz-Eakin, Joulfaian, and Rosen (1993) and Joulfaian and Wilhelm (1994). The former evaluate the labor market participation rate by heir status and size of the inheritance. They find donees to be much less likely to still participate in the labor force three years after an inheritance, compared to individuals that did not receive a windfall. More so, the negative effect is increasing with the size of the inheritance. This makes sense, because leaving the labor force usually comes with a loss in income, which the inheritance has to compensate for. Although estimated coefficients by Joulfaian and Wilhelm (ibid.) are smaller in amplitude, the general effect stays the same and can be considered a robust result for at least western societies, as becomes clear in the following paragraphs.

Blau and Goodstein (2016) use a sample of older married couples from the HRS (waves 1996-2008) and detect an average decline of 4 percentage points in the donees' labor force participation rate. The pattern remains robust for both men and woman and over a range of varying model specifications. Interestingly, only the directly bequested show the reaction, while the spouse's labor supply remains unaffected (ibid., Table 2, p. 128).

What about countries other than the US? Niizeki and Hori (2019) use Japanese microdata with individuals aged 26-51 and inheritances on the household level to estimate changes in the probability of working. While they find no reaction for men, woman in their sample were around 5 percent less likely to work after an inheritance, despite the fact that their inheritances were significantly smaller in size than those received by the men (ibid., p. 180).

Bø, Halvorsen, and Thoresen (2019) use an enormous set of administrative Norwegian data, showing relatively instant effects of increasing consumption of leisure after an inheritance - even in younger age groups.

For the case of France, Garbinti and Georges-Kot (2016) again estimate the probability to retire for the age group close to the expected retirement age, using a survival model instead of the otherwise widely used probit approaches. They find individuals that inherit in a given year have a (much) higher probability to retire, even compared to those that will inherit in the upcoming years. The closer the inheritance is to the date at which the agent would be eligible for her full pension scheme, the larger the effect becomes. Additionally, they find at least some evidence for the hypothesis that risk averse agents make their retirement decision based on

the certainty equivalent of a future inheritance rather than its expected value.

Bloemen (2011) also uses a panel of older workers in the age range of 48-64 years from the dutch socio-economic panel study and estimates a multinomial logit model on the reasons the agents report for leaving the labor force. He finds significant positive effects of assets - including houses - on the probability to choose (early) retirement and negative effects from debts. Transition into unemployment, including disability status, has the same sign on the coefficients, but is not statistically significant (ibid., p. 653).

2.2.3 The role of expectations

Economic theory suggests that an anticipated inheritance does not leave the researcher with a realistic chance to measure an ex-post effect of the newly gained wealth onto the labor market behaviour of agents. From the point on, from which the information on the future inheritance would be available, the agents intertemporal budget constraint is loosened and in case of any disutility of work, the reduction in e.g. working hours or the planned retirement age would happen right away. Consequently, any effect measured after an expected inheritance was received would at least be an underestimation of the true effect size, as parts of the reaction already took place.

The first and most relevant approach to address the role of expectations in the labor market responses to inheritances was done by Brown, Coile, and Weisbenner (2010). The data of the HRS they used contain information on individual's expectations about future inheritances in the next ten years and the size of those inheritances on every wave of the survey.[2] Whilst the respondent's information is positively correlated with the outcome, the expectations are not reliable: Fewer than two out of five individuals that were sure to receive an inheritance in the next ten years actually did receive it over the following eight years. At the same time, 10 percent out of the group of individuals not expecting anything did in fact get surprised by an inheritance. On top of that, more than half of the inheritances are significantly different in size from what the bequested expected (ibid., pp. 426-27). Consistently, the authors find the effect of unexpected inheritances onto labor market exit to be a bit stronger in amplitude, but of the same direction as expected inheritances, that do have a significant effect themselves. This is in line with the results from Blau and Goodstein (2016), who also use data from the HRS.

Results from Doorley and Pestel (2016) point at the fact that the reaction on an expected inheritance might just take place shortly before the event, but yielding the same results in terms of sign and amplitude as the unexpected one, which nat-

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[2] In case the respondent does not give an exact value for the expected inheritance, it is categorized into brackets of 0-10k, 10k-50k, 50k-250k, 250k-1 million and over 1 million Dollars.

urally only lead to reactions following the event.[3] Opposing this, Crusius and von Werder (2017) find significant post event adaption even on anticipated inheritances, the adaption path is however quicker compared to unexpected transfers.

2.2.4 Existing results for Germany

The two existing studies with GSOEP data mainly focus on the internal margin as behavioural channel of labor supply - relying on hours of work as dependent variable in their model setups. Peters and Schwarz (2013) use waves 1984-2008 of the GSOEP and a two step model incorporating a Heckman correction for the decision top work. Their results indicate that per 100,000 Euro increase of an inheritance the yearly working hours of heirs are on average reduced by 30 hours. As most inheritances are smaller in size than 100,000 Euro, the absolute effect is relatively small. Categorizing the inheritances, they find weak evidence for liquid assets to be more effectful than e.g. real estate. In line with most other studies, they do not find an effect on the labor supply of the donees partners.

The second study relying on GSOEP data is Doorley and Pestel (2016). In the same way as Peters and Schwarz (2013) they use the household level information on windfalls that are part of the GSOEP since 2001. Their sample is reduced to those who receive an inheritance and are in prime working age (24-51 years), with the time normalized around the event for the years 2001-2013. Their fixed-effects regressions indicate that woman do reduce the hours of work already before the inheritance. However, prime age men in the GSOEP show no reaction - both for anticipated and not anticipated windfalls - not even in their desired hours of work (Doorley and Pestel, 2016, pp. 13-15).

Finally, Crusius and von Werder (2017) choose an innovative approach by taking the self-reported expected retirement age from the German SAVE panel study as dependent variable to measure the external margin adaptions to unearned income. Their results suggest a reduction in expected retirement age of one month per 10,000 Euro of inheritance (average marginal effect) - while the bequested are willing to invest around a third of the windfall to achieve that.

Concluding from the previous findings of empirical research, two more hypotheses can be formulated that will be tested by means of the analysis explained in Section 4:

> Hypothesis 2: The effect of inherited wealth on the labor supply of heirs increases with the size of the wealth transfer.
> Hypothesis 3: The effect differs between men and woman.

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[3] To be clear, these results are still not in line with classic economic theory - as the rational, utility maximising agent with perfect foresight and a preference for consumption smoothing over the lifetime would show the reaction to an anticipated gain in wealth much earlier (if even detectable) compared to what Doorley and Pestel (2016) find.

Despite the emerging pattern, the real effect is in all likelihood larger than most estimates for two reasons: There will at least be some agents that incorporated expected inheritances fully in their lifetime optimum, showing no reaction at the time of the event. Also, in actual labor markets it is costly to adapt to a new optimum, so the effect is likely to be non-linearly increasing with the size of the inheritance and somewhat curbed: some agents do not react, because their inheritances are too small to cover the cost of adaption to the new desired optimum (see for the agents' costs when reacting in labor supply e.g. Chetty, 2012).

3 Data and Sample Description

The following section is meant to give a brief overview over the data the study is based on. Thereafter, the empirical strategy to test our hypotheses is described, before the variables and targeted sample-population are discussed in detail.

3.1 Data

The study is conducted using data from the German socio-economic panel study (GSOEP), a representative household study providing a rich set of data from 1984 onwards up to today. The data are collected via yearly interviews, most of which are computer assisted with an interviewer visiting the respondents at home. Individuals stay in the study until they deny participation, resulting in panel data with potential for various longitudinal studies (see for a detailed introduction in Goebel et al., 2019).

The GSOEP data from 2017 (.v34) contain a large set of information regarding general individual wealth and specifically inheritances and are therefore particularly useful for the research question at hand. Respondents were asked if they inherited any wealth in the past 15 years the following way:

> *Have you personally received an inheritance or larger endowment in the last 15 years?*
> *We are referring mainly to transfers of home or property ownership, securities, participating interests, and other assets or larger sums of money.*[4]

Taken together, a total of 26,782 individuals got the question for past inheritances, which splits up into 23,912 persons with no inheritance, 2,683 person with at least one inheritance (or gift) and 187 cases of item non-response ("no answer"). Follow up questions categorize the transfers into inheritances or inter-vivos transfers (gifts) and the type of transferred wealth being either "building and property ownership, owner-occupied housing", "securities (treasury bills, stocks, investment funds, etc.)", "cash, bank balances, etc.", "company ownership or partial ownership" or "other assets or non-cash gifts". Also, the year the transfer was received is reported, as is the value at that time in Euro. Each respondent was able to report up to three windfalls.

