Labour Supply after Inheritances and the Role of Expectations

Karina Doorley
Nico Pestel

March 2016

I Z A

Labour Supply after Inheritances and the Role of Expectations

Karina Doorley
LISER and IZA

Nico Pestel
IZA, University of Cologne and ZEW

ABSTRACT

Labour Supply after Inheritances and the Role of Expectations[*]

This paper examines the effect of wealth on labour market behaviour. Providing convincing evidence on this relationship is challenging since wealth and labour supply may be endogenously determined. We overcome this by looking at wealth shocks in the form of inheritances, distinguishing between unanticipated and anticipated inheritances. We provide a theoretical framework which outlines how an individual's labour market behaviour may be expected to react to a wealth shock under different circumstances including perfect/imperfect anticipation and a credit constrained environment. We test our model predictions using rich household and individual level micro-data for Germany. We find that women decrease their hours of work in response to an inheritance. Both men and women are more likely to stay self-employed after a large inheritance and male entrepreneurs are also more likely to recruit. The effect of inheritances on the self-employed is amplified for those who are credit constrained. The magnitude of these effects is similar for anticipated and unanticipated inheritances but the timing varies, with effects visible before the event in the case of anticipated inheritances.

JEL Classification: D31, J22, L26

Keywords: inheritance, wealth, labour supply, self-employment, Germany

Corresponding author:

Karina Doorley
Luxembourg Institute for Socio-Economic Research (LISER)
Maison des Sciences Humaines
11 Porte des Sciences
L-4366 Esch-sur-Alzette/Belval
Luxembourg
E-mail: karina.doorley@liser.lu

1 Introduction

In many OECD countries, inheritances make up a larger share of national income today than they did during the last century. This is because the rate of return on private wealth has generally exceeded national income growth over the last few decades. In countries with large national income growth, such as China or India, inheritances play a more minor role as past wealth does not matter as much as wealth stemming from current income. On the other hand, in countries with low growth rates, such as many developed countries in the 21st century, wealth is capitalised at a faster rate than national income so that old wealth is more important than new wealth. In countries with negative population growth, this effect is exacerbated as inheritances are shared out among fewer people (Piketty, 2014). In this context, it becomes important to understand how inheritances affect behaviour. If we consider that individuals can become rich either through their own work or through the work of their ancestors which is transferred to them in the form of an inheritance, inheritances can be considered as substitutes for labour in income generation. Understanding the effect of such transfers on the labour market behaviour of heirs is crucial to policy makers who are interested in increasing the supply of labour or in reducing wealth or income inequality. Tools such as inheritance taxes can be used to curb the disincentive effect of inheritances on labour supply or to redistribute towards those who do not receive inheritances.

More generally, the literature points to effects of non-labour income on labour market outcomes. If leisure is a normal good, we can expect that wealth shocks, such as inheritances, reduce lifetime labour supply as households can consume the windfall and any capital income accruing to it over their lifetime. Gains in household wealth have been observed to affect labour supply decisions in various ways, both at the extensive margin, through early retirement (Krueger and Pischke, 1992; Brown et al., 2010; Bloemen, 2011), participation (Holtz-Eakin et al., 1993; Bloemen and Stancanelli, 2001), the intensive margin through hours worked (Joulfaian and Wilhelm, 1994; Henley, 2004) and labour income (Elinder et al., 2012). Additionally, a financial windfall can serve to finance the start-up or the extension of a business and, hence, increase the likelihood of becoming or staying self-employed (Holtz-Eakin et al., 1994b,a; Lindh and Ohlsson, 1996;

Blanchflower and Oswald, 1998; Hurst and Lusardi, 2004).

In this paper, we consider several channels of how labour supply behaviour is affected by shocks to wealth, focusing on inheritances. Providing convincing evidence on the link between inheritances and labour supply is challenging since inheritances and labour supply may be endogenously determined. We deal with this potential endogeneity in a number of ways. Firstly, we focus only on heirs, with the timing and amount of the inheritance used to identify its effect on labour supply. Secondly, we employ individual panel data in a fixed effects approach to control for factors which are time-invariant but which may be correlated both with labour supply and with inheritance receipt.

Brown et al. (2010) study the effect of inheritances on retirement decisions and, in a novel contribution, are able to isolate the effects of both unexpected inheritances and expected inheritances, finding that unexpected inheritances induce retirement more often than expected inheritances. The working age population also deserves attention in this respect as inheritances occur more often, but not exclusively, among older generations. The margins of adjustment of labour supply for the working age population may also be very different to those of the population nearing retirement age. In this paper, we provide the first evaluation of the effect of inheritances on the labour market behaviour of the working age population, distinguishing between anticipated and unanticipated inheritances. This distinction allows us to identify the impact of a true "shock" to wealth on the labour market behaviour of the working age population. The working age population have a number of options available to them if they wish to change their labour market behaviour in response to an increase in their wealth. We consider here the most likely options for the employed and for the self-employed: a change to hours of work for the employed and investment in their existing business for the self-employed.

We focus on Germany, a country that is characterized by a strongly ageing society, a high level of wealth inequality as well as a sharply increasing aggregate value of assets, implying a growing importance of future inheritances. Hence, the behavioural effects of inheritances will become more and more relevant as a determinant of employment structure. We use long-ranging panel micro data from the German Socio-Economic Panel Study (SOEP 2013). This provides detailed information on the labour market histories of individuals, which can be related to past inheritances as well as expectations about

future inheritances (in 2001), information on households' financial windfalls (from 2001 onwards) as well as a rich set of individual and household characteristics.

The results of this paper add to the literature on the causal effect of non-labour income, in general, and inheritances, in particular, on labour market behaviour. We find that hours worked by males stay constant after an inheritance, whether large or small; expected or unexpected. For women, both actual and desired hours of work decrease by about 1.5 per week in response to an inheritance, whether it was expected or unexpected. This is in line with previous findings of negative cross-wage and income elasticities, particularly among married women in Germany (Bargain et al., 2014). Moreover, our results suggest that both men and women are more likely to stay self-employed after a large inheritance while male entrepreneurs are also more likely to recruit. We find that being credit constrained amplifies the effect of inheritances on the likelihood of staying self-employed, which suggests that credit constraints pose a barrier to remaining self-employed and that receiving an inheritance can lift that barrier. Along all of these margins, the magnitude of the effects is similar for anticipated and unanticipated inheritances but, in line with classical intertemporal labour supply models, the timing varies, with effects more visible before the event in the case of anticipated inheritances.

The paper is organized as follows: Section 2 presents a theoretical framework for our hypotheses. Section 3 describes the data and section 4 the methodology. Our results are presented in section 5. Section 6 concludes.

2   Theory

In what follows, we set out a simple two-period model for consumption, hours of work and investment for the employed and the self-employed under different assumptions concerning the anticipation of inheritances and the functioning of capital markets.

2.1 Employees

2.1.1 Perfect anticipation and capital markets

The life-cycle model of consumption indicates how heirs can be expected to behave. Suppose that an individual receives an inheritance that is completely anticipated, as may be the case in countries such as Germany where parents are forbidden by law from disinheriting their children. This inheritance will not affect labour supply and consumption, post-inheritance as it will already have been taken into account in the optimal choice of labour supply from the beginning of the life-cycle. Rather, heirs will use the inheritance to repay any loans that they took out in order to smooth their consumption prior to the inheritance.

We extend a simple two-period model (Cahuc and Zylberberg, 2004) to our framework. The individual decides on their labour supply in period one and, if an inheritance occurs, it does so immediately after labour supply is fixed in period one. Any labour supply adjustment takes place in period two. There is no uncertainly regarding wages, self-employment income, prices or the length of life. The individual will choose consumption, c, and hours of work, h, to maximize utility over the two periods, given a particular discount rate which we assume is equal to the interest rate, r, and is exogenous. The utility from being employed is:

$$U_t = U(c_t, h_t) \tag{1}$$

Denote W the financial windfall received in time $t=1$, a net assets and w the income from working as an employee (which depends only on hours of work) and assume that the individual enters period 1 with no net assets, i.e., $a_0 = 0$. Consumption for the employed over the two periods is:

$$\sum_{t=1}^{2}[1/(1+r)]^{t-1}c_t = W - [a_2/(1+r)] + \sum_{t=1}^{2}[1/(1+r)]^{t-1}w(h_t) \tag{2}$$

The utility maximization problem is:

$$max_{c_t,h_t}\sum_{t=1}^{2}[1/(1+r)]^{t-1}u(c_t, h_t) \tag{3}$$

4

Solving the maximization problem, the optimal path for hours of work for a perfectly anticipated windfall is:

$$h_1 = h_2 \qquad (4)$$

2.1.2 Imperfect anticipation and credit constraints

In a world where credit is constrained, another result is possible. Even if the windfall is perfectly anticipated, a liquidity constrained windfall recipient may not be financially able to adjust their hours of work before the windfall and may be unable to smooth consumption between the two periods. Therefore, we may see a labour supply effect in the second period, even for perfectly anticipated inheritances.

