

SUBJECTIVE INHERITANCE EXPECTATIONS AND ECONOMIC OUTCOMES

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In this paper we investigate whether and to what extent inheritance expectations act as a driver of economic choices. We use survey data that are representative of the Dutch adult population with a specific module on subjective probabilities on receiving an inheritance and its amount in the next 10 years. We analyze whether the expected inheritance acts as a deterrent to saving. Results suggest that individuals perceive the expected inheritances as a potential increase of personal wealth, which leads to a reduction in savings. Expectations also appear to matter for the intentions to bequeath and for intended choices on work versus leisure in the future.

JEL Codes: D14, D84, D91

Keywords: inheritance, savings, subjective expectations

1. INTRODUCTION

In this paper, we study the effect of an anticipated inheritance, using rich measures of inheritance expectations derived from survey reports on subjective probabilities. We analyze inheritance expectations and their impact on several economic choices, in particular household savings, the intention to leave a bequest, and expected labor supply at an older age. The role of a bequest in intertemporal

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planning has been intensively debated in the literature. Decumulation rates of the elderly are found to be much lower than as predicted by a standard life cycle model. Bequests and precautionary savings are the most accredited factors to explain this evidence (Niimi and Horioka, 2019). Given that the chance of receiving an inheritance, despite not necessarily for altruistic reasons (Horioka, 2002), is far from unlikely in several countries; individuals can see inheritance as a form of deferred wealth. If an inheritance is expected, it would be incorporated, like any other form of expected resources, into the consumption and saving plans of a life cycle planner.

Our empirical analysis uses the DNB Household Survey (DHS), a longitudinal survey representative of the Dutch adult population that allows us to study both psychological and economic aspects of financial behavior. This panel survey was launched in 1993 and comprises longitudinal information on work, pensions, housing, mortgages, income, ownership of durable goods and assets, loans, health, economic and psychological concepts, and personal characteristics. The data set is particularly suited for our analysis as it includes many questions about sources of income the respondents may have and contains detailed information on assets, liabilities, and mortgages. As we are interested in questions concerning the probability of receiving an inheritance in the future, we devised a special module that comprehends questions that enrich the DHS data set with new information on inheritance expectations.

Our results show that expected inheritances are negatively associated with current savings. We think that a causal interpretation is plausible: individuals perceive the expected inheritances as an increase in expected lifetime wealth, which raises their optimal consumption and reduces their savings. Moreover, we find that expecting a larger inheritance is also negatively associated with intended labor supply at an older age, in the sense of reducing the probability of working full-time at any point after age 62. This is in line with the notion that leisure is a normal good—increasing lifetime income raises the demand for leisure. Finally, we find that expecting a larger inheritance enhances the intention to bequeath. This can be rationalized with a life cycle model with bequest motive, implying that the optimal bequest will increase with lifetime income.¹ It may also have a less economic explanation: expecting an inheritance indicates the presence of a family norm that makes leaving a bequest more desirable. Eventually, all our results are in line with our expectations and robust, even when dropping individuals who already benefited from a past inheritance and whose propensity to save might have already been shaped through the previous transfer.

The remainder of the paper is organized as follows: Section 2 outlines the theoretical framework. Section 3 describes the data. Section 4 discusses the empirical methodology and the main results for the analysis of savings. We also extend the analysis by considering the effect of inheritance expectations on working intentions at older age and on bequest intentions. Section 5 concludes the paper.

¹Jurges (2001) shows that a stated bequest motive is associated with a steeper age-wealth profile in Germany.

2. RELATED LITERATURE

An inheritance can be conceived as “unearned income” that may affect earnings, consumption, savings, and other economic outcomes (Imbens *et al.*, 2001). A large strand of the literature has focused on the effect of unexpected income receipt and windfall gains on consumption and saving decisions. The economic rationale, following the permanent income hypothesis and the standard life cycle model (Deaton *et al.*, 2002), suggests that households should just react to unexpected shocks in income and wealth, while expected shocks are already incorporated in the optimal consumption and saving pattern. Thus, the timing of expected income receipt should not matter for consumption decisions. The empirical literature has considered both expected and unexpected income and wealth changes to test whether and under what circumstances these theoretical implications hold; see, e.g., Borella *et al.* (2009) and Garcia *et al.* (1997). Calcagno *et al.* (2009) studied the effect of a change in real estate wealth on household consumption in Italy and found that price increases raise consumption not only for homeowners but also for renters.

The role of wealth for explaining labor supply decisions has been broadly considered; see Krueger and Pischke (1992), Brown *et al.* (2010), Bloemen and Stancanelli (2001) on (early) retirement behavior, Bloemen and Stancanelli (2001) on labor market participation, and Imbens *et al.* (2001) and Henley (2004) on hours worked. Joulfaian and Wilhelm (1994) analyzed the effect of receiving an inheritance on labor supply. Bloemen and Stancanelli (2001) found that wealth has a significant positive impact on the reservation wage and a negative impact on the reemployment probability for the unemployed—higher levels of wealth result in higher reservation wages, reducing the employment probability. Joulfaian (2006) finds that wealth increases by only a fraction of the inheritances received, which implies that the marginal propensity to consume is significantly higher than what a perfect foresight or consumption smoothing framework would predict. Some recent studies focus on the effect of receiving an inheritance on labor force participation (LFP) of married couples. Blau and Goodstein (2016) analyze the effect of receiving an inheritance by one individual in a couple. They find that, controlling for inheritance expectations, the actual receipt of an inheritance changes LFP of the individual but not of the spouse. They interpret this as evidence in favor of a model of limited dynamic commitment, where receiving the inheritance increases the individual’s within-household bargaining power.

Inheritances can to some extent be anticipated, and the theory implies that the anticipated and unanticipated parts will have different effects. Most existing studies focus on the unanticipated part. Doorley and Pestel (2020) distinguish between expected and unexpected inheritances using a binary measure for expecting an inheritance. They find that hours worked by men stay constant after an inheritance, irrespective of the size of the inheritance, and irrespective of whether it was expected or unexpected. For women, both actual and desired hours of work fall by about 1.5 hours per week in response to an inheritance, for expected as well as unexpected inheritances. Brown *et al.* (2010) used inheritance receipt as a wealth shock. Distinguishing expected and unexpected inheritances, they found that especially unexpected inheritances are associated with a significant increase

in the probability of (early) retirement. A similar analysis using European data is carried out by Suari-Andreu (2018), showing modest effects at most on labor supply and retirement.

Several existing studies have analyzed the intention to bequeath. (Horioka, 2002, 2014) shows that household preferences vary substantially across countries, leading to different bequest motives and bequest divisions. Moreover, Niimi (2019) shows that the behavioral response of Japanese households toward changes in inheritance taxes varies depending on different bequest motives. Along this line, shedding light on different theoretical models and using the Comparative Survey of Savings in Japan and the US, Horioka *et al.* (2000) report that the empirical relevance of each of the three traditional theoretical models (life cycle model, altruism model, and dynasty model) depends on the institutional context (e.g., while the selfish life cycle model is the dominant model in both the US and Japan, the altruism model has much more relevance in Japan than it is in the US).

