A cross-country study of saving and spending in retirement

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Abstract

Using an experimental survey, we elicit the importance of alternative saving motives during retirement for soon to retire individuals in Australia and the Netherlands. The experimental task comprises two stages. First, we elicit the importance of saving motives via vignettes that differ in combination of income, wealth and (by the participant advised) consumption pattern. Next, we repeat this in case of a major life event such as becoming frail and / or losing a spouse. We examine rational, behavioral and psychological explanations for saving in retirement. The cross-country experimental framework allows us to investigate the importance of the institutional settings, that is the amount of liquid, opposed to annuitized, pension wealth. Findings suggest that institutional settings are generally not associated with an increase or decrease in the importance of a saving motive. However, institutional settings do seem to be important in case of a major life event. In addition, our results indicate that, even after controlling for a rich set of explanatory variables, individual and country specific effects remain important in explaining why soon to retired individuals want to hold on to (or increase) their wealth during retirement.

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1 Background and motivation

Recent empirical studies show that retirees hold on to their assets and keep on saving well into their later years (e.g. Dynan et al. (2004) for the United States; van Ooijen et al. (2015) for the Netherlands; Wu et al. (2015) for Australia). These studies showing the absence of dis-saving by the elderly contradict the strong theoretical support for the smoothing of consumption over the life-cycle (Modigliani and Brumberg (1954) and related papers over the past 60 years). This paper investigates reasons why individuals close to retirement may hold on to their wealth by using the Netherlands and Australia as proxies for an income-driven and wealth-driven systems respectively.

The retirement saving (accumulation phase) and income (decumulation phase) sphere is one where there typically is government policy influencing individual's choice. This can be done by restricting choice by mandating (for example minimum contribution levels), directing choice by tax policies (tax favourable treatment of retirement savings) or by nudging (defaults). The aim of government policies could be to reduce welfare spending (by reducing the need of reliance on the social welfare net in retirement) and/or to improve social welfare by preventing individuals to make choices which substantially reduces their lifetime utility (due to for example inertia or hyperbolic discounting). The positive effect of government policies is reduced in case individuals underspend in retirement. Therefore, understanding the motives to underspend in retirement is important to potentially enhance the retirement saving and income government policies.

Globally there has been a shift from defined benefit (DB) to defined contribution (DC) retirement savings system (Bateman and Piggott 2010). This gives individuals more choice, but also more responsibility and (investment and lifetime) risk exposure. Therefore, the importance of alternative savings motives in retirement might be dependent on the institutional setting. Despite taking decades (i.e., current retirees have not been in a DC system their whole working life) before the full impact of the institutional settings on the saving motives to reveal, the use of an experimental survey allows us to directly investigate the effect of institutional effects of the importance of alternative savings motives.

The Australian DC system - often referred to as "superannuation guarantee" - is introduced in 1992. It is a mandatory universal workplace pension system under which every employee over 18 with an income of more than 450 dollars per month accumulates at least 9.5% of their salary in a pension account. Retirees can choose to take a lump sum, a phased withdrawal product, or a term or life annuity. Most take non-annuitised products (Bateman and Piggott 2010). This second pillar is accompanied by a first pillar means-tested public Age pension, and by third pillar voluntary saving. The Dutch DB system exists since 1922.[1] There is no required minimum retirement contribution and legislation mandates the annual tax favored maximum accrual of pension rights. Benefits are paid as a lifetime pension. Most pension plans aim for a gross replacement rate of 70% of the average career salary (including public pension benefits) for an individual with at least 40 years of (full-time) employment (Knoef et al. 2016).

Despite opposite retirement savings systems in both Australia and the Netherlands, retirees have conservative drawdown patterns. Wu et al. (2015) analyze eight years of data from Centrelink (Australian government agency which delivers a range of so-

[1] In 1992 the pension fund for employees of the government was founded.

cial security government payments) and describe the income, asset and decumulation patterns of more than 10,000 pensioners who receive a payment from the first-pillar means-tested Age Pension. They show that, on average, consumption stays low, even among the wealthier households with substantial superannuation assets and that some poorer retirees appear to consume even less than the first pillar Age Pension payment. Similarly, van Ooijen et al. (2015) find that elderly Dutch on average keep large amounts of assets even at a very old age, leaving large bequests. They find large initial differences in the level of wealth held among different health groups and between couples and (widowed) singles, but no major differences in the decumulation pattern for the different health groups.

Although some explanations have been put forward to understand this retirement-savings puzzle of the elderly (see, e.g. Wärneryd (1995); De Nardi et al. (2016)), the emphasis in the literature has been on empirical analysis of rational explanations or theoretical models. There has been little consideration of behavioral or psychological explanations yet an increasing number of studies suggest that these may be important to explain individual's financial choices for (retirement) saving and spending (Shefrin and Thaler 1988; Canova et al. 2005; Beshears et al. 2011).

We fill a gap in the literature by investigating why people hold on to, or even increase, their wealth during retirement. We analyze the influence of institutional factors such as the flexibility of retirement wealth compared to life long pension streams in the observed differences in preferences. We examine the relative importance of alternative saving motives based on rational, behavioral and psychological explanations and assess the influence of major life events, such as a health shock or losing a spouse, in the reasons to save.[2] We do so by conducting an experimental survey of retirement saving and spending decisions of soon to retire households in Australia and the Netherlands. The different institutional framework for decumulation in Australia and the Netherlands (Bateman et al. 2016b), have the potential to provide important insights into the retirement-savings puzzle. That is, Australian retirees typically have a more flexible and liquid phased withdrawal retirement savings account while Dutch retirees are required to take lifetime annuities.

The remainder of this paper is structured as follows. Section 2 provides a brief literature review of the rational, behavioral and psychological reasons to why individuals may hold on to their wealth. Section 3 describes the structure of the experimental survey and the different treatments implemented. Section 4 presents the model description and results. Section 5 concludes.

2 Saving motives of the elderly

There has been considerable attention in the academic literature to identify, describe, and categorize saving motives for different types of households (Keynes 1936; Katona 1975; Browning and Lusardi 1996; Canova et al. 2005). In an economic context, saving is mostly treated as residual unspent income (Lunt and Livingstone 1991; Wärneryd 1999) which does not necessarily correspond to how ordinary people think of saving

[2]Throughout this paper we will use saving motives also to indicate reasons to hold on to your wealth.

according to Katona (1975). He alleges that ordinary people think of saving as to actively put money in bank accounts as, for example, a protection against future insecurities. Nyhus (2002) provides empirical evidence in favor of this statement. From an economist point of view, the difference between active or passive (residual) savings might be negligible. However, from a psychological point of view this is most certainly not as framing matters. According to Wärneryd (1995), an individual can interpret the question "Do you save money" in two ways: "Do you actively put money aside?" or "Do you have money over [at the end of the month]?".

Wärneryd (1995) suggests that five motives could be relevant in explaining the (dis) saving behavior of the elderly. The elderly continue earlier saving habits, save as matter of precaution, save to bequeath (either for altruistic or exchange motives), do not dissave because of liquidity constraints, or save because they expect (even) lower income in the future. According to De Nardi et al. (2016) the saving motives of the elderly essentially break down into two categories: precautionary savings for risks the elderly face (such as lifespan uncertainty or uncertain medical - out of pocket - expenditure) and the bequest motive. There has been, however, little consideration in the economic literature of behavioral or psychological explanations, despite an increasing number of studies suggesting that these may be important (Shefrin and Thaler 1988; Canova et al. 2005; Beshears et al. 2011).

The remainder of this section will provide a brief review of the literature on saving motives that might be of interest for the elderly.[3] We divide the saving motives into three categories, namely (economic) rational, behavioral, and psychological explanations.

2.1 Rational saving motives

The rational saving motive which has gained most attention in the literature is the precautionary savings motive for risks elderly face, such as uncertain lifetimes, income and medical expenditures.[4] Early work by Davies (1981), using actual income and survival data from Statistics Canada, shows a negative impact of uncertain lifetimes in dis-saving of the elderly. De Nardi et al. (2009) using the AHEAD (Assets and Health Dynamics of the Oldest Old) dataset combined with a model developed in De Nardi et al. (2010), show that, by means of two sets of simulations, that when the risk of living longer than five years is eliminated all of the individuals deplete their net worth by the end of the fifth year. On the contrary, most individuals facing uncertain lifespans still have significant asset holdings after five years even when facing the most pessimistic survival prospects. The importance of precautionary savings wealth for the elderly is also empirically confirmed by Kennickell and Lusardi (2004), using a direct question about precautionary wealth from the 1995 and 1998 waves of the Survey of Consumer Finances in the United States.

The bequest motive could also be of importance. The role of inter generational transfers, both post-mortem and inter-vivos, has gained considerable attention in the economics

[3]Notice that these different motives are not necessarily mutually exclusive, although recent research in by Beshears et al. (2011) suggest that some individuals do treat these as mutually exclusive.

[4]Zeldes (1989), Caballero (1990), and Weil (1993) extended the theoretical conditions of the two-period framework by Leland (1968), Sandmo (1970) and Dreze and Modigliani (1972) under which non diversifiable (income) risk leads to higher saving.

literature (Alessie and Kapteyn 2001; Masson and Pestieau 1997). However, there is a lack of consensus on why people leave a bequest, as pointed out by Poterba (2001) and others. Some argue that bequests are mainly accidental (Hurd 1989) as the elderly keep a buffer as a result of life-span risk. Others believe that bequests are intentional (Alessie et al. 1995; Laferrère and Wolff 2006) and motivated by inter-generational altruism. In these models well-off parents will help finance their children's higher education (Laitner and Juster 1996), but parents will discriminate on the basis of their children's income (Hochguertel and Ohlsson 2009). Another strand of models is motivated by 'a joy of giving'. In these (egoistic) models, parents derive utility from the amount they spend on their children but do not take the utility the child derives from the resulting transfer into account (Hurd 1989).

Lastly, elderly may save during retirement due to liquidity constraints. Most studies in the literature of retirees aggregate assets in the household portfolio (including housing) thereby implicitly assuming that households can easily liquidate their housing wealth by means of, for example, second mortgages or reversed (annuity) mortgages. We observe, however, a general consensus in the academic literature that the elderly are not willing to give up their houses (Banks et al. 2012; Fisher et al. 2007; Caro et al. 2012), unless in case of divorce, widowhood, or nest leaving by children (Suari-Andreu et al. 2015; Sabia 2008). Therefore, the willingness to stay put may be a reason for elderly to save during retirement since most of their wealth is in the house they live in.

2.2 Behavioral saving motives

Since the behavioral life-cycle hypothesis first gained prominence (Shefrin and Thaler 1988) behavioral explanations have gained considerable attention. For this study relevant explanations are the tendency to delay the decision making process, that is, procrastination, habit formation (e.g. Alessie and Lusardi (1997)) and mental accounting (Shefrin and Thaler 1988; Thaler 1999).

The effect of procrastination has recently gained attention in the behavioral economics literature as a possible explanation to why individuals stick to defaults in regards of retirement planning. Beshears et al. (2009) argue that procrastination may be caused by the complexity of the choices to be made or by individuals' problems with self-control. More recently Brown and Previtero (2014), using three administrative datasets, show that procrastinators[5] are more likely contribute less to their 401(k) and are less likely to participate in a supplemental savings plan. On top of that they are more likely to choose the default option of their retirement plan (Brown et al. 2016).

There is a clear distinction between habit (formation) in the economics and psychology literature. In psychology, habits implies a tendency towards repetitive and routine behavior (Wärneryd 1999; Loibl et al. 2011), whereas in economics the concept of habit formation relies more on the idea that the utility of current consumption might be affected by one's own past consumption (Alessie and Lusardi 1997). There is considerable empirical evidence of the existence of habit formation. For example, Guariglia and Rossi (2002) using the British Household Panel Survey (BHPS) suggest that past consumption changes are important in determining current changes in consumption. More

[5]Brown and Previtero label individuals as procrastinators if they wait until the last day to make an active choice of a health care plan.

recently, Alessie and Teppa (2010) using the DNB Household Survey find evidence in favor of habit formation, although the magnitude of habit formation coefficient is small. In the same vein, the psychology literature validate the (independent) role of habit in regular saving deposits using a Self-Report Habit Index (Verplanken and Orbell 2003; Loibl et al. 2011).

Two other behavioral features proposed by Shefrin and Thaler (1988) are mental accounting (set of cognitive operations used by individuals to organize, evaluate and keep track of financial activities) and framing. According to Thaler (1999) three components of mental account received most attention in the 80's and 90's. First, framing of gains and losses, choice bracketing (loss hurts less if it can be combined with a larger gain), and diversification heuristics (asset allocation an investor chooses will depend strongly on the array of funds offered in the retirement plan).

2.3 Psychological saving motives

The psychology literature suggests that individuals find more abstract goals, such as self-esteem or self-gratification, more important than concrete motivations to save (Canova et al. 2005). It suggests as well that money may be viewed as a buffer against social risks (Engelberg and Sjöberg 2007).

Canova et al. (2005) using a dataset consisting of 97 British adults identified fifteen salient motives as a cognitive scheme of which the more concrete motivations (saving for a better house, a new car, or "availability of money" - a buffer) can be found at the bottom of the hierarchy while at the top more abstract goals (self-esteem, or self-gratification) are present. This aligns with the early work of Yamauchi and Templer (1982) who identify, using an experimental setting, three dimensions to explain the attitude towards money. The first is "power and prestige", or alternatively purchasing items or accumulating wealth to impress others and increase your self-esteem, the second and third are "time-retention" and "security", which can be interpreted as placing value to preparing for future goals or security.

Overall, the psychology literature suggests that there is a tendency to view money as a protection against the kind of vulnerability that is inherent to social involvement (Yamauchi and Templer 1982; Furnham 1984). Examples of risks are, the loss of trust and confidence in others because of their dubious schemes, or loss of autonomy and consequent dependence upon other people. In addition to these risks, individuals may save to protect themselves against a change in pension rules. Diamond (1994) note that the effect of reforms in the pension system can be twofold: first, they can provide solution to existing social risk, or it can generate such risks. Since political risks are an inherent part of any pension scheme according to Barr and Diamond (2006), individuals may experience discomfort with them. van Dalen and Henkens (2015) find, using a regular survey with a representative sample of the Dutch population, that Dutch have reduced their trust pension funds, banks and insurance companies after the global financial crisis. This perception of the institutions may have an impact in the saving behavior.

3 The experimental survey

Individuals from a representative sample in the Netherlands and individuals sampled from a large commercial web panel of Australians, were invited to participate in an experimental survey. The experiment had several objectives. The first objective was to investigate the effect of the liquidity of wealth (that is, lifetime income versus liquid wealth) on preferred consumption patterns and saving motives. The second objective was to analyze the role of implied endorsement. The third objective of the experiment was to assess the effect of the possibility of a future health shock on the preferred consumption patterns and saving motives.[6]

The methodology we use to address our research questions is that of a stated-choice experiment using vignettes. Vignettes, when used in research, consists of a hypothetical story in order to elicit information on preferences or anticipated behavior (Louviere et al. 2000). Vignette experiments have long been used in social sciences (van Beek et al. 1997) and are suitable for cross-country analysis (e.g. King et al. (2003); Kapteyn et al. (2007)). Our vignette consists of short descriptions of hypothetical retirement scenarios and households. Hypothetical households are used, so that respondents in different countries (with different retirement income systems) can evaluate the same choice set. For example, in Australia the age pension is mean-tested, whereas in the Netherlands it is universal. Another advantage of the vignette methodology is that respondents whose actual situation differs can still answer the questions.

For the Netherlands, we use the LISS panel and the CentER panel, which together include over 5,000 households. One member in the household provides the household data and updates this information at regular time intervals. In addition, panel members are selected with the help of Statistics Netherlands in order to be representative of the Dutch population. These households agree to respond to survey questions on a regular basis. We are only interested in individuals close to retirement as these should be thinking about retirement decisions. Therefore, only individuals aged 50-64 and not yet retired receive an invitation to participate which reduce the Dutch sample to 1,798 eligible household members. Participants in Australia were recruited via the commercial web panel provider 'TEG rewards' which includes over 1,000,000 panel members and were paid around $4 to complete the survey. The (stratified) sample comprised 1,004 people aged 50-64 and not yet retired.

3.1 Survey overview

The survey consisted of five parts. The first part collected information on demographics (household composition, age of the participant and partner if applicable, employment status of the participant and partner if applicable). This part of the survey was only conducted in Australia, as this information was already available in the LISS and CentER panel. The remainder of the survey was conducted in both countries, although some questions were not asked to the LISS or CentER panel participants, as they were available as background variables. The second part was the experimental task which is

[6] A static version of the Dutch survey which was fielded in the Netherlands in December 2016 is available at "Dutch version of the survey.pdf" and a static version of the English survey which was fielded in late March 2017 is available at "English version of the survey.pdf"

explained in detail in Subsection 3.2, 3.3 and 3.4.

We test whether individual's knowledge of retirement planning and future orientation influence retirement saving behavior by including questions relating to planning and future time perspectives from Jacobs-Lawson and Hershey (2005), time preference and planning horizon from Fisher and Montalto (2011) as well as questions on risk attitude from Dohmen et al. (2011). Life expectancy beliefs have an influence in retirement planning since people who underestimate their life expectancy are more likely to retire early, save too little and not purchase longevity protection (van Solinge and Henkens 2009; Bateman et al. 2016a). Participants are asked to answer questions on the subjective life expectancy beliefs for them and their partner from Teppa et al. (2015).

There has been a trend recently to add psychological personality tests such as the Big Five to economic analysis (e.g. Borghans et al. (2008)). In this vein, we ask the participants to answer the ten-item personality inventory (TIPI) instead of the much lengthier original version (Gosling et al. 2003).[7] We complement the analysis by including a measure of pension capability which combines the scores of the big three financial literacy questions from Lusardi and Mitchell (2011) supplemented by financial competence questions from Agnew et al. (2013) and numeracy questions from Lipkus et al. (2001).

However, it is not clear to which extent it can be considered that economic preferences are due to cultural differences solely. For instance, Weber (2013) argues that there are differences in the willingness to take risks which are linked to the country of origin and religion. Finally, we ask respondents to provide details of their cultural and educational background. The remainder of this section discusses the design of the vignettes in the experimental task (second part of the experimental survey).

3.2 The vignette task

Each participant is shown eight different vignettes. Each vignette differs in the characteristics of the hypothetical households (see Section 3.2.1). For each of the vignettes the participant is asked to (a) advise their preferred consumption stream, and (b) in two rounds of best / worse choice sets indicate which savings motives accompany this decision. The decision to save (or to hold on to wealth) and the amount of wealth to consume is, most likely, made at the same time. Thus, we could also have changed the order (ask (b) first and (a) second). However, the saving preferences for the participant might not fully align with the saving motives presented in the experiment. To prevent this mismatch influencing the stated consumption pattern preference, our approach is to ask (a) before (b).

3.2.1 Net present value of retirement savings of vignette households

To construct vignettes' household income and wealth, participants are allocated into four categories. For participants within a category all households in all vignettes have the same net present value (NPV) of retirement savings, but the liquidity of retirement

[7] The authors argue that the TIPI can be used for situations where short measures are needed when the personality is not the primary topic of interest.

savings differs in the eight vignettes (see Section 3.3). The categorization is based on participant's gross household income as shown in Table 1. Categorization takes place to prevent alienation from the wealth and income combinations presented in the experiment and to study the impact of retirement savings on saving motives.[8] The cut-off points in Table 1 are set so that they align with the quartiles of the gross household income which correspond to the LISS and CentER panel members. This information was available before the experiment. Using the Purchasing Power Parity (PPP)[9], the cut-off points in Table 1 are converted to Australian dollars. In the Australian experimental survey quotas are used to obtain a roughly even distribution of participants across gross household income categories.