In addition, many inheritances may be unanticipated. In the case of an unanticipated windfall, the hours of work path in equation (4) will no longer hold and there may be a change in consumption and labour supply in time period 2. The employed windfall recipient has a number of options. He can maintain hours of work, h and increase consumption or savings by W in time 2. Alternatively, the windfall recipient can reduce hours of work, h, and supplement his consumption from labour earnings with consumption from capital (the windfall). Of course, the windfall recipient may choose a mix of these options, slightly reducing hours worked and slightly increasing consumption in the second time period. With imperfect anticipation of windfalls, that is, partial anticipation, we may expect hours of work to change both before (in anticipation) and after (to adjust for the imperfect anticipation) the windfall.

In the case of imperfect anticipation and/or credit constraints, the optimal hours of work path satisfies:

$$h_1 \geq h_2 \qquad (5)$$

This is our first **testable hypothesis**. We will empirically check if hours of work change in the wake of a windfall (equation (5)) or if it stays the same (equation (4)).

2.2 The self-employed

2.2.1 Perfect Anticipation and capital markets

The case of self-employment is a natural extension of the case of the employed. We follow Blanchflower and Oswald (1998) in assuming that, given the same income and hours of work, for a certain proportion of the population, β, the utility from being self-employed:

$$U_t = U(c_t, h_t) + i \tag{6}$$

is greater than the utility of being employed (equation (1)) where i is the non-pecuniary utility from being one's own boss. The maximization problem is identical to that of the employed in the case of of perfect anticipation and capital markets

2.2.2 Imperfect anticipation and credit constraints

If there are capital constraints, a further result is possible among the self-employed population. It may be the case that investing capital in the business leads to higher self-employment income over the two periods and that this was not possible in period 1 due to credit constraints. More formally, if the income from self-employment, s, is a function of hours worked, h, and capital invested in the business, k and all capital invested in the business comes from the self-employed individual, if:

$$\sum_{t=1}^{2}[s(h_t, k_t) + (1+r)a_{t-1} - a_t] < \sum_{t=1}^{2}[s(h_t, k_t + (1+r)a_{t-1} - a_t)] \tag{7}$$

the windfall recipient may supplement capital with the financial windfall in period 2 in order to increase self-employment income and, therefore, consumption, after the windfall. This is our second **testable hypothesis**. Lacking data on the amount of capital invested annually in own businesses, we check this empirically by (a) modelling the probability of remaining self-employed after an inheritance and (b) modelling the acquisition of employees by the self-employed, after receiving an inheritance. Of course, longevity in self-employment and the employment of staff are just two potential consequences of

increased investment in one's own business.[1] However, these margins are the only two that we have information on every year.

3 Data

We use micro-data from the German Socio-Economic Panel Study (SOEP) which is a long-ranging panel micro data (1984–2013) providing detailed information on the labour market histories of individuals, information relating to past inheritances as well as expectations about future inheritances (in 2001), information on windfall incomes of households (from 2001 onwards) as well as a rich set of individual and household characteristics.

Windfalls. It is useful to distinguish, at this stage, between the nature of the wealth shocks, denoted "windfalls", in our data. In 2001, the following question was posted about the expectation of a windfall: *"What do you think, are you going to inherit something or receive a gift of substantial value (again) in the future?"* Individuals could respond *"Yes, that is certain"*, *"Yes, probably"*, *"No"* or *"Don't know"*. Those who respond *"Yes, that is certain"* or *"Yes, probably"* are assigned to the group who expect a windfall while those who respond *"No"* or *"Don't know"* are assigned to the group who do not expect a windfall. Among those who expect a windfall, a further question is posed about the amount expected. From wave 2001 onwards, respondents are asked whether they received a windfall, like an inheritance, gift or lottery, in the year prior to the survey year. We can, thus, match recipients of a financial windfall after 2001 with their expectation of such a receipt in 2001. We can also distinguish between the nature of the windfall that each household receives.

Inheritances may be considered as "shocks" to wealth if they are unanticipated. Many inheritances are the result of the death of a family member and this event is unlikely to be perfectly anticipated. In addition, the amount of the inheritance is unlikely

---

[1]There are other margins by which individuals may adjust their labour supply behaviour in response to an inheritance. The most obvious one is the switch from employment (or non-employment) to self-employment. As an inheritance may actually be composed of a business, the occurrence of an inheritance and the self-employment decision could be perfectly correlated. For this reason, we abstain from modelling the switch to self-employment, preferring to focus on the probability of those who were self-employed before the inheritance remaining self-employed or acquiring employees.

to be known in detail. For this reason, we consider that an individual who receives an inheritance which they state that they do not expect, receives a shock to their wealth. Individuals who receive inheritances that they state they are expecting may also receive a wealth shock through the timing or the amount of the inheritance. Knowing the expectation status of such windfalls allows us to identify how individuals react to (somewhat) anticipated and unanticipated inheritances. Gifts present a more complicated situation. We know if an individual is expecting a gift in 2001. However, unlike lottery receipts and, to a large extent, inheritances, individuals may ask for gifts. So, even if an individual expects no gift in 2001, a change in personal circumstances later on (redundancy, moving home, childbirth, divorce, etc.) may lead her to ask for a gift. In this case, the direction of causality between the wealth shock and labour market behaviour is ambiguous. Lottery receipts, by their very nature, are unanticipated and their amount can be highly variable. They present a potentially interesting example of how unanticipated wealth shocks affect labour market behaviour (see Lindh and Ohlsson (1996) and Imbens et al. (2001) for investigations of how lottery receipts affect labour market behaviour). In our sample, however, the incidence of lottery receipts is relatively low and the average amount won also tends to be low. Inheritances are also more interesting from a policy perspective as they are widely received and any systematic labour market behaviour which results from their receipt should be of interest to policy makers. Finally, because inheritances also represent the vast majority of windfalls which occur in our panel dataset, both in incidence and amount, in what follows we concentrate on the effect of inheritances on labour market behaviour.

One drawback of using inheritances as wealth shocks is that they may be linked to the death of a close family member which may incur a labour supply response of its own. Brown et al. (2010) looks at the effect of parental death and inheritance on labour supply separately and concludes that it is the increase in wealth associated with the receipt of an inheritance, and not the loss of a parent which triggers the labour market response. In Figure 1, we show that indeed the event of an inheritance closely follows the death of a parent (in law), but does usually not exactly coincide. In most cases, inheritances are received in the year after the parent's death. However, in our regression analysis, we will also control for the incidence of a parent's death.

Sample and summary statistics. Using household level inheritance information, we look at the labour market behaviour of individuals in response to inheritances, distinguishing between those who expected a windfall and those who did not. We use the panel of individuals observed in the German SOEP waves 2001–2013. We retain the heads of household and their spouses aged 20–54 in 2001 (not older than 65 in subsequent years) who experience no more than one household windfall within this 13 year period. We discard households where multiple generations are present as an inheritance may not, in these cases, affect household level net assets.

We graph some of the important outcomes for the entire population described in the selection above (whether they inherit or not) in Figures 2 to 5. Figure 2 shows how the expectation of windfalls differs by age and gender. Men are more likely to expect a windfall than women for all age categories. Given their expectation of a windfall, men are also more likely than women to expect a windfall of over 50,000 DM. There is an age pattern in the expectation of a windfall with younger men more likely to expect a windfall (roughly 25%) than older men (18%). Among women, it is the middle-aged category that is more likely to expect a windfall (21%) than the younger (18%) or older (16%) cohorts. Figure 3 shows that the annual probability of receiving an inheritance increases with age. The probability is around 0.5% for individuals not older than 34 and it is highest for the cohort above age 55 at 1.3% for men and 1.5% for women. The right hand panel of Figure 3 shows that people are, on average, able to assess the likelihood of a windfall. The annual probability of receiving an inheritance is more than twice as high for individuals who expect a windfall than for those who do not. Figure 4 shows that the cumulative probability of receiving an inheritance in the years after 2001 increases significantly more for those who expect a windfall in 2001 than for those who do not. For example, the proportion of individuals experiencing an inheritance between 2001 and 2013 without expecting one is around 10%, while this proportion is close to 25% for those who expected a windfall. Figure 5 shows the level of inheritance received by expectation. The average value of an expected inheritance is slightly higher than the average value of an unexpected inheritance. However, the largest differences are evident between those who expect an inheritance above or below 50,000 DM. The latter group receive, on average, half of what the former group receive.

9

More detailed summary statistics relating to our estimation sample only, that is, relating to heirs within this panel, are shown in Tables 1 and 2. Panel A of Table 1 shows that the sample of individuals observed in 2001 and who inherit between 2002 and 2013 is 263 men and 289 women. 40% of male heirs anticipate their inheritance while the figure for women is slightly lower at 35%. Of these heirs who expect their inheritance, around half expect that it will be over 50,000 DM (or EUR 30,500). Narrowing the definition of expectation to responses stating that a windfall is expected with certainty (rather than certainly or probably), the share decreases to 13%–14% of heirs. Panel B of Table 1 reports statistics relating to the average value of inheritances and the average age of recipients. The mean inheritance is valued at around EUR 50,0000, roughly similar to the mean annual household income. However, the distribution is rather skewed. Over 60% of inheritances are below EUR 25,000 in value. Around one in four are over EUR 50,000 in value while just 15% are in excess of EUR 100,000. These figures do not differ much by gender.