In this context, another potential link to be considered is the relationship between receiving an inheritance and leaving a bequest. Stark and Nicinska (2015) conclude that the experience of inheriting can enhance the intention to bequeath. DeBoer and Hoang (2017) use binary measures for expecting an inheritance and the intention to leave a bequest, and find a positive relation in the US, which is even stronger than the positive relation between bequest intentions and the actual receipt of an inheritance. Along the same line, using micro-data for Japan and US, Niimi and Horioka (2018) show that the receipt of intergenerational transfers from parents increases the likelihood of leaving bequests to the children. The role of expectations has been widely considered in the economic literature, as an important driver shaping economic and financial decisions. Expectations on a future inheritance could represent an important factor affecting labor outcomes as well as saving choices. To the best of our knowledge, the existing literature provides little evidence on the possible link between inheritance expectations and individuals' economic decisions. This constitutes one of the main reasons why the first goal of this paper is to study whether subjective expectations of receiving an inheritance in the future do, in some way, affect *current* economic decisions. The expectation as well as the degree of uncertainty on the size and timing of the receipt of an inheritance may influence the pattern of life cycle saving (Weil, 1996). Expecting a wealth endowment in the future (compared to already having received it) should then play a relevant role in shaping people's economic behavior, particularly if the amount is large. According to theory, large inheritances in particular may lead to a decline in both LFP and savings (Joulfaian, 2006). The life cycle model predicts that the perspective of receiving a wealth endowment in the future will positively affect current consumption decisions and, if leisure is a normal good, will induce them to supply less labor over the life cycle, or retire earlier. Moreover, we expect that inheritance expectations will affect intended economic behavior in the future. For example, it may affect the planned age of retirement or may make individuals more inclined to leaving a bequest themselves. The empirical analysis of the relation between inheritance expectations and these two aspects of intended future behavior is the second goal of the paper.

The direct measurement of expectations has developed since the early 1990s, as expectations are a key interest in intertemporal economic models and measuring expectations is useful to avoid making strong assumptions (Manski, 2002, 2004). In line with this development, the measurement of expectations in terms of probabilities has become very important in economics. Elicitation of probabilistic expectations has several desirable features, such as ease of interpretation, ability to characterize uncertainty, possibility of exploiting the algebra of probability to check the internal consistency of a respondent's elicited expectations about different events, and interpersonal comparability allowing to reach conclusions about the correspondence between subjective beliefs and "frequentist realities" (Dominitz and Manski, 1997; Dominitz, 1998; Manski, 2004). The validity of survey reports of subjective expectations has been discussed extensively. According to Dominitz (1998), it is unreasonable and unnecessary to hope for perfect correspondence. Still, there is overwhelming evidence that, in spite of reporting errors such as rounding, non-response, focal answers (like fifty-fifty), subjective probabilities add useful information that helps to avoid ad hoc and unrealistic assumptions. Analyzing the predictive power of expectations gives insights into the validity of expectations data—even if it is not possible to verify whether reported probabilities reflect the actual beliefs held by respondents. Internal consistency and plausibility of responses suggest that responses have "face validity" when the questions concern well-defined events that are relevant to respondents' lives (Manski, 2004). Many studies show that subjective expectations help to explain economic decisions; see, e.g., Manski (2004) and Van der Klaauw (2012). Kleinjans and van Soest (2014) show that accounting for the reporting problems does not have a large effect on how subjective probabilities vary with individual characteristics. De Bresser (2019), using repeated measures of survival probabilities, demonstrated that the reports have test–retest reliability. Drerup *et al.* (2017) relate the quality of the reported answers (e.g., internal consistency) to the respondent's economic decision process.

De Bresser and van Soest (2015) analyzed the determinants of satisfaction with various dimensions of pension arrangements, emphasizing the role of subjective expectations regarding retirement income, showing the validity of subjective expectations elicited through probabilistic measures and the causal impact of expectations on well-being. They apply two different methods to construct subjective replacement rate distributions from the reported probabilities. The first, proposed in Dominitz and Manski (1997), fits an assumed underlying (log-normal) distribution for each observation by minimizing the squared difference between the probabilities implied by the assumed distribution and those reported in the data; the second approach, adapted from Bellemare *et al.* (2012), uses spline interpolation to fit a subjective distribution that passes through the points corresponding to the probabilities reported by the respondents. The latter is a non-parametric procedure, in the sense that it does not assume any parametric form of the respondents' underlying subjective distributions.

3. INSTITUTIONAL SETTING AND DATA

We use data for the Netherlands. As inheritances and bequests may vary with the institutional setting, it seems useful to discuss how inheritances and inter-vivos

transfers are treated by the Dutch tax system. As explained by Basiglio (2021), inheritances and inter-vivos transfers are taxed if they exceed certain thresholds, where the tax rates and the exempted amounts depend on the “intergenerational relationship” between the provider of the gift or inheritance and the recipient. For example, inheritance from parents is taxed if it exceeds approximately €20,000 (the amount varies somewhat across years), the tax rate on the first €120,000 above that is 10 percent and the marginal tax rate on higher amounts is 20 percent. Inter-vivos transfers to children are not taxed if they are lower than €5,300 in a given year, and sometimes even up to higher amounts (under special conditions; see the appendix of Basiglio (2021) for details). These tax rules may affect the tendency to save to leave a bequest, but also make it attractive to avoid large inheritances using inter-vivos transfers.

For the empirical analysis, we use the DHS, a panel study covering the Dutch adult population collected the CentERdata, a research institute specialized in Internet surveys, affiliated with Tilburg University (see <https://www.centerdata.nl/en>). It is a representative data set of the Dutch population. Comprising information on work and pensions, accommodation and mortgages, income and health, assets and liabilities, and economic and psychological concepts, it allows for studies on psychological and economic aspects of financial behavior. The questionnaires are self-administered through the Internet, and individuals can answer at any convenient time during a 5-day period. Respondents are members of the CentERpanel, originally based on a random sample drawn from the non-institutionalized Dutch adult population. Importantly, the selection of panel members does not require access to Internet: households without a computer or an Internet connection are provided with the necessary equipment. Panel members are invited to answer questions every week or every 2 weeks; some of the questionnaires are the DHS modules that are repeated each year.

In the next subsections, we describe the main variables of interest and all the other control variables. All descriptive statistics are shown in Table A.1 in the Appendix, with variable definitions in Table A.2. All descriptive statistics use sampling weights provided by the survey agency to correct for unit non-response. (The unweighted statistics are very similar.)

3.1. *Inheritance Expectations*

The DHS data set is particularly suited for our analysis because it includes rich information on, for example, sources of income, savings and saving attitudes, liabilities, and mortgages. In addition, as we were interested in questions concerning the probability of receiving a (large) inheritance in the future, we designed a special module with questions that enrich the data set with new information on inheritance expectations, and invited the respondents of the CentERpanel to participate in this specific survey. It was fielded from November 25 to November 29, 2016. The overall response rate was 83.8 percent (2,196 out of 2,621 respondents). We merged the data from this module with the 2016 modules on assets and liabilities and economic and psychological concepts from DHS.

For the inheritance expectations, following the Dominitz and Manski studies referred to in the Introduction, we allow for continuous responses instead of binary

(yes/no) answers—respondents report the *chances* of receiving an inheritance. In this way, responses will be more accurate, as individuals are in some way forced to reflect more deeply on the questions. Moreover, their answers can capture uncertainty. As argued by Manski (2004), if people can express their expectations in probabilistic form, elicitation of subjective probability distributions has compelling advantages relative to verbal questioning. Probability provides a well-defined absolute numerical scale for the responses; therefore, there is more reason to think that responses are also interpersonally comparable than when using a subjective scale. The exact wording of the four subjective probability questions on the inheritance is as follows:

Questions from the module on inheritance expectations

- Q1. How likely is it that you will receive an inheritance in the **next 10 years**? [*if $Q1 > 0$ then go to $Q2$*]
- Q2. And how likely is that you will receive an inheritance of **more than 10,000 euros** in the **next 10 years**? [*if $Q2 > 0$ then go to $Q3$* .]
- Q3. And how likely is that you will receive an inheritance of **more than 25,000 euros** in the **next 10 years**? [*if $Q3 > 0$ then go to $Q4$* .]
- Q4. And how likely is that you will receive an inheritance of **more than 50,000 euros** in the **next 10 years**?

Fill a percentage here from 0 to 100 percent. For example, if you are certain that you will receive an inheritance in the next 10 years, then enter 100 percent. But if there is still a small chance that you will not receive it, then you enter 97 percent or less. If you are fully convinced that you will receive no inheritance in the next 10 years, enter 0 percent. But if there is still a small chance that you will receive it, then you enter, for example, 3 percent or something more. And if you think the odds are about half, then you fill in 50 percent, or slightly more or less if that fits better with what you think.