Table 1: Categorization of the gross household income into income groups for the Netherlands (Australia).

	participant's income		**vignette household wealth**	
			NPV of pension wealth	saving wealth
1	less than	€41,250 ($70,000)	€168,000 ($291,000)	€8,400 ($14,550)
2	€41,250 ($70,000)	≤ €60,000 ($105,000)	€543,000 ($940,500)	€27,150 ($47,050)
3	€60,000 ($105,000)	≤ €81,750 ($140,000)	€880,500 ($1,524,000)	€462,275 ($76,200)
4	more than	€81,750 ($140,000)	€1,420,500 ($2,458,500)	€71,050 ($122,950)

The value of the vignette household pension wealth (saving for retirement) and savings wealth (other savings) are set using the available information on the net (median) household income of couples for each of the groups in the Dutch dataset. The pension wealth at retirement is calculated in two steps. First, we calculate the "additional lifetime income". That is the difference between the current net median household income[10] for the income group and the statutory age pension for couples.[11] Second, we calculate the current value for this annuity product and use this as the pension wealth at retirement using an annuity factor of 30. Furthermore, their savings wealth is the maximum of five percent of their pension wealth, or three months worth of their monthly net household income. The corresponding wealth and income combinations in australian dollars are set by converting euros to australian dollars using the PPP (OECD 2015b).

3.2.2 Task 1: advising spending patterns to vignette households

In each vignette, the participant can advise the household a consumption pattern out of five alternatives.[12] The five spending patterns are the same in all eight vignette for a

[8]For example, if a participant with a yearly income of 20,000 euros has to evaluate a hypothetical household with a yearly income of 60,000 euros, it is unlikely that we can capture the participant's preferences with the vignettes presented.

[9]The Purchasing Power Parity rates allows us to "... equalize the purchasing power of different currencies by eliminating the differences in price levels between countries." (OECD 2015b).

[10]Please note that we assume that the replacement rate (pension entitlement divided by the pre-retirement earnings) is equal to 1, based on the net replacement rate in the Netherlands (OECD 2015a).

[11]As we do not restrict our sample to couples only, we implicitly assume that participants without a partner are capable of assessing the (financial) preferences of a hypothetical household consisting of two persons.

[12]In order to keep this experiment comprehensible, participant can only choose between constant consumption patterns. It would be of interest to analyze the effect of decreasing (increasing) consumption throughout the retirement. This, however, is beyond the scope of this paper.

participant. However, the spending patterns differ between participants as it is aligned to the household income group category in Section 3.2.1. To help the participant fully understand the consequences of each consumption pattern, we included information on the remaining wealth at the age of 65, 75, 85, and 95. Figure 1 shows an example of the set of spending patterns offered to a household.

Figure 1: Spending patterns for a household in the first income group with middle income and middle wealth (see Section 3.3.1).

Lifetime income	
Annual	Fortnightly
$36,050	$1,387

	Spending		Wealth			
	Annual	Fortnightly	At age 65	At age 75	At age 85	At age 95
Spending Plan 1	$42,700	$1,642	$152,775	$86,275	$19,775	$0
Spending Plan 2	$40,650	$1,563	$152,775	$106,775	$60,775	$14,775
Spending Plan 3	$36,050	$1,387	$152,775	$152,775	$152,775	$152,775
Spending Plan 4	$31,450	$1,210	$152,775	$198,775	$244,775	$290,775
Spending Plan 5	$29,900	$1,150	$152,775	$214,275	$275,775	$337,275

3.2.3 Task 2: saving motives for the vignette household given spending pattern

Based on the literature, we constructed an initial extensive list of 19 possible saving motives. To prevent cognitive exhaustion while maintaining econometric power, we reduced the list to 10 saving motives when designing the vignette-based experimental task. The selection of 10 saving motives out of the initial 19 possible savings motives was done using the results of a pre-test survey which asked subjects to rank the importance of the 19 saving motives (see Appendix A). Table 2 consists the list of the 10 saving motives used in the vignette together with their in text name.

To further prevent cognitive exhaustion of the participant, we only present a subset of five saving motives in each vignette. These motives are taken from the list of 10 saving motives at random with replacement with the restriction that there should be three rational motives and two psychological motives. The ordering of these five motives is determined randomly. Moreover, to prevent cognitive exhaustion of the participant the subset of five savings motives is the same across the first four vignettes and the same across the last four vignettes.

3.3 Participants heterogeneity in the eight vignettes

Three features of the characteristics of the hypothetical household varies across the eight vignettes each participant faces in the experimental survey. In the first three vignettes the extent to which retirement savings are liquid differs (see Section 3.3.1). In the fourth vignette we introduce implied endorsement (see Section 3.3.2). In the last four vignettes the hypothetical household's health expectations differs (see Section 3.3.3). For a participant, these last four vignettes all have the same liquidity of the retirement savings, but the liquidity of the retirement savings differs between participants.

Table 2: Saving motives used in the vignettes.

name	**text in vignette**
rational	
precautionary	wants to ensure that they will be able to finance any unforeseen expenditures other than health an daged care expenditures
precautionary health	wants to ensure that they will be able to finance unforeseen health and aged care expenditures
life-span risk	wants to ensure that they will not outlive their wealth
intended bequest	wants to ensure that they will be able to leave a bequest to their dependents or estate
liquidity	wants to ensure that they have enough cash on hand at any time
intra-household bequest	wants to ensure that if they die, their partner is able to maintain his/her standard of living
psychological	
autonomy	wants to ensure that they remain financially independent
security	wants to ensure that they have enough money to have peace of mind
self-gratification	wants to ensure that they are able to enjoy life now as well as later
political risk	wants to ensure that they are protected against a change in the superannuation / pension rules

3.3.1 Liquidity of retirement savings (vignette 1-3)

In the first set of four vignettes, hypothetical households have the following characteristics. The household consists of two recently retired individuals aged 65. They are in good health and expect to stay so at least until they reach the age of 70. They own the house they live in (without a mortgage), and do not have any plans to move or sell the house. If one of them dies, the widow(er) would receive less pension income. The reduction in pension income corresponds to a proportional decrease in expenditures. The households in the first three vignettes differ in the liquid wealth available and lifetime income.

In the first three vignettes we vary the liquid wealth and income combinations. The gross household income groups (Table 1) are used to construct four between subjects treatment. Based on the income group, subjects are allocated a level of total retirement savings which consist of liquid wealth plus the net present value of lifetime income. The three within subject treatments are the extent to which retirement savings are liquid, that is, which proportion is provided as a lifetime income stream. Hence, there are 4*3 = 12 liquid wealth and income combinations of which each participant is shown three.

Using a participants allocated pension and savings wealth (see Table 1), the wealth and income combinations are constructed as follows: (Ia) [high wealth, low income]: the lifetime income consists of the statutory age pension complemented by savings wealth which is annuitised. The wealth solely consists of the pension wealth. (Ib) [low wealth, high income]: the lifetime income consists of the statutory age pension complemented by the pension wealth which is annuitised. The wealth solely consists of the savings wealth (Ic) [middle wealth, middle income]: the lifetime income consists of the statutory age pension complemented by the average between the pension and savings wealth which are annuitised. The wealth consists of the average between the pension and savings wealth. These three different wealth and income combinations are presented to participants at random.

Note that the available wealth and lifetime income combinations correspond to the country specific pension characteristics. In the Netherlands, second pillar pension con-

tributions are generally converted into a lifetime income stream, whereas Australian retirees receive their superannuation accumulation at the age of retirement as a lump sum based on their accumulated pension contributions.[13] Therefore, (Ia) mimics the financial situation of a household based on the Dutch pension arrangement, which is likely to have a high lifetime income and low pension wealth, and is compared to (Ib) which corresponds to the financial situation of a household based on the Australian system where the opposite holds. Note that in the experiments subjects in both countries receive treatments (Ia), (Ib), as well as (Ic).

Whereas (Ia) and (Ib) correspond to country specific systems, (Ic) corresponds to a potential future direction for both retirement systems. Discussions around the pension system in the Netherlands indicate that the new pension contract should allow for more flexibility while maintaining some intragenerational risk-sharing features (Klijnsma 2015). Similarly, the discussions around retirement income in Australia indicate that more prescription may be introduced in order to encourage products which offer longevity protection (Murray et al. 2014). This suggests that both pension systems could (slowly) converge towards each other in the future. Therefore, the combination (Ic) corresponds to a potential future direction for both retirement systems and is calculated as the average of the wealth and income based on the Dutch and Australian pension systems. Alternatively, (Ic) could also be interpreted as a system in transition, where individuals have had some years of pension accrual in a DB setting and some years in a DC setting (which is, for example, representative for the United States).

3.3.2 Inclusion of implied governmental endorsement (vignette 4)

A potential instrument for governments to alter spending and savings decisions without restricting individuals' choices is using implied endorsement. We include a fourth vignette in which the hypothetical household is obliged to withdraw a minimum amount each financial year from their account in order to qualify for a tax exemption at the age of retirement. The results of this vignette, however, will not be used in our analyzes. Hence, we will not describe this vignette in more detail.

3.3.3 Future health expectation (vignettes 5-8)

The third and last set of vignettes consists of four vignettes of hypothetical households. Each of these households again consists of two recently retired individuals aged 65. They own the house they live in (without a mortgage), and do not have any plans to move or sell the house. If one of them dies, the widow(er) would receive less pension income. The reduction in pension income corresponds to a proportional decrease in expenditures.

The design of this set of vignettes is a between subject treatment of the liquidity of wealth (in addition to the between subject treatment of retirement wealth) and a within subject treatment of future health expectations. Hence, for this set of vignettes, participants are once randomly allocated to vignettes where households either have a

[13] For a thorough investigation on the similarities and differences between the Dutch and Australian pension system, we refer to Bateman et al. (2016b).

low wealth and high income, or high wealth and low income.[14] For each participant the households in the four vignettes, differ in (III) their health expectations for the future.

We consider four different health expectations (from good to bad) for the future. The first (hypothetical) household expects that both of them will remain healthy, at least until the age of 75. The second household, on the contrary, expects that within 10 years one of them will develop some difficulties with activities of daily living (ADL). The third household expects that one of them will die within 10 years, but that the survivor will remain healthy at least until the age of 75. The fourth household expects that one of them will die within 10 years, and that the partner will develop some ADL limitations.

3.4 Derivation of the alternative consumption patterns and relation to income stream treatment

The consumption patters are based on, and include, the yearly income streams derived in Section 3.3.1. The highest consumption pattern that the participant can choose is 105% of the high income stream. The other options are ranked from high consumption to low(est) consumption, consumption equal to high income, a consumption pattern equal to middle income, the consumption stream equal to low income, and yearly consumption equal to 95% of the low income stream. Notice that if the household in the vignette receives a low income and the participant state a preferred consumption stream equal to middle income, the wealth of the household decreases each year. If the household runs out of wealth, they have to adjust their consumption level to their income. According to this example, the household has to reduce their consumption to their low income.

4 Model description and results

This section discusses the model and results. First, we present the model used to explain the importance of saving motives. Second, the analysis sample is described together with the descriptive statistics on the advised spending pattern, importance of the saving motives, and the relevant covariates. Finally, the estimation results are discussed.

4.1 A model to assess the importance of the saving motives

Our data is obtained from treatments $t = 1, \ldots, 3, 5, \ldots 8, 5H, \ldots, 8H$, referring to the vignettes as discussed in Section 3, with $t = 5H, \ldots, 8H$ referring to high liquidity vignettes 5 to 8 (high wealth, low income) whereas $t = 5, \ldots, 8$ refer to low liquidity vignettes 5 to 8 (low wealth, high income). We investigate the effect of various (unobserved) determinants on the respondent's decision to indicate the importance of a saving motive. In this paper, we focus on the effect of the country of residence, liquidity of wealth, and future health expectations, while controlling for a rich set of explanatory

[14] We abstain from the middle income and middle wealth because of survey time restrictions and to prevent lack of explanatory power due to too many between subject treatments.

variables. These consist of personal characteristics of the respondent (e.g. gender), as well as personality traits.

In the econometric analysis we assume that individuals are utility maximizers. Since we only observe the ranking of the saving motives, the utility is a latent variable and thus the underlying decision process is unobserved. The starting point of the empirical specification is therefore a single index latent variable (U^*). The importance of a saving motive m ($m = 1, \ldots, 10$) for individual i ($i = 1, \ldots, N$) and for treatment t is assumed to be determined by individual characteristics X_i, the individual's (advised) spending pattern S_i, a set of nuisance parameters $A_{i,t}$, and an individual specific term μ_i^m capturing unobserved individual characteristics.

$$U_{i,t}^{m,*} = U_{i,t}^{m,*}(X_i, S_i, A_{i,t}, \mu_i^m)$$

A set of binary variables S_i, indicating advised spending pattern is included, where 1 indicates that the respondent selected spending pattern s ($s = 1, \ldots, 5$) in treatment t and zero otherwise. To account for different advised spending patterns per treatment, there are [5*3 + (5*4)*2 - 1 =] 54 binary variables for the spending pattern, i.e. $S_i \coloneqq [S_{i,1,1}, \ldots, S_{i,1,5}, S_{i,2,1}, \ldots, S_{i,2,5}, \ldots, S_{i,8H,5}]$ where $S_{i,t,s}$ equals 1 if individual i selected spending pattern s in treatment t. Similarly, we model $A_{i,t}$ as a set of 10 binary variables $A_{i,t,m}$ indicating whether individual i saw saving motive m in treatment t[15], i.e. $A_{i,t} \coloneqq [A_{i,t,1}, \ldots, A_{i,t,10}]$. Our model reads as follows:

$$U_{i,t}^{m,*} = \beta_1^m X_i + \beta_2^m S_i + \beta_3^m A_{i,t} + \mu_i^m + \epsilon_{i,t}^m$$

where β_1^m measures the effect of individual characteristics $U_{i,t}^{m,*}$ for saving motive m. The influence of the spending pattern and vignette[16] for saving motive m is captured by β_2^m, whereas the impact of the nuisance term is determined by β_3^m. The unmeasured (and immeasureable) effects on the decision process, $\epsilon_{i,t}^m$, are assumed to be normally distributed with mean 0 and variance $\sigma_{\epsilon^m}^2$. The random component is normally distributed with mean 0 and variance $\sigma_{\mu^m}^2$, and independent of $\epsilon_{i,t}$ for all m and t.

The saving motive importance is analyzed using an ordinal scale (from $k = 1$: 'least important' to $k = 5$: 'very important').[17] The observed ratings per saving motive m and treatment t, $R_{i,t}^m$ are linked to the latent variable using

$$R_{i,t}^m = k \iff \nu_{k-1}^m < U_{i,t}^{m,*} \leq v_k^m,$$

where for each m the threshold parameters $-\infty = \nu_0^m < \nu_1^m < \ldots < \nu_4^m < \nu_5^m = \infty$ are estimated empirically, thus are, per saving motive, implicitly assumed to be the same for all respondents. Identification is achieved by restricting the constant term to

[15] Nuisance parameters, modeled as binary variables, are included to account for the different choice sets of saving motives (in total there are [20*4 =] 120 different possibilities) a respondent faces. It could be that some motives are of less importance when another (different) motive is included in the choice set. Our results appear to be robust to a specification without nuisance parameters, see Table 11.

[16] As the spending pattern includes the vignette, a vignette (dummy) variable itself is redundant.

[17] Formally, a saving motive was assigned value 5 (4) if the motive was most preferred in the first (second) round of best / worse, whereas a value 1 (2) was assigned if the motive was least preferred in the first (second) round of best / worse. The 'non-preferred' motive was assigned value 3.

zero and $\sigma^2_{\epsilon^m}$ to 1. This is the specification of a random effects ordered probit (REOP) model. Estimation of the model can be conducted using standard software (e.g. Stata) - see Greene and Hensher (2010) for details about the estimation procedure.

4.2 Data and descriptive analysis

The initial sample includes data on 2,802 respondents, of whom 1,798 Dutch were invited to participate via Dutch LISS / CentER panel[18], and 1,004 Australians were recruited via the commercial web panel provider 'TEG rewards'. Australian participants were allocated to an income category based on the screening questions at the start of the survey. Dutch participants were allocated to the income category based on already available information on gross household income - see Section 3.1. The Dutch participant for whom information on gross household income was missing were allocated to an income category at random. The goodness of the (pre-) allocation was checked afterwards based on the survey answer. Severely mismatched participants that were (randomly) allocated an income category differing at least two positions from their self-reported income category were excluded from the analysis sample. Preliminary analysis suggested that survey responses of the severely mismatched participants (138 out of 1,669), differed statistically significant from those who were not severely mismatched. Also respondents who afterwards turned out not to be eligible to participate (e.g. retirees), or with missing information on relevant covariates, see Table 3, were excluded. This reduced the sample to 2,420 (1,437 Dutch, and 983 Australian) respondents.

In the analysis sample, see Table 4, Australian respondents tend on average to have more children living at home, a higher homeownership rate, and a higher subjective life expectancy than respondents from the Netherlands. The Dutch, however, are more often born in the country they currently live in, and tend to consider themselves more often a member of a church or religion. They also tend to be more confident in how the first and second pension pillar work, compared to Australians. This is most likely driven by the differences in the first-pillar pension. Australia's first pillar is means-tested, whereas Dutch is universal. Regarding the other personality related measures, Australians tend to perform better in the pension capability related questions,[19] be more conscientious, and future oriented (patient). However, Australians are also more impulsive regarding financial matters, and slightly more risk seeking than their Dutch counterparts.[20]

Table 5 contains the percentages of advised spending pattern per treatment and country. Participants increase the wealth of the hypothetical household if they advise spending pattern $s = 5$ for the high liquidity of wealth vignette ($t = 1$). Spending pattern

[18] Out of those 1,798 potential participants, 1,669 finished the experimental task

[19] The pension capability measure is constructed using the financial literacy, numeracy and pension knowledge questions. Australians outperform the Dutch only in the financial literacy questions (around 85% had at most 1 mistake in Australia, compared to 72% in the Netherlands), as the distributions of the numbers of mistakes for the numeracy and pension knowledge question are comparable.

[20] Standardized measures are standardized (mean 0 and standard deviation of 1) using the full analysis sample. However, not all participants ranked all saving motives. As a robustness check we compare the estimates of our main specification to the results when standardization takes place per respondents that ranked the saving motive, see Table 12 in Appendix C. There are hardly any differences in the estimation results.

Table 3: Description of the relevant covariates, X_i.