Different from most other data sources and empirical results seen in the previous section of this study the inheritance information is given on the individual level

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[4] The text is taken from the English language version of the GSOEP's individual questionnaire in 2017, Question 155 (SOEP/Kantar, 2017, p. 27).

rather than at household level.[5] This is useful, as prior research points at the fact that a transfer received by a spouse has a different - likely smaller or even none - impact on the partner than on the actual receiver. E.g. Cesarini et al., 2017 compare the labor supply responses of spouses in a sample of Swedish lottery winners and find no evidence for the unitary household model, which predicts complete pooling of resources by couples that live together. Niizeki and Hori, 2019 compare the labor market response of married couples in Japan of whom one spouse inherited an find no effect from the partner's inheritance on the probability to work. Woman in their sample, that are on average significantly likelier to not work if receiving an inheritance on their own, do not react in any meaningful way to inheritances of their spouses, although these are on average twice as high (ibid., p. 185).

To sum up, the GSOEP data contain information about wealth transfers of unearned income on the individual level, the time these transfers were received, the actual type of the transfer and how much they were worth at the time.

With regard to the individuals' expectations about inheritances, the situation is less satisfactory. Although the data contain information about the individuals' expectation of inheriting in the future, they do not fit well in the design of this study. In 2001, respondents were asked whether they expect an inheritance in the future and if so whether they expect this windfall to be be more than 50,000 Deutschmark or less. But due to the fact that we have the information for only one point in time, it would be a restriction hard to justify to rely only on individuals who answered it in 2001. Moreover, treating an inheritance as expected on the basis of that information seems a bit sketchy, as it still could be a different transfer that hit the individual without being anticipated beforehand. However, as discussed in Section 2.2.3 the actual effect of expectations seems weaker than to be expected from classic economic theory. Doorley and Pestel (2016) e.g. use the aforementioned GSOEP information on expected windfalls and find the reaction in hours worked to take place shortly before the transfer is received (at least for woman in their sample) in case a transfer was expected, opposed to a small lag in the reaction if nothing was expected.

Before looking at descriptive statistics for the inheritances in the sample, the following section describes the restrictions made when reducing the broad GSOEP sample to the estimation sample.

3.2 Sample restrictions

By design, this analysis is limited to those respondents out of the GSOEP population, that did answer the set of questions for personal past inheritances in the survey

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[5] On the household level, information about windfalls is a regular part of the GSOEP questionnaires. On the individual level it is provided once in 2001 for the past 15 years and now again in 2017, wave 34.

Table 1: Loss of observations when reducing to estimation sample

Condition	Observations
1. Inheritance question answered in 2017	295,938
2. Not self-employed	−13,884
3. Not parental leave	−5,941
4. Not sheltered workshop	−196
5. Not military & community service	−206
6. Working in previous year	−145,905
7. Age 25-65	−12,782
8. Time horizon 2010-2017	−56,510
9. Missings in key variables	−3,374
Final sample	57,140

Note that a change in the order of conditions would change the amount of person-year observations lost at each step.

of 2017, as described in Section 3. Starting from there, the population is narrowed down to better address the research question and suit the methodological approach of this study. Table 1 shows how many observations get lost at any step of the process which is laid out in the following section. In the end, the sample has 60,515 observations of 12,844 individuals, each providing a maximum of 8 observations to the sample.

As a first step, self-employed persons with and without employees are excluded from the sample, as are persons supporting family members. It is likely that self-employed individuals do react different on (unexpected) wealth shocks than their regularly employed counterparts, as they get the chance to invest in their business and maybe work even more after the transfer. However the actual difference in average behaviour, it seems convincing that the effect differs in a meaningful way from that on regular employees, which has been shown by e.g. Holtz-Eakin, Joulfaian, and Rosen (1994), who find that inheritances enhance the likelihood of self-employed entrepreneurs surviving in their business. The special case of individuals who take the chance to fulfill there dream and open a new business after an inheritance cannot be captured with the approach of this study and needs an own estimation.[6] Furthermore, cases of parental leave are dropped, as in that case, the inheritance will not be the underlying reason for the job exit.

In the next step, the estimation sample is reduced to persons that have been working in the previous year, which is a strong condition and drops around 146,000 observations.[7] Reasons for this condition are the following: the reference group in the

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[6] See e.g. Lindh and Ohlsson (1996) who find lottery prizes and inheritances do enhance the probability of transitions into self-employment in Sweden.

[7] Being employed is measured by the same underlying variable that is later used for the dependent variable in the estimation, to avoid unclear cases.

probit model are persons that do have a job and it would not make sense to compare persons that quit a job since the previous year with those, that did not have one in the first place, because they would still get a (non zero) probability assigned for quitting their non existing job. Stated differently, the goal is to estimate the effect of unearned income on (ongoing) labor market participation, *given* that individuals have a job.

Furthermore, the age of individuals is restricted. To aim at effects in the prime age working population, person-year observations below the age of 25 are excluded, because they are likelier to work part-time beside a full-time education or being in other kinds of programs that are not really comparable to classic employment. Still, to allow for person-year observations at the age of 25 to enter the sample, the employment status is controlled for the preceding year. On the other side of the spectrum, individuals get dropped when they become older than 60 years, as they get close to their retirement age and have a much higher probability to quit their jobs. Many of those would in fact be able to enjoy retirement, without even getting any kind of penalty to their pension.

In the penultimate step of the process, the study's time horizon gets reduced to years 2010-2017. The main reason for this is of methodological nature: By construction, individuals enter the sample with different numbers of person-year observations. However, these observations can hardly be argued to be independent, as it is very likely that personal preferences and also time constant person specific fixed-effects shape the decision or fact to stay employed or to quit a job.[8] By limiting the study's time horizon, the imbalance also gets limited, at the expense of losing some inheritances for the estimation. Still, as a result of the sample design, some individuals get more weight in our sample than others. Individuals that have no years of non-response are overrepresented and consequently get a larger weight in the probit estimation. The same is true for individuals that work during their full time in the sample, because after being unemployed for a period, individuals drop out the sample until they have been working again for a year.

Finally, a welcome side effect of the shortened time horizon is the better comparability to Brown, Coile, and Weisbenner (2010) who use data from 1994-2002, while interviews took place every two years.

In the last step, 3374 observations are dropped due to missing data in the key variables which are needed for the estimation.

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[8] Note that just using a fixed-effects model would not adjust for that, as individuals that are employed in every period would be left out the estimation, because of a lack of variation in the dependent variable.

Table 2: Inheritances and gifts in the estimation sample

Windfall	N	mean	sd	median	0.9 quantile	min	max
Inheritances	350	61,061	109,415	24,500	150,000	500	750,000
Gifts	213	60,421	101,608	20,000	150,000	900	700,000

Source: SOEP v34; Author's calculations.
Note that the data have been winsorized at the upper and lower 1 percent quantile. The different number of windfalls compared to Table 6 is due to missing values in either the type or the worth of the windfall.

3.3 Descriptive Statistics

So how much do the bequested in the GSOEP sample receive on average? Table 2 shows some descriptive statistics on reported windfalls in the estimation sample. The main point here is the difference between the mean and the median, which holds true for both inheritances and gifts: The distribution of windfalls is heavily right skewed, which means it has a long tail at the right side of the median. The differences in the mean indicate that this is even a little more extreme for inheritances compared to gifts.

To address problems with outliers, the distribution of reported windfall amounts of any gift or inheritance is partially transformed by means of winsorizing, as is common practice with survey data. For this analysis, the most extreme one percent on both sides of the distribution of values reported as windfalls are replaced by their percentile values. This aims at getting a sample that is more robust to spurious outliers that could otherwise drive and bias the estimation results. In the case of wealth transfers, the right side end of the distribution with the super high windfalls is more of a problem, as the most density mass of reported inheritances is somewhere below 100,000 Euro and some outliers in the two digit million area would heavily influence the sample mean. With survey data the reported outliers can always be a measurement error and even if not, the very few cases do not allow for statistical inference.