The first question is taken from the US Health and Retirement Study (HRS) and the Survey of Health, Ageing and Retirement in Europe (SHARE); see, e.g., Kleinjans and van Soest (2014) and Suari-Andreu (2018). These surveys did not ask any follow-up questions on the amounts, although they did this for other expectations, such as leaving a bequest. In principle, question *Q2* is asked only if the answer to question *Q1* is positive, and the same logic applies to the subsequent questions *Q3* and *Q4*. Figure 1a–d presents the distributions of the reported subjective probabilities. About half of the respondents report a zero probability of receiving any inheritance. Among those who report a nonzero probability of receiving an inheritance, a large minority (35 percent) is certain that the amount will be lower than €10,000 (Figure 1b). Similarly, many respondents indicate that their inheritance will always be lower than €25,000 or €50,000.

Response Rates and Consistency of Reported Probabilities

The module on inheritance expectations has been submitted to 2,621 panel participants. Among these, 421 individuals did not respond at all (unit nonresponse), 2,196 completed the questionnaire, and 4 respondents started but did not complete

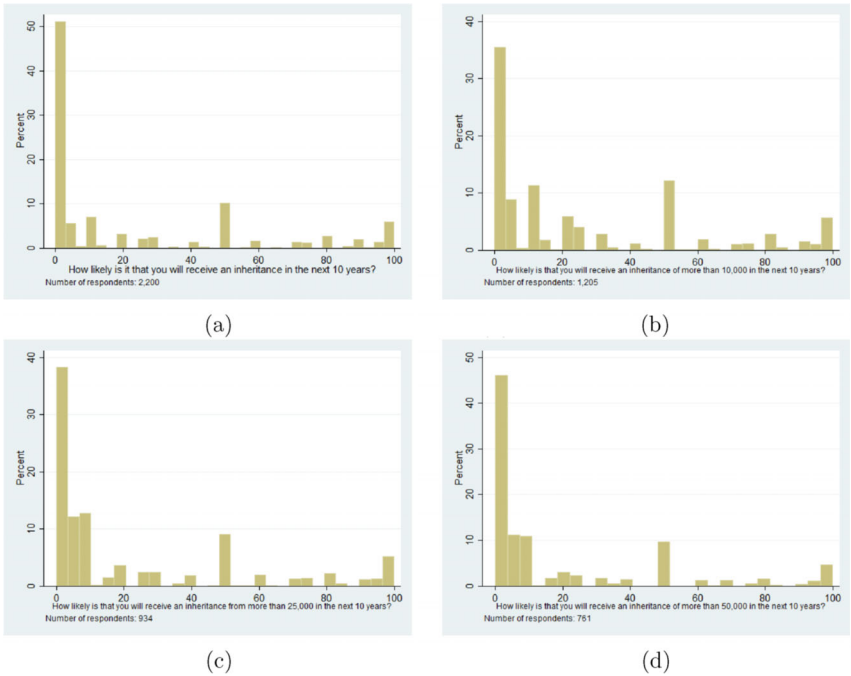


Figure 1. Subjective Inheritance Expectations in 10 Years. (a) Expected inheritance. (b) Expected inheritance greater than €10,000. (c) Expected inheritance greater than €25,000. (d) Expected inheritance greater than €50,000 [Colour figure can be viewed at wileyonlinelibrary.com].
 Note: Statistics are weighted by sample weights.

the survey, giving a response rate of 83.8 percent. Virtually everyone who answered the first question and was asked one or more a follow-up question (i.e., did not report a zero probability) also answered these follow-up questions. Among the 2,196 respondents, 992 individuals reported to have zero chances of receiving an inheritance, 271 of the others reported no chance of receiving an inheritance greater than €10,000, 172 of the remaining respondents gave a zero probability of an inheritance greater than €25,000, and 166 reported a zero probability of getting an inheritance greater than €50,000.

According to the literature, common concerns with probabilistic questions are nonresponse, focal points (e.g., answering 0 percent, 50 percent, or 100 percent) and different degrees of rounding (Kleinjans and van Soest, 2014). A total of 197 respondents report the same probability values at all four questions about chances of receiving inheritances. Among these, 175 report a value different from (0 or) 100 percent; there are 45 cases in which individuals always report a probability of 50 percent (i.e., 2 percent of all respondents). It seems likely that these are focal answers.² The 22 respondents who always report a probability of 100 percent might

²Kleinjans and van Soest (2014) report that in the HRS, 4.71 percent of the respondents gave a 50 percent answer for question Q1 (4.85 percent if nonresponses are discarded; see their Table 1).

TABLE 1
MEAN CHANCES OF RECEIVING AN INHERITANCE BY AGE CATEGORIES

Age Categories	Chances Inheritance	Chances inh > 10k	Chances inh > 25k	Chances inh > 50k
16–34 years	22.93	10.72	7.39	5.30
35–44 years	31.46	20.37	14.64	10.56
45–54 years	38.57	28.68	20.80	14.06
55 years and older	14.31	8.70	6.07	4.24
Total	21.72	13.71	9.73	6.80

Notes: The table reports the means of the chances of receiving an inheritance in all four cases. Statistics are weighted by sample weights.

indeed know for sure that they will receive an inheritance of more than €50,000. We reran all regressions also without these always 50 and always 100 observations, and results remained very similar; this is in line with the results of Kleijnans and van Soest (2014) that suggest that, for a variety of subjective probability questions in different domains, the focal answers do not affect the estimates of the importance of the associations between the subjective probabilities and socioeconomic characteristics.

Another check on internal consistency and plausibility of the responses is to consider whether the reported probabilities obey the logical rule that they should be non-increasing: our data show that the rate of inconsistency is very low, around 2 percent out of the whole sample; to be more precise, 46 of the 2,196 individuals report a non-increasing sequence of probabilities.

In Table 1, we report how the chances of receiving an inheritance vary across different age categories; it appears that among people between 45 and 54 years old the probabilities of receiving an inheritance in the next 10 years are higher compared to the other categories; this seems reasonable because individuals in that age category, identifying those with older (grand)parents, could represent the ones with more “solid” and relatively well-formed inheritance expectations.³

Finally, we can compare inheritance expectations with actual inheritances received. The DHS panel has information on receiving an inheritance in each year. We used the last 10 available annual waves of (2012–2021). On average, 5.5 percent reported that they received an inheritance in a given year (with hardly any variation over the years). Among individuals who answered the questions in each of the 10 years, 22.7 percent received an inheritance at least once. This is quite close to the average probability of receiving a bequest in the next 10 years (21.7 percent).

Among positive inheritances received ($N = 1,103$), the median amount inherited was €5,000. As expected, the distribution is right-skewed, with first quartile €2,500 and third quartile €12,000. Due to a small number of very large amounts (the maximum is €570,000), the mean of positive amounts is €18,845. Among positive inheritances, 28.5 percent is at least €10,000, 17.5 percent is at least €25,000, and 10 percent is at least €50,000. As only 22.7 percent actually received a positive

³This result is in line with the strong negative effect of age on the probability of receiving an inheritance found by Kleijnans and van Soest (2014) for the US population of age 50 and older.

inheritance, these numbers are rather small compared to the unconditional average subjective probabilities in Table 1. It therefore seems that, on average, respondents have realistic expectations about whether they will receive an inheritance or not, but they tend to overestimate the chances of receiving a large inheritance. A (partial) explanation may be that they do not account for the inter-vivos transfers stimulated by the tax system, which reduce the amount of the actual inheritance.

3.2. *Savings Measure*

The first part of our analysis focuses on the effect of anticipating an inheritance on savings. The DHS data set has no information concerning consumption. To construct a reliable measure for savings, we combine the traditional approach in the literature (i.e., approximating savings as the difference between financial assets across years) and a different approach proposed by Alessie and Teppa (2010), which exploits several questions concerning saving behavior and expenditure habits from the DHS data.