Covariate	Explanation
Personal characteristics	
male	1 if male, 0 if female
partner	1 if lives together with partner, 0 else
children	1 if respondent has at least 1 child living at home, 0 else
INC_3_4	1 if respondent is in (current) income category 3 or 4, 0 else
homeowner	1 if respondent owns (potentially with a mortgage) the house (s)he lives in, 0 else
religious	1 if respondent considers himself as member of a certain religion or church community, 0 else
born_country	1 if respondent is born in the country (s) lives in, 0 else
SLE1_high	1 if respondent expects to live as least as long as predicted according to Statistics Australia / Netherlands, 0 else
Personality related	
ret_plan	1 if respondent answered 'Yes' to the question: "Have you ever tried to work out how much you need to save for retirement?", 0 else
pens_cap	1 if respondent had less mistakes than the median number of mistake in the analysis sample for both the financial literacy questions (Lusardi and Mitchell 2011), as well as the numeracy questions (Lipkus et al. 2001), and pension literacy questions (Bateman et al. 2017), 0 else.
pens_kno_std	standardized measure comprised of the following questions: "I am knowledgeable about how the Age Pension works" and "I am knowledgeable about how superannuation works."
risk1_std	standardized measure comprised of the following question: "How do you see yourself: Are you generally a person who is fully prepared to take risk or do you try to avoid taking risk?"
imp_fin_be∼d	standardized measure comprised of four questions related to self-controlled behavior in the domain of finances of the participant (Duckworth and Weir 2011)
fut_or_std	standardized measure comprised of twelve questions related to patience / future orientation of the participant (Strathman et al. 1994)
TIPI_Con_std	standardized measure for the personality trait conscientiousness, comprised of the two conscientiousness related questions of the ten-item personality inventory (TIPI) (Gosling et al. 2003)
Country of residence	
AUSTRALIA	1 if respondent took part in the Australian questionnaire, 0 else

$s = 4$ or $s = 5$ leads to an increase in wealth for the middle wealth / middle income vignette ($t = 2$), whereas wealth increases during retirement for the low liquidity of wealth vignette ($t = 3$), if the respondent advised spending pattern $s = 3$, $s = 4$ or $s = 5$. Spending patterns $s = 2$ and $s = 3$ seem to be most popular irrespective of the treatment. The spending pattern distribution for the Dutch is more skewed to the higher spending patterns, in contrast to that of the Australians. Almost 50% (45%) of the Dutch (Australian) respondents did not change the advised spending pattern in the first stage. During the second stage, almost 60% (55%) of the Dutch (Australian) respondents did not change the advised spending pattern.

As expected beforehand, there are differences between the advised spending patterns between countries. For example, if a Dutch respondent is confronted with an unfamiliar institutional pension setting they become less conservative spenders (compare $t = 3$ with $t = 1$), whereas Australian respondents become more conservative spenders (compare $t = 1$ with $t = 3$). If a health shock is likely to occur in the near future in the system they are familiar with, Dutch advise to spend less (compare $t = 5$ with $t = 6$ and $t = 8$), whereas the effects are only minor for Australians (compare $t = 5H$ with $t = 6H$). Moreover we find that if death is expected in the near future respondents become less conservative spenders irrespective of the system they are familiar with (compare $t = 5, 5H$ with $t = 7, 7H$).

Table 6 presents the importance of saving motive per treatment and country. We define a saving motive as important, when it is most preferred in either the first or second round of best / worse. Irrespective of the treatment, the psychological motives (cf. autonomy and self-gratification) appear to be important for the respondents. The importance of rational saving motives differ per country. For example, life-span risk is considered more important in Australia than in the Netherlands. This might be due to Australians being more aware of life-span risk, compared to Dutch who are in a setting where life-span risk is hedged with lifelong annuities. Another example is that intra-household bequest is more important in the Netherlands than in Australia. This might be due to the joint and survivor annuities in the Netherlands[21], which would make the Dutch more aware of the need to leave sufficient wealth for the partner after they pass away. Intended bequest does not seems to be very important for both countries. The liquidity of wealth at the start of retirement ($t = 1$, $t = 2$, and $t = 3$) does not seem to influence the importance of saving motives. However, liquidity of wealth does seem to affect the ranking under different future health expectations ($t = 6, 6H$ and $t = 8, 8H$). The effect of liquidity of wealth on the life-span risk motive for the Australian participants seems counterintuitive. For a hypothetical household with a high liquidity of wealth, Australian participants indicate less often that the life-span motive is most preferred in the first or second round of best / worse, compared to a hypothetical household with a low liquidity of wealth. A closer inspection of the data (not included) reveals that this result is driven by a relative small number of participants, together with changes in the advised spending pattern. Finally, notice that the participants seem to react to health shocks ($t = 6, 6H$) and ($t = 8, 8H$) as the precautionary health motive becomes more important on average.

[21] Accrued pension rights in the Netherlands are typically converted into a life-long income stream - cf. Section 1. The pension benefit consists of an "own" old age pension and survivor benefits. Commonly 70% of the pension benefit is a survivor benefit. However, individuals have the opportunity to increase their "own" old age pension at the cost of the partner pension before their first pillar pension payment and upon mutual agreements of both spouses (Brown and Nijman 2011).

Table 4: Descriptive statistics of the control variables.

	Analysis Sample				The Netherlands				Australia			
	Mean	Sd	Min	Max	Mean	Sd	Min	Max	Mean	Sd	Min	Max
Personal characteristics												
male	0.50	0.50	0.00	1.00	0.50	0.50	0.00	1.00	0.50	0.50	0.00	1.00
partner	0.72	0.45	0.00	1.00	0.71	0.45	0.00	1.00	0.74	0.44	0.00	1.00
children	0.40	0.49	0.00	1.00	0.36	0.48	0.00	1.00	0.45	0.50	0.00	1.00
INC_3_4	0.32	0.47	0.00	1.00	0.31	0.46	0.00	1.00	0.34	0.47	0.00	1.00
homeowner	0.78	0.42	0.00	1.00	0.74	0.44	0.00	1.00	0.83	0.37	0.00	1.00
religious	0.32	0.47	0.00	1.00	0.33	0.47	0.00	1.00	0.30	0.46	0.00	1.00
born_country	0.85	0.36	0.00	1.00	0.92	0.27	0.00	1.00	0.74	0.44	0.00	1.00
SLE1_high	0.49	0.50	0.00	1.00	0.40	0.49	0.00	1.00	0.62	0.49	0.00	1.00
Personality related												
ret_plan	0.42	0.49	0.00	1.00	0.33	0.47	0.00	1.00	0.56	0.50	0.00	1.00
pens_cap	0.35	0.48	0.00	1.00	0.26	0.44	0.00	1.00	0.47	0.50	0.00	1.00
pens_kno_std	0.00	1.00	−188	1.87	0.04	1.05	−188	1.87	−006	0.92	−188	1.87
risk1_std	0.00	1.00	−197	2.40	−004	1.01	−197	2.40	0.06	0.98	−197	2.40
imp_fin_be∼d	0.00	1.00	−194	5.08	−023	0.93	−194	5.08	0.34	1.01	−194	5.08
fut_or_std	0.00	1.00	−418	2.80	−016	0.99	−418	2.80	0.24	0.97	−418	2.80
TIPI_Con_std	0.00	1.00	−411	1.52	−012	1.02	−411	1.52	0.17	0.94	−411	1.52
Country of residence												
AUSTRALIA	0.41	0.49	0.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	1.00
N	2,420				1,437				983			

Table 5: Percentage advised spending pattern by treatment: The Netherlands and Australia

		Treatment (t)										
		$t=1$	$t=2$	$t=3$	$t=5$	$t=6$	$t=7$	$t=8$	$t=5H$	$t=6H$	$t=7H$	$t=8H$
Spending pattern (s)												
The Netherlands												
$s=1$	1.05*[high income]	17.1	15.7	7.9	5.4	5.2	7.2	5.0	15.0	13.0	18.5	17.4
$s=2$	[high income]	42.2	46.2	56.9	58.7	49.7	57.4	50.5	45.7	40.4	42.5	38.2
$s=3$	[middle income]	26.4	30.1	28.3	29.9	38.1	26.7	33.5	24.9	31.8	26.0	28.7
$s=4$	[low income]	8.8	5.4	3.6	2.9	4.2	4.5	6.0	9.9	10.9	9.6	11.1
$s=5$	0.95*[low income]	5.5	2.7	3.3	3.1	2.9	4.2	5.0	4.5	4.0	3.3	4.6
Australia												
$s=1$	1.05*[high income]	12.7	12.3	5.6	5.2	4.4	5.4	4.8	12.1	10.5	13.8	13.6
$s=2$	[high income]	29.4	28.4	34.3	35.8	32.5	39.2	34.1	33.3	32.0	32.9	28.7
$s=3$	[middle income]	29.8	36.6	39.6	41.4	41.8	37.8	40.8	28.5	29.1	27.0	32.0
$s=4$	[low income]	13.5	13.3	11.8	11.5	14.7	12.3	14.5	12.8	14.9	14.0	11.1
$s=5$	0.95*[low income]	14.6	9.4	8.8	6.1	6.7	5.4	5.9	13.4	13.6	12.3	14.6

Notes: Per country, columns add up to 100. Treatments $t = 1, \ldots, 8, 5H, \ldots, 8H$, referring to the vignettes as discussed in Section 3, with $t = 5, \ldots, 8$ referring to vignettes 5 to 8 in low liquidity of wealth (low wealth, high income) whereas $t = 5H, \ldots, 8H$ refers to vignettes 5 to 8 in high liquidity of wealth (high wealth, low income).

Table 6: Percentage saving motive most important in first or second round best / worse: The Netherlands and Australia

		Treatment (t)										
		$t=1$	$t=2$	$t=3$	$t=5$	$t=6$	$t=7$	$t=8$	$t=5H$	$t=6H$	$t=7H$	$t=8H$
Saving motive (m)												
The Netherlands												
Rational												
$m=1$	precautionary	46.5	48.3	48.5	43.5	47.1	44.6	45.1	46.5	51.5	49.6	48.7
$m=2$	precautionary health	53.8	54.2	54.9	50.4	59.9	54.3	60.2	52.8	64.1	53.1	64.6
$m=3$	life-span risk	7.9	5.6	5.6	7.2	8.1	7.8	7.5	6.5	8.3	7.1	9.8
$m=4$	intended bequest	6.1	6.6	6.9	8.2	7.1	6.8	6.2	4.8	3.7	4.8	5.3
$m=5$	liquidity	59.7	58.2	58.3	58.9	62.9	61.5	63.7	57.3	59.5	61.0	56.4
$m=6$	intra-household bequest	52.9	53.9	54.2	51.7	50.4	60.4	59.1	54.9	51.0	60.2	58.8
Psychological												
$m=7$	autonomy	58.9	57.9	58.1	59.9	54.5	54.5	52.6	57.8	53.3	53.5	54.4
$m=8$	security	26.8	27.7	27.4	25.9	22.5	23.6	22.2	26.9	25.1	23.7	22.8
$m=9$	self-gratification	64.0	63.8	63.0	63.5	58.1	60.3	56.2	66.3	62.4	64.4	58.6
$m=10$	political risk	25.9	26.4	25.6	24.8	24.5	20.1	21.5	26.1	20.9	22.7	20.4
Australia												
Rational												
$m=1$	precautionary	45.5	47.9	48.4	42.2	49.0	44.6	49.8	45.7	48.2	41.7	43.7
$m=2$	precautionary health	51.9	51.5	51.3	47.3	49.0	46.1	51.0	52.6	63.8	51.7	59.9
$m=3$	life-span risk	33.0	33.3	31.8	34.2	35.0	30.8	31.3	28.5	26.4	24.8	26.4
$m=4$	intended bequest	8.3	7.5	8.5	6.1	10.6	8.3	7.6	10.1	12.3	11.5	12.3
$m=5$	liquidity	32.1	35.5	33.1	34.2	31.5	31.9	33.1	25.6	30.8	31.6	31.2
$m=6$	intra-household bequest	41.4	40.6	42.5	50.6	49.4	60.7	61.1	46.8	45.6	58.1	51.2
Psychological												
$m=7$	autonomy	56.5	54.9	58.7	58.7	57.6	57.6	50.4	53.5	50.2	53.9	49.8
$m=8$	security	54.9	54.5	53.2	44.1	41.8	44.8	43.7	55.5	52.4	55.0	53.3
$m=9$	self-gratification	63.5	64.7	61.9	62.0	58.0	62.0	56.4	62.3	55.9	56.4	58.1
$m=10$	political risk	14.6	11.4	12.2	20.0	17.4	11.5	14.9	19.4	14.9	15.3	14.5

Notes: A respondent assesses the importance of five saving motives per treatment. The motives that are most important in either the first or second round of best / worse are assigned value 1, while the other three motives are assigned value 0. Next, per saving motive and per treatment, the share of ones in the total number of time a motive is assessed is reported in the table. Per country, columns average is around 40. Treatments $t = 1, \ldots, 8, 5H, \ldots, 8H$, referring to the vignettes as discussed in Section 3, with $t = 5, \ldots, 8$ referring to vignettes 5 to 8 in low liquidity of wealth (low wealth, high income) whereas $t = 5H, \ldots, 8H$ refer to vignettes 5 to 8 in high liquidity of wealth (high wealth, low income). See Table 2 for the full-text saving motives.

4.3 Estimation Results

This section discusses the estimation results. First, we consider the effect of the country of residence and the institutional settings. Second, we quantify these effects on the importance of rational and psychological savings motives. Third, we look more closely to the effect of updated beliefs on future health shocks. We discuss these estimation results only in detail for the precautionary health ($m = 2$), security ($m = 8$), and self-gratification motive ($m = 9$), as the discussion of an additional motive would hardly add any, for this paper relevant, new insights. A discussion of the estimation results for the other saving motives can be found in Appendix B.

4.3.1 The effect of (uncaptured) institutional settings on the importance of saving motives

The main results of the precautionary health ($m = 2$), security ($m = 8$), and self-gratification ($m = 9$) motive are presented in Table 7.[22] Even after controlling for a rich set of covariates (including personal characteristics, personality traits, and institutional pension setting), there still appear to be differences between Dutch and Australian respondents as indicated by the country of residence dummy variable. We interpret this variable as a proxy of uncaptured institutional settings, for example due to social learning. From Table 7 and Table 10 in Appendix B, we observe that the Dutch, ceteris paribus, find the following motives more important than Australians: precautionary, precautionary health, liquidity, intra household bequest, and political risk. Australians, on the other hand, find life-span risk, intended bequest, and security more important.

The first stage dummy variables (Table 7) allow us to control for the institutional pension setting in our model specification. The reference category, $S_{3,2}$, ensures that wealth remains constant throughout retirement for treatment $t = 3$, that is a low liquidity of wealth. Our estimates for advised spending pattern $s = 2$ with a different first stage treatment ($t = 1$ or $t = 2$), are in general not statistically different from the reference category at a 1% significance level - except for the precautionary motive ($m = 1$) for treatment $t = 3$, see Table 10 in Appendix B. The importance for most saving motives are not affected by these dummy variables. However, the precautionary, precautionary health, intended bequest, and self-gratification motive are affected by the (first stage) dummy variables. Advising spending pattern $s = 3$, $s = 4$, or $s = 5$ is, unsurprisingly, associated with an increase in ranking for precautionary, precautionary health, and intended bequest, but with a decrease in ranking for self-gratification. Recall that these spending patterns are, irrespective of the institutional pension setting, associated with a lower consumption which leads to accumulating substantial amounts of wealth during retirement.

Most estimates for a spending pattern (but different treatments) are, however, not statistically significant from each other, even if they are associated with a statistically significant increase, or decrease, in the ordinal ranking of the motive. Compare, for example, the estimates of $S_{1,3}$ with $S_{2,3}$ for the precautionary health motive. Although

[22] It might be the case that the importance of some saving motives are made within an household, rather than per household member. Since the LISS / CentER panel are household panels, this could influence the standard errors of our estimates. Therefore, in Table 13 we cluster on households, rather than on household members. The results are hardly affected.

these estimation results could be driven by a relatively small number of observations per dummy variable (especially for spending pattern $s = 1$ and spending pattern $s = 5$), another interpretation is that the liquidity of wealth at the start of retirement is less important. The significant estimates for precautionary health (and intended bequest, see Table 10 in Appendix B) could then be simply driven by the available wealth at certain ages, whereas the estimates for the self-gratification motive can be explained by the consumption pattern throughout retirement.

4.3.2 Quantifying the effect of direct en indirect institutional settings on the importance of saving motives

Our methodology allows us, via predicted probabilities, to assess the relative importance of different saving motives under different sets of covariates assuming that the random effect term is zero. Table 8 presents the (predicted) probability that a saving motive is in the top two for a reference person.[23] The reference person for the Netherlands and Australia share the same set of characteristics, but differ by country of residence, liquidity of wealth, and advised spending pattern. Recall that advising spending pattern $s = 3$ or $s = 4$ for the low wealth / high income treatment ($t = 3$) implies saving throughout retirement (similar to the empirical findings by van Ooijen et al. (2015) for the Netherlands). Advising spending pattern $s = 3$ or $s = 4$ for the high wealth / low income treatment ($t = 1$) leads to substantial amounts of wealth throughout retirement (similar to the empirical findings by Wu et al. (2015) for Australia).

The columns per treatment and advised spending pattern (compare $t = 1$ with $t = 3$, for a single spending pattern, within a country of residence) in Table 8 indicate how the reference person would change their short term behavior if the pension system would instantaneously change from low liquidity of wealth to high liquidity of wealth, or vice versa. The effects are in general only small or non monotonic, suggesting that changing the retirement would barely change the importance of saving motives in the short run.[24] However, in the long run (when changing nationally, not for only a single individual), as people become more aware of the consequences of the change in system, the importance of saving motive might change due to e.g. social learning, as indicated by the difference between countries.

The results in Table 8 indicate that not only rational motives (precautionary ($m = 1$), precautionary health ($m = 2$), liquidity ($m = 5$), and intra-household bequest ($m = 6$)) are important in understanding why individuals hold on to their wealth. Also the psychological motives autonomy ($m = 7$) and self-gratification ($m = 9$) are important, although often neglected in the economic literature. These results suggest, in addition, that the rational motives life-span risk ($m = 3$) and intended bequest ($m = 4$), and the psychological motive political risk ($m = 10$) are less important in explaining why individuals want to hold on to their wealth. The low ranking of life-span risk is most

[23] The probability that the rating of saving motive m for individual i is strictly larger than 3 is given by $\Pr(R^m > 3) = \Pr(R^m = 4) + \Pr(R^m = 5) = \Phi(\nu_5^m - \mathbf{x}'\beta) - \Phi(\nu_3^m - \mathbf{x}'\beta)$ where $\Phi(.)$ is the cumulative distribution function of a standard normal distribution. Standard errors are calculated using the delta method. See Greene and Hensher (2010) for the details about this procedure.

[24] A noteworthy exception is the increased importance of the precautionary ($m = 1$), autonomy ($m = 7$), and self-gratification ($m = 9$) motive at the cost of precautionary health ($m = 2$), liquidity ($m = 5$), and intra-household bequest ($m = 6$) for high liquidity of wealth ($t = 1$) compared to low liquidity of wealth ($t = 3$) for spending pattern $s = 4$, irrespective of the country of residence.

likely a direct consequence of the advised spending pattern together with the vignette text (see Table 2 for the vignette text). Spending pattern $s = 2$, $s = 3$, or $s = 4$ imply either constant increasing wealth for treatment $t = 3$, or substantial amounts of wealth at later ages for treatment $t = 1$. Hence, its very unlikely that a participant *will outlive their wealth*. Several mechanisms could drive the result of the low importance for the intended bequest motive. For example, changes in social norms over the cohorts. Participants in our experiment could be more egocentric compared to earlier generations. Alternatively, saving motives could not be time invariant. Although our participants indicate at this moment in time that intended bequest is not as important compared to other motives, it may become important later in live. Another explanation is that bequests are not intentional, but accidental (Hurd 1989). The low importance of the psychological motive political risk is most likely driven by other motives that are more important to the household.