Note that winsorizing is distinct from trimming or truncation of data, which would mean to just exclude the most extreme reported values and yield a censored sample and an unnecessary number of missing values. As the observations are not at all distributed equally over the years, all windfalls are pooled to one distribution, instead of the usual approach to winsorize for every sample year separately (see Table 7 in the appendix). With respect to the actual distribution, the lowest percentile of reported windfalls is at 500 Euro - while the 99th percentile of the distribution lies at 750,000 Euro, respectively.

Regarding the research questions, it can be noted that with the median windfall below 25,000 Euro, for many of the bequested in the estimation sample it is not a
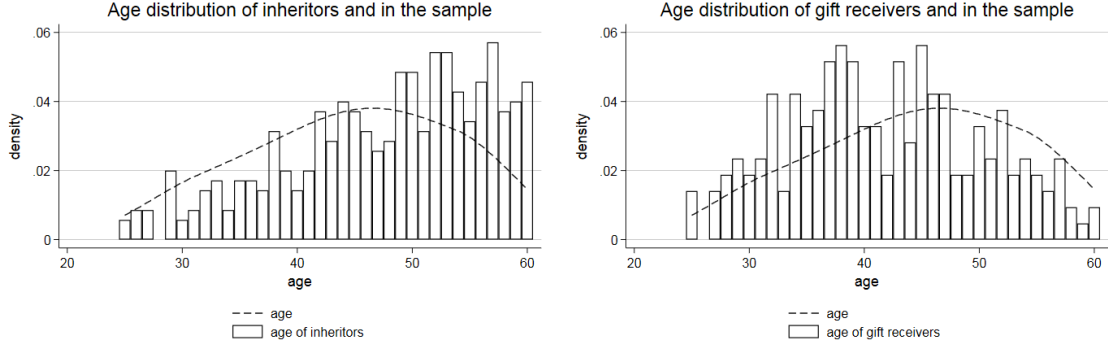
3. DATA AND SAMPLE DESCRIPTION

Figure 1: Age distribution of inheritors and gift receivers compared to the sample population

realistic option to leave the labor market forever on the basis of their freshly gained wealth. However, this could be different for those above the distribution's 90 percent quantile who receive at least 150,000 Euro.

As a next step, it seems intuitive to look at differences between those observations that receive an inheritance and those who do not. First of all, it is important to note that the age distribution of person-year observations that receive a gift or an inheritance is different from the general age distribution in the sample. This is clearly shown by Figure 1: Most inheritances happen in the group of people older than 50 years of age, whilst the kernel density of the general population age peaks earlier and we have fewer observations close to the cutoff point at age 60. However, the picture for gifts received is different and the bars of the histogram follow the kernel density line relatively well. If anything the age of persons when receiving a gift seems to be slightly below the average of the sample population. This is not surprising, as inheritances are in most cases connected to the death of a parent while the majority of gifts are transferred by parents that are still alive.

What about other differences between heir-observations and the sample population? Table 3 shows differences in the mean of some of the financial and demographic control variables that will later be part of the regression analysis. Also in preparation of the following analysis, the observations are split up by gender to have a first look at differences between these as well. The financial control variables are all lagged at the previous year and are therefore showing the value from the year before the windfall was received. This makes sense, because they will of course react to the windfall income. The different control variables are discussed in more detail in Section 4.1.3. Clearly, individuals that receive a windfall are on average part of the privileged. They have a higher average income, are wealthier already before the transfer and - although the difference seems less - are among the better educated. Between the two sorts of windfalls, those receiving a gift are on average a bit better of than those who inherit. With the age gap of five to six years in disadvantage, gift receivers still

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Table 3: Non-weighted mean of selective control variables by donee status and gender in the estimation sample

		age	$labnet_{t-1}$	$hhnetinc_{t-1}$	$hhassetinc_{t-1}$	edyears	migback
All	no	44.6	1,779.0	24,281.7	728.6	13.0	18.8 %
	inh	47.7	2,041.7	27,897.8	888.3	14.1	8.0 %
	gift	41.8	2,202.1	28,769.4	803.1	15.0	8.9 %
Men	no	44.5	2,319.0	24,635.1	729.5	12.9	19.9 %
	inh	47.7	2,790.4	28,813.0	879.5	14.5	8.7 %
	gift	41.4	2,724.5	30,341.9	962.8	15.4	9.6 %
Woman	no	44.7	1,290.4	23,961.9	727.7	13.0	17.7 %
	inh	47.7	1,480.1	27,211.5	894.9	13.9	7.5 %
	gift	42.4	1,589.0	26,924.2	615.8	14.6	8.2 %

Source: SOEP v34; Author's calculations.
labnet is monthly net labor income. *hhnetinc* is all household income per year, after taxes and equivalence weighted. *hhassetinc* is the equivalence weighted annual household income from financial assets, including interest, dividends and rent. *edyears* are years of education and *migback* includes direct and indirect migration background. The variables are described in detail in Section 4.1.3.

have the higher average income compared to inheritors.

Another vast difference in the sample population is between men's and woman's net labor income, where between all categories the males are not far from earning double the income. In terms of household income and wealth the difference between the genders almost vanishes - which is at least to some part expectable, since those are weighted for the household size and therefore it is mostly the single households who could account for a meaningful spread. Finally, the donees in the sample are half as likely to have a direct or indirect migration background, compared to those who do not receive a transfer.
Regarding these statistics, it should be kept in mind that these are non-weighted person-year observations from a pooled sample population, so most of the donees will in different years be part of the non-treated group as well. On the other hand, many of those who do not receive a windfall during the observed time horizon could have gotten it before or will receive it in the future. Also, it is of course not clear if and in what way these differences could have something to do with the willingness to leave the labor market regardless of in the form of correlation or causality. Regarding the large difference in net labor income, from economic theory the effect would be twofold: While the better income leads to more choice in terms of taking a sabbatical or even taking early retirement, the better earning are likely to have the better jobs and might derive more identity utility out of them, lowering in turn the willingness to leave that behind.

3. DATA AND SAMPLE DESCRIPTION

Following this introduction to the data the empirical strategy to tackle the research question and hypothesis explained in Section 2 will be laid out in detail.

4 Methodology

To measure the effect of unearned income on the external margin of labor supply, this study follows the setup of Brown, Coile, and Weisbenner (2010, see model on p. 428) in their model to capture relatively short term responses to inheritances.

4.1 Empirical Strategy

The basic idea is the main approach taken in the literature, which is to test if receiving an inheritance or gift increases the probability of retirement or leaving the labor force, respectively. Technically, the approach is to estimate the probability of quitting an existing job and to compare this probability between people that inherited wealth and those that did not. With this in mind the following probit model is estimated:

$$Pr\left(\text{laborexit}_{it} = 1\right) = \Phi\left(\beta_0 + \beta_1\text{inheritance}_{it} + \beta_2\text{gift}_{it} + \beta_3 Z_{it} + \tau_t + \epsilon_{it}\right) \quad (1)$$

The dependent variable $laborexit_{it}$ in the main specification is a dummy variable and therefore has two possible outcomes. It is zero in case the individual is working in a given year and it becomes equal to one to indicate a person (i) quit the labor market in the survey year (t). Although the panel structure of the data is not directly used by the probit model, some specifications of the inheritance variables and some control variables refer to information from previous years, which is denoted by the subscripts (t).

Being part of the labor force is defined relatively broad, including full-time, part-time and marginal employment and the sample is limited to individuals working in the previous year. The dependent variables are described in detail in the following Section 4.1.1.

On the right hand side (RHS) of the equation, Φ is the cumulative distribution function of the standard normal distribution. The β coefficients are estimated by maximum likelihood, which means the maximization of the probability to observe the data at hand, under the assumption about their distribution (which in our case is a standard normal distribution).[9]

The two coefficients of interest in the model from equation(1) are β_1 and β_2, measuring the influence of our variables of interest: unearned income in the form of either an inheritance or a gift. In the basic specification, $inheritance_{it}$ is a dummy variable indicating the occurrence of an inheritance this year, while $gift_{it}$ indicates gifts in the same way. By design, only one of them can indicate a transfer for a

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[9] For a comprehensive overview on maximum likelihood methods in general and the chosen probit model of this study, refer e.g. to chapter 15 in Wooldridge (2002).

person-year observation at the same time, setting the other to zero by default.