In constructing the change in financial assets between 2015 and 2016, we use liquid assets (checking accounts, savings or deposit accounts, deposit books, savings certificates, savings arrangements) and subtracted liquid liabilities (private loans, extended lines of credit). Moreover, following how Alessie and Teppa (2010) constructed their proxy for savings, we first use the information about whether any money has been put aside in the previous 12 months; in the case in which the answer is assertive, individuals are asked to report the amount saved in the same period.

For those who stated they put aside money, if the change in financial wealth corresponds to the class of money put aside, then their savings are set equal to the change in the financial wealth; in the opposite case, if the change in financial wealth does not correspond to the class of money put aside, then savings are set equal to the midpoint of the reported category containing the amount (again following the approach of Alessie and Teppa (2010)). Second, for those who declare that they did not put any money aside, we cross this information with the answer to another question in the survey: *Over the past 12 months, would you say the expenditures of your household were higher than the income of the household, about equal to the income of the household, or lower than the income of the household?*

In Figure 2a, we report the distribution of the constructed savings measure; it appears that there is a high concentration on “quite low” levels of savings, but there are also some very high and very low values.

Our sample allows us to split the sample into three categories, based on the variable reporting savings: (1) negative savings, corresponding to expenditures that are higher than income; (2) zero savings for those who stated to have put no money aside and whose expenditures were equal to the income of the household; (3) positive savings for those whose expenditures were lower than the household income. See Table 2—the large majority has (small) positive savings.

3.3. *Intention to Leave a Bequest*

The second dependent variable we want to study is the intention to leave a bequest. The survey question we use for this is a subjective probability question

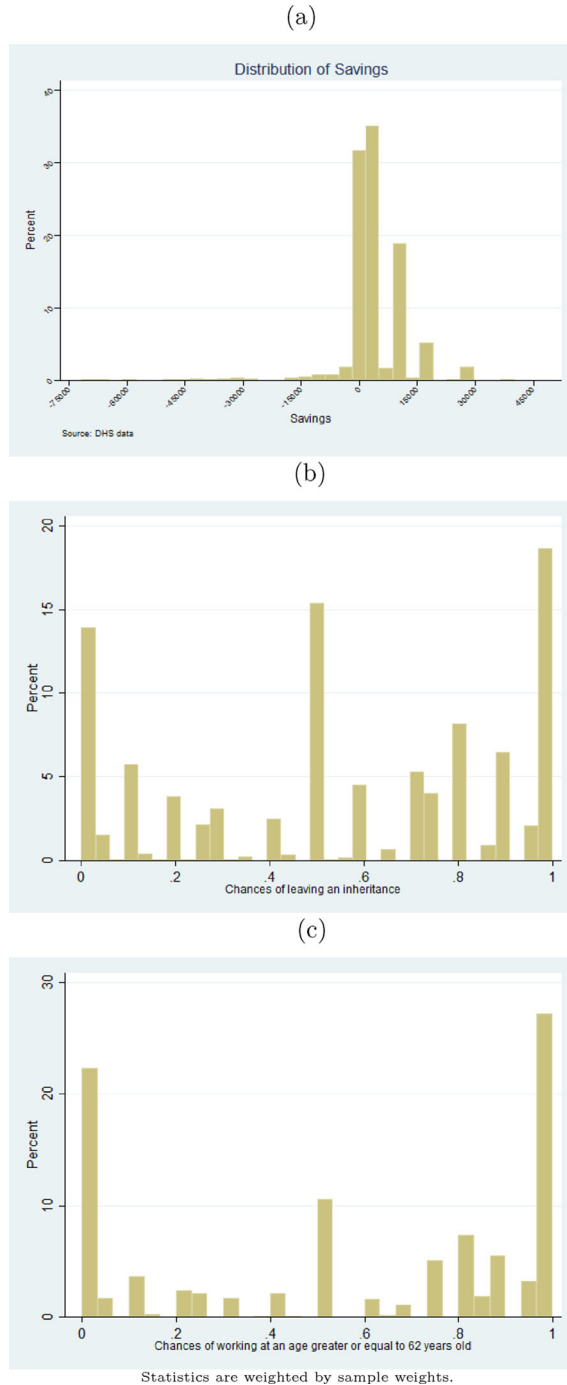


Figure 2. Distributions of (a) Savings, (b) Intention to Bequeath, and (c) Work/Retirement Intentions [Colour figure can be viewed at [wileyonlinelibrary.com](https://onlinelibrary.wiley.com)].

TABLE 2
SAVING BEHAVIOR—DESCRIPTIVE STATISTICS

Saving, No Savings or Dissaving	Average Savings	Frequency in Percentage Values
Dissave	-9937.85	9.78
Neither save nor dissave	0	18.96
Save	6137.39	71.26
Total	3401.20	100.00

Notes: Descriptive statistics of the constructed variable on saving behavior. Statistics are weighted by sample weights.

similar to the initial question on the probability of receiving an inheritance. The wording is: *What are the chances that you will leave a bequest (including possessions and valuable items)?* Individuals can answer with a number from 0 to 100—0 means “no chance” and 100 means “absolutely sure.” Figure 2b reports its distribution. Looking at the descriptive statistics reported in Table A.1, a huge fraction of the sample appears to intend to leave an inheritance in the future: approximately 86 percent of the sample reports a positive probability, and almost 18 percent reports a probability of 100 percent.

3.4. Working After Age 62

Another economic outcome we are interested into is represented by the chances of working at any age greater than or equal to 62 years old.⁴ Figure 2c presents the distribution of the answers. The probability is zero for 21.8 percent of all observations and 100 for almost 24 percent; indeed, the average probability is about 56 percent.

3.5. Other Explanatory Variables

So far, we focused our attention on the main variables of interest. In the regression models, we also include a set of more or less standard socioeconomic characteristics like age, gender, education, and the log of (personal after tax) income. In our sample, the average age of individuals is 56 years old, and women represent 44 percent of the sample. There is a quite high concentration of individuals with a high-school diploma. As we are dealing with leaving a bequest, important variables to be considered may be marital status and having one or more children: approximately 22 percent of the individuals are singles, whereas 72 percent have at least one child. Finally, we also take into consideration some other personal characteristics that may have an impact on savings: a dummy variable equal to one if the individual is not planning to give large amounts of money to child(ren) as well as two variables concerning attitudes toward lack of receiving allowances and having learned to put money away as a child. These variables are presented in the last three rows of Table A.1: “No Money Support to Child,” “No Allowance as Child,” “No

⁴The exact text of the question is “*What are the chances, you think, of you having a full-time paid job at the age of 62 or older?*.” As for the case of willingness to bequeath, individuals can answer with any number from 0 to 100, where 0 means “no chance” and 100 means “absolutely sure.”

SaveTeach as Child.” They are directly taken from the DHS in the “Economic and Psychological Concepts” section. The exact wordings are as follows:

- Do you give large amounts of money to your children in order to transfer part of your capital to them, or are you planning to do so in the future, e.g. every year?
- When you were between 8 and 12 years of age, did you receive an allowance from your parents then? By allowance we mean a fixed amount received on a regular basis.
- Did your (grand)parents try to teach you how to budget when you were between 12 and 16 years of age?

4. EMPIRICAL ANALYSIS

To detect the impact of expecting an inheritance of a given amount on economic outcomes, we first estimate a probit model in which the dependent variable is a dummy variable taking value 1 if savings are positive and 0 otherwise. Second, exploiting the three categories of savings constructed in the previous section, we perform an ordered probit where the dependent variable assumes value 1 if individuals dissave, 2 if they neither save nor dissave, and 3 if they save. We implement the same approach using the other economic outcomes, the intention to leave a bequest and the intentions to work after age 62 (Sections 4.2 and 4.3).