A noticeable difference between the Netherlands and Australia, see Table 8, is the predicted importance of the security motive ($m = 8$). Australians may find the security motive more important than the Dutch, as they might have seen elderly without income who completely spent their wealth. In the Netherlands, however, as people accrue income, they will always have additional second pillar pension income. Hence, Australians are more aware of what could happen. A similar explanation holds for life-span risk ($m = 3$). The illiquidity of the second pension pillar has most likely made Dutch more aware of risks (at all ages), whereas Australians are more aware of risk during more advanced ages. Therefore, the liquidity motive ($m = 5$) is of more importance for the Dutch. Also intra-household bequest ($m = 6$) is more important in the Netherlands than in Australia. This might be due to the joint and survivor annuities in the Netherlands. Thereby making them more aware of the need to leave sufficient wealth for the partner after they pass away.

4.3.3 The effect of future health expectancy on the importance of saving motives

The second stage dummy variables, see Table 7, allow us to control for the institutional setting and to assess the effect of future health expectations.[25] Similar to the first stage dummy variables, most estimates are not statistically significantly different from the reference category ($S_{3,2}$). An interesting exception is the negative estimate of $S_{5,2}$ for precautionary health, suggesting that reducing uncertainty about the future health state is associated with a decrease in the importance of that motive in the low wealth / high income setting. Notice that most estimates for treatment $t = 5$ are comparable in size with their first stage counterpart. Consider, as an example, the interaction between spending pattern $s = 3$ and treatment $t = 1$ for the self-gratification motive (that is, $S_{1,3} = -0.138$). The second stage counterpart would be the combined estimates of vignette 5, thus treatments $t = 5$ and $t = 5H$, and spending pattern $s = 3$ (that is, $S_{5,3} + S_{5H,3} = 0.009$). This result was expected beforehand, as the only differences between

[25] The estimates for spending pattern $s = 5$ in the second stage variables are, for some motives, driven by at most 50 observations. Therefore these estimates might behave somewhat surprisingly. Notice that combining these with spending pattern $s = 4$ is not desirable because of the interpretation, as spending pattern $s = 5$ is constructed to indicate an increase in wealth for the high wealth / low income type of vignettes.

treatment $t = 1, 3$ and $t = 5H, 5$ is the age until both members of the hypothetical household expect to remain healthy (cf. Section 3).

Vignette 6 and vignette 8 describe a hypothetical household that expects to develop some ADL limitations within 10 years after retirement. We observe that the importance of the precautionary health motive for spending pattern $s = 3$, $s = 4$ or $s = 5$, which imply saving in the low wealth / high income setting, is comparable to treatment $t = 3$. These spending patterns are hardly affected by the high wealth / low income vignette. However, spending pattern $s = 1$ and $s = 2$ are different. Advising spending pattern $s = 1$ ($s = 2$) at vignette 6 (8) is associated with an increase in importance of the precautionary health motive for the high liquidity of wealth income combination. The importance of the security motive appears in the second stage of the experiment to be negatively affected for other spending patterns and liquidity of wealth, other than the reference category. Suggesting that participants have enough money to have a peace of mind already with relatively small private savings combined with a high guaranteed life-time income.

One of the household members is expected to die within 10 years after retirement for vignette 7 and vignette 8. The inclusion of the dummies related to these vignettes mostly affect the importance of the intra-household bequest and the security motive, see Table 10 in Appendix B. Most dummy variables for the low wealth / high income treatments, (that is, for $t = 5, \ldots, 8$) are associated with an increase in the importance for the low wealth / high income vignettes. A high liquidity of wealth (that is, for $t = 5H, \ldots, 8H$) does hardly seem to affect the (total) point estimate. We interpret this finding as a sign that the importance of the security saving motive might not be driven by the liquidity of wealth. The sign, size, and interpretation of the estimates for the ADL limitations vignettes are comparable to those associated with death of the spouse.

The earlier proposition that self-gratification might be driven by the spending pattern rather than by liquidity of wealth, is not refuted by the second stage dummy variables. Advising spending pattern $s = 3$, $s = 4$ or $s = 5$, is (almost) consistently throughout the different vignette associated with a decrease in importance for the low wealth / high income vignette ($t = 5, \ldots, 8$). For the high wealth / low income vignette, the sign of the (total) estimate is unaffected ($t = 5H, \ldots, 8H$). The positive sign of advising spending pattern $s = 1$ in the high wealth / low income setting can be explained by the substantial additional numbers of years the hypothetical household could hold on to that spending pattern, compared to the low wealth / high income setting.

These results suggest that, in general, liquidity of wealth does not seems to be a substantive contributor for the importance of saving motives at the start of retirement. However, if a health shock would occur in the near future, higher liquidity of wealth is for some motives associated with an increase in importance, especially for precautionary health.

Table 7: Main results. Random Effects Ordered Probit estimates per saving motive.

	$m=2$	$m=8$	$m=9$
AUSTRALIA	-0.278^{***}	1.175^{***}	-0.0310
	(-3.32)	(12.60)	(-0.34)
First stage dummies			
$S_{1,1}$	-0.0430	0.0735	-0.0782
	(-0.40)	(0.66)	(-0.60)
$S_{1,2}$	-0.0126	0.0251	0.0754
	(-0.20)	(0.38)	(1.01)
$S_{1,3}$	0.284^{***}	0.0207	-0.138
	(3.26)	(0.24)	(-1.43)
$S_{1,4}$	0.189	0.0960	-0.300^{**}
	(1.50)	(0.78)	(-2.39)
$S_{1,5}$	0.306^{**}	0.0931	-0.396^{***}
	(2.16)	(0.62)	(-2.77)
$S_{2,1}$	0.0768	0.00983	0.0734
	(0.64)	(0.09)	(0.56)
$S_{2,2}$	0.0236	-0.0683	0.0690
	(0.40)	(-1.14)	(0.94)
$S_{2,3}$	0.272^{***}	0.164^{*}	-0.300^{***}
	(3.16)	(1.85)	(-3.23)
$S_{2,4}$	0.609^{***}	0.212	-0.307^{**}
	(4.49)	(1.44)	(-2.19)
$S_{2,5}$	0.404^{**}	-0.333	-0.524^{***}
	(2.32)	(-1.50)	(-2.96)
$S_{3,1}$	0.0312	-0.113	0.331^{*}
	(0.18)	(-0.59)	(1.87)
$S_{3,2}$	0	0	0
	(.)	(.)	(.)
$S_{3,3}$	0.371^{***}	-0.00275	-0.378^{***}
	(4.35)	(-0.03)	(-3.81)
$S_{3,4}$	0.532^{***}	-0.0749	-0.611^{***}
	(3.39)	(-0.37)	(-3.69)
$S_{3,5}$	0.291	-0.168	-0.420^{**}
	(1.60)	(-0.80)	(-2.20)
Second stage dummies			
$S_{5,1}$	-0.372	0.0340	-0.494
	(-1.44)	(0.13)	(-1.55)
$S_{5,2}$	-0.197^{*}	-0.0844	0.0620
	(-1.94)	(-0.81)	(0.59)
$S_{5,3}$	0.267^{**}	-0.424^{***}	-0.365^{***}
	(2.10)	(-3.70)	(-3.03)
$S_{5,4}$	0.676^{***}	-0.286	-1.009^{***}
	(2.72)	(-1.18)	(-4.36)
$S_{5,5}$	0.736^{**}	-0.317	-0.557
	(2.18)	(-1.22)	(-1.47)
$S_{5H,1}$	0.00177	-0.201	0.657^{*}
	(0.01)	(-0.68)	(1.84)
$S_{5H,2}$	0.137	0.116	-0.0646
	(1.05)	(0.85)	(-0.46)
$S_{5H,3}$	0.0110	0.344^{**}	0.374^{**}
	(0.07)	(2.10)	(2.47)
$S_{5H,4}$	-0.453	-0.0221	0.448
	(-1.50)	(-0.07)	(1.60)
$S_{5H,5}$	-0.438	0.399	-0.00995
	(-1.09)	(1.07)	(-0.02)
$S_{6,1}$	-0.502^{**}	-0.411	-0.136
	(-2.02)	(-1.64)	(-0.48)
$S_{6,2}$	-0.0300	-0.204^{*}	-0.00697
	(-0.28)	(-1.89)	(-0.06)
$S_{6,3}$	0.783^{***}	-0.287^{***}	-0.554^{***}
	(6.08)	(-2.64)	(-4.86)
$S_{6,4}$	0.229	-0.521^{**}	-0.812^{***}
	(0.92)	(-2.44)	(-3.35)
$S_{6,5}$	0.514^{*}	0.0347	-0.857^{**}
	(1.70)	(0.13)	(-2.56)
$S_{6H,1}$	0.562^{*}	0.181	0.334
	(1.80)	(0.62)	(0.99)
$S_{6H,2}$	0.417^{***}	0.0568	-0.0441
	(3.01)	(0.42)	(-0.30)
$S_{6H,3}$	0.0817	0.108	0.104
	(0.50)	(0.72)	(0.71)
$S_{6H,4}$	0.409	0.294	0.189
	(1.32)	(1.07)	(0.69)
$S_{6H,5}$	0.324	-0.00724	0.0631
	(0.84)	(-0.02)	(0.17)
$S_{7,1}$	-0.273	-0.121	-0.363^{*}
	(-1.18)	(-0.57)	(-1.77)
$S_{7,2}$	-0.0157	-0.264^{***}	0.0347
	(-0.15)	(-2.66)	(0.30)
$S_{7,3}$	0.384^{***}	-0.340^{***}	-0.540^{***}
	(3.06)	(-2.81)	(-4.51)
$S_{7,4}$	0.473^{*}	-0.131	-0.736^{***}
	(1.71)	(-0.54)	(-3.14)
$S_{7,5}$	0.171	-0.0830	-0.264
	(0.57)	(-0.29)	(-0.67)
$S_{7H,1}$	0.263	-0.0581	0.640^{**}
	(0.97)	(-0.24)	(2.47)
$S_{7H,2}$	0.0814	0.0920	-0.0135
	(0.64)	(0.67)	(-0.09)
$S_{7H,3}$	-0.179	0.281^{*}	0.149
	(-1.10)	(1.69)	(0.95)
$S_{7H,4}$	-0.351	0.0253	0.194
	(-1.06)	(0.08)	(0.69)
$S_{7H,5}$	0.697^{*}	-0.281	-0.272
	(1.81)	(-0.80)	(-0.61)
$S_{8,1}$	-0.197	0.472^{**}	-0.426
	(-0.77)	(2.26)	(-1.49)
$S_{8,2}$	0.104	-0.276^{**}	-0.156
	(0.98)	(-2.57)	(-1.36)
$S_{8,3}$	0.597^{***}	-0.485^{***}	-0.501^{***}
	(4.56)	(-4.17)	(-4.46)
$S_{8,4}$	0.446^{**}	-0.0346	-0.563^{***}
	(2.28)	(-0.14)	(-2.79)
$S_{8,5}$	0.376	-0.397	-0.728^{***}
	(1.28)	(-1.25)	(-2.92)
$S_{8H,1}$	0.485^{*}	-0.520^{**}	0.491
	(1.66)	(-2.09)	(1.46)
$S_{8H,2}$	0.357^{**}	0.170	-0.0169
	(2.48)	(1.18)	(-0.11)
$S_{8H,3}$	0.0626	0.363^{**}	-0.0274
	(0.38)	(2.26)	(-0.18)
$S_{8H,4}$	0.00614	-0.167	-0.0946
	(0.02)	(-0.56)	(-0.38)
$S_{8H,5}$	0.552	-0.215	0.0936
	(1.50)	(-0.58)	(0.28)
Random effect			
$\widehat{\sigma}^2_{u,m}$	1.689^{***}	2.007^{***}	1.949^{***}
	(16.64)	(16.81)	(16.97)
ρ	62.8%	66.7%	66.1%
Control var.	Yes	Yes	Yes
Nuisance par.	Yes	Yes	Yes
Threshold par.	Yes	Yes	Yes
Groups	1,770	1,785	1,813
Observations	8,279	8,390	8,541
Log-likelihood	-10735.6	-10707.8	-10581.2

Notes: *, ** and *** denote significance at 90%, 95%, and 99% respectively. t-statistics clustered by individual in parentheses. Recall that $m=2$ denotes the precautionary health motive, $m=8$ the security motive, and $m=9$ the self-gratification motive. See Table 10 in Appendix B for the other saving motives. Control variables: personal characteristics and personality related cf. Table 3.

Table 8: Predicted probabilities (%) and corresponding standard error (*100) in brackets of a reference person for ranking a saving motive as most important in either first or second round of best / worse. Reference person vary by country of residence, liquidity of wealth, and advised spending pattern.

		Country of residence											
		The Netherlands						*Australia*					
		Treatment (t)						Treatment (t)					
		$t=1$			$t=3$			$t=1$			$t=3$		
		Spending pattern (s)			Spending pattern (s)			Spending pattern (s)			Spending pattern (s)		
		$s=2$	$s=3$	$s=4$	$s=2$	$s=3$	$s=4$	$s=2$	$s=3$	$s=4$	$s=2$	$s=3$	$s=4$
Saving motive (m)													
Rational motives													
$m=1$	precautionary	46.7	50.4	64.8	53.1	52.7	55.3	39.7	43.3	58.0	46.0	45.5	48.2
		(12.0)	(12.3)	(11.9)	(11.7)	(12.2)	(13.0)	(12.0)	(12.4)	(12.9)	(12.1)	(12.5)	(13.5)
$m=2$	precautionary health	58.8	69.8	66.4	59.3	72.7	77.8	47.7	59.5	55.7	48.2	62.8	68.7
		(13.0)	(11.9)	(12.8)	(12.7)	(11.3)	(10.8)	(13.7)	(13.6)	(14.3)	(13.5)	(13.2)	(13.2)
$m=3$	life-span risk	1.3	1.4	1.5	1.5	1.5	1.8	15.3	16.0	16.6	16.2	16.5	18.1
		(1.2)	(1.3)	(1.4)	(1.3)	(1.3)	(1.7)	(8.5)	(8.9)	(9.5)	(8.6)	(9.0)	(10.4)
$m=4$	intended bequest	0.2	0.4	0.1	0.1	0.4	0.4	0.4	0.7	0.2	0.2	0.7	0.7
		(0.2)	(0.5)	(0.2)	(0.2)	(0.5)	(0.5)	(0.5)	(0.9)	(0.3)	(0.3)	(0.9)	(0.9)
$m=5$	liquidity	71.1	63.4	60.5	67.1	64.9	71.0	36.6	28.9	26.3	32.4	30.2	36.4
		(10.5)	(11.8)	(12.6)	(10.9)	(11.6)	(11.5)	(12.0)	(11.1)	(11.0)	(11.2)	(11.3)	(12.9)
$m=6$	intra-household bequest	63.6	64.7	61.0	65.3	65.4	70.7	46.9	48.1	44.2	48.8	48.8	54.8
		(12.2)	(12.3)	(13.3)	(11.8)	(12.2)	(12.4)	(13.4)	(13.6)	(14.0)	(13.1)	(13.5)	(14.6)
Psychological motives													
$m=7$	autonomy	63.6	57.8	70.6	63.3	63.1	58.2	65.1	59.3	71.9	64.8	64.6	59.7
		(14.0)	(14.7)	(13.5)	(13.7)	(14.2)	(15.8)	(14.1)	(15.0)	(13.6)	(13.9)	(14.4)	(16.0)
$m=8$	security	12.2	12.1	13.7	11.7	11.6	10.3	50.4	50.2	53.2	49.4	49.3	46.4
		(7.5)	(7.5)	(8.4)	(7.1)	(7.3)	(7.4)	(15.2)	(15.3)	(15.7)	(14.9)	(15.4)	(16.9)
$m=9$	self-gratification	87.8	82.9	78.5	86.2	76.2	68.4	87.2	82.1	77.6	85.5	75.2	67.3
		(7.6)	(9.6)	(11.3)	(8.1)	(11.8)	(14.3)	(8.1)	(10.2)	(11.9)	(8.6)	(12.4)	(14.9)
$m=10$	political risk	7.4	7.4	13.4	7.4	7.8	9.0	2.0	2.0	4.3	2.0	2.1	2.5
		(4.8)	(4.9)	(7.9)	(4.8)	(5.1)	(6.2)	(1.7)	(1.7)	(3.4)	(1.7)	(1.8)	(2.3)

Notes: Reference person is constructed under the following input: male = 1, partner = 1, children = 1, INC_3_4 = 1, homeowner = 1, religious = 0, born_country = 1, SLE1_high = 0, ret_plan = 1, pens_cap = 1, other (standardized) variables equal zero. Nuisance parameters have value 0.5 and we abstain from the random effects (formally, we use the mean random effects which equals zero). Per country, columns average is around 40. Treatments $t=1$ (high wealth, low income) and $t=3$ (low wealth, high income) refer to vignettes 1 and 3 as discussed in Section 3. See Table 2 for the full-text saving motives.

5 Conclusion

Recent empirical studies in the United States (Dynan et al. 2002), the Netherlands (van Ooijen et al. 2015), and Australia Wu et al. (2015), show that retirees do not draw down their wealth during retirement, contradicting the strong theoretical support for the smoothing of consumption over the life-cycle (Modigliani and Brumberg 1954). The current paper investigates reasons why individuals close to retirement may hold on to their wealth by using the Netherlands and Australia as proxies for income-driven and wealth-driven systems respectively. The Netherlands mandates that retirement income is paid as a lifelong payment stream whereas Australia gives individuals more freedom of choice. More freedom of choice, however, leads to more responsibility and more exposure to investment risk and life-span risk for the individual.

We analyze the importance of rational, psychological and behavioral saving motives in Australia and the Netherlands using an experimental survey which comprises two stages. First, we present four hypothetical households (vignettes) that vary in the combination of income and wealth - mimicking the Dutch and Australian institutional settings. We ask participants to advise a consumption pattern along with the most and least important reasons to advise such a pattern. Second, we ask participants to repeat this exercise when a major life events is introduced, such as losing a spouse or become frail. The experimental task is complemented by a set of questions that control for pension capabilities, personality traits and background information of the participant. Our design allows us to investigate the importance of the institutional setting, that is the liquidity of wealth during retirement.

We observe a twofold effect of the institutional setting. It appears that different income and wealth combinations do affect the advised consumption pattern in the two countries considered. For instance, Dutch respondents become less conservative on average if they have a large liquidity of wealth at retirement, whereas Australian respondents become more conservative in a setting with low availability of wealth and high income. On the other hand, our estimation results suggest that most saving motives are not affected by the interaction terms between the institutional setting and advised spending pattern. Yet, some are affected by the interaction terms in absence of major life events. Here, advising consumption patterns that imply low consumption (or saving) are associated with an increase in the ranking for the precautionary, precautionary health and intended bequest motive, and a decrease in ranking for self-gratification motive.

Major life events seem to have an impact on advised saving pattern and saving motives as suggested by our estimation results. We observe that a health shock is associated with an increase in importance of the precautionary health motive for the high liquidity of wealth vignette. Similarly, if one of the household members is expected to die within 10 years after retirement significantly affects the importance of the intra-household bequest and the security motive, irrespective of the liquidity setting. Overall, these results suggest that the liquidity of wealth, as a proxy for the institutional setting, does not seem to be a substantive contributor standalone for the importance of saving motives at the start of retirement. Health shocks combined with availability of wealth, do seem to be associated with an increase in importance of some motives, such as precautionary health.