Beside the basic specification, inheritances and gifts will enter the model in different variable modifications, as continuous variable for the value of the transfer and in the form of categories for small and large transfers, to see if the results are robust against these changes. Also, as Section 2 showed divergent empirical results for men and woman, all model specifications will additionally be estimated separately for woman and men as well.

The other variables in the model are the following: Z_i is a matrix of control variables, β_0 is the model's intercept, τ_t is a year dummy to control for macroeconomic time specific effects and ϵ_i is the error term. The variables in matrix Z_i are included in the model to control for a range of other factors, that are likely to influence the individuals decision to leave the labor market. In a perfect scenario, when controls cover every other influence, it would enable an identification of $\beta_{1/2}$ as actual causal effects of the transfer received.

However, the coefficients of a binary probit model cannot be interpreted in the same way as those of ordinary least squares can, where the marginal effect of a predictor on the mean of the dependent variable is just the coefficient itself. The reason this is different for a probit model is, that the marginal effect is still dependent on the value of the other predictors and their coefficients as well. Still, the sign of the coefficient is useful: In case of a positive coefficient, an increase in the predictor equals an increase in the (conditional) probability of a "positive" outcome in the dependent variable (see Wooldridge, 2002, pp. 458-59). Applied to the concrete estimated model, a positive coefficient β_1 would indicate an increase in *inheritance* to enlarge the estimated average probability to quit the labor market.

To ensure consistent estimators, in all model specifications the standard errors are clustered on the individual level to account for the non-random probability of multiple observations from the same individual in the sample population. This is done the same way by Brown, Coile, and Weisbenner (2010).

4.1.1 The dependent variables

Following again Brown, Coile, and Weisbenner (ibid.), in the first specification of this study the dependent variable is a binary dummy which is zero when a person is employed and becomes one, when she left the labor force since the previous year. Throughout the analysis, participating in the labor market is captured via the following annual question of the GSOEP questionnaire:

> *Are you currently employed? Which one of the following applies best to your status?*[10]

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[10] This is question 33 in the paper based version of the 2017 individual questionnaire

The answers to that annual question are taken from the generic *emplst* variable, which provides the employment status for every year of the GSOEP data (see SOEP Group, 2018, pp. 11-12).

Included in the "working" category of our dependent binary variable are full-time, part-time and marginal employment, respectively. However, excluded from the workforce are individuals in vocational training and also in sheltered workshops, as these cases would be hard to compare to the rest of the labor market. For the same reasons, self-employed individuals are excluded from the analysis, as is explained in detail in Section 3.2.

Also, some cases are dropped from the "not working" category, namely persons in maternity and parental leave, as the inheritance will not be the reason for leaving the job market and if anything it will influence the timing to get back into the labor market, which goes beyond the scope of this study. Note though, that cases of non-working who are in education and training, the voluntary military service or community and social service are kept in the sample. That is, if they have been working the previous year and are at least 25 years of age, resulting in the inheritance as a plausible reason for that change in working status to happen. The very few possible cases of mandatory military and social services - which were legally abolished in the summer of 2011 - are excluded. Table 4 shows both the dependent variables.

By design, the dependent variable for labor force exit does not differentiate between those, that want to leave the labor market and those, that got laid off by their employees. With regard to the research question, only the first of these cases is relevant, the others come as spurious correlation into the estimation.

To address that, the second specification of the dependent variable looks at reasons of why respondents left a job. The information is taken from the generic *jobend* variable, which is provided in the GSOEP data and combines information from several questions (ibid., p. 30). While the sample is the same as before, the binary dependent variable now is zero for all observations, that did not leave their jobs. It becomes one if a job is left by means of an active decision, that could theoretically be caused by an inheritance. Defined as those active decisions are: own resignation, mutual termination, employee requested transfer, ended own business, early retirement, old-age pensions and sabbaticals.[11] Cases that passively lost their job are excluded from the regression on the second dependent variable. Although, while still every sample observations has worked at the previous year, some of those that actively left a job will still be working (2,069 cases) while others are unemployed

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(SOEP/Kantar, 2017, p. 9)

[11] Although self-employed individuals are excluded from the analysis, there are a few cases that stated that they left an own business.

Table 4: Labor exit and job left actively in the estimation sample

	No	Yes	Total
Labor exit	55,011	2,129	57,140
Job left actively	52,470	2,524	54,994

Source: SOEP v34; Author's calculations.
The less observations for Job left actively are due to ob-
servations that passively left their job.

(455 cases).[12] The second specification of the dependent variable differs from the replicated study of Brown, Coile, and Weisbenner (2010), who rely on labor force exit as dependent variable.

4.1.2 The inheritance variables

The following part aims at explaining the different specifications of our main variable of interest. Table 6 in the appendix shows the total amounts of gifts and inheritances in the estimation sample and how they distribute over the sample's time horizon from 2010-2017. Reasons for the uneven distribution of windfalls over the years are discussed in Section 6.3.

In the basic specification the variables $inheritance_{it}$ and $gift_{it}$ are binary, indicating whether an inheritance or gift was received in this year or not. Consequently, the model captures only immediate reactions - the individual would have to leave the labor market in the very same year it receives the windfall to detect an effect. At the same time, there is no differentiation between windfalls of different sizes, the binary dummy variables just indicate a one no matter how large or small the windfall is. As alternative measure, it seems logical to include the windfall's worth in Euro as a continuous variable, following again Brown, Coile, and Weisbenner (ibid., p. 428). This is to test the second hypothesis, which states that the reaction might increase with size of the transfer. This seems only logical, as leaving the labor market naturally is only a feasible strategy for those who inherit large enough to compensate for the opportunity cost of their wage. In the rare case of two reported transfers by one individual in one year, these are summed up and treated as one, with the first one. For all observations receiving no transfer, the variable will just be zero.

In the third specification of inheritances and gifts the chosen approach is somewhat in the middle between the first two and differs from replicated study (ibid.). The transfers are categorized into windfalls below and above 50,000 Euro, with the base category again being those observations, that do not receive a windfall. By doing so,

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[12] Note, that also the still employed observations could have been unemployed for some month and then found a job again before the next interview.

it is accounted for the feasibility problem of those who receive smaller transfers and probably cannot afford to leave the labor market as a result of the windfall. The group with the larger inheritances gets treated as one, which maybe accounts better for the decreasing marginal utility gained out of additional value of the windfall: As an example, although of the same size in absolute value, the step from a 50,000 Euro windfall to a 100,000 Euro windfall will have a more sizable effect on the individual's behaviour than that from a Million Euros to 1.05 Million Euros. The specification with the continuous worth in Euro does not account for that and also suffers from the uneven distribution of reported values across the scale, because many respondents round their reported value up or down to the next integer, leading to many observations around values like 10,000 or 50,000 and too little in between.

Although from a theoretical point of view it seems only logical to split up the windfalls into more categories than just two, the data at hand with only relatively few large windfalls would not allow for serious statistical interference based on them. For now, all three specifications of windfalls in the model only capture actions that take place in the very same year - the effect of the wealth transfer onto labor market exits or leaving a job is measured only for the period it was received in. It seems a bit restrictive not to model for effects that happen at least one or two years after the windfall was received. In fact, most of the empirical results from Section 2 show effects around the time of the inheritance or gift, with detectable changes ending approximately three years after the transfer was received (see e.g. Elinder, Erixson, and Ohlsson, 2012, p. 16).

To allow the specified probit model to capture the effect that way, the variables for inheritances and gifts are lagged for the past two years and the incidences are added up. To give an example, an inheritance from 2010 would still be captured by the inheritance-dummy in 2011 and 2012, at least if the individual was still part of the survey. Consequently, the number of observations with inheritances rises. The approach for the absolute value and category windfall variables is exactly the same: The value the variable shows in the year of the transfer is just being carried over in the future for the next two years. In the rare event of another transfer happening within that time to the same individual, the one reported closer to time (t) counts. In all the tables shown in this study, the variables which cover the effect from the past three years will be denoted by means of a _long_ suffix.

The described specifications are a deviation from the replicated paper of Brown, Coile, and Weisbenner (2010), who estimate the effect over a two year period and an eight year period, where in both specification the relative timing between the labor market exit and the inheritance cannot be observed. As most of the inheritances in the used GSOEP sample are close to 2017, it does not make sense to replicate the long difference estimation as well, as also the information on expected retirement

age, which is used as dependent variable is not at disposal.