Panel A of Table 2 shows summary statistics for heirs for the whole period under investigation, 2001–2013. We have 2,946 person-year observations for men and 3,160 person-year observations for women. Each year, about 9% of individuals experience a windfall in form of an inheritance and about 53% (men) and 54% (women) of the individual-year observations are post inheritance. Panel B of Table 2 describes the employment profile of heirs. As expected, men work significantly more hours per week (38) than women (24). They also desire to work more hours per week (39) than women (29) although this difference is smaller. The employment rates over the 13 year period are 87% for men and 76% for women. There is a negligible proportion of men working part-time (3%) while the figure for women is substantial at 41%. Among men, 8.7% in the sample are self-employed. The self-employment rate among women is lower at 5.9%. As a measure of investment in own businesses, we are also interested in the proportion of self-employed who have employees. Less than half of the self-employed have at least one employee (4% of men, 1.8% of women).

4 Empirical Approach

Inheritance recipients may differ from non-recipients in their observable and unobservable characteristics, e.g., preferences for work, risk etc. We deal with this issue in two ways. Firstly, we limit our analysis to those who receive an inheritance. Secondly, we exploit the longitudinal nature of our data to estimate models with individual fixed effects. For individual i observed in time period t who receives an inheritance W_i in period t_i^W, we define a post-inheritance indicator $POST_{it} = \mathbf{1}(t \geq t_i^W)$, which is equal to zero in pre-inheritance years and equal to one afterwards. The main regression model is:

$$
\begin{aligned}
y_{it} = \beta_0 +\ & \beta_1 POST_{it} \\
+\ & \beta_2 \left[POST_{it} \times EXP_{i,2001} \right] \\
+\ & \beta_3 \left[POST_{it} \times \mathbf{1}(W_i > K) \right] \\
+\ & \beta_4 \left[POST_{it} \times EXP_{i,2001} \times \mathbf{1}(W_i > K) \right] \\
+\ & X_{it}' \gamma\ +\ \alpha_i\ +\ \mu_t\ +\ \mu_s\ +\ \varepsilon_{it}
\end{aligned}
\tag{8}
$$

where y_{it} is the outcome variable of interest (hours of work, self-employment status, etc.) and $EXP_{i,2001}$ is a binary variable indicating whether individual i expected a windfall or not, which is interacted with the post-inheritance indicator $POST_{it}$. Hence, we compare the labour market behaviour of individuals pre- and post-inheritance and differentiate between those who expected a windfall and those who did not, giving the model a difference-in-differences interpretation. We further expand the model by interacting the post-inheritance and expectation indicators with a binary variable $\mathbf{1}(W_i > K)$ indicating whether the windfall amount exceeded a certain threshold K (triple-differences). In the empirical specifications, we employ values for K of EUR 25,000 and EUR 50,000 respectively. Individual and household level controls are contained in X_{it}. We control for age, age squared, years of education, marital status (married or not), household type (indicators for single, single parent, couple without children, couple with children) and whether the individual's parents (and, in the case of couples, parents-in-law) are dead. We also include individual fixed effects (α_i) which control for factors which are assumed to be constant over time but which may be correlated with the dependent and inde-

pendent variables. Year fixed effects to capture time effects such as the macroeconomic environment (μ_t) and state fixed effects (μ_s) are also included. The idiosyncratic error ε_{it} is assumed to be uncorrelated with the explanatory variables.

The coefficients of interest have the following interpretation. Coefficient β_1 measures the effect of an inheritance smaller than K for an individual, while β_2 measures the *additional* effect of the inheritance if it was expected. Coefficient β_3 gives the additional effect of a large, but unexpected inheritance and β_4 is the additional effect of a large and expected inheritance.

In a second step, we go beyond a simple binary comparison of pre- and post-inheritance periods and shed some light on the dynamics of labour market outcomes in an event study framework by employing the regression model

$$
\begin{aligned}
y_{it} = \ & \beta_0 \ + \ \sum_{d=-4}^{4} \beta_1^d \mathbf{1}(\Delta_{it}^W = d) \ + \ \sum_{d=-4}^{4} \beta_2^d \left[\mathbf{1}(\Delta_{it}^W = d) \times EXP_{i,2001} \right] \\
& + \ X_{it}'\gamma \ + \ \alpha_i \ + \ \mu_t \ + \ \mu_s \ + \ \varepsilon_{it}
\end{aligned}
\tag{9}
$$

where $\Delta_{it}^W \equiv t - t_i^W$ is the time gap between period t and the period of individual i's inheritance receipt. We look at time gaps between four or more years before and after inheritance. This allows us to test whether there are anticipation effects (in case of expectation) before the inheritance and how persistent the labour market effects of the inheritance are. The interpretation of the coefficients β_1^d and β_2^d are the same as before, but apply to each time gap $d \in [-4, 4]$ separately.

5 Results

We present two sets of results. The first set, displayed in Tables 3 to 6 stem from a difference-in-difference style model which is described in equation (8). The results of these models are presented separately for men and women. The second set of results, illustrated in Figures 7 to 10 show an event study style analysis as in equation (9). This, more detailed model specification, complements the difference-in-difference results giving us more information regarding the timing of any potential behavioural response

to the inheritance. While the difference-in-difference results give an overview of average employment status after the inheritance compared to before, the event study focuses on the effect of the inheritance in each separate year (before and) after the inheritance, compared only to the year before the inheritance.

5.1   The effect of inheritances on hours worked.

Our first hypothesis states that hours of work should either stay constant or decrease after an inheritance, depending on whether it was anticipated or not. We use two measures of hours of work to model this. The first corresponds to actual hours of work while the second represents desired hours of work. We expect that the effect of inheritances on desired hours of work should be larger than that on actual hours of work due to constraints that employees have in their choice set of hours of work. Beginning with the actual hours worked by the individual, Table 3 shows the effect of an inheritance on hours of work. Columns (1)–(4) show results for men while columns (5)–(8) show results for women. In columns (1) and (5), a simple version of equation (8) is estimated in which we define two time periods, pre and post where the post period includes the year 0 in which the inheritance occurs. In columns (2)–(4) and (6)–(8), this dummy variable is interacted with a dummy variable which takes the value of 1 if the individual was expecting an inheritance in 2001 so that, for example, the coefficient on $POST$ gives the effect of an inheritance on the hours of work of a recipient who was not expecting it, averaged over the years after the inheritance. Adding the coefficients on $POST$ and $POST \times EXP$ gives the same effect for those who were expecting an inheritance. We add a further set of interactions in columns (3)–(4) and (7)–(8) which indicate if the inheritance received was in excess of EUR 25,000 or EUR 50,000 respectively, considering that individuals might respond differently to inheritances of different magnitudes.

In columns (1)–(4) of Table 3, we find no evidence that men's hours of work are affected by inheritances. This result holds for anticipated, unanticipated, small and large inheritances. Looking at Figure 7, we can confirm this effect in the left hand graph. The black line shows the effect of expected inheritances on hours of work while the grey line show the effect of unexpected inheritances on hours of work. Men's hours of work are

unchanged after the receipt of an inheritance, whether the inheritance was expected or unexpected.

Looking next at the hours of work of women, columns (5)–(8) in Table 3 indicate that women decrease their hours of work by around 1.4 per week after an unexpected inheritance although this effect is only statistically significant at conventional levels in column (5). The coefficient on $POST \times EXP$ is not statistically significant, indicating that this result applies to unexpected and expected inheritances. Our most flexible specifications in columns (7) and (8) show that this result is not affected by the size of the inheritance. The right hand panel of Figure 7 shows the timing of the decrease in hours of work by female heirs. It appears that the labour supply change actually occurs before the inheritance is received (or declared to have been received). Before $t-1$, female hours of work are higher than after $t-1$ and this difference is larger and statistically significant for anticipated inheritances (black line), indicating that women adjust their hours of work downwards in anticipation of an expected inheritance.

We turn next to desired hours of work. Two of the specifications for men (columns (3) and (4) of Table 4) show that men who receive an expected inheritance actual desire to increase their hours of work. The size of the inheritance has no effect on this result. Looking at the year by year composition of this effect in Figure 8, we see however that there is no statistically significant effect of inheritances on the desired hours of work of men on a year by year basis. Results for women, displayed in columns (5) to (8) of Table 4 confirm that women desire to decrease their hours of work by around 1.5 per week in response to an inheritance, whether expected or unexpected. Figure 8 shows the timing of this effect. Again, anticipation effects play a large role with much of the decrease in desired hours of work occurring in the years prior to the inheritance receipt. This is true even for unexpected inheritances, suggesting that anticipation is, at best, imperfect. Columns (7) and (8) of Table 4 also show that large expected inheritances may actually increase the desired hours of work of women. This is not immediately interpretable in light of our theoretical model but could indicate that receiving a large inheritance encourages women to want to join the labour force or move to full-time work as child-care or labour mobility become more affordable.