Our main regressors of interest are either one of the four subjective probabilities of inheritance probabilities presented in Section 3.1, the chances of receiving any inheritance in the next 10 years, and of receiving an inheritance greater than €10,000, greater than €25,000, or greater than €50,000, or the subjective expectation of the inheritance. The latter combines the four reported probabilities, assuming the subjective distribution is symmetric on the intervals between the points for which subjective probabilities are reported.⁵

We also control for demographic and socioeconomic variables such as gender, age, level of education, and log income presented in Section 3.5.⁶

4.1. Savings

Our first dependent *savings* variable is a dummy taking value 1 if savings are positive and 0 otherwise.⁷ We include only one subjective probability at the

⁵Moreover, the distribution is truncated at €100,000 and assumed to be symmetric on (50,000; 100,000), so that the expectation (in €1,000) is given by $5(P1 - P2) + 17.5(P2 - P3) + 37.5(P3 - P4) + 75P4$, where $P1, \dots, P4$ are the answers to the questions Q1, ..., Q4 in Section 3.1, respectively. The mean of these subjective expectations (zeros included) is €7,300, the standard deviation is €15,000.

⁶In addition to income, we have included wealth (i.e., net worth computed considering all types of private savings and investment accounts, housing wealth, other real estate and durable goods net of mortgages, and other financial debt) as a control variable. This substantially reduces the number of observations, however. Results including log wealth are available in Section A.1 of the Online Appendix. The main results are virtually the same as those of specifications without log wealth.

⁷Using the original continuous savings variable and running an OLS regression gives a negative but insignificant relationship with the subjective probabilities. Using the saving rate as dependent variable also results in insignificant effects, probably because this savings measure is rather noisy. The latter results are reported in Section A.2 of the Online Appendix.

time—including all four probabilities makes all probabilities insignificant due to multi-collinearity (results not presented). Results are presented in Table 3. The impact of receiving an inheritance has the expected sign and is significant at the 5 percent level. Expecting a (large) inheritance reduces the probability of saving a positive amount by a magnitude ranging from 9 to 13 percentage points. The final column confirms the negative effect of the expected inheritance on the probability to save: keeping other variables constant, an increase in the expected inheritance by €1,000 reduces the probability to save by approximately 0.18 percentage points.

Women have an approximately 5 percentage points higher probability of saving than men, and this difference is significant. This effect might be due to higher risk aversion or a larger interest in precautionary savings among women. In line with this result, Seguino and Floro (2003) argue that increases in women's wages as well as increases in their share of income lead to higher rates of saving at the household level. Another aspect that deserves to be emphasized is the age-related effect: it appears that as the individual gets older he tends to save less. This result is in fact in line with the literature and appears in line with a recent paper by Niimi and Horioka (2019) in which the authors assess the importance of precautionary saving and bequest motives in explaining the wealth decumulation behavior of the retired elderly.

Looking at civil status, the ex-ante expectation is that *singles* might be less oriented to save compared to those living with a partner or with children. Results confirm this prediction, showing that singles have lower probabilities of saving, *ceteris paribus*.

Another interesting result is related to the variable on the intention of giving financial support to children. Our results show that those who do not intend to give financial support to their children have an approximately 7 percentage points lower probability to save than those who are willing to financially support their child(ren), and this difference is significant. It suggests that inter-vivos transfers to children are an important motive to save. Moreover, those who did not learn to put money away (i.e., saving) as a child have a significantly lower probability to save than those who did, as one might expect. This could reflect a causal effect of financial education, but of course might also reflect other aspects of family education or unobserved family factors affecting savings attitudes of children and parents in the same way.

As indicated in Section 3.2, we also use a more refined measure of saving, differentiating three (ascending) categories: (1) dissavers (savings below zero); (2) those who neither save nor dissave (savings approximately zero); and (3) savers (savings above zero). See the previous section for details, particularly the descriptive statistics in see Table 2. The ordered probit results explaining this ordered categorical outcome confirm the negative effect of inheritance expectations on the tendency to save; see Tables 4 and 5. In general, the results for different models and specifications all point in the same direction. The coefficients on the subjective inheritance expectations are negative and statistically significant (Table 4).

Given that coefficients on ordered probit are not very informative, we present marginal effects of the main explanatory variables of interest, the inheritance probabilities, in Table 5. The table reports the marginal effects on the three different outcomes (i.e., dissaving, neither saving nor dissaving, and positive savings). Results

TABLE 3
IMPACT OF INHERITANCE EXPECTATIONS ON SAVING—PROBIT SPECIFICATION

	[1]	[2]	[3]	[4]	[5]
Probability inheritance	-0.1093*** (0.0350)				
Probability inheritance 10k		-0.1266*** (0.0422)			
Probability inheritance 25k			-0.0912* (0.0481)		
Probability inheritance 50k				-0.1105** (0.0550)	
Expected value of inheritance					-0.0018** (0.0007)
Female	0.0481* (0.0246)	0.0490** (0.0246)	0.0505** (0.0246)	0.0507** (0.0246)	0.0506** (0.0246)
Age	-0.0041*** (0.0011)	-0.0039*** (0.0011)	-0.0039*** (0.0011)	-0.0039*** (0.0011)	-0.0039*** (0.0011)
Income(log)	0.0508*** (0.0134)	0.0492*** (0.0134)	0.0479*** (0.0134)	0.0476*** (0.0133)	0.0486*** (0.0134)
<i>Educational levels</i>					
Primary	-0.0048 (0.0692)	-0.0046 (0.0690)	0.0006 (0.0678)	0.0007 (0.0678)	
Lower vocational	-0.0319 (0.0437)	-0.0311 (0.0436)	-0.0293 (0.0437)	-0.0290 (0.0437)	-0.0293 (0.0658)
Intermediate general					0.0018 (0.0677)
Intermediate vocational	-0.0244 (0.0444)	-0.0220 (0.0443)	-0.0236 (0.0445)	-0.0242 (0.0446)	-0.0224 (0.0661)
Higher vocational	-0.0490 (0.0442)	-0.0477 (0.0441)	-0.0457 (0.0440)	-0.0455 (0.0441)	-0.0448 (0.0672)
University	0.0146 (0.0455)	0.0198 (0.0448)	0.0166 (0.0453)	0.0167 (0.0453)	0.0192 (0.0642)
Retired	0.0181 (0.0306)	0.0181 (0.0306)	0.0242 (0.0303)	0.0250 (0.0303)	0.0211 (0.0305)
Single	-0.0860*** (0.0332)	-0.0860** (0.0334)	-0.0833** (0.0333)	-0.0829** (0.0333)	-0.0850** (0.0334)
Child(ren)	0.0304 (0.0406)	0.0320 (0.0409)	0.0335 (0.0411)	0.0334 (0.0411)	0.0324 (0.0410)
No money support to child	-0.0710** (0.0311)	-0.0725** (0.0311)	-0.0728** (0.0313)	-0.0724** (0.0312)	-0.0728** (0.0312)
No allowance as child	-0.0203 (0.0253)	-0.0247 (0.0256)	-0.0208 (0.0255)	-0.0206 (0.0254)	-0.0223 (0.0255)
No SaveTeach as child	-0.0765** (0.0351)	-0.0733** (0.0349)	-0.0724** (0.0348)	-0.0716** (0.0348)	-0.0728** (0.0349)
Observations	1,250	1,250	1,250	1,250	1,250
Log-likelihood	-585.2520	-585.6043	-588.1056	-587.9578	-586.9575

Notes: Dependent variable: Saving = 1, Not saving = 0. Probit model. Marginal effects reported. Standard errors in parentheses. * $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