4.1.3 The control variables

Beside inheritances and gifts, a set of control variables is part of the estimation and they are expected to influence the individual's labor market decision that is captured by the dependent variable. Doing the estimation without the controls would result in omitted variables biases and likely lead to inconsistent coefficient estimates for $\beta_{1/2}$. Most of controls are similar in style to the replicated paper, although the descriptions sometimes were unclear. Some controls are added, to use additional information available in the data.

The financial control variables are maybe the most important, as the aim here is to estimate the effect of unearned income, the regularly earned income will definitely play a role there and so does the existing wealth. The existing household and personal wealth sets the amount of the received wealth shock into perspective, e.g. regarding the possibility to keep a certain prior standard of living. The financial controls should rely on the previous year, because the situation there will have determined the grounds on which the labor market outcome takes place.

The monthly net labor income in Euro from the main job is a generic and imputed variable provided in the GSOEP (SOEP Group, 2018, p. 8). It is straightforward why to use the year before the dependent variable potentially indicates the labor force exit, as otherwise those who actually did leave their jobs would have no income and the causality would be reversed. Net income is used, because it captures the amount the individual can really consume and base her decision on, as opposed to pre-tax income, which would also be available.

Next, all yearly household income from the previous year is included, again a variable generated and imputed in the GSOEP data (Grabka, 2017, p. 43). The income is after taxes and including any government transfers, representing all income the household had that year. This way the influence of potential partners and the general financial situation of the household is controlled for. As the study is looking on the individual and not the household level, it seems intuitive to weight the household income by its size and needs respectively, as obviously it does make a difference whether the income needs to provide for e.g. a spouse and three children or is just for one person's needs. For the equivalence weighting the modified OECD-Scale is used as introduced by Hagenaars, de Vos, and Zaidi (1994): The assigned values are 1 for the head of the household, 0.5 for each additional adult household member and 0.3 for each child.

What is missing so far is a control for the wealth of the individual or household. As a proxy for wealth, the household income from assets in the previous year is included. In the same way as explained for the overall net household income it is

transformed by equivalence weights.

To account for the different life situations of individuals in the sample, the type of household they live in is controlled for by means of five categories: Single and couple households each with and without children define the majority of the sample. Every other constellation is captured by a fifth category of others.

Also, education level dummies are included following the classification of the isced-1997 standard, introduced by the UNESCO (1997). The categories are *inadequately*, *general elementary*, *middle vocational*, *vocational + high school diploma*, *higher vocational* and *higher education*. Although the group of inadequately educated is only 538 observations strong, they are not added to another category, as their labor market participation is significantly different from the others.

The respondent's age is included by means of age group categories, to address the different situations of varying age groups on the labor market. The groups are formed of 25-34, 35-44, 45-54 and 55-60 year old individuals and on average the oldest and the youngest group can be expected to work a little less than the two middle age groups, as the latter will have found their labor market niche while still being healthy.

In case of (partial) disability in the form of a reduced earnings capacity or special needs at the workplace, German laws protect against being laid off by your employee - at least to a higher degree than workers with a full earning capacity / no disability status. Whatever the actual effect on the labor market outcomes of the about 6.5 percent affected observations in the sample, it seems sensible to control for the disability status by means of a simple dummy variable.

Also, a control dummy for bad health condition is used, as severe health problems will often be a cause to quit the labor market or to change the job. The condition is self reported, answering the following annual question: *How would you describe your current health?*[13]. The possible answers range on a five-level likert scale from "very good" to "bad", with the last category to trigger the control dummy variable for bad health - the other four form the reference group. In the same way as the financial controls the health status is lagged to the previous year. In total, there are 823 person-year observations reporting bad health status, which is a little short of 1.5 percent of our sample observations.

So far the controls differentiate between demographic influences, financial possibilities, the type of household and education, which are all person related variables. To control for regional- and sector specific labor market effects that are mostly out of the individual's hand to influence - like the average unemployment rate - dummy variables for the industry type and the 16 constituent states of Germany are in-

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[13] Question 158 in the paper based individual questionnaire from 2017, (SOEP/Kantar, 2017, p. 28).

cluded. Especially with the differences between east and west Germany still playing a role, but also because of varying degrees of economic prosperity between the constituent states and regions, it seems sensible to control for that. In the same way, economic prosperity and business cycles can be different between industries and should be controlled for. The industry type used differentiates between 10 relatively broad categories, that put together the finer self reported assessment of respondents (Grabka, 2017, p. 32). To avoid too small categories, agriculture, energy and mining are pooled to one. Again, the control is lagged on the previous year, to capture the last industry the individuals that transitioned into non-working have been working in. Noteworthy is, that around 45 percent of observations in the sample are working in the services industry, with the next largest being manufacturing with only around 15 percent.

Finally, the last control to cover macroeconomic effects on the probability to quit the working population are the included survey year dummies - mainly aiming at nationwide economic crisis or boom phases to capture wave fixed-effects.

5 Empirical Results

The main specification of this study is a replication of the approach from Brown, Coile, and Weisbenner (2010) to measure the effect of unearned income onto the probability to leave the labor market conditional on having a job in the previous year. The effect is measured with two different dependent variables: first the exit out of the labor market and second the action of actively leaving an existing job, but not necessarily the labor market.

5.1 Labor market exit

Table 8 in the Appendix shows the regression results onto the labor exit variable. As the variable including the inheritance value shows no significant influence in any estimated specification, it is not reported in the regression tables. Instead, for better comparability to Brown, Coile, and Weisbenner (ibid.) a dummy variable which does not differentiate between inheritances and gifts is included.

In short, the estimation results in Table 8 provide no evidence for the hypotheses explained in Section 2. In fact, in some specifications the windfalls are negatively correlated with the probability to quit the labor market. The simplest specification, a dummy indicating a gift or inheritance in the same year is significant at the reported 10 percent level. The marginal effect evaluated at sample means predicts an one percent lower probability to leave the labor market in the year an inheritance or a gift was received. Note though, that the pattern of negative correlation vanishes in the specifications covering inheritances and gifts in the past three years and therefore seems not to be robust.

With regards to the control variables, most of them can in fact explain the labor market exits with the effects being stable throughout different specifications. Table 9 in the Appendix shows the regression with dummy variables for inheritances and gifts in the past three years with reported control variables. For more intuitive interpretation, the coefficient values have been substituted by marginal effects evaluated at the sample means of the control variables. Although not reported, the control variables come with the same coefficient sign in almost every specification of the analysis.

As expected, all the financial controls appear to be highly significant. The higher the net labor income at the previous wave, the less likely someone is to leave the labor market. The equivalence weighted, yearly net income of the household has the same effect. The proxy for wealth, however, shows a highly significant positive correlation: Having more income from assets on average increases the probability to quit the labor market.

In the same way, the other control variables indicate effects in the expected manner.

Having a disability status increases the predicted probability by around three percent, while a bad health condition in the previous year makes it even five percent more likely to leave the labor market for the average individual in the sample. Also significant, but smaller in amplitude is the prediction for migration background. Having a direct or indirect migration background comes with one percent or half a percent higher prediction of labor market exits, respectively.

How about the influence of the observations' age onto the dependent variable? Compared to the reference of 45 to 54 year old individuals, the group in the age of 55 to 60 years is unsurprisingly more likely to quit the labor market, even after the health effect is already controlled for. For likely different reasons, it is around the same for the younger age group of 25 to 34 years.

5.2   Leaving a job

Next, we look at the results for the alternative dependent variable which looks on leaving a job by means of a person's active decision. As explained in more detail in Section 4.1.2 this mainly includes cases of own resignations, mutual termination, early retirement and sabbaticals. The indicated event is not conditioned on being unemployed after that, as for these cases the data lack observations in sufficient number to allow for statistical inference.

The estimated coefficient results with the second dependent variable are shown in Table 5. As a relatively robust correlation, receiving a gift seems to increase the likelihood to actively leave a job in the sample population across the different specifications. Evaluated at sample means, observations that received a gift in the past three years have a 1.3 percent higher predicted probability to actively leave a job compared to those observations that did not receive a gift. For the dummy covering only gifts in the very same year, the effect is with 3.5 percent a bit larger and the p-value indicates high significance.

The variable with categories for the windfall's value shows that the effect is driven by observations that receive gifts smaller than 50,000 Euro. Taken together with inheritances, the effect vanishes, as gifts plus inheritances seem to have no significant influence on the dependent variable.