To summarise, our results shows that male hours of work can be expected to stay

14

constant after an inheritance, whether large or small; expected or unexpected. This is unsurprising given that men have typically been found to have very inelastic labour supply (Bargain et al., 2014). For women, both actual and desired hours of work are seen to decrease by about 1.5 per week in response to an inheritance, whether the inheritance was expected or unexpected. Event study analyses shows that most of this adjustment happens before the inheritance is received, particularly for anticipated inheritances.[2]

5.2   The effect of inheritances on self-employment status.

Our second hypothesis proposes that, if an inheritance is imperfectly anticipated, self-employed people may increase their investment in their business after receiving a windfall. This may result in them being more likely to stay self-employed. To capture this margin, we look firstly at the probability of the self-employed remaining self-employed after receiving an inheritances. To capture the effect of inheritances on investment in own business, we next look at the change in the probability of being self-employed with employees compared to being self-employed without employees. Results of the latter analysis should be interpreted with caution given the small sample size of the group of heirs who were self-employed in 2001, particularly female heirs.

We focus on the sample of individuals who were self-employed in 2001 and use equation (8) where the dependent variable is self-employment status or self-employment with employees status. Columns (1) and (5) show that there is a positive although insignificant effect of an inheritance on the likelihood of staying self-employed for both men and women. Looking at our most flexible specification for men in columns (3) and (4) of Table 5, we see that men are more likely to stay self-employed after a large inheritance (over EUR 50,000), whether it was anticipated or unanticipated. Looking at results for women in columns (7) and (8), we find that women are also more likely to stay self-employed, after a large inheritance (over EUR 25,000 and over EUR 50,000). The magnitude of this effect is similar to the effect for men.

---

[2]A study of the extensive margin (results available from authors on request) in which we model the effect of inheritances on the probability of working shows no significant effect, indicating that the behavioural response observed for women is likely to take place on the intensive margin (e.g. a switch from full-time to part-time)

Looking at Figure 9, we can draw more detailed conclusions with regards to the timing of effects. We find that, for men, the effect of unanticipated inheritances (gray line) is visible from the first year post-inheritance and lasts at least two years. There is a positive effect of a similar magnitude for expected inheritances but we note evidence of anticipation effects in this case, as evidenced by the upward sloping black line from the beginning of the event study. This effect lasts up to year four. In the right hand panel of Figure 9, we find slight increases in the probability of staying self-employed for female heirs but the year-by-year effects are insignificant both for anticipated and for unanticipated inheritances. This analysis confirms that windfalls such as inheritances can encourage self-employment. The effect is more pronounced for men and for large inheritances (over EUR 25,000 or 50,000). Important anticipation effects are evidence in the case of expected inheritances.

We next use equation (8) to model the probability of being self-employed with at least one employee, conditional on being self-employed at the beginning of the observation period. Results are displayed in Table 6. These should be interpreted with some caution as, from Table 2, we note that there is a very small sample of individuals who are self-employed with employees during the period studied. This sample is smaller for women (1.8%) than for men (3.7%). The effect of large inheritances on the probability of staying or becoming self-employed with employees is positive but statistically insignificant. Looking to the year-by-year effects in Figure 10, we see that, for men, inheritances do increase the likelihood of staying or becoming self-employed with employees but that this effect takes some time and is most pronounced 0-2 years after unanticipated inheritances and 4 years after anticipated inheritances. The right hand panel of Figure 10 shows no discernible pattern in the effect of inheritances on the propensity of women to be self-employed with employees.

5.3 The role of credit constraints.

As discussed in Section 2, the existence or non-existence of credit constraints for a particular individual may change their behavioural response to anticipated or unanticipated windfalls. The man who expects a large inheritance but has no access to credit through,

for example, lack of collateral, will not be able to adjust his labour market behaviour to reflect the new wealth until he actually receives it. To examine the role of credit constraints, we next add an interaction term to the models presented so far which indicates if the individual is likely to be credit constrained or not. We employ two different definitions of credit constraints based on proxies for household wealth. The rational for this is that individuals who live in high net worth households do not "need" inheritances if they really want to change their labour market behaviour. However, individuals living in wealth poor households may not have access to credit markets due to their lack of collateral and the receipt of an expected or unexpected inheritance may prove more important in their labour market behaviour. The first measure we use defines an individual who lives in a house that they do not own as credit constrained, as they lack the collateral that being a home-owner gives ($CREDITOWN$). The second defines an individual who lives in a household which earns a low level of capital income ($\leq$ EUR 250 per annum) as credit constrained ($CREDITCAP250$). Both of these measures of credit constraints are recorded in the year prior to the inheritance.

Results are displayed in Tables 7 to 9. These results can be compared to columns (1), (2), (5) and (6) in Tables 3 to 6. There is no effect of an inheritance (expected or unexpected) on the hours of work of men and this conclusion does not change for credit constrained men (Table 7). The negative effect of inheritances on the hours of work of women is still present (although it is on the margins of statistical significance in the specification which uses home-ownership to proxy credit constraints, possibly due to the slightly reduced sample size caused by missing information relating to credit constraints) but being credit constrained has no extra effect on the hours of work of women who receive an inheritance.

Results for self-employment status are shown in Table 8. For men, we find that being credit constrained (as proxied by home-ownership) further increases the likelihood of staying self-employed after an inheritance. We find the same results for women (again using the home-ownership proxy for capital constraints). This sheds light on the mechanism that underlies the response of the self-employed to inheritances, suggesting that credit constraints pose a barrier to remaining self-employed and that receiving an inheritance can lift that barrier. Looking at the probability of staying or becoming self-employed

17

with employees in Table 9, we find some extension of this result to the case of investing in own businesses through hiring. Receipt of an inheritance increases the likelihood of credit constrained men staying or becoming self-employed with employees but only for the specification in which credit constraints are proxied by home-ownership. There is actually a negative effect of receiving an inheritance on the likelihood of credit constrained women staying or becoming self-employed with employees. This may reflect gender difference in incentives for risk-taking or could simply be driven by the very small number of self-employed women who have employees, who receive an inheritance and who are not home-owners.

5.4 Further robustness checks

In this section, we perform a number of further robustness checks which consider alternative definitions of the expectation variable in order to ensure that our results are not sensitive to the definition of an anticipated windfall.

Let us first consider the nature of expectations at the individual versus the household level. Respondents are asked individually whether or not they expect some form of windfall in 2001. However, information relating to inheritances received is collected at the household level and, more generally, wealth is usually attributed to households rather than to individuals, particularly when the household is composed of a married couple. We therefore check how consistent the expectation variable is across members of a couple. If one member of a couple is systematically more or less likely to expect some sort of windfall in the future, it may dampen the anticipated household level labour supply response to the windfall.

Figure 6 shows the consistency of expectations within couples. The first bar in each of the left and right panels of the graph shows the proportion of men and women who do not expect a windfall and whose partner does not expect a windfall. Around 70% of men and women fall into this category. The second bar shows the proportion of men and women who expect a windfall and whose partner also expects a windfall. Around 11% of men and women fall into this category meaning that around 81% of couples agree on their expectation of a windfall. The last two bars in each of the left and right

panels shows the proportion of men and women who disagree on the expectation of a windfall and these amount to around 19% of couples. We conclude that the consistency of expectations within couples in this instance is good. A specification of equation (8) in which we replace the expectation variable with a household expectation variable (which is equal to one only if both members of the couple expect a windfall) does not change our conclusions with respect to hours of work (results available from authors on request). Unfortunately, the size of the sample of the self-employed who are in a couple in which both members expect a windfall is too small to allow us to comment on how this precision affects the effect of expected inheritances on the probability of staying self-employed.

In a second refinement, we redefine the expectation variable to be equal to one if the individual states that they will certainly receive an inheritance or gift in the future.[3] Once again, this robustness check reduces the sample size of the self-employed who expect an inheritance to the extent that comparisons with Tables 5 and 6 are not possible. However, results of this model for the hours worked by the employed, displayed in Table 10 are remarkably similar to the baseline results in table 3. Receipt of an inheritance decreases hours of work for women and, in many cases, estimates are more precise.

6 Conclusion

This paper adds to the literature on the effect of non-wage income, in general, and inheritances, in particular, on labour market behaviour. We provide a theoretical framework which outlines how individuals' labour market behaviour may be expected to react to a wealth shock under different circumstances including perfect/imperfect anticipation and a credit constrained environment. We test our model predictions using rich household and individual level micro-data for Germany.