Predicted probabilities for Dutch and Australian reference persons that behave in cor-

respondence with the empirical results by van Ooijen et al. (2015) for the Netherlands and Wu et al. (2015) for Australia, indicate that the most important reasons to hold on to their wealth are precautionary health, intra-household bequest, and self-gratification for the Dutch and precautionary health, self-gratification, and security for Australians. In contrast to, for example, De Nardi et al. (2016), our results suggest that intended bequest and life-span risk are unlikely to be important for the reference person irrespective of the, country dummy, advised spending pattern, and the institutional setting. This different result might be driven by an unobserved cohort effect.

Finally, our estimation results suggest that individual effects are important as the fraction of the unexplained variation captured by the individual effects varies between 54.6% (for the precautionary motive) and 72% (for the intended bequest motive). Furthermore, we observe that there still appear to be differences between Dutch and Australian respondents. These results hint towards that, despite controlling for a rich sets of covariates that control for individual characteristics and institutional effects, there still are country-specific drivers for saving during retirement that remain unexplained.

From a policy perspective, our results suggest that the availability of wealth, our proxy for the institutional setting, hardly influence the ranking of saving motives. This could be interpreted that individuals do not respond as expected to changes in the liquidity of wealth at the start of retirement. Furthermore, the high effect of individual characteristics suggests that a medium to high annuitisation rate with limited choice might be desirable from a policy perspective in order to accommodate for the observed heterogeneity and to protect individuals for themselves.

Based on the work presented in this paper, at least three important directions for future research can be identified. First, lifetime consumption and saving decisions are complex choices for individuals. The effect of implied endorsement, which may alter decisions for a substantial proportion of individuals (Benartzi and Thaler 2007), could be analyzed with the (not in detail discussed) implied endorsement vignette. Second, the decision to save (or to hold on to wealth) could be made at the same time. Our current analysis allows to study associations between the former and the latter. A possible extension could be to estimate a structural model which assumes that the spending pattern and saving motive is a combined decision. Third, in this paper individuals are asked to choose between different constant spending patterns before indicating their preferred saving motives. An interesting extension is to analyze preferences for saving motives for non constant patterns (e.g. higher consumption at the start of retirement, followed by less spending later).

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A Pre-test results

A.1 Background and methodology

The review of the literature on possible motives that could influence spending and saving behavior of individuals during retirement, see Section 2, resulted in 19 possible motives to hold on to the wealth. These motives were labeled as rational, behavioral or psychological as indicated in Table 9. In order to prevent cognitive exhaustion while maintaining econometric power, we reduced the list to 10 saving motives using the results of a pre-test survey.

The pre-test was fielded to a sample of 100 people aged 50 and over in each of Australia and the Netherlands in September/October 2016 using the commercial web panel providers Pureprofile in Australia and Survey Sampling International (SSI) in the Netherlands. We showed the participants 9 sets with 10 statements which are factors that could influence their spending and saving behavior when they are retired. The participants had to first choose in each set the statement that they found most and least important for them to continue saving during retirement. Then they had two make the same choice among the remaining 8 statements, that is, they had to choose the second most and second least important motive. An example of one of the sets shown is highlighted in Figure 2.

Figure 2: Question asked in the pre-test

Set 1 of 9

MOST important reason to save	2nd MOST important reason to save	Reasons to save	2nd LEAST important reason to save	LEAST important reason to save
○	○	You want to **ensure** that you have enough money at hand to help your children finance their house (or other unforeseen events).	○	○
○	○	You want to **ensure** that you will have sufficient savings to cover unforeseen expenditures and intend to leave any unused savings as a bequest to your dependents or estate.	○	○
○	○	You want to **ensure** that you will be able to leave a bequest to your dependents or estate.	○	○
○	○	You want to **ensure** that you remain financially independent.	○	○
○	○	You want to **stick** to what you are used to because you tend to delay making decisions.	○	○
○	○	You want to **ensure** that if you die, your partner is able to maintain his/her standard of living.	○	○
○	○	You want to **ensure** that your spending level remains constant over time.	○	○
○	○	You want to **ensure** that you have enough cash on hand at any time	○	○
○	○	You want to **ensure** that you will be able to finance unforeseen health and aged care expenditures.	○	○
○	○	You want to **ensure** that you are protected against a change in the superannuation/pension rules.	○	○

A.2 Results

Table 9 provides an overview of the results of the best-worst analysis of the 19 saving motives for the 100 respondents in Australia and in the Netherlands. We observe that the precautionary, precautionary health, liquidity, intra-household bequest, second silo, autonomy, security, self-gratification and political risk score in both countries among the

Table 9: Best-worst analysis of the 19 saving motives.

	Reasons to save	Australia	The Netherlands
	Rational		
✓	wants to ensure that they will be able to finance any unforeseen expenditures (excluding health and aged care expenditures). [precautionary]	2075	1418
✓	wants to ensure that they will be able to finance unforeseen health and aged care expenditures. [precautionary health]	1931	1631
✓	wants to ensure that they will not outlive their wealth. [Life-span risk]	1567	997
✓	wants to ensure that they will be able to leave a bequest to their dependents or estate. [(intended) Bequest]	853	1015
✓	wants to ensure that they have enough cash on hand at any time [Liquidity]	2098	1610
✓	wants to ensure that if one of them dies, the other is able to maintain his/her standard of living. [Intra-household bequest]	1583	1413
	want to ensure that they have enough money at hand to help their children financing their house or with other (unforeseen) events. [inter-vivos]	900	1060
	Behavioral		
	wants to ensure that the amount of total wealth remains constant over time. [habit formation]	1142	1068
	wants to ensure that the level of their monthly savings remains constant over time. [habit formation]	1294	1048
	wants to ensure that their spending level remains constant over time [habit formation]	1260	1077
	wants to stick to what they are used to because they tend to delay making decisions. [Procrastination]	914	1060
	Silo		
	wants to ensure that they will have savings in one account to leave a bequest to your dependents or estate and savings in another account for unforeseen expenditures. [Silo #1]	988	1078
	wants to ensure that they will have sufficient savings to cover unforeseen expenditures and intend to leave any unused savings as a bequest to your dependents or estate. [Silo #2]	1380	1292
	Psychological		
✓	wants to ensure that they remain financially independent. [Autonomy]	2506	1543
	wants to ensure that their wealth continues to increase. [Speculation]	1012	1017
✓	wants to ensure that they have enough money to have peace of mind. [Security]	2804	1317
	wants to ensure that they have enough money so that they feel they have been successful in life. [Self-esteem]	787	1054
✓	wants to ensure that they are able to enjoy life now as well as later. [Self-gratification]	2339	1516
✓	wants to ensure that they are protected against a change in the superannuation/pension rules. [Political risk]	1367	1536

top 10. As expected, life-span risk scores among the top 10 only in Australia whereas the first silo motive scores among the top 10 only in the Netherlands.

A quick look to the table indicates that motives categorized as rational and psychological are those which seem more popular for Australians and Dutch. We note as well from the analysis that intended bequest does not score among the top 10 reasons to save in both Australia and the Netherlands. As expected, life-span risk scores higher in Australia

(top 8) than in the Netherlands, where it is the least preferred saving motive. This aligns with the fact that few retired households purchase lifetime payments in the form of annuities, exposing themselves to the risk of outliving their wealth. On the other hand, political risk scores much higher in the Netherlands (top 4) than in Australia (top 10). This aligns with our expectations as countries where annuities are paid out are more exposed to the political risk that indexation of benefits will vary the actual pension payments during retirement. Following the results presented above we decided upon the list of saving motives accompanied by a ✓in Table 9.

Note that in this list we do include the intended bequest motive, even though it did not score as high as it would have been expected (top 18 out of 19 for both countries). However, we see that respondents do have a bequest motive as indicated by the fact that the silo motives score among the top 10 motives. The silo motives are those that provide the choice to combine precautionary and bequest motives. We decided to drop the two silo questions as these should appear always together in order to elicit whether individuals have silo motives. This would decrease the saving motives considered in our final analysis. Therefore, we choose to add the bequest motive to the final list of motives, motivated by the combined bequest motive.

B Full description of the main results

This section discusses the personal characteristics and personality related estimates of Table 10.

B.1 The effect of personal characteristics on the importance of saving motives

The explanatory power of the personal characteristics appears to differ per saving motive, and some motives are not affected by any of the included personal characteristics. The precautionary motive ($m = 1$), autonomy motive ($m = 7$) and the security motive ($m = 8$) are unsurprisingly not statistically different from zero at the 5% significance level. These motives are likely to affect everyone irrespective of their personal characteristics, or are more related to the personality traits. The absence of statistically significant personal characteristics for the life-span risk motive ($m = 3$) might be surprising at first. One might expect beforehand that (private) information on subjective life expectancy (captured by SLE_high), current income (captured by INC_3_4), and partner (captured by partner) should be indicators of life-span risk.[26] However, recall that respondents have to choose a spending pattern for the hypothetical household that has partner and potential different income stream, thereby reducing the explanatory variables of these covariates. Another explanation might be the framing of life-span risk, see Table 2, as *they will not outlive their wealth* thereby unintentionally putting more emphasis on the advised spending pattern.

Being a male is associated with a decrease in the importance of the precautionary health motive ($m = 2$) and an increase in the intra-household bequest motive ($m = 6$). As males are generally the first to die in the household (as they, on average, live shorter and are generally older), they also providers of the intra-household bequest and are typical receiver of partner's informal care. In addition, males spend less time in bad health (see e.g. Majer et al. (2013)). Hence, also the intended bequest motive ($m = 4$) is more important to them, as well as (other) individuals who have a stronger intended bequest motive as they have children.

...

B.2 The effect of personality on the importance of saving motives

The personality related measures appear to

Table 10: Main results. Random Effects Ordered Probit estimates per saving motive.

	$m=1$	$m=2$	$m=3$	$m=4$	$m=5$	$m=6$	$m=7$	$m=8$	$m=9$	$m=10$
Personal characteristics										
male	-0.0732	-0.307***	0.0116	0.308***	0.0177	0.153**	-0.0745	-0.0000742	0.0571	-0.0340
	(-1.20)	(-4.24)	(0.15)	(3.26)	(0.26)	(2.11)	(-0.97)	(-0.00)	(0.74)	(-0.46)

[26] The null hypotheses that these three variables are jointly significant is rejected at conventional significance levels. Re-estimating the model with only one out of these three variables does not lead to a significant parameter estimate.

	$m=1$	$m=2$	$m=3$	$m=4$	$m=5$	$m=6$	$m=7$	$m=8$	$m=9$	$m=10$
partner	-0.0405	-0.157*	0.0166	0.125	-0.0842	0.552***	0.0109	-0.0793	-0.0740	-0.0382
	(-0.55)	(-1.87)	(0.20)	(1.18)	(-1.11)	(6.60)	(0.12)	(-0.89)	(-0.85)	(-0.47)
children	0.0357	0.0345	-0.0542	0.363***	0.0230	-0.0930	-0.0359	-0.0813	-0.0685	0.0300
	(0.58)	(0.48)	(-0.74)	(3.93)	(0.35)	(-1.29)	(-0.48)	(-1.03)	(-0.87)	(0.40)
INC_3_4	-0.0409	0.0797	0.0507	-0.0613	-0.0171	-0.0839	0.119	-0.0166	0.267***	-0.277***
	(-0.59)	(0.99)	(0.62)	(-0.60)	(-0.22)	(-1.03)	(1.41)	(-0.19)	(2.95)	(-3.47)
homeowner	-0.00851	-0.00739	-0.0389	-0.117	0.00714	0.0302	-0.0204	-0.0228	0.225**	-0.172**
	(-0.11)	(-0.08)	(-0.44)	(-1.02)	(0.09)	(0.33)	(-0.22)	(-0.24)	(2.50)	(-2.00)
religious	-0.0839	0.142*	0.0702	0.0401	0.155**	-0.0901	-0.00880	0.00797	-0.284***	0.0212
	(-1.31)	(1.91)	(0.94)	(0.42)	(2.32)	(-1.20)	(-0.11)	(0.10)	(-3.63)	(0.30)
born_country	-0.0858	0.0221	-0.135	-0.0581	0.0495	0.185*	0.0489	-0.172*	0.181*	-0.118
	(-0.95)	(0.23)	(-1.21)	(-0.46)	(0.56)	(1.86)	(0.46)	(-1.66)	(1.71)	(-1.15)
SLE1_high	-0.0288	-0.0621	0.0775	-0.101	-0.0886	0.0269	0.0403	0.0186	0.122	-0.0178
	(-0.47)	(-0.87)	(1.07)	(-1.13)	(-1.35)	(0.38)	(0.54)	(0.24)	(1.60)	(-0.26)
Personality related										
ret_plan	-0.202***	-0.0106	-0.0232	-0.237**	-0.146**	0.115	0.102	0.0440	0.0491	0.0916
	(-2.94)	(-0.13)	(-0.28)	(-2.29)	(-1.96)	(1.50)	(1.21)	(0.50)	(0.59)	(1.14)
pens_cap	0.170**	0.254***	0.103	-0.408***	0.0840	-0.0816	0.0351	0.0789	0.127	-0.379***
	(2.50)	(3.21)	(1.29)	(-4.00)	(1.21)	(-1.07)	(0.42)	(0.89)	(1.49)	(-4.99)
pens_kno_std	0.00954	0.0321	-0.0161	-0.0444	0.0545	-0.0888**	0.00421	-0.0178	0.00566	-0.0146
	(0.30)	(0.81)	(-0.41)	(-0.90)	(1.50)	(-2.24)	(0.11)	(-0.42)	(0.15)	(-0.40)
risk1_std	-0.0744**	-0.0644*	0.0117	0.0301	-0.0422	-0.0271	0.0887**	0.0419	0.0544	0.0456
	(-2.49)	(-1.77)	(0.33)	(0.65)	(-1.35)	(-0.77)	(2.44)	(1.11)	(1.42)	(1.34)
imp_fin_be∼d	-0.00226	-0.0594*	-0.0135	-0.00380	0.0176	0.0694*	-0.0316	0.00778	0.0331	-0.103***
	(-0.07)	(-1.65)	(-0.36)	(-0.08)	(0.48)	(1.84)	(-0.82)	(0.19)	(0.82)	(-2.84)
fut_or_std	0.0874***	0.0910**	-0.0288	-0.0160	-0.0679**	-0.00699	-0.0351	0.00852	-0.0762*	0.0135
	(2.79)	(2.22)	(-0.72)	(-0.33)	(-1.98)	(-0.18)	(-0.93)	(0.21)	(-1.78)	(0.37)
TIPI_Con_std	0.0666**	0.0429	-0.0918**	-0.128***	0.0444	0.0497	0.0449	-0.0492	0.0806**	-0.0581
	(2.20)	(1.19)	(-2.49)	(-2.72)	(1.30)	(1.36)	(1.18)	(-1.27)	(2.08)	(-1.61)
AUSTRALIA	-0.179**	-0.278***	1.194***	0.225**	-0.900***	-0.425***	0.0401	1.175***	-0.0310	-0.613***
	(-2.43)	(-3.32)	(13.56)	(2.07)	(-11.54)	(-5.23)	(0.47)	(12.60)	(-0.34)	(-7.48)
Fist stage dummies										
$S_{1,1}$	-0.179*	-0.0430	0.252**	-0.181	-0.0917	0.0472	0.0185	0.0735	-0.0782	0.0179
	(-1.65)	(-0.40)	(1.98)	(-1.17)	(-0.79)	(0.48)	(0.17)	(0.66)	(-0.60)	(0.18)
$S_{1,2}$	-0.159***	-0.0126	-0.0385	0.153*	0.116*	-0.0468	0.00703	0.0251	0.0754	-0.00590
	(-2.60)	(-0.20)	(-0.52)	(1.65)	(1.74)	(-0.72)	(0.10)	(0.38)	(1.01)	(-0.09)
$S_{1,3}$	-0.0685	0.284***	-0.00681	0.400***	-0.0988	-0.0157	-0.145	0.0207	-0.138	-0.00495
	(-0.78)	(3.26)	(-0.07)	(3.48)	(-1.10)	(-0.18)	(-1.55)	(0.24)	(-1.43)	(-0.05)
$S_{1,4}$	0.303**	0.189	0.0161	0.0180	-0.177	-0.114	0.200	0.0960	-0.300**	0.335**
	(2.38)	(1.50)	(0.11)	(0.10)	(-1.40)	(-0.85)	(1.38)	(0.78)	(-2.39)	(2.50)
$S_{1,5}$	-0.0848	0.306**	0.142	0.213	0.0205	-0.184	0.0898	0.0931	-0.396***	0.0661
	(-0.56)	(2.16)	(0.88)	(1.22)	(0.13)	(-1.26)	(0.52)	(0.62)	(-2.77)	(0.41)
$S_{2,1}$	-0.227**	0.0768	0.0343	-0.202	-0.209*	0.249**	0.0161	0.00983	0.0734	0.00919
	(-2.16)	(0.64)	(0.28)	(-1.22)	(-1.80)	(2.20)	(0.13)	(0.09)	(0.56)	(0.08)
$S_{2,2}$	-0.0688	0.0236	-0.0502	0.0369	0.0270	0.0648	-0.0560	-0.0683	0.0690	0.0357
	(-1.09)	(0.40)	(-0.70)	(0.42)	(0.40)	(1.09)	(-0.80)	(-1.14)	(0.94)	(0.57)
$S_{2,3}$	0.0160	0.272***	0.00649	0.409***	-0.0966	-0.0476	-0.0496	0.164*	-0.300***	-0.102
	(0.19)	(3.16)	(0.07)	(3.54)	(-1.14)	(-0.58)	(-0.55)	(1.85)	(-3.23)	(-1.15)
$S_{2,4}$	0.0946	0.609***	-0.106	0.379**	-0.0848	-0.0796	0.112	0.212	-0.307**	-0.0861
	(0.64)	(4.49)	(-0.66)	(2.43)	(-0.61)	(-0.51)	(0.70)	(1.44)	(-2.19)	(-0.50)
$S_{2,5}$	0.0956	0.404**	-0.216	0.777***	0.0202	0.00783	-0.0983	-0.333	-0.524***	0.196
	(0.54)	(2.32)	(-0.94)	(3.30)	(0.09)	(0.04)	(-0.42)	(-1.50)	(-2.96)	(1.00)
$S_{3,1}$	-0.389**	0.0312	0.114	0.113	-0.145	0.263	-0.211	-0.113	0.331*	-0.223
	(-2.52)	(0.18)	(0.66)	(0.53)	(-0.84)	(1.63)	(-1.04)	(-0.59)	(1.87)	(-1.33)
$S_{3,2}$	0	0	0	0	0	0	0	0	0	0
	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)
$S_{3,3}$	-0.0106	0.371***	0.0131	0.384***	-0.0598	0.00172	-0.00627	-0.00275	-0.378***	0.0277
	(-0.12)	(4.35)	(0.14)	(3.31)	(-0.69)	(0.02)	(-0.07)	(-0.03)	(-3.81)	(0.32)
$S_{3,4}$	0.0570	0.532***	0.0742	0.395**	0.111	0.151	-0.135	-0.0749	-0.611***	0.103
	(0.39)	(3.39)	(0.42)	(2.03)	(0.77)	(0.91)	(-0.79)	(-0.37)	(-3.69)	(0.60)
$S_{3,5}$	0.213	0.291	-0.242	0.502**	-0.149	-0.0741	0.0710	-0.168	-0.420**	0.181
	(1.17)	(1.60)	(-1.17)	(2.05)	(-0.76)	(-0.37)	(0.32)	(-0.80)	(-2.20)	(0.90)
Second stage dummies										
$S_{5,1}$	-0.187	-0.372	0.383	0.197	0.292	-0.198	-0.105	0.0340	-0.494	0.186
	(-0.62)	(-1.44)	(1.24)	(0.54)	(1.32)	(-0.79)	(-0.45)	(0.13)	(-1.55)	(0.58)