Next, it seems sensible to have a short look on those control variables that differ in a meaningful way from the first regressions onto the labor market exit. The estimation results including control variables are shown in column (2) of Table 9 in the Appendix. Again, the example coefficients come from the specification indicating a gift or inheritance received in the past three years. While the signs of the coefficients remain the same, the household income and the wealth - approximated via the income from assets - both lack to explain the dependent variable in a significant

way. However, the influence of personal net labor income from the previous year is still highly significant.

Another difference appears to be in education. The categories higher vocational and higher education have a small but significant positive influence. This suggesting that better educated individuals leave a job more often as a result of active decision making compared to the less educated reference group of observations in the middle vocational category.

Also, differences between age groups seem to be more significant for leaving the job than for labor market exits. The results suggest that the younger someone is the likelier she actively leaves her job.

Table 5: The effect of inheritances and gifts on actively leaving a job

	Dependent variable: Job left actively					
	1-year effect			3-year effect		
Variable	(1)	(2)	(3)	(4)	(5)	(6)
Windfall	0.0948					
	(0.0925)					
Inherit.		-0.0944				
		(0.136)				
Gift		0.294**				
		(0.131)				
Inherit. < 50000			-0.160			
			(0.166)			
Inherit. > 50000			0.0488			
			(0.235)			
Gift < 50000			0.366**			
			(0.149)			
Gift > 50000			0.0451			
			(0.274)			
Windfall_long				0.0673		
				(0.0544)		
Inherit._long					0.0299	
					(0.0719)	
Gift_long					0.131	
					(0.0820)	
Inherit._long < 50000						0.0261
						(0.0864)
Inherit._long > 50000						-0.0694
						(0.164)
Gift_long < 50000						0.190*
						(0.0990)
Gift_long < 50000						0.0788
						(0.153)
N	54994	54994	54994	54994	54994	54994

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Source: SOEP v34; Author's calculations.

Note: Coefficient estimates from a pooled probit model. Standard errors in parentheses, clustered on the individual level. Variables with the subscript _long indicate events from the past 3 years. All estimations include controls as described in Section 4.1.3: financial situation, age, household type, education, disability, bad health, migration background, industry, state, year.

6 Discussion

The following section is meant to compare the results from the previous section with the literature and generally set them into a broader context. One of the main questions to address here is whether the "failed" replication of Brown, Coile, and Weisbenner (2010) is the result of limitation due to the used data or rather a difference in society or institutional environment between Germany and the US.

6.1 The Results in Context

Taking into account the two working paper relying on GSOEP data by Peters and Schwarz (2013) and Doorley and Pestel (2016), the results of this study actually solidify the emerging picture. Looking at prime age population as well (age 24-51 years), the latter find no effect of windfalls onto hours worked of men, not even in their desired hours of work. So even with a loosened budget constraint, there seems to be not much desire to work less amongst prime age men in Germany. And although there is an effect on woman in their sample, it is not very strong.

Arguably, entirely leaving the labor market - even for a limited time - is a more drastic measure compared to reducing the hours worked, which capture changes in the internal and the external margin of labor supply and not just the external margin. From that perspective, it is no real surprise that most of the coefficient estimates in Section 5 showed no significant influence on the dependent variable.

However, the results from the second approach - using the job endings by means of individual decisions as dependent variable - indicate that for some persons the financial possibilities provided in form of a gift open up the opportunity or just the courage to leave a job behind. Unfortunately, the data do not allow to differentiate between those that just switched into a new job and those that became unemployed. For these cases the subgroup of observations that got a windfall and left the labor market is too small to base serious results on.

Regarding the replication, the first of two main differences between the study of Brown, Coile, and Weisbenner (2010) and this analysis is in the target population. Respondents of the HRS in their sample are between 50 to 65 years old, which makes the decision to leave the labor market easier for the inheritors in terms of a likely smaller impact on their careers, as many will be shortly before their retirement age. The second difference lies in the received windfalls, which are on average higher and more common in the HRS compared to the GSOEP sample. Although their data come from the years 1994 to 2002, the average and the median inheritance are with 67,000 Dollar and 28,000 Dollar higher than in the GSOEP sample, making it less likely to find an comparable effect for Germany.

Furthermore, institutional and socio-economic differences between Germany and the

US could help to explain the different outcomes. As Elinder, Erixson, and Ohlsson (2012) point out for the case of Sweden compared to the US, the fact that decedents cannot disinherit their children and the significantly higher taxes on labor income make a relevant difference regarding the research question at hand, as both are likely to influence the behavioral responses of heirs (ibid., p. 1). Their point can to some extend be adopted for the case of Germany, although it is not straightforward in what direction these differences influence the measured effect.

Despite the somewhat limited results and likely weaker effects than for the US, policymakers should still take the behavioral consequences of inheritances and its tax schemes into account. After all, Crusius and von Werder (2017) show existing effects for Germany in much the same way as Brown, Coile, and Weisbenner (2010) did. With their long difference estimation on the expected retirement age Crusius and von Werder (2017) find the bequested to plan earlier retirement compared to before the inheritance was received. Moreover, the analysis from Bø, Halvorsen, and Thoresen (2019) finds effects of unearned income also for younger age groups, enabled by an enormous set of administrative data from Norway. As their welfare state is not so different from the German, it seems likely for these incentives to work somewhat the same way in Germany.

As the importance of inheritances is likely to grow in the future due to increasing wealth and increasing inequality, the topic of labor market incentives of these unearned incomes should be on the agenda of future economic research.

6.2 General Limitations

This section on limitations provides an overview of the potential shortcomings of this study. First, this again helps the reader to embed the reported results into context and second it aims at naming starting points for future research conducted on the same or related topics.

In the chosen model setup without individual fixed-effects, it is not possible to control for the individuals' general desire to work or, stated differently, their preference for leisure time which shape their opportunity cost of working. In case of these preferences being systematically different between persons that receive a windfall and those that do not, the taken approach would either over- or underestimate the effect of unearned income on the probability to exit the labor market or quit a job. While the differences in preferences remain an open question, the broader point of the average receiver of a large inheritance being systemically different in socio-economic status from the average of the underlying population is likely to be true as can be seen in Table 3. A fixed effects logit model, estimated in a sample with solely the persons receiving a windfall, would account for this systematic effect by focusing on

the within-person variation before and after the windfall is received. The disadvantage of such an approach would be the exclusion from those in the estimation, that have no switch in the dependent variable while they are observed in the sample, which becomes a problem in the case of e.g. age or period effects, when they are not accounted for (see pp. 970-71 in Brüderl, 2010). In effect, these observations could only be used to get a more precise estimation of the control variables.

However, while the lack of accounting for individual fixed-effects could potentially bias the coefficients of this analysis in an undesirable manner,[14] it is not likely to receive an entirely different result just by changing the statistical method from a probit approach to a fixed-effects logit model estimated on the same set of variables. Another limitation is the unability to address the role of expectations with the data and the chosen approach. Although this is not very likely, it could be the case that only individuals who did not at all expect to receive a windfall react ex-post the event in the way our hypotheses predict it. In that scenario, the group that did expect the transfer already integrated it into their labor market decisions years ago and when the event now is observed they do not change behaviour and prevent the group of donees to be systematically different from the reference group.

The next point is closely related to the expectations: The independent variables of interest in the model from Section 4 do not capture anticipation effects that take place before the actual event, but only those happening either directly or in the three following years. In the case of generally expected inheritances, the bequested might still decide to start consuming the future wealth only shortly before it will finally be received. In the estimated model of this analysis those effects would be missed.

Although not a flaw of the approach, a comprehensive picture of the behaviour of inheritants would need to allow for reactions to take place not during the regular employment phase but by the time they can afford to retire. The estimations of Crusius and von Werder (2017) using the self-reported expected retirement age of individuals to measure that effect are a good proxy, but there could be a gap between what people expect with regard to their retirement age and then the actual event taking place. To quantify this dimension and derive an overview of the size of the task policy makers have to deal with would likely need administrative data from the statutory pension insurance as a basis, combined with life-cycle data to capture past inheritances and control variables.

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[14] Note though, that the results of Brown, Coile, and Weisbenner (2010) who came up with the approach that is replicated here, turned out to be robust in in sign and amplitude in most countries they were replicated for - even when different statistical methods are used.