We find that inheritances lead to a decrease in the desired and actual hours of work of women of around 1.5 per week. There is no effect of inheritances on the hours of work of men, an unsurprising result given that men typically have less elastic labour supply than women. We also find that large inheritances increase the probability of self-employed men

---

[3]Our baseline definition of expectation assumes that an individual expects an inheritance if the say "Yes, that is certain" or "Yes, probably".

and women remaining self-employed. In a further result for the self-employed we find that men are also more likely to recruit following an inheritance. Along all of these margins, the magnitude of the effect is similar for both anticipated and unanticipated inheritances but, in line with the predictions of classic intertemporal labour supply models, the timing varies, with the effects of anticipated inheritances more likely to be detected before the inheritance is received. The role of credit constraints in these effects is investigated and we find that credit constraints amplify the magnitude of the effect for the self-employed, suggesting that access to credit can be a barrier to remaining self-employed.

The results of this paper are relevant in informing the policy debate on the design of inheritance taxes. In particular, potential exemptions for the bequest of business assets are currently under discussion in Germany.[4] More generally, German inheritance taxation law currently exempts most inheritances from taxation. For example, the inheritance of owner-occupied housing between family members is largely exempted. In addition, heirs are only liable when the value of the inheritance exceeds the relevant personal allowance (e.g., 500,000 EUR for spouses and 400,000 EUR for children). Our results suggest that any concerns that policy makers may have about inheritances discouraging work among the working age population are limited. More generally, extending the results of this paper to other developed countries with low national income growth suggests that, as the disincentive effects of inheritances on labour supply are small and as inheritances may actually encourage self-employment and job creation, inheritance taxation should not have, as its primary motive, the objective of encouraging labour supply, at least among the working age population.

---

[4] The current version of the German Inheritance and Gift Tax (*Erbschaftsteuer- und Schenkungs-teuergesetz*) largely exempts the bequest of business assets conditional on retaining the business as well as maintaining the wage bill over a certain period after the inheritance. According to a ruling of the Federal Constitutional Court, these exemptions violate the equal treatment principle and are therefore unconstitutional and must be revised before June 2016.

References

Bargain, O., K. Orsini, and A. Peichl (2014). Comparing Labor Supply Elasticities in Europe and the United States: New Results. *Journal of Human Resources 49*(3), 723–838.

Blanchflower, D. G. and A. J. Oswald (1998). What Makes an Entrepreneur? *Journal of Labor Economics 16*(1), 26–60.

Bloemen, H. G. (2011, October). The Effect of Private Wealth on Retirement Rate: An Empirical Analysis. *Economica 78*(312), 637–655.

Bloemen, H. G. and E. G. F. Stancanelli (2001). Individual Wealth, Reservation Wages, and Transition into Employment. *Journal of Labor Economics 19*(2), 400–439.

Brown, J. R., C. C. Coile, and S. J. Weisbenner (2010). The Effect of Inheritance Receipt on Retirement. *Review of Economics and Statistics 92*(2), 425–434.

Cahuc, P. and A. Zylberberg (2004). *Labor Economics*. The MIT Press.

Elinder, M., O. Erixson, and H. Ohlsson (2012). The Impact of Inheritances on Heirs' Labor and Capital Income: Evidence from Swedish Panel Data. *The B.E. Journals in Economics Analysis & Policy 12*(1), 1935–1682.

Henley, A. (2004). House Price Shocks, Windfall Gains and Hours of Work: British Evidence. *Oxford Bulletin of Economics and Statistics 66*(4), 439–456.

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

Holtz-Eakin, D., D. Joulfaian, and H. S. Rosen (1994a). Entrepreneurial Decisions and Liquidity Constraints. *RAND Journal of Economics 25*(2), 334–347.

Holtz-Eakin, D., D. Joulfaian, and H. S. Rosen (1994b). Sticking it Out: Entrepreneurial Survival and Liquidity Constraints. *Journal of Political Economy 102*(1), 53–75.

Hurst, E. and A. Lusardi (2004). Liquidity Constraints, Household Wealth, and Entrepreneurship. *Journal of Political Economy 112*(2), 319–347.

Imbens, G. W., D. B. Rubin, and B. I. Sacerdote (2001). Estimating the Effect of Unearned Income on Labor Earnings, Savings, and Consumption: Evidence from a Survey of Lottery Players. *American Economic Review 91*(4), 778–794.

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

Krueger, A. B. and J.-S. Pischke (1992). The Effect of Social Security on Labor Supply: A Cohort Analysis of the Notch Generation. *Journal of Labor Economics 10*(4), 412–437.

Lindh, T. and H. Ohlsson (1996). Self-Employment and Windfall Gains: Evidence from the Swedish Lottery. *Economic Journal 106*(439), 1515–1526.

Piketty, T. (2014). *Capital in the 21st Century*. Harvard University Press.

Figures

Summary statistics

Figure 1: Summary statistics: Inheritance following a parent's death
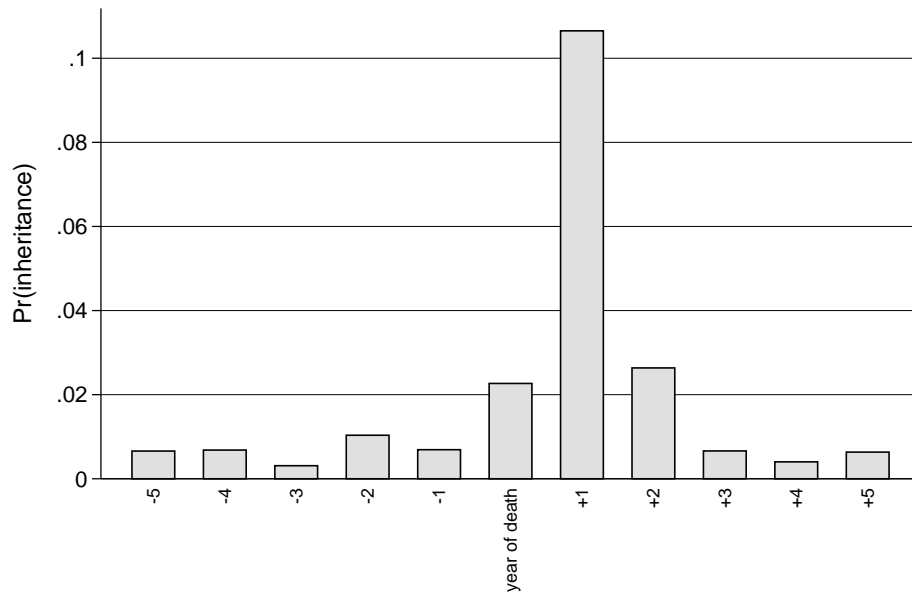
Note: Survey years 2001-2013 are pooled. *Source:* SOEP 2013, own calculations.

Figure 2: Summary statistics: Expectation of windfall by age in 2001
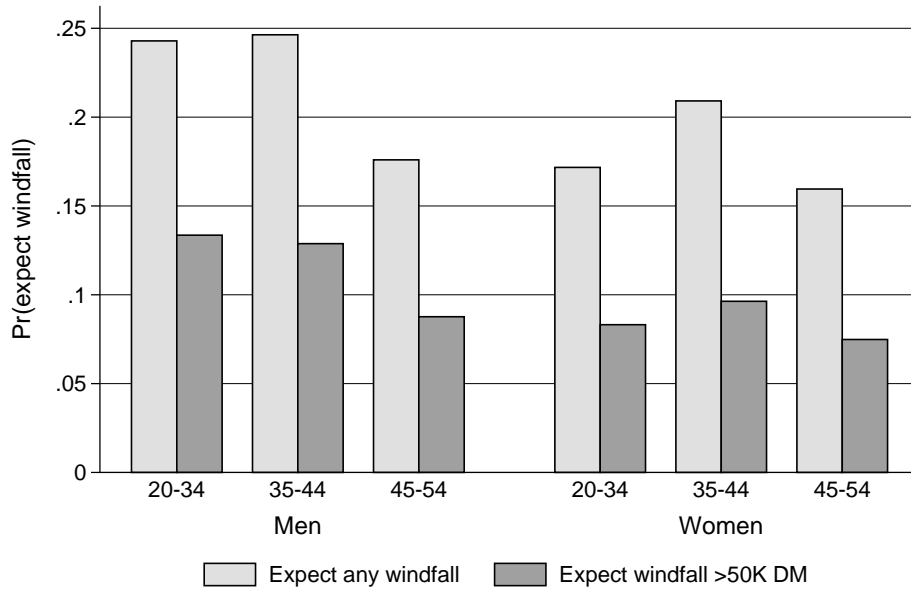
Note: Survey years 2001-2013 are pooled. Expectation of windfall >50,000 DM corresponds to about 30,500 euros (in 2013). *Source:* SOEP 2013, own calculations.