	$m=1$	$m=2$	$m=3$	$m=4$	$m=5$	$m=6$	$m=7$	$m=8$	$m=9$	$m=10$
$S_{5,2}$	-0.201*	-0.197*	-0.0998	0.0528	0.0666	0.149	0.0962	-0.0844	0.0620	-0.0298
	(-1.95)	(-1.94)	(-0.92)	(0.39)	(0.65)	(1.58)	(0.86)	(-0.81)	(0.59)	(-0.30)
$S_{5,3}$	-0.121	0.267**	-0.0556	0.459***	-0.100	0.117	0.0367	-0.424***	-0.365***	0.00218
	(-1.04)	(2.10)	(-0.43)	(3.09)	(-0.91)	(1.04)	(0.28)	(-3.70)	(-3.03)	(0.02)
$S_{5,4}$	-0.225	0.676***	0.332	0.404	-0.248	0.189	-0.0750	-0.286	-1.009***	-0.387*
	(-0.95)	(2.72)	(1.20)	(1.16)	(-1.33)	(0.84)	(-0.34)	(-1.18)	(-4.36)	(-1.79)
$S_{5,5}$	-0.135	0.736**	0.335	0.424	-0.320	-0.0835	-0.402	-0.317	-0.557	0.234
	(-0.49)	(2.18)	(1.17)	(1.05)	(-0.89)	(-0.30)	(-1.17)	(-1.22)	(-1.47)	(0.86)
$S_{5H,1}$	0.0893	0.00177	-0.182	-0.0608	-0.411	0.143	0.0376	-0.201	0.657*	-0.238
	(0.27)	(0.01)	(-0.51)	(-0.15)	(-1.61)	(0.48)	(0.13)	(-0.68)	(1.84)	(-0.66)
$S_{5H,2}$	0.0771	0.137	0.0122	-0.00995	-0.219*	0.108	-0.299**	0.116	-0.0646	0.0522
	(0.60)	(1.05)	(0.09)	(-0.06)	(-1.67)	(0.86)	(-2.21)	(0.85)	(-0.46)	(0.43)
$S_{5H,3}$	-0.0201	0.0110	-0.0480	-0.134	-0.226	-0.129	-0.324*	0.344**	0.374**	-0.224
	(-0.13)	(0.07)	(-0.30)	(-0.68)	(-1.48)	(-0.91)	(-1.94)	(2.10)	(2.47)	(-1.40)
$S_{5H,4}$	-0.0212	-0.453	0.300	-0.460	0.186	-0.294	-0.0924	-0.0221	0.448	0.299
	(-0.07)	(-1.50)	(0.93)	(-1.17)	(0.77)	(-1.02)	(-0.34)	(-0.07)	(1.60)	(1.12)
$S_{5H,5}$	0.0883	-0.438	-0.518	-0.0879	0.200	0.358	0.176	0.399	-0.00995	-0.568
	(0.25)	(-1.09)	(-1.50)	(-0.19)	(0.47)	(0.96)	(0.42)	(1.07)	(-0.02)	(-1.60)
$S_{6,1}$	-0.143	-0.502**	0.924***	0.130	0.335	-0.0639	-0.578**	-0.411	-0.136	-0.215
	(-0.56)	(-2.02)	(2.87)	(0.43)	(1.61)	(-0.25)	(-1.99)	(-1.64)	(-0.48)	(-0.58)
$S_{6,2}$	-0.0584	-0.0300	0.0315	0.101	0.0664	0.112	-0.0637	-0.204*	-0.00697	-0.137
	(-0.56)	(-0.28)	(0.30)	(0.71)	(0.63)	(1.11)	(-0.56)	(-1.89)	(-0.06)	(-1.24)
$S_{6,3}$	0.0294	0.783***	-0.0933	0.201	-0.101	0.0788	-0.0752	-0.287***	-0.554***	-0.146
	(0.27)	(6.08)	(-0.79)	(1.35)	(-0.97)	(0.79)	(-0.61)	(-2.64)	(-4.86)	(-1.32)
$S_{6,4}$	0.00127	0.229	0.176	0.340	-0.0901	0.253	-0.107	-0.521**	-0.812***	-0.0578
	(0.01)	(0.92)	(0.76)	(1.31)	(-0.54)	(1.26)	(-0.55)	(-2.44)	(-3.35)	(-0.25)
$S_{6,5}$	0.476*	0.514*	0.210	-0.0232	-0.110	-0.311	-0.388	0.0347	-0.857**	0.225
	(1.74)	(1.70)	(0.75)	(-0.05)	(-0.36)	(-1.22)	(-1.26)	(0.13)	(-2.56)	(0.76)
$S_{6H,1}$	0.323	0.562*	-1.123***	0.0139	-0.198	-0.241	0.379	0.181	0.334	0.0320
	(1.07)	(1.80)	(-2.91)	(0.04)	(-0.75)	(-0.82)	(1.14)	(0.62)	(0.99)	(0.08)
$S_{6H,2}$	0.0385	0.417***	-0.0647	-0.116	0.0206	-0.0873	-0.194	0.0568	-0.0441	-0.111
	(0.29)	(3.01)	(-0.46)	(-0.68)	(0.15)	(-0.66)	(-1.38)	(0.42)	(-0.30)	(-0.80)
$S_{6H,3}$	-0.000293	0.0817	0.0458	0.113	-0.0668	-0.161	-0.260*	0.108	0.104	-0.400***
	(-0.00)	(0.50)	(0.32)	(0.61)	(-0.48)	(-1.23)	(-1.73)	(0.72)	(0.71)	(-2.69)
$S_{6H,4}$	0.217	0.409	0.0113	-0.145	0.0319	-0.586**	-0.361	0.294	0.189	-0.146
	(0.84)	(1.32)	(0.04)	(-0.47)	(0.15)	(-2.32)	(-1.41)	(1.07)	(0.69)	(-0.52)
$S_{6H,5}$	-0.643*	0.324	0.0704	0.171	-0.0646	0.463	0.0968	-0.00724	0.0631	-0.570
	(-1.93)	(0.84)	(0.21)	(0.34)	(-0.18)	(1.41)	(0.24)	(-0.02)	(0.17)	(-1.56)
$S_{7,1}$	-0.301	-0.273	0.534*	0.137	0.211	0.171	-0.304	-0.121	-0.363*	-0.373
	(-1.34)	(-1.18)	(1.77)	(0.52)	(0.92)	(0.76)	(-1.44)	(-0.57)	(-1.77)	(-1.50)
$S_{7,2}$	-0.223**	-0.0157	0.0369	-0.0932	0.144	0.508***	-0.123	-0.264***	0.0347	-0.273***
	(-2.17)	(-0.15)	(0.35)	(-0.66)	(1.47)	(5.01)	(-1.14)	(-2.66)	(0.30)	(-2.75)
$S_{7,3}$	-0.114	0.384***	0.0642	0.199	-0.151	0.459***	0.147	-0.340***	-0.540***	-0.327***
	(-0.98)	(3.06)	(0.53)	(1.27)	(-1.39)	(3.76)	(1.16)	(-2.81)	(-4.51)	(-2.73)
$S_{7,4}$	0.132	0.473*	-0.253	0.300	-0.132	0.632***	-0.490**	-0.131	-0.736***	-0.310*
	(0.63)	(1.71)	(-1.16)	(0.98)	(-0.66)	(2.84)	(-2.50)	(-0.54)	(-3.14)	(-1.74)
$S_{7,5}$	0.452	0.171	-0.0780	0.622**	-0.549**	-0.0532	-0.0278	-0.0830	-0.264	-0.358
	(1.38)	(0.57)	(-0.19)	(2.03)	(-2.11)	(-0.17)	(-0.10)	(-0.29)	(-0.67)	(-1.09)
$S_{7H,1}$	0.419	0.263	-0.653*	0.156	-0.330	0.118	-0.262	-0.0581	0.640**	0.0751
	(1.58)	(0.97)	(-1.90)	(0.51)	(-1.20)	(0.43)	(-0.99)	(-0.24)	(2.47)	(0.26)
$S_{7H,2}$	0.0160	0.0814	0.0364	0.212	-0.148	-0.0465	-0.0995	0.0920	-0.0135	-0.0230
	(0.13)	(0.64)	(0.28)	(1.30)	(-1.18)	(-0.34)	(-0.75)	(0.67)	(-0.09)	(-0.18)
$S_{7H,3}$	0.0238	-0.179	-0.394**	0.135	0.00750	-0.172	-0.362**	0.281*	0.149	-0.0138
	(0.16)	(-1.10)	(-2.54)	(0.66)	(0.05)	(-1.05)	(-2.24)	(1.69)	(0.95)	(-0.09)
$S_{7H,4}$	-0.306	-0.351	0.789***	-0.235	0.114	-0.283	0.00477	0.0253	0.194	0.0887
	(-1.16)	(-1.06)	(2.75)	(-0.65)	(0.46)	(-0.96)	(0.02)	(0.08)	(0.69)	(0.36)
$S_{7H,5}$	-0.506	0.697*	0.259	-0.659*	0.351	0.241	-0.0452	-0.281	-0.272	0.0658
	(-1.34)	(1.81)	(0.58)	(-1.75)	(1.07)	(0.60)	(-0.11)	(-0.80)	(-0.61)	(0.16)
$S_{8,1}$	-0.388	-0.197	0.339	-0.0714	0.253	0.103	-0.425**	0.472**	-0.426	-0.665**
	(-1.53)	(-0.77)	(1.10)	(-0.15)	(1.16)	(0.39)	(-1.97)	(2.26)	(-1.49)	(-2.10)
$S_{8,2}$	-0.114	0.104	0.0167	-0.00581	0.119	0.399***	-0.0817	-0.276**	-0.156	-0.198*
	(-1.05)	(0.98)	(0.15)	(-0.04)	(1.12)	(3.82)	(-0.72)	(-2.57)	(-1.36)	(-1.86)
$S_{8,3}$	0.0744	0.597***	0.0192	0.0486	-0.0164	0.419***	-0.219*	-0.485***	-0.501***	-0.251**
	(0.68)	(4.56)	(0.16)	(0.33)	(-0.15)	(3.44)	(-1.81)	(-4.17)	(-4.46)	(-2.25)
$S_{8,4}$	0.154	0.446**	-0.409*	0.519***	-0.257	0.271	-0.276	-0.0346	-0.563***	-0.149
	(0.73)	(2.28)	(-1.91)	(2.73)	(-1.34)	(1.34)	(-1.51)	(-0.14)	(-2.79)	(-0.66)

	$m=1$	$m=2$	$m=3$	$m=4$	$m=5$	$m=6$	$m=7$	$m=8$	$m=9$	$m=10$
$S_{8,5}$	0.547**	0.376	0.686**	0.0843	-0.419	0.209	-0.423	-0.397	-0.728***	-0.260
	(2.05)	(1.28)	(2.27)	(0.27)	(-1.38)	(0.81)	(-1.48)	(-1.25)	(-2.92)	(-0.88)
$S_{8H,1}$	0.316	0.485*	-0.381	0.724	-0.433	-0.0356	-0.0267	-0.520**	0.491	0.0681
	(1.09)	(1.66)	(-1.08)	(1.47)	(-1.58)	(-0.12)	(-0.10)	(-2.09)	(1.46)	(0.19)
$S_{8H,2}$	-0.0367	0.357**	0.0629	-0.0667	-0.179	-0.0553	-0.311**	0.170	-0.0169	-0.0672
	(-0.26)	(2.48)	(0.44)	(-0.37)	(-1.32)	(-0.40)	(-2.15)	(1.18)	(-0.11)	(-0.50)
$S_{8H,3}$	-0.0710	0.0626	-0.247*	0.0566	-0.222	-0.0698	-0.0626	0.363**	-0.0274	-0.196
	(-0.51)	(0.38)	(-1.68)	(0.30)	(-1.52)	(-0.45)	(-0.41)	(2.26)	(-0.18)	(-1.38)
$S_{8H,4}$	-0.379	0.00614	1.128***	-0.595**	0.161	-0.0989	-0.203	-0.167	-0.0946	0.0428
	(-1.41)	(0.02)	(3.65)	(-2.01)	(0.67)	(-0.35)	(-0.78)	(-0.56)	(-0.38)	(0.15)
$S_{8H,5}$	-0.512	0.552	-0.456	0.205	0.399	-0.218	-0.0574	-0.215	0.0936	0.0770
	(-1.56)	(1.50)	(-1.31)	(0.55)	(1.15)	(-0.67)	(-0.16)	(-0.58)	(0.28)	(0.21)
Nuisance parameters										
A_1	0	0.112	-0.129	0.0837	0.109	-0.143*	-0.00206	0.166**	0.132	0.152**
	(.)	(1.43)	(-1.49)	(0.88)	(1.51)	(-1.87)	(-0.02)	(2.06)	(1.49)	(2.00)
A_2	-0.198**	0	-0.127	0.00745	0.0564	-0.133*	-0.0643	-0.0354	0.0940	0.0992
	(-2.51)	(.)	(-1.49)	(0.08)	(0.73)	(-1.80)	(-0.68)	(-0.44)	(0.99)	(1.29)
A_3	0.432***	0.204**	0	0.399***	0.371***	0.250***	0.254***	0.431***	0.345***	0.525***
	(5.32)	(2.46)	(.)	(3.82)	(4.89)	(3.24)	(2.91)	(5.09)	(3.84)	(6.54)
A_4	0.478***	0.369***	0.705***	0	0.673***	0.309***	0.499***	0.626***	0.378***	0.801***
	(6.12)	(4.70)	(8.81)	(.)	(9.13)	(4.18)	(5.55)	(7.44)	(4.41)	(9.96)
A_5	0.0314	-0.0313	-0.129	-0.0641	0	0	-0.0250	0.0821	0.0421	0.165**
	(0.40)	(-0.38)	(-1.60)	(-0.66)	(.)	(.)	(-0.28)	(0.97)	(0.52)	(2.25)
A_6	0	0	0	0	0	0	0	0	0	0
	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)
A_7	-0.294***	-0.215***	-0.212***	-0.385***	-0.517***	-0.175**	0	-0.411***	-0.225***	0.00712
	(-3.92)	(-2.68)	(-2.76)	(-4.04)	(-7.13)	(-2.34)	(.)	(-5.04)	(-2.65)	(0.10)
A_8	0.0707	-0.0982	-0.134	-0.160*	-0.415***	-0.0208	-0.226***	0	-0.154*	0.244***
	(0.95)	(-1.35)	(-1.64)	(-1.67)	(-6.34)	(-0.28)	(-2.59)	(.)	(-1.84)	(3.12)
A_9	-0.226***	-0.337***	-0.191**	-0.181**	-0.549***	-0.211***	-0.587***	-0.512***	0	0
	(-3.16)	(-4.51)	(-2.46)	(-2.04)	(-7.71)	(-2.94)	(-6.93)	(-6.43)	(.)	(.)
A_{10}	0	0	0	0	0	0	0	0	0	0
	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)
Threshold parameters										
$\widehat{\nu_1}$	-2.186***	-2.361***	-0.234	0.830***	-2.916***	-1.757***	-2.327***	-1.276***	-1.893***	-1.025***
	(-11.30)	(-11.24)	(-1.13)	(3.21)	(-14.83)	(-8.90)	(-9.55)	(-5.46)	(-7.80)	(-4.54)
$\widehat{\nu_2}$	-1.159***	-1.404***	1.123***	1.922***	-1.724***	-0.846***	-1.205***	0.168	-0.862***	0.410*
	(-6.10)	(-6.78)	(5.35)	(7.35)	(-8.94)	(-4.32)	(-4.95)	(0.72)	(-3.54)	(1.83)
$\widehat{\nu_3}$	-0.175	-0.325	2.002***	2.836***	-0.643***	0.321*	-0.231	1.115***	-0.0204	1.545***
	(-0.93)	(-1.58)	(9.36)	(10.57)	(-3.36)	(1.65)	(-0.95)	(4.71)	(-0.08)	(6.80)
$\widehat{\nu_4}$	0.998***	0.884***	2.697***	3.628***	0.599***	1.700***	0.939***	2.155***	0.998***	2.595***
	(5.24)	(4.30)	(12.39)	(12.99)	(3.11)	(8.66)	(3.85)	(8.98)	(4.05)	(11.26)
Random effect										
$\widehat{\sigma}_u^2$	1.203***	1.689***	1.688***	2.566***	1.427***	1.739***	1.942***	2.007***	1.949***	1.606***
	(15.77)	(16.64)	(14.89)	(14.20)	(16.53)	(16.72)	(16.88)	(16.81)	(16.97)	(15.54)
ρ	54.6%	62.8%	62.8%	72.0%	58.8%	63.5%	66.0%	66.7%	66.1%	61.6%
Groups	1,796	1,770	1,778	1,848	1,847	1,831	1,836	1,785	1,813	1,788
Observations	8,386	8,279	8,315	8,645	8,545	8,650	8,568	8,390	8,541	8,381
Log-likelihood	-11528.1	-10735.6	-9712.7	-7048.9	-11146.0	-11110.7	-10971.7	-10707.8	-10581.2	-10473.8

Notes: *, ** and *** denote significance at 90%, 95%, and 99% respectively. t-statistics clustered by individual in parentheses. Recall that $m=1$ denotes the precautionary motive, $m=2$ the precautionary health motive, $m=3$ the life-span risk motive, $m=4$ the intended bequest motive, $m=5$ the liquidity motive, $m=6$ the intra-household bequest motive, $m=7$ the autonomy motive, $m=8$ the security motive, $m=9$ the self-gratification motive, and $m=10$ the political risk motive. See Table 2 for the full-text saving motives.

C Robustness checks

Table 11: Robustness check 1. Random Effects Ordered Probit estimates per saving motive without nuisance parameters.