TABLE 4
IMPACT OF INHERITANCE EXPECTATIONS ON SAVING—ORDERED PROBIT SPECIFICATION

	[1]	[2]	[3]	[4]	[5]
Probability inheritance	-0.3756*** (0.1250)				
Probability inheritance 10k		-0.4736*** (0.1540)			
Probability inheritance 25k			-0.3662** (0.1776)		
Probability inheritance 50k				-0.4013** (0.2006)	
Expected value of inheritance					-0.0065*** (0.0025)
Female	0.1379 (0.0919)	0.1406 (0.0922)	0.1458 (0.0917)	0.1458 (0.0917)	0.1457 (0.0918)
Age	-0.0163*** (0.0042)	-0.0154*** (0.0043)	-0.0153*** (0.0042)	-0.0153*** (0.0042)	-0.0153*** (0.0042)
Income(log)	0.1514*** (0.0417)	0.1463*** (0.0417)	0.1418*** (0.0414)	0.1394*** (0.0414)	0.1438*** (0.0414)
<i>Educational levels</i>					
Primary	-0.1132 (0.2502)	-0.1372 (0.2493)	-0.1054 (0.2477)	-0.1028 (0.2478)	-0.1163 (0.2485)
Lower vocational	-0.1559 (0.1471)	-0.1772 (0.1466)	-0.1591 (0.1454)	-0.1553 (0.1462)	-0.1674 (0.1461)
Intermediate general	-0.0732 (0.1739)	-0.0951 (0.1735)	-0.0827 (0.1731)	-0.0830 (0.1734)	-0.0857 (0.1734)
Intermediate vocational	-0.1590 (0.1484)	-0.1737 (0.1482)	-0.1680 (0.1477)	-0.1687 (0.1481)	-0.1725 (0.1479)
Higher vocational	-0.2362* (0.1401)	-0.2559* (0.1398)	-0.2356* (0.1388)	-0.2338* (0.1394)	-0.2419* (0.1393)
Retired	0.1339 (0.1155)	0.1272 (0.1162)	0.1471 (0.1151)	0.1534 (0.1150)	0.1387 (0.1157)
Single	-0.2423** (0.1047)	-0.2444** (0.1052)	-0.2360** (0.1049)	-0.2327** (0.1045)	-0.2402** (0.1049)
Child(ren)	0.1312 (0.1429)	0.1365 (0.1436)	0.1415 (0.1435)	0.1423 (0.1432)	0.1381 (0.1435)
No money support to child	-0.2808** (0.1165)	-0.2868** (0.1170)	-0.2874** (0.1170)	-0.2853** (0.1164)	-0.2873** (0.1168)
No allowance as child	-0.1062 (0.0901)	-0.1243 (0.0903)	-0.1103 (0.0901)	-0.1080 (0.0900)	-0.1147 (0.0901)
No SaveTeach as child	-0.2280** (0.1060)	-0.2210** (0.1058)	-0.2177** (0.1056)	-0.2145** (0.1055)	-0.2190** (0.1058)
Observations	1,250	1,250	1,250	1,250	1,250
Log-likelihood	-753.4352	-753.0394	-755.4256	-755.6451	-754.5024

Notes: Dependent variable: Dissaving = 1; Neither saving nor dissaving = 2; Saving = 3. Ordered probit model. Coefficients reported. Standard errors in parentheses. * $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

TABLE 5
MARGINAL EFFECTS OF INHERITANCE EXPECTATIONS FROM ORDERED PROBIT REGRESSION

<i>Outcome variable: Dissaving</i>					
Probability inheritance	0.0462*** (0.0156)				
Probability inheritance 10k		0.0582*** (0.0193)			
Probability inheritance 25k			0.0454** (0.0223)		
Probability inheritance 50k				0.0498** (0.0251)	
Expected value of inheritance					0.0008** (0.0003)
<i>Outcome variable: Neither saving nor dissaving</i>					
Probability inheritance	0.0537*** (0.0183)				
Probability inheritance 10k		0.0679*** (0.0225)			
Probability inheritance 25k			0.0524** (0.0255)		
Probability inheritance 50k				0.0574** (0.0289)	
Expected value of inheritance					0.0009** (0.0004)
<i>Outcome variable: Saving</i>					
Probability inheritance	-0.0999*** (0.0332)				
Probability inheritance 10k		-0.1260*** (0.0409)			
Probability inheritance 25k			-0.0978** (0.0474)		
Probability inheritance 50k				-0.1072** (0.0535)	
Expected value of inheritance					-0.0017** (0.0007)
Observations	1,250	1,250	1,250	1,250	1,250

Notes: Ordered probit model. Marginal effects reported. Standard errors in parentheses. * $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

are consistent with the probit results, showing that, for example, an increase of 1 percentage point in the probability of receiving any inheritance gives an almost 0.05 percentage points higher probability of dissaving and an almost 0.10 percentage points lower probability of positive savings. An increase in the expected amount inherited by €1,000 reduces the probability to save by 0.17 percentage points (in line with Table 3) and increases the probabilities to dissave and neither save nor dissave by almost equal amounts.

Saving is negatively associated with age and strongly positively associated with income (Table 4). The latter is in line with the extensive literature stating that the propensity to save and to consume differ substantially across income groups and that high-income households save a larger fraction of income than low-income

households (Huggett and Ventura, 2000; Dynan *et al.*, 2004; Fan, 2006). Controlling for income and other variables, there is not much of a relation between education level and saving. Other interesting results concern the effects of the variables on planning to give large amounts of money to child(ren) or not being taught to save during childhood: we find that individuals who were not taught to save money or (almost) never received an allowance as a child show higher probabilities of dissaving than others.

Excluding Respondents Who Already Received a Transfer

To analyze whether our results might be in some way driven by those who already received an inheritance or a gift, we conducted a robustness check dropping those who already benefited of a wealth transfer. The models are the same (i.e., we use the same dependent and independent variables), only the sample differs, with the number of observations dropping from 1,250 to 1,183.⁸ In Appendix B, we show results from a probit model without individuals who benefited from a wealth endowment in the previous year. The signs and statistical significance of the coefficients related to the inheritance expectations are confirmed; the marginal effects of inheritance expectations appear to be a little bit higher than results obtained without dropping those who already received an inheritance or a gift.

4.2. *Intentions to Leave a Bequest*

As argued by Stark and Nicinska (2015), it is plausible that the receipt of an inheritance will create an environment that is conducive to making bequests, such that bequeathing will correlate positively with inheriting. However, the argument could also run in the opposite direction: people who did not receive an inheritance and who found it difficult to get on in life without the support provided by an inheritance will not want their children to be subjected to a similar experience. This assumes, of course, that people are altruistic toward their children. Of course, it has to be taken into account that willingness to bequeath can be related to unobservable family norms about bequest, which also affect inheritance expectations. Indeed, Wilhelm (1996) assumes that parents suffer from a fixed psychological cost if they deviate from equal division of postmortem bequests, whereas Laitner (1997) argues that social norms may explain why intergenerational transfers are equally divided between siblings; in families where parents think leaving an inheritance is the norm, children may adopt a similar norm. In such families, parents will more often leave a bequest, and children will expect to do the same. In other words, we should not interpret the relation between inheritance and bequest expectations as necessarily causal.

To analyze the relation between the expectation to receive an inheritance and the intention to leave a bequest, we exploit the question on the chances of leaving a bequest. Details on the bequest variable were already discussed in section 3.3; this is the dependent variable in the new model. The main explanatory variables

⁸The exact wording of the question used to establish whether the respondent already received an inheritance or an inter-vivos transfer is “Did you receive any inheritances and/or gifts in 2015?”

of interest are, as in the previous subsection, our four probabilities of receiving an inheritance or the subjective expected value of the inheritance. Accounting for the nature of the reported probability of the willingness to bequeath, with many respondents reporting zero or one, we use a two-limit tobit model with lower censoring at 0 and upper censoring at 1. Results, reported in Table 6, indicate a positive and significant (at the 1 percent level) relationship between expecting a (large) inheritance and the chances of leaving a bequest. An increase in the probability of receiving an inheritance is associated with a 4.6 percentage points increase in the willingness to bequeath. According to the final column, an increase in the expected inheritance amount by €1,000 is associated with a 0.08 percentage points increase in the probability to leave a bequest.⁹

The tobit results also show that income plays an important role—this seems plausible because richer households have higher chances of leaving a bequest to their relatives. Similarly, we find a positive effect of higher education—which may serve as a proxy for permanent income (university education is the omitted category; the primary education category is very small). Moreover, as expected, being alone in the household implies lower probabilities of leaving a bequest, whereas having children increases bequest intentions.