Figure 3: Summary statistics: Event of inheritance by age and expectation
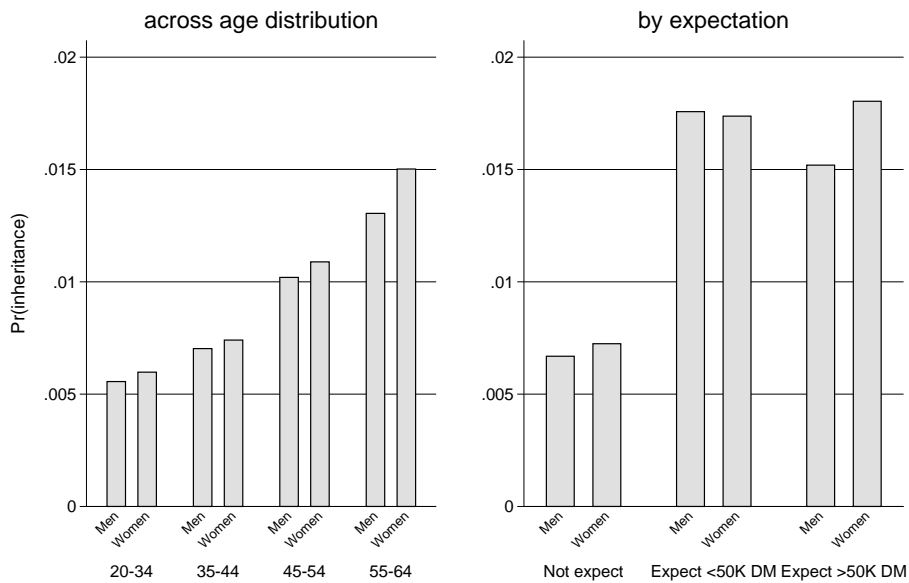
Note: Survey years 2001-2013 are pooled. Expectation of windfall >50,000 DM corresponds to about 30,500 euros (in 2013). *Source:* SOEP 2013, own calculations.

Figure 4: Summary statistics: Cumulative probability of inheritance
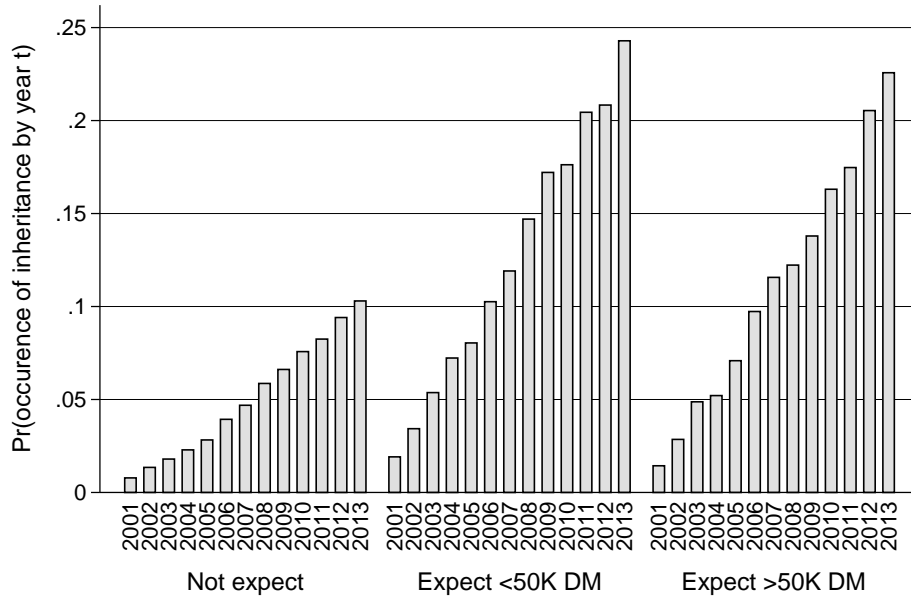
Figure 5: Summary statistics: Windfall income by type and expectation
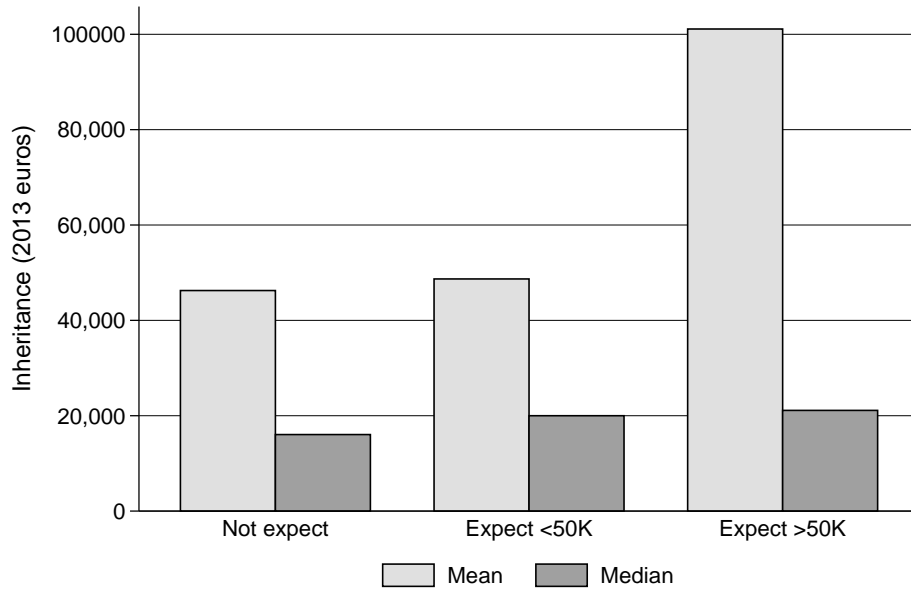
Figure 6: Summary statistics: Expectation consistency within couple households