6.3 Limitations of the data

While the preceding section focused on methodological limitations, the following part discusses limitations that are due to the data.

As a consequence of the survey strategy to ask respondents for inheritances in the past 15 years, the distribution of reported inheritances over the years takes the shape of a funnel: inheritances become fewer, the further the year is from the time of the interview (see Table 7 in the Appendix for the number of windfalls reported for every year in the original data). The peak is in 2016 and 2017 only comes with fewer cases, because the interviews were conducted over the course of that year. This funnel-like distribution of reported windfalls in the data probably is the result of a combination of several causes. There might be some kind of recall bias, leading to underreporting of inheritances further in the past. Although, at least for larger transfers this seems not a realistic explanation. If anything, the exact amount or timing of the inheritance could be forgotten, but not the whole event.[15] There could however be some kind of general unwillingness to report inheritances. But if the general willingness to report inheritances was the problem, it is not clear why this non-response should effect the events further in the past much more than those from recent years.

At least, to some extent the appearing distribution of windfalls over the years can be expected: The probability to receive an inheritance or gift is increasing for most individuals over a substantial part of their lifetime, which means if we ask them for past inheritances in 2017, it is more likely for the inheritance to have happened in recent years compared to further in the past. However, it is not straight forward to quantify this effect which would be needed to get a clear picture about the size of the problem and to evaluate how reliable the data actually are. Another cause in form of an underlying driver could be a generally increasing numbers of inheritances over the recent years.

On top of that, the distribution of windfalls naturally gets more extreme as we merge the inheritance data reported in 2017 with the information given in the years the inheritance actually happened in. We lose observations that have not been interviewed for the year the transfer happened in. This could again have several reasons, with the most likely being that they got sampled into the GSOEP population after they received the transfer. In result, the longer the reported windfall is in the past, the likelier it becomes that the observation cannot be used for the estimation sample. However, there is no way around that, as the chosen approach for the estimation relies on the use of various control variables. Therefore, person-year observations

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[15] Remember, the respondents are able to follow a survey of complex questions and most inheritances are connected to the death of a family member. With not only cash but also objects with more sentimental value being transferred, forgetting this just seems no realistic explanation.

we do not have these information on have to be excluded. Table 6 in the Appendix shows the inheritances per year in the estimation sample.

In conclusion, the estimation sample could suffer from underreported inheritances and gifts that lay further in the past, but to some extend the funnel-like distribution can also be explained logically. In case of the aforementioned logical reasons, the estimation results are unaffected, because it is the relative timing between the inheritance and the labor market exit of individuals that drive the coefficient estimates and not the actual year the events took place in.

In the case of an actual missing data problem, that would explain the few windfalls reported in the years further away from the interview, it would in the setup of this study lead to an underestimation of the effect of unearned income on labor supply. As the person-year observations with falsely non-reported transfers would be part of the control group with no transfers, it becomes making less likely to find a difference in behaviour between the two groups. In case of correlation between these non-random non-reportings and the reaction to an inheritance, the estimators could become inconsistent.

Next, it is important to keep in mind that the used sample is subject to left and right censoring. The event we look at here is rare, in the sense that individuals will receive an inheritance or gift usually 1-2 times during their entire lifespan - if they receive any at all. Consequently, it is unlikely for the event to happen in the relatively short period of time the individual is part of this study's sample population. As a result, a considerable part of our sample could have received the treatment in form of a windfall before entering the sample in the first place or is already knowing and adapting to a future transfer we will not observe. As this undermines the control group of non-treated to be more different from the inheritors, it could prevent an effect from being detectable.

Although not specific to the GSOEP sample, survey data based studies on labor supply effects of larger windfalls suffer from panel attrition which is likely to curb the measured (negative) effect: In case individuals use their freshly gained wealth to move abroad - lets say to better enjoy their retirement - they will be cases of missing not at random in the survey data.

More general, GSOEP data - like other survey based panels - suffer from an underrepresentation of the wealthiest population group. In result, large inheritances almost certainly are to scarce in the data compared to the reality, as there will be correlation between those that are wealthy and those that receive large windfalls, especially in the case of gifts, which are often used to transfer company shares. On top of that, the few cases of large inheritances do not allow for robust statistical inference regarding their effects, so they cannot be compared to smaller windfalls.

7 Conclusion

Replicating the estimation of Brown, Coile, and Weisbenner (2010) on a sample of prime age working population in Germany, the results of this study indicate no short-term reactions of individuals in their probability to exit the labor market after receiving a gift or an inheritance.

Similar to most published studies, that measure does not differentiate between labor market exits due to termination by the employer and active resignations of the employee, although only the latter cases are of actual interest with regard to the research question. In a next step, the analysis is designed to solely explain those cases that ended a job by means of an active decision of the employee. Apart from focusing on the aforementioned individuals only, the analysis is relying on the same sample and set of control variables. When focusing exclusively on explaining those observations, the results show a relatively robust positive correlation with wealth transfers in form of inter-vivos gifts. This indicates that some gift receivers use the enhanced financial possibilities to adjust their labor market behavior. These adaptions, however, do not seem to increase with the size of the wealth transfer. Due to limited observations in the data, it is not possible to differentiate between those that just change jobs and those that leave for a short vacation, a sabbatical or for early retirement. At the same time, opposed to gifts, inheritances show no effect onto the probability to actively leave a job.

The estimation results are robust for separate subgroup analyses for men and woman, as their reactions onto transfers of unearned income seem to be not significantly different with regard to the dependent variables. In the same way, focusing on a target population of elderly employees shortly before retirement age instead of prime age working population, does not change the estimation results in a meaningful way either. The results, however, lack validity for the wealthiest part of German society, as they are underrepresented in the used sample data. While the topic of inheritance taxation is likely to be an area of political conflict for the years to come, labor market effects of these wealth transfers seem to be of comparably small amplitude, at least for those that are already in employment.

Bibliography

Blau, David M. and Ryan M. Goodstein (2016). "Commitment in the household: Evidence from the effect of inheritances on the labor supply of older married couples". In: *Labour Economics* 42, pp. 123–137.

Bloemen, Hans G. (2002). "The Relation Between Wealth and Labour Market Transitions: An Empirical Study for the Netherlands". In: *Journal of Applied Econometrics* 17.3, pp. 249–268.

— (2011). "The Effect of Private Wealth on the Retirement Rate: An Empirical Analysis". In: *Economica* 78.312, pp. 637–655.

Bloemen, Hans G. and Elena G.F. Stancanelli (2001). "Individual Wealth, Reservation Wages, and Transitions into Employment". In: *Journal of Labor Economics* 19.2, pp. 400–439.

Bø, Erlend E., Elin Halvorsen, and Thor O. Thoresen (2019). "Heterogeneity of the Carnegie effect". In: *Journal of Human Resources* 54.3, pp. 726–759.

Brown, Jeffrey R., Courtney C. Coile, and Scott J. Weisbenner (2010). "The Effect of Inheritance Receipt on Retirement". In: *The Review of Economics and Statistics* 92.2, pp. 425–434.

Brüderl, Josef (2010). "Kausalanalyse mit Paneldaten". In: *Handbuch der sozialwissenschaftlichen Datenanalyse*. Springer, pp. 963–994.

Cesarini, David, Erik Lindqvist, Matthew J. Notowidigdo, and Robert Östling (2017). "The Effect of Wealth on Individual and Household Labor Supply: Evidence from Swedish Lotteries". In: *American Economic Review* 107.12, pp. 3917–46.

Chetty, Raj (2012). "Bounds on Elasticities with Optimization Frictions: A Synthesis of Micro and Macro Evidence on Labor Supply". In: *Econometrica* 80.3, pp. 969–1018.

Crusius, Tobias L. and Marten von Werder (2017). *The affluency to quit: How inheritances affect retirement plannings*. Tech. rep. Diskussionsbeiträge.

Deaton, Angus (1991). "Saving and Liquidity Constraints". In: *Econometrica* 59.5, pp. 1221–1248.

Doorley, Karina and Nico Pestel (2016). "Labour Supply after Inheritances and the Role of Expectations". In:

Elinder, Mikael, Oscar Erixson, and Henry Ohlsson (2012). "The Impact of Inheritances on Heirs' Labor and Capital Income". In: *The BE Journal of Economic Analysis & Policy* 12.1.