	$m=1$	$m=2$	$m=3$	$m=4$	$m=5$	$m=6$	$m=7$	$m=8$	$m=9$	$m=10$
Personal characteristics										
male	-0.0940	-0.294***	-0.0146	0.318***	-0.0163	0.150**	-0.115	0.00851	0.0516	-0.0545
	(-1.50)	(-4.02)	(-0.19)	(3.33)	(-0.24)	(2.04)	(-1.47)	(0.10)	(0.66)	(-0.73)
partner	-0.0235	-0.153*	0.0172	0.126	-0.0932	0.547***	0.0122	-0.0773	-0.0750	-0.0313
	(-0.31)	(-1.80)	(0.21)	(1.17)	(-1.21)	(6.45)	(0.14)	(-0.83)	(-0.86)	(-0.38)
children	0.00991	0.0308	-0.0582	0.369***	0.0466	-0.111	-0.0697	-0.0578	-0.0609	0.0199
	(0.16)	(0.42)	(-0.79)	(3.95)	(0.70)	(-1.53)	(-0.91)	(-0.71)	(-0.78)	(0.27)
INC_3_4	-0.0479	0.108	0.0519	-0.0733	-0.00343	-0.0826	0.160*	-0.0253	0.273***	-0.270***
	(-0.68)	(1.33)	(0.63)	(-0.70)	(-0.04)	(-0.99)	(1.87)	(-0.28)	(3.02)	(-3.32)
homeowner	0.0222	-0.0389	-0.0568	-0.123	-0.00510	0.0455	-0.0467	-0.0156	0.229**	-0.190**
	(0.28)	(-0.42)	(-0.64)	(-1.07)	(-0.06)	(0.49)	(-0.48)	(-0.16)	(2.52)	(-2.18)
religious	-0.0537	0.143*	0.0894	0.0389	0.129*	-0.0886	0.00989	0.00494	-0.278***	0.0296
	(-0.82)	(1.91)	(1.18)	(0.41)	(1.91)	(-1.15)	(0.13)	(0.06)	(-3.55)	(0.41)
born_country	-0.0807	0.00161	-0.166	-0.0425	0.0338	0.187*	0.0245	-0.161	0.164	-0.120
	(-0.89)	(0.02)	(-1.45)	(-0.33)	(0.37)	(1.84)	(0.23)	(-1.54)	(1.56)	(-1.16)
SLE1_high	-0.0187	-0.0591	0.0877	-0.101	-0.0769	0.0376	0.0276	0.0133	0.116	-0.000471
	(-0.30)	(-0.82)	(1.20)	(-1.12)	(-1.16)	(0.53)	(0.36)	(0.17)	(1.52)	(-0.01)
Personality related										
ret_plan	-0.214***	-0.00662	0.00570	-0.230**	-0.126*	0.104	0.0963	0.0416	0.0423	0.115
	(-3.09)	(-0.08)	(0.07)	(-2.20)	(-1.67)	(1.33)	(1.11)	(0.46)	(0.51)	(1.41)
pens_cap	0.172**	0.261***	0.106	-0.397***	0.111	-0.0665	0.0531	0.0793	0.142*	-0.347***
	(2.46)	(3.28)	(1.33)	(-3.85)	(1.56)	(-0.86)	(0.63)	(0.87)	(1.66)	(-4.45)
pens_kno_std	0.0146	0.0353	-0.0144	-0.0534	0.0450	-0.0914**	0.00497	-0.00911	0.000241	-0.0275
	(0.45)	(0.88)	(-0.36)	(-1.08)	(1.22)	(-2.26)	(0.12)	(-0.21)	(0.01)	(-0.73)
risk1_std	-0.0747**	-0.0616*	0.00720	0.0186	-0.0225	-0.0193	0.0934**	0.0425	0.0545	0.0545
	(-2.47)	(-1.67)	(0.20)	(0.40)	(-0.71)	(-0.54)	(2.47)	(1.10)	(1.43)	(1.58)
imp_fin_beh_std	0.00526	-0.0595	-0.0251	-0.0125	0.00667	0.0662*	-0.0399	0.00733	0.0291	-0.110***
	(0.17)	(-1.63)	(-0.67)	(-0.26)	(0.18)	(1.75)	(-1.01)	(0.18)	(0.72)	(-3.00)
fut_or_std	0.0925***	0.0912**	-0.0256	-0.0174	-0.0637*	-0.00507	-0.0360	0.0209	-0.0772*	0.0128
	(2.84)	(2.19)	(-0.64)	(-0.35)	(-1.83)	(-0.13)	(-0.92)	(0.50)	(-1.80)	(0.34)
TIPI_Con_std	0.0612*	0.0448	-0.0913**	-0.125***	0.0537	0.0571	0.0549	-0.0474	0.0869**	-0.0608*
	(1.95)	(1.23)	(-2.46)	(-2.63)	(1.57)	(1.54)	(1.42)	(-1.18)	(2.25)	(-1.67)
AUSTRALIA	-0.188**	-0.274***	1.166***	0.228**	-0.898***	-0.440***	0.0237	1.169***	-0.0483	-0.602***
	(-2.50)	(-3.24)	(13.23)	(2.08)	(-11.28)	(-5.36)	(0.27)	(12.21)	(-0.53)	(-7.21)
Interaction terms (1st stage)										
$S_{1,1}$	-0.147	-0.0457	0.283**	-0.160	-0.0936	0.0422	-0.00508	0.0947	-0.0803	0.0156
	(-1.35)	(-0.41)	(2.23)	(-1.05)	(-0.81)	(0.42)	(-0.05)	(0.84)	(-0.62)	(0.15)
$S_{1,2}$	-0.147**	-0.00878	-0.0550	0.147	0.110*	-0.0578	0.0174	0.0188	0.0796	-0.00179
	(-2.43)	(-0.14)	(-0.76)	(1.59)	(1.68)	(-0.89)	(0.25)	(0.29)	(1.07)	(-0.03)
$S_{1,3}$	-0.0542	0.288***	-0.00764	0.403***	-0.105	-0.0105	-0.128	0.0291	-0.147	0.000280
	(-0.61)	(3.33)	(-0.08)	(3.50)	(-1.16)	(-0.12)	(-1.34)	(0.34)	(-1.51)	(0.00)
$S_{1,4}$	0.267**	0.185	-0.0243	0.0305	-0.248**	-0.134	0.160	0.0974	-0.328***	0.331**
	(2.08)	(1.47)	(-0.17)	(0.16)	(-1.97)	(-1.01)	(1.13)	(0.77)	(-2.63)	(2.47)
$S_{1,5}$	-0.0639	0.296**	0.0844	0.203	-0.0440	-0.204	0.0764	0.0823	-0.403***	0.0261
	(-0.42)	(2.11)	(0.53)	(1.16)	(-0.27)	(-1.42)	(0.44)	(0.54)	(-2.82)	(0.16)
$S_{2,1}$	-0.187*	0.0809	0.0714	-0.185	-0.197*	0.261**	0.00444	0.0326	0.0963	0.00664
	(-1.78)	(0.68)	(0.57)	(-1.13)	(-1.68)	(2.31)	(0.04)	(0.28)	(0.74)	(0.06)
$S_{2,2}$	-0.0740	0.0197	-0.0580	0.0345	0.0216	0.0543	-0.0465	-0.0683	0.0615	0.0233
	(-1.18)	(0.33)	(-0.83)	(0.39)	(0.32)	(0.92)	(-0.67)	(-1.15)	(0.84)	(0.38)
$S_{2,3}$	0.0272	0.279***	-0.0132	0.425***	-0.116	-0.0613	-0.0441	0.174**	-0.311***	-0.0875
	(0.32)	(3.23)	(-0.14)	(3.69)	(-1.34)	(-0.74)	(-0.49)	(1.96)	(-3.34)	(-0.98)
$S_{2,4}$	0.0977	0.625***	-0.139	0.344**	-0.172	-0.100	0.0852	0.173	-0.307**	-0.0765
	(0.66)	(4.66)	(-0.87)	(2.17)	(-1.24)	(-0.63)	(0.53)	(1.13)	(-2.20)	(-0.45)
$S_{2,5}$	0.155	0.364**	-0.259	0.737***	-0.0323	0.0131	-0.108	-0.325	-0.545***	0.163
	(0.88)	(2.05)	(-1.18)	(3.10)	(-0.15)	(0.07)	(-0.47)	(-1.53)	(-2.99)	(0.83)
$S_{3,1}$	-0.342**	0.0103	0.139	0.151	-0.185	0.246	-0.281	-0.0966	0.348**	-0.229
	(-2.28)	(0.06)	(0.80)	(0.74)	(-1.04)	(1.47)	(-1.39)	(-0.51)	(2.00)	(-1.38)
$S_{3,2}$	0	0	0	0	0	0	0	0	0	0
	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)
$S_{3,3}$	0.00229	0.383***	-0.0109	0.386***	-0.0896	-0.0170	0.00883	0.0133	-0.396***	0.0236
	(0.03)	(4.46)	(-0.11)	(3.35)	(-1.02)	(-0.21)	(0.09)	(0.15)	(-3.97)	(0.27)
$S_{3,4}$	0.0828	0.521***	0.0467	0.408**	0.0724	0.142	-0.133	-0.0893	-0.587***	0.129

	$m=1$	$m=2$	$m=3$	$m=4$	$m=5$	$m=6$	$m=7$	$m=8$	$m=9$	$m=10$
	(0.56)	(3.28)	(0.27)	(2.06)	(0.51)	(0.86)	(-0.76)	(-0.45)	(-3.49)	(0.76)
$S_{3,5}$	0.223	0.277	-0.292	0.451*	-0.207	-0.0806	0.0638	-0.169	-0.451**	0.143
	(1.21)	(1.54)	(-1.47)	(1.80)	(-1.04)	(-0.41)	(0.30)	(-0.83)	(-2.34)	(0.72)
Interaction terms (2nd stage)										
$S_{5,1}$	-0.169	-0.372	0.348	0.0856	0.211	-0.238	-0.0794	-0.0435	-0.490	0.165
	(-0.56)	(-1.47)	(1.15)	(0.23)	(0.95)	(-0.94)	(-0.34)	(-0.17)	(-1.53)	(0.52)
$S_{5,2}$	-0.223**	-0.222**	-0.103	0.0239	0.00695	0.120	0.0577	-0.140	0.0460	-0.0733
	(-2.14)	(-2.16)	(-0.93)	(0.18)	(0.07)	(1.26)	(0.51)	(-1.33)	(0.44)	(-0.68)
$S_{5,3}$	-0.142	0.252**	-0.0785	0.386***	-0.103	0.0759	0.0309	-0.466***	-0.353***	-0.0339
	(-1.21)	(1.98)	(-0.62)	(2.61)	(-0.92)	(0.66)	(0.24)	(-4.07)	(-2.93)	(-0.27)
$S_{5,4}$	-0.273	0.625**	0.287	0.348	-0.216	0.162	-0.138	-0.300	-1.011***	-0.418*
	(-1.15)	(2.52)	(1.05)	(0.99)	(-1.22)	(0.71)	(-0.60)	(-1.23)	(-4.34)	(-1.89)
$S_{5,5}$	-0.121	0.776**	0.289	0.341	-0.249	-0.157	-0.436	-0.249	-0.565	0.0663
	(-0.45)	(2.30)	(1.00)	(0.86)	(-0.65)	(-0.60)	(-1.32)	(-0.99)	(-1.43)	(0.24)
$S_{5H,1}$	0.0119	-0.00536	-0.188	0.0183	-0.326	0.146	0.00884	-0.122	0.644*	-0.235
	(0.04)	(-0.02)	(-0.54)	(0.05)	(-1.26)	(0.48)	(0.03)	(-0.41)	(1.79)	(-0.67)
$S_{5H,2}$	0.119	0.167	0.00353	0.00140	-0.149	0.102	-0.234*	0.188	-0.0580	0.0899
	(0.90)	(1.25)	(0.03)	(0.01)	(-1.09)	(0.83)	(-1.73)	(1.33)	(-0.41)	(0.70)
$S_{5H,3}$	-0.000741	0.0361	-0.0657	-0.0956	-0.198	-0.126	-0.336**	0.386**	0.356**	-0.220
	(-0.00)	(0.22)	(-0.42)	(-0.49)	(-1.29)	(-0.87)	(-2.01)	(2.33)	(2.33)	(-1.36)
$S_{5H,4}$	0.0125	-0.349	0.288	-0.432	0.179	-0.257	0.0393	0.0338	0.418	0.346
	(0.04)	(-1.16)	(0.90)	(-1.10)	(0.75)	(-0.88)	(0.14)	(0.11)	(1.47)	(1.27)
$S_{5H,5}$	0.0468	-0.441	-0.465	-0.0309	0.125	0.454	0.221	0.258	0.00815	-0.343
	(0.13)	(-1.10)	(-1.39)	(-0.06)	(0.28)	(1.25)	(0.54)	(0.73)	(0.02)	(-0.96)
$S_{6,1}$	-0.123	-0.508**	0.839***	0.0184	0.238	-0.106	-0.559*	-0.501*	-0.133	-0.247
	(-0.46)	(-2.09)	(2.73)	(0.06)	(1.11)	(-0.41)	(-1.91)	(-1.96)	(-0.46)	(-0.67)
$S_{6,2}$	-0.0895	-0.0612	0.0280	0.0706	0.0117	0.0707	-0.105	-0.253**	-0.0253	-0.174
	(-0.84)	(-0.56)	(0.25)	(0.50)	(0.10)	(0.68)	(-0.92)	(-2.32)	(-0.22)	(-1.47)
$S_{6,3}$	0.00395	0.770***	-0.108	0.136	-0.107	0.0570	-0.0761	-0.329***	-0.543***	-0.187
	(0.04)	(5.95)	(-0.89)	(0.92)	(-1.03)	(0.56)	(-0.61)	(-3.05)	(-4.74)	(-1.64)
$S_{6,4}$	-0.0198	0.189	0.129	0.246	-0.0693	0.210	-0.165	-0.566***	-0.814***	-0.0919
	(-0.10)	(0.76)	(0.56)	(0.98)	(-0.44)	(1.06)	(-0.86)	(-2.62)	(-3.37)	(-0.40)
$S_{6,5}$	0.465*	0.543*	0.188	-0.0993	-0.0939	-0.370	-0.435	0.0802	-0.855**	0.0500
	(1.78)	(1.77)	(0.68)	(-0.21)	(-0.28)	(-1.46)	(-1.47)	(0.31)	(-2.43)	(0.17)
$S_{6H,1}$	0.218	0.573*	-1.037***	0.0827	-0.0844	-0.231	0.379	0.287	0.318	0.0657
	(0.70)	(1.85)	(-2.75)	(0.23)	(-0.31)	(-0.77)	(1.14)	(0.98)	(0.92)	(0.16)
$S_{6H,2}$	0.0908	0.450***	-0.0665	-0.1000	0.0895	-0.0792	-0.139	0.135	-0.0330	-0.0726
	(0.67)	(3.19)	(-0.46)	(-0.59)	(0.64)	(-0.60)	(-0.98)	(0.96)	(-0.22)	(-0.51)
$S_{6H,3}$	0.0165	0.0941	0.0141	0.148	-0.0690	-0.177	-0.259*	0.136	0.0868	-0.386**
	(0.12)	(0.57)	(0.09)	(0.79)	(-0.49)	(-1.33)	(-1.72)	(0.90)	(0.59)	(-2.55)
$S_{6H,4}$	0.214	0.490	0.0160	-0.0886	0.0369	-0.555**	-0.274	0.359	0.163	-0.110
	(0.85)	(1.58)	(0.05)	(-0.28)	(0.18)	(-2.22)	(-1.07)	(1.28)	(0.60)	(-0.39)
$S_{6H,5}$	-0.614*	0.343	0.0525	0.215	-0.0637	0.550*	0.189	-0.112	0.0634	-0.317
	(-1.90)	(0.89)	(0.16)	(0.41)	(-0.16)	(1.70)	(0.48)	(-0.34)	(0.16)	(-0.88)
$S_{7,1}$	-0.300	-0.289	0.513*	0.0803	0.149	0.139	-0.312	-0.185	-0.359*	-0.424*
	(-1.27)	(-1.28)	(1.71)	(0.30)	(0.64)	(0.62)	(-1.47)	(-0.81)	(-1.81)	(-1.83)
$S_{7,2}$	-0.251**	-0.0426	0.0290	-0.134	0.0896	0.468***	-0.159	-0.322***	0.0231	-0.316***
	(-2.43)	(-0.41)	(0.26)	(-0.97)	(0.87)	(4.54)	(-1.44)	(-3.18)	(0.20)	(-2.96)
$S_{7,3}$	-0.140	0.374***	0.0393	0.135	-0.159	0.425***	0.141	-0.376***	-0.530***	-0.354***
	(-1.18)	(2.97)	(0.32)	(0.86)	(-1.45)	(3.46)	(1.12)	(-3.06)	(-4.43)	(-2.94)
$S_{7,4}$	0.142	0.434	-0.268	0.194	-0.0963	0.606***	-0.527***	-0.142	-0.732***	-0.331*
	(0.69)	(1.58)	(-1.24)	(0.63)	(-0.51)	(2.65)	(-2.64)	(-0.59)	(-3.16)	(-1.88)
$S_{7,5}$	0.427	0.197	-0.110	0.547*	-0.485*	-0.115	-0.0790	-0.0385	-0.283	-0.515
	(1.31)	(0.67)	(-0.28)	(1.79)	(-1.74)	(-0.35)	(-0.30)	(-0.14)	(-0.71)	(-1.56)
$S_{7H,1}$	0.378	0.286	-0.634*	0.184	-0.241	0.0992	-0.232	0.0221	0.629**	0.123
	(1.38)	(1.07)	(-1.85)	(0.59)	(-0.87)	(0.36)	(-0.87)	(0.08)	(2.46)	(0.46)
$S_{7H,2}$	0.0636	0.113	0.0318	0.231	-0.0755	-0.0394	-0.0368	0.168	-0.00712	0.0177
	(0.48)	(0.87)	(0.23)	(1.42)	(-0.57)	(-0.29)	(-0.27)	(1.18)	(-0.05)	(0.14)
$S_{7H,3}$	0.0357	-0.172	-0.421***	0.168	0.00498	-0.172	-0.379**	0.307*	0.124	-0.0217
	(0.24)	(-1.05)	(-2.59)	(0.82)	(0.03)	(-1.05)	(-2.34)	(1.82)	(0.79)	(-0.14)
$S_{7H,4}$	-0.333	-0.260	0.781***	-0.175	0.0753	-0.261	0.0939	0.0783	0.161	0.126
	(-1.27)	(-0.79)	(2.72)	(-0.47)	(0.31)	(-0.87)	(0.37)	(0.26)	(0.58)	(0.52)
$S_{7H,5}$	-0.476	0.709*	0.254	-0.597	0.325	0.346	0.0201	-0.373	-0.238	0.301
	(-1.25)	(1.87)	(0.59)	(-1.56)	(0.95)	(0.86)	(0.05)	(-1.08)	(-0.53)	(0.73)
$S_{8,1}$	-0.353	-0.191	0.278	-0.182	0.155	0.0524	-0.456**	0.391*	-0.430	-0.707**