Event study results

Figure 7: Event study results: Inheritance effect on actual hours worked for full sample
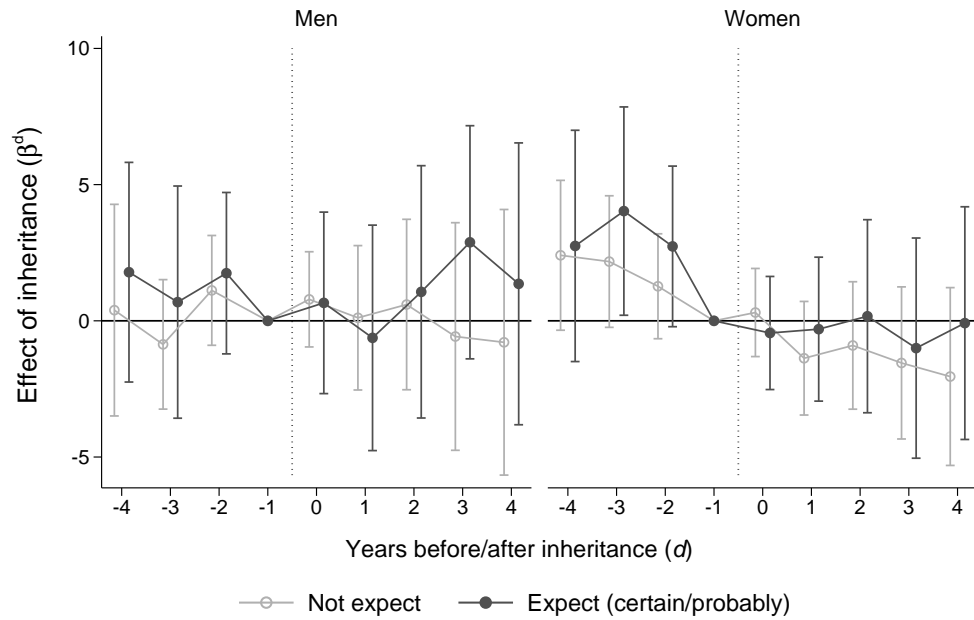
Figure 8: Event study results: Inheritance effect on desired hours for full sample
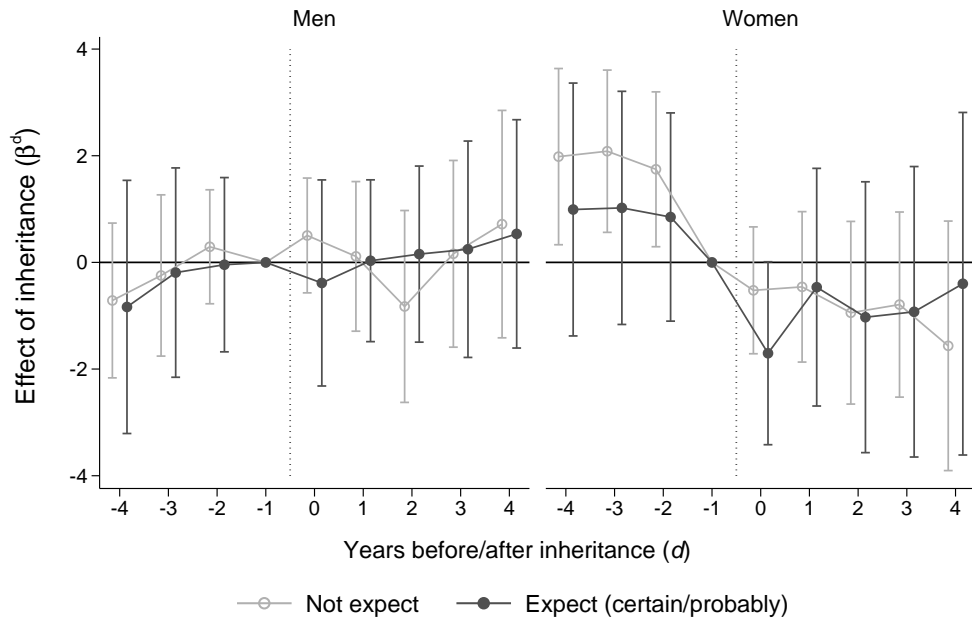
Figure 9: Event study results: Inheritance effect on self-employment for 2001 self-employed
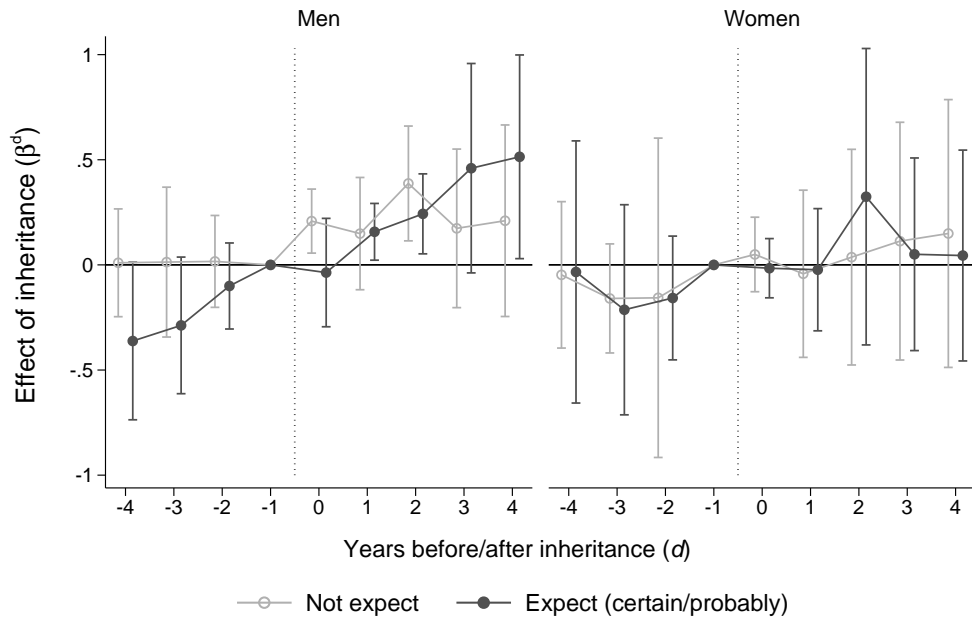
Figure 10: Event study results: Inheritance effect on self-empl. with employees for 2001 self-employed
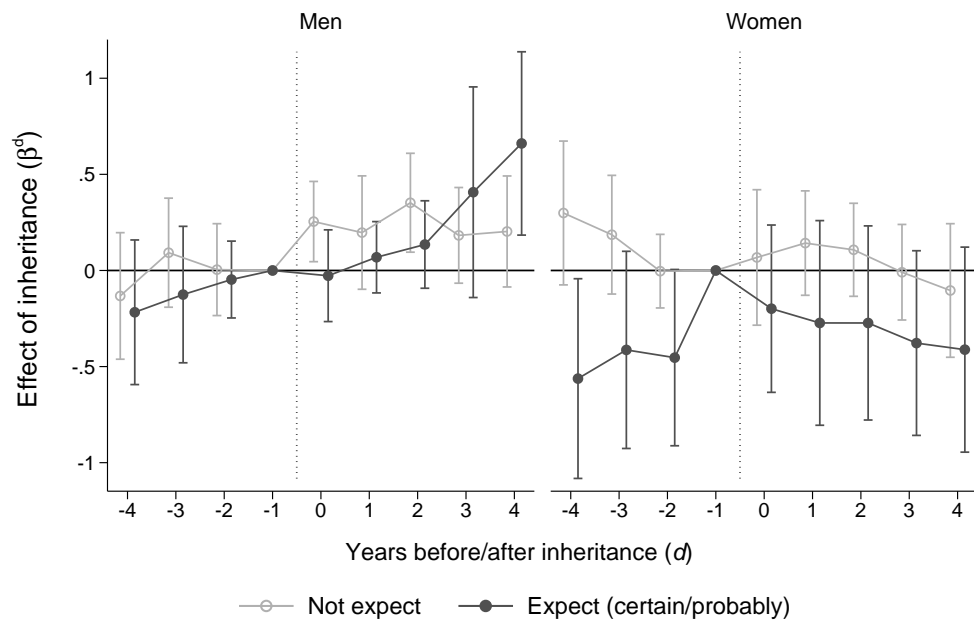
Note: Source: SOEP 2013, own calculations.

Tables

Summary statistics

Table 1: Summary statistics: Expectations and inheritances (sample of heirs)

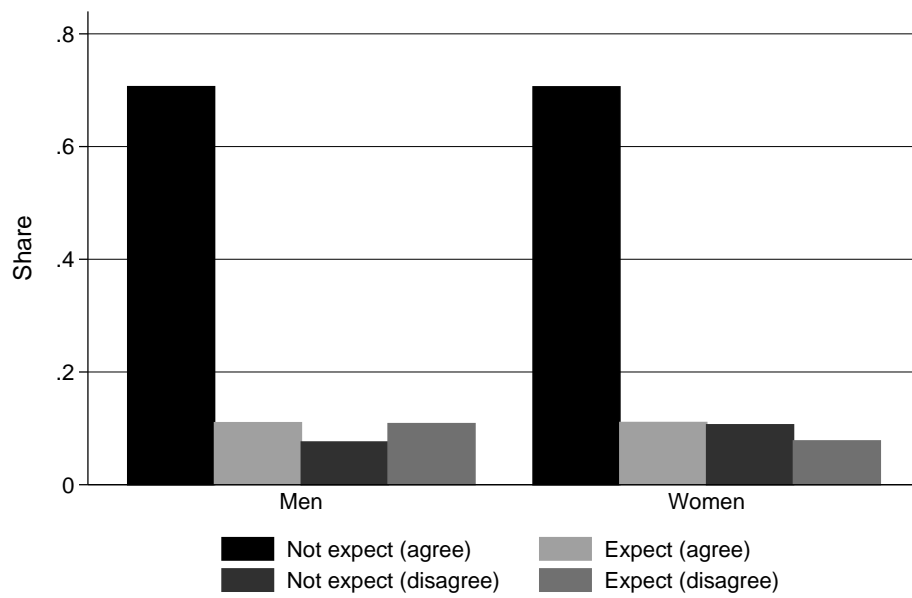| Sample	Men	Women
A. Windfall expectation in 2001		
Windfall expected	.4	.35
(certain/probably)	(.49)	(.48)
Windfall expected >50K DM	.2	.16
(certain/probably)	(.4)	(.36)
Windfall expected	.13	.14
(certain)	(.34)	(.35)
B. Inheritance value and age in year t		
Inheritance value	49397	51041
	(96929)	(98195)
Inheritance value >25K	.34	.39
	(.48)	(.49)
Inheritance value >50K	.25	.26
	(.43)	(.44)
Inheritance value >100K	.16	.15
	(.37)	(.36)
Age	47.38	45.91
	(8.91)	(9.17)
Observations	263	289

Note: Expectation of windfall >50,000 DM corresponds to about 30,500 euros (in 2013). *Source:* SOEP 2013, own calculations.

Table 2: Summary statistics: Estimation sample

Sample	Men	Women
A. Event of inheritance		
Inheritance in year t	.09	.09
	(.28)	(.29)
Year t post inheritance	.53	.54
	(.5)	(.5)
B. Employment status		
Actual hours	38.4	23.5
	(17.5)	(17.4)
Desired hours	39.31	28.97
	(6.7)	(9.85)
Employed	.86	.76
	(.34)	(.43)
Part-time employee	.03	.41
	(.16)	(.49)
Self-employed	.087	.059
	(.282)	(.237)
Self-employed with 1+ employees	.04	.018
	(.195)	(.132)
C. Demographic controls		
Couple household	.8	.75
	(.4)	(.43)
Married	.74	.69
	(.44)	(.46)
Age	47.51	45.98
	(9.01)	(9.1)
Years of education	12.8	12.4
	(2.8)	(2.3)
Father deceased	.43	.4
	(.49)	(.49)
Mother deceased	.29	.23
	(.45)	(.42)
Partner's father deceased	.3	.32
	(.46)	(.46)
Partner's mother deceased	.17	.21
	(.38)	(.4)
Observations	2946	3160

Source: SOEP 2013, own calculations.