Garbinti, Bertrand and Simon Georges-Kot (2016). *Time to smell the roses? Risk aversion, the timing of inheritance receipt, and retirement*. Tech. rep. Institut National de la Statistique et des Etudes Economiques.

Goebel, Jan, Markus M. Grabka, Stefan Liebig, Martin Kroh, David Richter, Carsten Schröder, and Jürgen Schupp (2019). "The German Socio-Economic Panel (soep)". In: *Jahrbücher für Nationalökonomie und Statistik* 239.2, pp. 345–360.

Grabka, Markus M. (2017). *SOEP 2016-Codebook for the $ PEQUIV file 1984-2016: CNEF variables with extended income information for the SOEP*. Tech. rep. SOEP Survey Papers 464: Series D. Berlin: DIW/SOEP.

Hagenaars, Aldi, Klaas de Vos, and Asghar Zaidi (1994). *Poverty Statistics in the Late 1980s: Research based on Micro-Data*. Tech. rep. Office for Official Publications of the European Communities, Luxembourg.

Heckman, James J. and Thomas E. MaCurdy (1980). "A Life Cycle Model of Female Labour Supply". In: *The Review of Economic Studies* 47.1, pp. 47–74.

Holtz-Eakin, Douglas, David Joulfaian, and Harvey S. Rosen (1993). "The Carnegie conjecture: Some Empirical Evidence". In: *The Quarterly Journal of Economics* 108.2, pp. 413–435.

— (1994). "Sticking it Out: Entrepreneurial Survival and Liquidity Constraints". In: *Journal of Political Economy* 102.1, pp. 53–75.

Imbens, Guido W., Donald B. Rubin, and Bruce I. Sacerdote (2001). "Estimating the Effect of Unearned Income on Labor Earnings, Savings, and Consumption: Evidence from a Survey of Lottery Players". In: *American economic review* 91.4, pp. 778–794.

Joulfaian, David and Mark O. Wilhelm (1994). "Inheritance and Labor Supply". In: *Journal of Human Resources*, pp. 1205–1234.

Lindh, Thomas and Henry Ohlsson (1996). "Self-Employment and Windfall Gains: Evidence from the Swedish Lottery". In: *The Economic Journal* 106.439, pp. 1515–1526.

Niizeki, Takeshi and Masahiro Hori (2019). "The effect of inheritance receipt on individual labor supply: Evidence from Japanese microdata". In: *Japan and the World Economy* 49, pp. 176–186.

Peters, Heiko and Peter Schwarz (2013). *Bequests and Labor Supply in Germany*. TranState Working Papers 173. University of Bremen, Collaborative Research Center 597: Transformations of the State.

Picchio, Matteo, Sigrid Suetens, and Jan C. van Ours (2017). "Labour Supply Effects of Winning a Lottery". In: *The Economic Journal* 128.611, pp. 1700–1729.

Piketty, Thomas and Gabriel Zucman (2015). "Wealth and Inheritance in the Long Run". In: *Handbook of income distribution*. Vol. 2. Elsevier, pp. 1303–1368.

Sachverständigenrat (2019). *Den Strukturwandel meistern. Jahresgutachten 2019/20*. Tech. rep. Sachverständigenrat zur Begutachtung der gesamtwirtschaftlichen Entwicklung.

SOEP Group (2018). *SOEP-Core v33.1-Documentation of person-related status and generated variables in $ PGEN*. Tech. rep. SOEP Survey Papers 483: Series D - Variable Descriptions and Coding, DIW/SOEP, Berlin.

SOEP/Kantar (2017). *Living in Germany. Survey 2017. Individual Questionnaire*. Tech. rep. SOEP Group and Kantar Public.

Stancanelli, Elena G.F. (1999). "Do the Rich Stay Unemployed Longer? An Empirical Study for the UK". In: *Oxford Bulletin of Economics and Statistics* 61.3, pp. 295–314.

UNESCO, May (1997). *International Standard Classification of Education: ISCED 1997 (re-edition)*.

Wooldridge, Jeffrey M. (2002). *Econometric Analysis of Cross Section and Panel Data*. Cambridge, MA: MIT Press.

Appendices

Table 6: Inheritances and gifts per year in the estimation sample

year	no windfall	inheritance	gift	total
2010	3,824	6	7	3,837
2011	5,239	27	6	5,272
2012	6,656	44	21	6,721
2013	7,280	35	22	7,337
2014	8,387	65	22	8,474
2015	7,477	61	44	7,582
2016	8,748	100	77	8,925
2017	8,966	12	14	8,992
	56,577	350	213	57,140

Source: SOEP v34; Author's calculations.

Table 7: Windfalls reported per year in the original data

year	1. windfall	2. windfall	3. windfall	percent	total
"no answer"	36	7	1	1	44
2002	51	1	0	2	52
2003	80	9	0	3	89
2004	89	6	1	3	96
2005	103	9	2	4	114
2006	95	7	0	3	102
2007	151	10	0	5	161
2008	127	9	1	5	137
2009	141	12	0	5	153
2010	135	19	1	5	155
2011	149	15	2	6	166
2012	214	23	4	8	241
2013	210	12	3	8	225
2014	229	18	6	9	253
2015	343	39	3	13	385
2016	446	31	8	16	485
2017	84	6	2	3	92
total	2,683	233	34	100	2,950

Source: SOEP v34; Author's calculations.
The column *percent* gives the percent amount of windfalls reported in a given year compared to the overall reported windfalls.

Table 8: The effect of inheritances and gifts on labor market exit

| | Dependent variable: Labor market exit | | | | | |
| | 1-year effect | | | 3-year effect | | |
Variable	(1)	(2)	(3)	(4)	(5)	(6)
Windfall	-0.303**					
	(0.151)					
Inherit.		-0.434**				
		(0.210)				
Gift		-0.116				
		(0.217)				
Inherit. < 50000			-0.839**			
			(0.364)			
Inherit. > 50000			0.00986			
			(0.284)			
Gift < 50000			-0.0900			
			(0.254)			
Gift > 50000			-0.202			
			(0.399)			
Windfall_long				-0.100		
				(0.0734)		
Inherit._long					-0.0506	
					(0.0873)	
Gift_long					-0.193	
					(0.136)	
Inherit._long < 50000						-0.191*
						(0.111)
Inherit._long > 50000						0.204
						(0.167)
Gift_long < 50000						-0.190
						(0.163)
Gift._long > 50000						-0.157
						(0.294)
N	57140	57140	57140	57140	57140	57140

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Source: SOEP v34; Author's calculations.

Note: Coefficient estimates from a pooled probit model. Standard errors in parentheses, clustered on the individual level. Variables with the subscript _long indicate events from the past 3 years. All estimations include controls as described in Section 4.1.3: financial situation, age, household type, education, disability, bad health, migration background, industry, state, year.

Table 9: Labor market exit and active job end with control variables

	Labor market exit	Job left actively
Inherit._long	-0.00259	0.00267
Gift_long	-0.00857*	0.0128
LabNetInc$_{t-1}$	-0.0000204***	-0.0000107***
PostGovInc$_{t-1}$	-0.000000396***	-0.000000154
AssetInc$_{t-1}$	0.000000592***	0.000000232
Type of household		
2-Adults	ref	ref
1-Adult	0.00502**	-0.00383
1-Adult + Childs	0.00654**	-0.00405
2-Adults + Child	-0.00362**	-0.00760***
Others	0.0125**	-0.0112
Education (isced97)		
Middle vocational	ref	ref
Inadequately	0.0258***	-0.00675
General elementary	0.00729***	-0.00331
Vocational + Highschool	-0.00191	0.00209
Higher vocational	-0.00200	0.00945**
Higher education	0.00347*	0.0135***
Agegroup		
45-54	ref	ref
25-34	0.0107***	0.0459***
35-44	0.00132	0.0142***
55-60	0.0118***	-0.00865***
Bad health dummy	0.0518***	0.0294***
Disability dummy	0.0309***	0.00844**
Migration background		
None	ref	ref
Direct	0.00893***	0.00225
Indirect	0.00547*	0.000718
Industry dummies	Yes	Yes
State dummies	Yes	Yes
Year fixed-effects	Yes	Yes
N	57140	54994

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Source: SOEP v34; Author's calculations.
Note: Margins reported at sample means, estimates from a pooled probit model. Standard errors, not reported, clustered on the individual level. Variables with the subscript _long indicate events from the past 3 years.

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