4.3. Working After Age 62

The effect of wealth on labor market behavior has been extensively analyzed in the literature (Doorley and Pestel, 2020); a wealth endowment may affect labor supply decisions: see Krueger and Pischke (1992), Brown *et al.* (2010), Bloemen and Stancanelli (2001) on early retirement, Bloemen and Stancanelli (2001) on labor market participation, and Imbens *et al.* (2001) and Henley (2004) on hours worked. Expecting an inheritance with a larger probability, or expecting a larger inheritance, implies a larger expected lifetime income. According to the life cycle model and assuming that leisure is a normal good, this will negatively affect labor supply (Joulfaian and Wilhelm, 1994). Bloemen and Stancanelli (2001) found that wealth has a significantly positive impact on the reservation wage and a negative impact on the employment probability. Similarly, wage expectations influence occupational and inter-temporal labor supply decisions as well as consumption and savings decisions; see, e.g., Dominitz (1998) for an analysis of the cross-sectional variation in expectations, revisions of expectations between the spring and the fall of 1993, and the relationship between 1993 expectations and the distribution of earnings realizations in spring 1994.

We exploit the survey question reporting the chances of working at any age greater than or equal to 62 years old to construct a dependent variable reflecting work (or retirement) intentions; details on this variable have been explained in Section 3.4. We use the same regressors as in the previous analysis. Also in this case, we perform a two-limit tobit model (with lower limit 0 and upper limit 1), directly exploiting the chances of working at an age larger than or equal to 62 years. Table 7 presents the results. According to the final column, we find a negative and

⁹We also ran a linear regression; results (not reported) are similar, showing the same positive relation between inheritance expectations and willingness to bequeath.

TABLE 6
CHANCES OF LEAVING A BEQUEST

<i>Dependent variable: Intentions to bequeath</i>					
Probability inheritance	0.0460*** (0.0108)				
Probability inheritance 10k	0.0486*** (0.0131)				
Probability inheritance 25k	0.0557*** (0.0146)				
Probability inheritance 50k	0.0536*** (0.0170)				
Expected value of inheritance	0.0008*** (0.0002)				
Female	0.0019 (0.0069)	0.0016 (0.0070)	0.0006 (0.0070)	0.0008 (0.0070)	0.0008 (0.0070)
Age	-0.0013*** (0.0003)	-0.0014*** (0.0003)	-0.0014*** (0.0003)	-0.0014*** (0.0003)	-0.0014*** (0.0003)
Income(log)	0.0164*** (0.0042)	0.0173*** (0.0042)	0.0173*** (0.0042)	0.0177*** (0.0042)	0.0172*** (0.0042)
<i>Educational levels</i>					
Primary	-0.0063 (0.0213)	-0.0040 (0.0208)	-0.0059 (0.0212)	-0.0065 (0.0215)	-0.0053 (0.0211)
Lower vocational	-0.0384*** (0.0148)	-0.0368** (0.0147)	-0.0371** (0.0147)	-0.0384** (0.0149)	-0.0369** (0.0147)
Intermediate general	-0.0611*** (0.0215)	-0.0584*** (0.0212)	-0.0603*** (0.0214)	-0.0606*** (0.0215)	-0.0602*** (0.0214)
Intermediate vocational	-0.0548*** (0.0158)	-0.0539*** (0.0158)	-0.0535*** (0.0157)	-0.0536*** (0.0158)	-0.0534*** (0.0157)
Higher vocational	-0.0168 (0.0114)	-0.0157 (0.0114)	-0.0169 (0.0114)	-0.0173 (0.0115)	-0.0164 (0.0114)
Retired	0.0530*** (0.0083)	0.0524*** (0.0083)	0.0521*** (0.0083)	0.0510*** (0.0083)	0.0523*** (0.0083)
Single	-0.0284*** (0.0106)	-0.0284*** (0.0106)	-0.0280*** (0.0106)	-0.0291*** (0.0107)	-0.0280*** (0.0106)
Child(ren)	0.0669*** (0.0153)	0.0671*** (0.0154)	0.0671*** (0.0153)	0.0672*** (0.0154)	0.0672*** (0.0153)
No money support to child	-0.0651*** (0.0095)	-0.0652*** (0.0095)	-0.0644*** (0.0095)	-0.0652*** (0.0096)	-0.0647*** (0.0095)
No allowance as child	-0.0018 (0.0073)	-0.0004 (0.0074)	-0.0008 (0.0073)	-0.0014 (0.0074)	-0.0006 (0.0073)
No SaveTeach as child	-0.0412*** (0.0128)	-0.0432*** (0.0130)	-0.0432*** (0.0130)	-0.0439*** (0.0131)	-0.0431*** (0.0130)
Observations	1,250	1,250	1,250	1,250	1,250
Left-censored observations	140	140	140	140	140
Right-censored observations	234	234	234	234	234
Uncensored observations	876	876	876	876	876
Log-likelihood	-585.4633	-587.8127	-587.4397	-589.9531	-587.2920

Notes: Tobit model. Marginal effects reported. Standard errors in parentheses. * $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

TABLE 7
IMPACT OF INHERITANCE EXPECTATIONS ON PROBABILITY OF WORKING

<i>Dependent variable: Probability of working</i>					
Probability inheritance	-0.0374 (0.0293)				
Probability inheritance 10k		-0.0383 (0.0339)			
Probability inheritance 25k			-0.0936** (0.0382)		
Probability inheritance 50k				-0.1117** (0.0452)	
Expected value of inheritance					-0.0013** (0.0006)
Female	-0.1707*** (0.0243)	-0.1708*** (0.0243)	-0.1693*** (0.0242)	-0.1687*** (0.0242)	-0.1690*** (0.0242)
Age	-0.0049*** (0.0011)	-0.0049*** (0.0011)	-0.0046*** (0.0011)	-0.0047*** (0.0011)	-0.0046*** (0.0011)
Income(log)	0.0499*** (0.0157)	0.0498*** (0.0157)	0.0506*** (0.0156)	0.0503*** (0.0156)	0.0505*** (0.0156)
<i>Educational levels</i>					
Primary	-0.4876** (0.1943)	-0.5029*** (0.1931)	-0.5158*** (0.1905)	-0.5110*** (0.1914)	-0.5133*** (0.1909)
Lower vocational	0.0348 (0.0322)	0.0344 (0.0323)	0.0297 (0.0328)	0.0330 (0.0322)	0.0312 (0.0325)
Intermediate general	0.0086 (0.0384)	0.0068 (0.0388)	0.0076 (0.0383)	0.0102 (0.0378)	0.0082 (0.0382)
Intermediate vocational	-0.0246 (0.0312)	-0.0248 (0.0312)	-0.0267 (0.0312)	-0.0267 (0.0312)	-0.0266 (0.0312)
Higher vocational	0.0107 (0.0268)	0.0096 (0.0270)	0.0081 (0.0269)	0.0089 (0.0268)	0.0082 (0.0269)
Retired	-0.7630*** (0.1287)	-0.7592*** (0.1314)	-0.7640*** (0.1291)	-0.7588*** (0.1332)	-0.7641*** (0.1290)
Single	0.0060 (0.0262)	0.0061 (0.0262)	0.0024 (0.0264)	0.0032 (0.0263)	0.0029 (0.0264)
Child(ren)	0.0127 (0.0309)	0.0114 (0.0309)	0.0093 (0.0306)	0.0088 (0.0306)	0.0095 (0.0306)
No money support to child	0.0104 (0.0262)	0.0109 (0.0262)	0.0108 (0.0261)	0.0129 (0.0260)	0.0115 (0.0261)
No allowance as child	-0.0618** (0.0299)	-0.0634** (0.0303)	-0.0678** (0.0304)	-0.0687** (0.0305)	-0.0687** (0.0305)
No SaveTeach as child	0.0137 (0.0287)	0.0155 (0.0284)	0.0123 (0.0287)	0.0147 (0.0283)	0.0133 (0.0285)
Observations	535	535	535	535	535
Left-censored observations	118	118	118	118	118
Right-censored observations	123	123	123	123	123
Uncensored observations	294	294	294	294	294
Log-likelihood	-350.9093	-351.0861	-348.6549	-348.5993	-349.0029

Notes: Tobit model. Marginal effects reported. Standard errors in parentheses. * $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

significant effect of the expected inheritance on the probability of working at any age greater than or equal to 62 years, in line with what we would expect if leisure is a normal good: an increase in the expected amount inherited by €1,000 reduces the probability to work after age 62 by approximately 0.13 percentage points. Using the separate inheritance probabilities gives effects in the same direction, but not always significant.