Main regression results

Table 3: Regression results: Inheritance effect on actual hours worked for full sample

	(1) Men	(2) Men	(3) Men	(4) Men	(5) Women	(6) Women	(7) Women	(8) Women
POST	-0.164	-0.050	0.268	0.255	-1.466*	-1.412	-1.453	-1.302
	(0.870)	(0.963)	(0.838)	(0.834)	(0.055)	(0.111)	(0.160)	(0.176)
POST × EXP		-0.297	-1.089	-0.476		-0.169	-2.237	-1.268
		(0.865)	(0.616)	(0.803)		(0.920)	(0.267)	(0.501)
POST × (W>25K)			-1.043				0.205	
			(0.647)				(0.897)	
POST × EXP × (W>25K)			2.524				4.729	
			(0.475)				(0.167)	
POST × (W>50K)				-1.283				-0.480
				(0.622)				(0.798)
POST × EXP × (W>50K)				0.645				3.757
				(0.882)				(0.343)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2946	2946	2946	2946	3160	3160	3160	3160
r2	0.076	0.076	0.076	0.076	0.091	0.091	0.094	0.092

Table 4: Regression results: Inheritance effect on desired hours of work for full sample

	(1) Men	(2) Men	(3) Men	(4) Men	(5) Women	(6) Women	(7) Women	(8) Women
POST	-0.149	-0.351	-0.272	-0.535	-1.485***	-1.562***	-1.532**	-1.545***
	(0.748)	(0.470)	(0.573)	(0.280)	(0.002)	(0.005)	(0.013)	(0.008)
POST × EXP		0.505	1.087*	1.028*		0.234	-1.111	-0.662
		(0.395)	(0.082)	(0.086)		(0.801)	(0.346)	(0.551)
POST × (W>25K)			-0.226				-0.019	
			(0.819)				(0.985)	
POST × EXP × (W>25K)			-1.964				3.213*	
			(0.193)				(0.082)	
POST × (W>50K)				1.018				0.032
				(0.410)				(0.981)
POST × EXP × (W>50K)				-2.697				2.787
				(0.143)				(0.179)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2527	2527	2527	2527	2383	2383	2383	2383
r2	0.023	0.023	0.026	0.025	0.079	0.079	0.083	0.082

Table 5: Regression results: Inheritance effect on self-employment for 2001 self-employed

	(1) Men	(2) Men	(3) Men	(4) Men	(5) Women	(6) Women	(7) Women	(8) Women
POST	0.140	0.093	0.053	0.014	0.092	0.111	-0.077	0.041
	(0.150)	(0.462)	(0.656)	(0.894)	(0.352)	(0.309)	(0.566)	(0.712)
POST × EXP		0.108	-0.010	0.105		-0.053	0.140	-0.027
		(0.471)	(0.933)	(0.445)		(0.603)	(0.282)	(0.834)
POST × (W>25K)			0.119				0.294***	
			(0.578)				(0.008)	
POST × EXP × (W>25K)			0.184				-0.250	
			(0.446)				(0.126)	
POST × (W>50K)				0.327**				0.308***
				(0.025)				(0.009)
POST × EXP × (W>50K)				0.083				-0.200
				(0.720)				(0.240)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes	No	No	No	No
Observations	203	203	203	203	156	156	156	156
r2	0.238	0.241	0.256	0.266	0.386	0.387	0.403	0.402

Table 6: Regression results: Inheritance effect on self-empl. with employees for 2001 self-employed

	(1) Men	(2) Men	(3) Men	(4) Men	(5) Women	(6) Women	(7) Women	(8) Women
POST	0.106	0.098	0.076	0.043	-0.019	-0.016	-0.153	-0.087
	(0.264)	(0.400)	(0.611)	(0.740)	(0.843)	(0.881)	(0.270)	(0.343)
POST $\times$ EXP		0.018	-0.161	-0.015		-0.009	0.105	0.006
		(0.895)	(0.277)	(0.915)		(0.933)	(0.639)	(0.965)
POST $\times$ (W>25K)			0.056				0.213	
			(0.781)				(0.368)	
POST $\times$ EXP $\times$ (W>25K)			0.331				-0.116	
			(0.162)				(0.746)	
POST $\times$ (W>50K)				0.228				0.311
				(0.150)				(0.440)
POST $\times$ EXP $\times$ (W>50K)				0.205				-0.174
				(0.444)				(0.691)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes	No	No	No	No
Observations	203	203	203	203	156	156	156	156
r2	0.238	0.238	0.258	0.256	0.325	0.325	0.338	0.345

Robustness: Credit constraints

Table 7: Robustness check: Inheritance effect on hours worked and credit constraints

	(1) Men	(2) Men	(3) Men	(4) Men	(5) Women	(6) Women	(7) Women	(8) Women
POST	-0.232	0.710	-0.110	0.227	-1.474	-1.534	-1.388	-2.379**
	(0.842)	(0.585)	(0.930)	(0.874)	(0.103)	(0.130)	(0.180)	(0.046)
POST × (CREDIT OWN)	-0.387		-1.246		0.238		-0.532	
	(0.811)		(0.540)		(0.874)		(0.760)	
POST × (CREDIT CAP250)		-2.349		-1.721		0.298		1.523
		(0.159)		(0.402)		(0.817)		(0.309)
POST × EXP			-0.298	1.200			-0.288	2.583
			(0.891)	(0.603)			(0.883)	(0.275)
POST × EXP × (CREDIT OWN)			2.759				2.307	
			(0.399)				(0.443)	
POST × EXP × (CREDIT CAP250)				-1.650				-3.874
				(0.620)				(0.201)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2845	2845	2845	2845	3077	3077	3077	3077
r2	0.072	0.074	0.073	0.074	0.094	0.094	0.095	0.096

Table 8: Robustness check: Inheritance effect on self-employment and credit constraints

	(1) Men	(2) Men	(3) Men	(4) Men	(5) Women	(6) Women	(7) Women	(8) Women
POST	0.055	0.177	0.072	0.093	-0.013	0.042	0.034	0.048
	(0.651)	(0.190)	(0.644)	(0.627)	(0.891)	(0.645)	(0.774)	(0.698)
POST × (CREDIT OWN)	0.233**		0.050		0.234***		0.168*	
	(0.045)		(0.677)		(0.005)		(0.099)	
POST × (CREDIT CAP250)		-0.081		0.005		0.109		0.154
		(0.518)		(0.979)		(0.251)		(0.118)
POST × EXP			-0.054	0.198			-0.150	-0.020
			(0.697)	(0.355)			(0.185)	(0.891)
POST × EXP × (CREDIT OWN)			0.402**				0.153	
			(0.027)				(0.211)	
POST × EXP × (CREDIT CAP250)				-0.206				-0.090
				(0.374)				(0.613)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes	No	No	No	No
Observations	203	203	203	203	156	156	156	156
r2	0.252	0.240	0.265	0.246	0.403	0.390	0.406	0.392

Table 9: Robustness check: Inheritance effect on self-employment with employees and credit constraints

	(1) Men	(2) Men	(3) Men	(4) Men	(5) Women	(6) Women	(7) Women	(8) Women
POST	0.058	0.100	0.113	0.076	0.050	-0.061	0.110	-0.087
	(0.588)	(0.435)	(0.381)	(0.639)	(0.682)	(0.509)	(0.465)	(0.436)
POST × (CREDIT OWN)	0.131		-0.052		-0.153		-0.296*	
	(0.235)		(0.736)		(0.152)		(0.097)	
POST × (CREDIT CAP250)		0.013		0.049		0.091		0.160
		(0.920)		(0.802)		(0.596)		(0.455)
POST × EXP			-0.143	0.060			-0.212	0.107
			(0.268)	(0.763)			(0.180)	(0.622)
POST × EXP × (CREDIT OWN)			0.413*				0.330	
			(0.062)				(0.205)	
POST × EXP × (CREDIT CAP250)				-0.089				-0.204
				(0.715)				(0.502)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes	No	No	No	No
Observations	203	203	203	203	156	156	156	156
r2	0.241	0.238	0.251	0.238	0.334	0.328	0.343	0.331

Robustness: Expectation

Table 10: Robustness: Inheritance effect on hours worked for full sample (expect certain)

	(1) Men	(2) Men	(3) Men	(4) Men	(5) Women	(6) Women	(7) Women	(8) Women
POST	-0.164	-0.508	-0.553	-0.259	-1.466*	-1.554*	-1.957**	-1.724*
	(0.870)	(0.597)	(0.626)	(0.808)	(0.055)	(0.062)	(0.049)	(0.061)
POST × EXP		2.657	3.209	2.348		0.659	-1.413	0.323
		(0.387)	(0.422)	(0.486)		(0.704)	(0.419)	(0.882)
POST × (W>25K)			0.161				1.185	
			(0.931)				(0.457)	
POST × EXP × (W>25K)			-1.871				4.209	
			(0.752)				(0.225)	
POST × (W>50K)				-1.075				0.749
				(0.615)				(0.704)
POST × EXP × (W>50K)				1.503				0.763
				(0.856)				(0.834)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2946	2946	2946	2946	3160	3160	3160	3160
r2	0.076	0.077	0.077	0.077	0.091	0.091	0.093	0.091