An additional result of interest is the gender difference: *ceteris paribus*, women have lower chances of working after age 62 than men have, in line with the lower labor market participation rate and larger prevalence of part-time work among women.

4.4. *Sensitivity Check*

One possible concern could be wondering whether and how well a linear measure of the probabilities works, given how large the spikes at 0, 50, and maybe also 100 percent are in the expectations distribution. For this reason, we created a set of dummy variables (probabilities equal to 0, 0–50 percent range, exactly 50 percent, and greater than 50 percent), and we use them as independent variables. Results are reported in Table 8 and show that, even when replacing the subjective probability by a set of dummies, the qualitative conclusions remain the same. The probability to save generally falls with the probability of receiving an inheritance and in particular, the effect of the 50 percent category is in line with this pattern. It seems the main thing is whether the probability of an inheritance is below 0.5 or at least 0.5.

For the probability to leave a bequest, the pattern is also monotonic and in line with the earlier results. Here the main effect is that of going from probability 0 to a positive probability of leaving an inheritance. The category of a 50–50 answer does not seem special. For the probability of working past age 62 we do not find any significant effect, in line with the earlier finding that the probability of receiving an inheritance was not significant here (cf. Table 7).

5. SUMMARY AND CONCLUSIONS

In this paper we investigated whether and to what extent expecting an inheritance acts as a driver of economic choices. In particular, we focused on the effects on savings, on the intention to leave a bequest, and on the intention to work at any point in time after reaching age 62. We used Dutch survey data with a specific module designed to extract subjective probabilities on expectations of receiving an inheritance and the size of such an inheritance during the next 10 years.

Our results imply that individuals perceive an expected inheritance as a potential increase of personal wealth, in line with the life cycle model. Expecting an inheritance reduces savings and increases the chances to dissave. Moreover, the larger the reduction, the larger is the expected inheritance. Second, inheritance expectations are positively related to the intention to leave a bequest, keeping other variables constant. This is in line with the literature and can be due to the role of family norms. Finally, in line with the notion that expecting an inheritance increases expected lifetime income and leisure is a normal good, larger chances of a (large) inheritance reduce the probability to work at a later age. These results are robust for the choice

TABLE 8
SENSITIVITY CHECK WITH DUMMY VARIABLES

	Model [1]	Model [2]	Model [3]
0 < Inheritance probability < 50	-0.0004 (0.0311)	0.0291*** (0.0074)	-0.0015 (0.0278)
Inheritance probability = 50%	-0.0865* (0.0502)	0.0337*** (0.0073)	-0.0566 (0.0403)
Inheritance probability > 50%	-0.1011** (0.0407)	0.0374*** (0.0066)	-0.0249 (0.0321)
Female	0.0488** (0.0245)	0.0034 (0.0069)	-0.1701*** (0.0244)
Age	-0.0040*** (0.0011)	-0.0010*** (0.0003)	-0.0049*** (0.0011)
Income(log)	0.0514*** (0.0135)	0.0159*** (0.0042)	0.0509*** (0.0157)
<i>Educational levels</i>			
Primary		-0.0011 (0.0198)	-0.4953** (0.1939)
Lower vocational	-0.0285 (0.0658)	-0.0344** (0.0144)	0.0355 (0.0323)
Intermediate general	0.0029 (0.0675)	-0.0563*** (0.0209)	0.0116 (0.0378)
Intermediate vocational	-0.0198 (0.0659)	-0.0510*** (0.0154)	-0.0209 (0.0310)
Higher vocational	-0.0457 (0.0675)	-0.0145 (0.0112)	0.0121 (0.0268)
University	0.0171 (0.0649)		
Retired	0.0168 (0.0308)	0.0545*** (0.0083)	-0.7654*** (0.1280)
Single	-0.0870*** (0.0332)	-0.0293*** (0.0106)	0.0041 (0.0264)
Child(ren)	0.0296 (0.0405)	0.0623*** (0.0150)	0.0093 (0.0309)
No money support to child	-0.0695** (0.0311)	-0.0623*** (0.0094)	0.0135 (0.0263)
No allowance as child	-0.0203 (0.0253)	-0.0011 (0.0073)	-0.0625** (0.0299)
No SaveTeach as child	-0.0753** (0.0351)	-0.0393*** (0.0126)	0.0124 (0.0296)
Observations	1,250	1,250	535
Left-censored observations		140	118
Right-censored observations		234	123
Uncensored observations		876	294
Log-likelihood	-584.5615	-580.4885	-349.8812

Notes: Model [1]: Dependent variable: Saving = 1, Not saving = 0. Probit model. Model [2]: Dependent variable: Intentions to bequeath. Tobit model. Model [3]: Dependent variable: Probability of working. Tobit model. Marginal effects reported. Standard errors in parentheses. * $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

of the sample and the measure of inheritance expectations. For example, treating 50 percent answers differently hardly makes a difference, even though the literature on subjective probabilities suggests that 50–50 answers may reflect something else than a 50 percent probability.

All in all, our results convincingly show that subjective probabilities of inheritance receipt have predictive power for economic outcomes and intentions that are robust and in line with theoretical predictions, providing support for the use of the subjective probability reports in empirical models of economic behavior.

Our results have implications for public policy. Following the argument of Niimi and Horioka (2018), the fact that the receipt of transfers from parents or parents-in-law increases the likelihood to leave a bequest contributes to the persistence or widening of wealth disparities. The taxation of inheritances and financial transfers will reduce the bequest motive for saving and the motive to save to financially assist children or others and will reduce the intergenerational persistence in wealth differences. Our results imply that they also have indirect effects on the behavior of the recipients: persistence of wealth inequality can be reduced by taxing intergenerational transfers, but if the recipients respond to this by saving more or working more and retiring later (as they expect a smaller inheritance), the effect will be partly undone.

We are aware that this work has several limitations that should be kept in mind when considering the results: we cannot claim that all the effects we find are causal—there might be issues of endogeneity, for example, related to unobservable features of parents (e.g., propensity to save, health status, age, and economic situation) that might shape inheritance expectations. Future research is needed to study the causal mechanisms in depth, considering other financial aspects such as debts, equity, and investments.

Moreover, our results for savings are based on using a discrete savings measure (dissaving, saving, or neither saving nor dissaving). A continuous measure of saving (or the saving rate) does not lead to significant results. We think this is due to the measurement errors in savings or income in our survey data. Linking the survey data to administrative data on income, savings, and wealth could be a useful future refinement of our analysis.

A third limitation is the cross-section nature of our data on inheritance expectations. It would be interesting to see how inheritance expectations change over time and how these dynamics relate to life cycle saving patterns, for example, in response to actually receiving an inheritance or to receiving a substantial inter-vivos transfer. This would also require better data on inter-vivos transfers, which seem particularly important in the Dutch context due to the tax rules for gifts and inheritances. The fact that our analysis is specific to the Dutch institutional context is, of course, also a limitation—inheritance expectations and their role for economic decisions might be different in different countries, although we expect that our general conclusion that inheritance expectations matter for economic decisions will remain valid.

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Appendix S1 Supporting Information

Appendix S2 Supporting Information