	$m=1$	$m=2$	$m=3$	$m=4$	$m=5$	$m=6$	$m=7$	$m=8$	$m=9$	$m=10$
	(-1.34)	(-0.77)	(0.96)	(-0.40)	(0.70)	(0.20)	(-2.03)	(1.79)	(-1.49)	(-2.13)
$S_{8,2}$	-0.147	0.0757	0.0236	-0.0461	0.0662	0.355***	-0.118	-0.330***	-0.171	-0.232**
	(-1.35)	(0.70)	(0.20)	(-0.32)	(0.60)	(3.42)	(-1.03)	(-3.05)	(-1.50)	(-2.03)
$S_{8,3}$	0.0474	0.580***	-0.0103	-0.0157	-0.0257	0.386***	-0.220*	-0.527***	-0.490***	-0.297**
	(0.42)	(4.41)	(-0.08)	(-0.11)	(-0.24)	(3.16)	(-1.80)	(-4.47)	(-4.34)	(-2.56)
$S_{8,4}$	0.116	0.409**	-0.430**	0.443**	-0.272	0.260	-0.324*	-0.0555	-0.552***	-0.186
	(0.56)	(2.06)	(-2.08)	(2.38)	(-1.45)	(1.27)	(-1.67)	(-0.22)	(-2.74)	(-0.82)
$S_{8,5}$	0.572**	0.398	0.658**	0.0557	-0.358	0.145	-0.448	-0.361	-0.740***	-0.380
	(2.13)	(1.35)	(2.27)	(0.17)	(-1.13)	(0.55)	(-1.63)	(-1.15)	(-2.84)	(-1.30)
$S_{8H,1}$	0.226	0.479*	-0.344	0.780	-0.318	-0.0382	0.0214	-0.449*	0.477	0.110
	(0.76)	(1.68)	(-1.01)	(1.60)	(-1.15)	(-0.12)	(0.08)	(-1.74)	(1.40)	(0.30)
$S_{8H,2}$	0.0208	0.387***	0.0514	-0.0339	-0.106	-0.0446	-0.236	0.242	-0.00464	-0.0275
	(0.15)	(2.67)	(0.35)	(-0.19)	(-0.76)	(-0.32)	(-1.60)	(1.62)	(-0.03)	(-0.20)
$S_{8H,3}$	-0.0526	0.0849	-0.245	0.0899	-0.198	-0.0675	-0.0644	0.407**	-0.0531	-0.183
	(-0.37)	(0.51)	(-1.63)	(0.47)	(-1.36)	(-0.44)	(-0.42)	(2.52)	(-0.34)	(-1.26)
$S_{8H,4}$	-0.348	0.0911	1.076***	-0.581**	0.183	-0.113	-0.168	-0.110	-0.119	0.0926
	(-1.32)	(0.35)	(3.64)	(-1.98)	(0.78)	(-0.39)	(-0.62)	(-0.36)	(-0.49)	(0.32)
$S_{8H,5}$	-0.542	0.564	-0.465	0.235	0.314	-0.117	0.0113	-0.272	0.110	0.246
	(-1.63)	(1.53)	(-1.43)	(0.61)	(0.85)	(-0.35)	(0.03)	(-0.74)	(0.33)	(0.69)
Threshold parameters										
$\widehat{\nu_1}$	-2.206***	-2.299***	-0.151	1.025***	-2.629***	-1.672***	-2.430***	-1.556***	-2.259***	-1.965***
	(-16.26)	(-15.22)	(-0.93)	(5.34)	(-17.94)	(-11.11)	(-14.82)	(-9.87)	(-14.06)	(-12.19)
$\widehat{\nu_2}$	-1.199***	-1.350***	1.163***	2.110***	-1.467***	-0.773***	-1.327***	-0.138	-1.239***	-0.567***
	(-9.01)	(-9.15)	(7.13)	(10.81)	(-10.37)	(-5.22)	(-8.33)	(-0.88)	(-7.90)	(-3.60)
$\widehat{\nu_3}$	-0.235*	-0.279*	2.031***	3.021***	-0.416***	0.383***	-0.369**	0.792***	-0.407***	0.553***
	(-1.78)	(-1.92)	(12.20)	(14.87)	(-2.99)	(2.60)	(-2.34)	(5.05)	(-2.63)	(3.52)
$\widehat{\nu_4}$	0.921***	0.924***	2.729***	3.814***	0.802***	1.756***	0.787***	1.817***	0.606***	1.603***
	(6.96)	(6.35)	(15.86)	(17.74)	(5.71)	(11.71)	(5.00)	(11.38)	(3.93)	(10.00)
Random effect										
$\widehat{\sigma_u^2}$	1.279***	1.735***	1.731***	2.649***	1.494***	1.811***	2.074***	2.153***	1.963***	1.694***
	(16.01)	(17.01)	(15.39)	(14.32)	(16.71)	(16.93)	(17.03)	(17.05)	(17.07)	(15.82)
	56.1%	63.4%	63.4%	72.6%	59.9%	64.4%	67.5%	68.3%	66.3%	62.9%
Groups	1796	1770	1778	1848	1847	1831	1836	1785	1813	1788
Observations	8386	8279	8315	8645	8545	8650	8568	8390	8541	8381
Log-likelihood	-11694.9	-10795.1	-9892.2	-7091.7	-11342.5	-11193.6	-11114.5	-10869.2	-10631.3	-10641.7

Notes: *, ** and *** denote significance at 90%, 95%, and 99% respectively. t-statistics clustered by individual in parentheses. Recall that $m=1$ denotes the precautionary motive, $m=2$ the precautionary health motive, $m=3$ the life-span risk motive, $m=4$ the intended bequest motive, $m=5$ the liquidity motive, $m=6$ the intra-household bequest motive, $m=7$ the autonomy motive, $m=8$ the security motive, $m=9$ the self-gratification motive, and $m=10$ the political risk motive. See Table 2 for the full-text saving motives.

Table 12: Robustness check 2. RE Ordered Probit estimates per saving motive with standardization per motive.

	$m=1$	$m=2$	$m=3$	$m=4$	$m=5$	$m=6$	$m=7$	$m=8$	$m=9$	$m=10$
Personal characteristics										
male	-0.0732	-0.307***	0.0116	0.308***	0.0177	0.153**	-0.0745	-0.0000742	0.0571	-0.0340
	(-1.20)	(-4.24)	(0.15)	(3.26)	(0.26)	(2.11)	(-0.97)	(-0.00)	(0.74)	(-0.46)
partner	-0.0405	-0.157*	0.0166	0.125	-0.0842	0.552***	0.0109	-0.0793	-0.0740	-0.0382
	(-0.55)	(-1.87)	(0.20)	(1.18)	(-1.11)	(6.60)	(0.12)	(-0.89)	(-0.85)	(-0.47)
children	0.0357	0.0345	-0.0542	0.363***	0.0230	-0.0930	-0.0359	-0.0813	-0.0685	0.0300
	(0.58)	(0.48)	(-0.74)	(3.93)	(0.35)	(-1.29)	(-0.48)	(-1.03)	(-0.87)	(0.40)
INC_3_4	-0.0409	0.0797	0.0507	-0.0613	-0.0171	-0.0839	0.119	-0.0166	0.267***	-0.277***
	(-0.59)	(0.99)	(0.62)	(-0.60)	(-0.22)	(-1.03)	(1.41)	(-0.19)	(2.95)	(-3.47)
homeowner	-0.00851	-0.00739	-0.0389	-0.117	0.00714	0.0302	-0.0204	-0.0228	0.225**	-0.172**
	(-0.11)	(-0.08)	(-0.44)	(-1.02)	(0.09)	(0.33)	(-0.22)	(-0.24)	(2.50)	(-2.00)
religious	-0.0839	0.142*	0.0702	0.0401	0.155**	-0.0901	-0.00880	0.00797	-0.284***	0.0212
	(-1.31)	(1.91)	(0.94)	(0.42)	(2.32)	(-1.20)	(-0.11)	(0.10)	(-3.63)	(0.30)
born_country	-0.0858	0.0221	-0.135	-0.0581	0.0495	0.185*	0.0489	-0.172*	0.181*	-0.118
	(-0.95)	(0.23)	(-1.21)	(-0.46)	(0.56)	(1.86)	(0.46)	(-1.66)	(1.71)	(-1.15)
SLE1_high	-0.0288	-0.0621	0.0775	-0.101	-0.0886	0.0269	0.0403	0.0186	0.122	-0.0178
	(-0.47)	(-0.87)	(1.07)	(-1.13)	(-1.35)	(0.38)	(0.54)	(0.24)	(1.60)	(-0.26)
Personality related										
ret_plan	-0.202***	-0.0106	-0.0232	-0.237**	-0.146**	0.115	0.102	0.0440	0.0491	0.0916
	(-2.94)	(-0.13)	(-0.28)	(-2.29)	(-1.96)	(1.50)	(1.21)	(0.50)	(0.59)	(1.14)
pens_cap	0.170**	0.254***	0.103	-0.408***	0.0840	-0.0816	0.0351	0.0789	0.127	-0.379***
	(2.50)	(3.21)	(1.29)	(-4.00)	(1.21)	(-1.07)	(0.42)	(0.89)	(1.49)	(-4.99)
pens_kno_std	0.00954	0.0322	-0.0160	-0.0447	0.0542	-0.0887**	0.00413	-0.0177	0.00577	-0.0147
	(0.30)	(0.81)	(-0.41)	(-0.90)	(1.50)	(-2.24)	(0.11)	(-0.42)	(0.15)	(-0.40)
risk1_std	-0.0747**	-0.0640*	0.0119	0.0300	-0.0423	-0.0269	0.0882**	0.0419	0.0552	0.0452
	(-2.49)	(-1.77)	(0.33)	(0.65)	(-1.35)	(-0.77)	(2.44)	(1.11)	(1.42)	(1.34)
imp_fin_beh_std	-0.00225	-0.0610*	-0.0135	-0.00378	0.0173	0.0692*	-0.0316	0.00771	0.0329	-0.104***
	(-0.07)	(-1.65)	(-0.36)	(-0.08)	(0.48)	(1.84)	(-0.82)	(0.19)	(0.82)	(-2.84)
fut_or_std	0.0880***	0.0929**	-0.0288	-0.0160	-0.0671**	-0.00686	-0.0360	0.00830	-0.0753*	0.0137
	(2.79)	(2.22)	(-0.72)	(-0.33)	(-1.98)	(-0.18)	(-0.93)	(0.21)	(-1.78)	(0.37)
TIPI_Con_std	0.0660**	0.0435	-0.0916**	-0.128***	0.0446	0.0495	0.0447	-0.0486	0.0817**	-0.0582
	(2.20)	(1.19)	(-2.49)	(-2.72)	(1.30)	(1.36)	(1.18)	(-1.27)	(2.08)	(-1.61)
AUSTRALIA	-0.179**	-0.278***	1.194***	0.225**	-0.900***	-0.425***	0.0401	1.175***	-0.0310	-0.613***
	(-2.43)	(-3.32)	(13.56)	(2.07)	(-11.54)	(-5.23)	(0.47)	(12.60)	(-0.34)	(-7.48)
Interaction terms (1st stage)										
$S_{1,1}$	-0.179*	-0.0430	0.252**	-0.181	-0.0917	0.0472	0.0185	0.0735	-0.0782	0.0179
	(-1.65)	(-0.40)	(1.98)	(-1.17)	(-0.79)	(0.48)	(0.17)	(0.66)	(-0.60)	(0.18)
$S_{1,2}$	-0.159***	-0.0126	-0.0385	0.153*	0.116*	-0.0468	0.00703	0.0251	0.0754	-0.00590
	(-2.60)	(-0.20)	(-0.52)	(1.65)	(1.74)	(-0.72)	(0.10)	(0.38)	(1.01)	(-0.09)
$S_{1,3}$	-0.0685	0.284***	-0.00681	0.400***	-0.0988	-0.0157	-0.145	0.0207	-0.138	-0.00495
	(-0.78)	(3.26)	(-0.07)	(3.48)	(-1.10)	(-0.18)	(-1.55)	(0.24)	(-1.43)	(-0.05)
$S_{1,4}$	0.303**	0.189	0.0161	0.0180	-0.177	-0.114	0.200	0.0960	-0.300**	0.335**
	(2.38)	(1.50)	(0.11)	(0.10)	(-1.40)	(-0.85)	(1.38)	(0.78)	(-2.39)	(2.50)
$S_{1,5}$	-0.0848	0.306**	0.142	0.213	0.0205	-0.184	0.0898	0.0931	-0.396***	0.0661
	(-0.56)	(2.16)	(0.88)	(1.22)	(0.13)	(-1.26)	(0.52)	(0.62)	(-2.77)	(0.41)
$S_{2,1}$	-0.227**	0.0768	0.0343	-0.202	-0.209*	0.249**	0.0161	0.00983	0.0734	0.00919
	(-2.16)	(0.64)	(0.28)	(-1.22)	(-1.80)	(2.20)	(0.13)	(0.09)	(0.56)	(0.08)
$S_{2,2}$	-0.0688	0.0236	-0.0502	0.0369	0.0270	0.0648	-0.0560	-0.0683	0.0690	0.0357
	(-1.09)	(0.40)	(-0.70)	(0.42)	(0.40)	(1.09)	(-0.80)	(-1.14)	(0.94)	(0.57)
$S_{2,3}$	0.0160	0.272***	0.00649	0.409***	-0.0966	-0.0476	-0.0496	0.164*	-0.300***	-0.102
	(0.19)	(3.16)	(0.07)	(3.54)	(-1.14)	(-0.58)	(-0.55)	(1.85)	(-3.23)	(-1.15)
$S_{2,4}$	0.0946	0.609***	-0.106	0.379**	-0.0848	-0.0796	0.112	0.212	-0.307**	-0.0861
	(0.64)	(4.49)	(-0.66)	(2.43)	(-0.61)	(-0.51)	(0.70)	(1.44)	(-2.19)	(-0.50)
$S_{2,5}$	0.0956	0.404**	-0.216	0.777***	0.0202	0.00783	-0.0983	-0.333	-0.524***	0.196
	(0.54)	(2.32)	(-0.94)	(3.30)	(0.09)	(0.04)	(-0.42)	(-1.50)	(-2.96)	(1.00)
$S_{3,1}$	-0.389**	0.0312	0.114	0.113	-0.145	0.263	-0.211	-0.113	0.331*	-0.223
	(-2.52)	(0.18)	(0.66)	(0.53)	(-0.84)	(1.63)	(-1.04)	(-0.59)	(1.87)	(-1.33)
$S_{3,2}$	0	0	0	0	0	0	0	0	0	0
	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)
$S_{3,3}$	-0.0106	0.371***	0.0131	0.384***	-0.0598	0.00172	-0.00627	-0.00275	-0.378***	0.0277
	(-0.12)	(4.35)	(0.14)	(3.31)	(-0.69)	(0.02)	(-0.07)	(-0.03)	(-3.81)	(0.32)
$S_{3,4}$	0.0570	0.532***	0.0742	0.395**	0.111	0.151	-0.135	-0.0749	-0.611***	0.103
	(0.39)	(3.39)	(0.42)	(2.03)	(0.77)	(0.91)	(-0.79)	(-0.37)	(-3.69)	(0.60)
$S_{3,5}$	0.213	0.291	-0.242	0.502**	-0.149	-0.0741	0.0710	-0.168	-0.420**	0.181
	(1.17)	(1.60)	(-1.17)	(2.05)	(-0.76)	(-0.37)	(0.32)	(-0.80)	(-2.20)	(0.90)

	$m=1$	$m=2$	$m=3$	$m=4$	$m=5$	$m=6$	$m=7$	$m=8$	$m=9$	$m=10$
Interaction terms (2nd stage)										
$S_{5,1}$	-0.187	-0.372	0.383	0.197	0.292	-0.198	-0.105	0.0340	-0.494	0.186
	(-0.62)	(-1.44)	(1.24)	(0.54)	(1.32)	(-0.79)	(-0.45)	(0.13)	(-1.55)	(0.58)
$S_{5,2}$	-0.201*	-0.197*	-0.0998	0.0528	0.0666	0.149	0.0962	-0.0844	0.0620	-0.0298
	(-1.95)	(-1.94)	(-0.92)	(0.39)	(0.65)	(1.58)	(0.86)	(-0.81)	(0.59)	(-0.30)
$S_{5,3}$	-0.121	0.267**	-0.0556	0.459***	-0.100	0.117	0.0367	-0.424***	-0.365***	0.00218
	(-1.04)	(2.10)	(-0.43)	(3.09)	(-0.91)	(1.04)	(0.28)	(-3.70)	(-3.03)	(0.02)
$S_{5,4}$	-0.225	0.676***	0.332	0.404	-0.248	0.189	-0.0750	-0.286	-1.009***	-0.387*
	(-0.95)	(2.72)	(1.20)	(1.16)	(-1.33)	(0.84)	(-0.34)	(-1.18)	(-4.36)	(-1.79)
$S_{5,5}$	-0.135	0.736**	0.335	0.424	-0.320	-0.0835	-0.402	-0.317	-0.557	0.234
	(-0.49)	(2.18)	(1.17)	(1.05)	(-0.89)	(-0.30)	(-1.17)	(-1.22)	(-1.47)	(0.86)
$S_{5H,1}$	0.0893	0.00177	-0.182	-0.0608	-0.411	0.143	0.0376	-0.201	0.657*	-0.238
	(0.27)	(0.01)	(-0.51)	(-0.15)	(-1.61)	(0.48)	(0.13)	(-0.68)	(1.84)	(-0.66)
$S_{5H,2}$	0.0771	0.137	0.0122	-0.00995	-0.219*	0.108	-0.299**	0.116	-0.0646	0.0522
	(0.60)	(1.05)	(0.09)	(-0.06)	(-1.67)	(0.86)	(-2.21)	(0.85)	(-0.46)	(0.43)
$S_{5H,3}$	-0.0201	0.0110	-0.0480	-0.134	-0.226	-0.129	-0.324*	0.344**	0.374**	-0.224
	(-0.13)	(0.07)	(-0.30)	(-0.68)	(-1.48)	(-0.91)	(-1.94)	(2.10)	(2.47)	(-1.40)
$S_{5H,4}$	-0.0212	-0.453	0.300	-0.460	0.186	-0.294	-0.0924	-0.0221	0.448	0.299
	(-0.07)	(-1.50)	(0.93)	(-1.17)	(0.77)	(-1.02)	(-0.34)	(-0.07)	(1.60)	(1.12)
$S_{5H,5}$	0.0883	-0.438	-0.518	-0.0879	0.200	0.358	0.176	0.399	-0.00995	-0.568
	(0.25)	(-1.09)	(-1.50)	(-0.19)	(0.47)	(0.96)	(0.42)	(1.07)	(-0.02)	(-1.60)
$S_{6,1}$	-0.143	-0.502**	0.924***	0.130	0.335	-0.0639	-0.578**	-0.411	-0.136	-0.215
	(-0.56)	(-2.02)	(2.87)	(0.43)	(1.61)	(-0.25)	(-1.99)	(-1.64)	(-0.48)	(-0.58)
$S_{6,2}$	-0.0584	-0.0300	0.0315	0.101	0.0664	0.112	-0.0637	-0.204*	-0.00697	-0.137
	(-0.56)	(-0.28)	(0.30)	(0.71)	(0.63)	(1.11)	(-0.56)	(-1.89)	(-0.06)	(-1.24)
$S_{6,3}$	0.0294	0.783***	-0.0933	0.201	-0.101	0.0788	-0.0752	-0.287***	-0.554***	-0.146
	(0.27)	(6.08)	(-0.79)	(1.35)	(-0.97)	(0.79)	(-0.61)	(-2.64)	(-4.86)	(-1.32)
$S_{6,4}$	0.00127	0.229	0.176	0.340	-0.0901	0.253	-0.107	-0.521**	-0.812***	-0.0578
	(0.01)	(0.92)	(0.76)	(1.31)	(-0.54)	(1.26)	(-0.55)	(-2.44)	(-3.35)	(-0.25)
$S_{6,5}$	0.476*	0.514*	0.210	-0.0232	-0.110	-0.311	-0.388	0.0347	-0.857**	0.225
	(1.74)	(1.70)	(0.75)	(-0.05)	(-0.36)	(-1.22)	(-1.26)	(0.13)	(-2.56)	(0.76)
$S_{6H,1}$	0.323	0.562*	-1.123***	0.0139	-0.198	-0.241	0.379	0.181	0.334	0.0320
	(1.07)	(1.80)	(-2.91)	(0.04)	(-0.75)	(-0.82)	(1.14)	(0.62)	(0.99)	(0.08)
$S_{6H,2}$	0.0385	0.417***	-0.0647	-0.116	0.0206	-0.0873	-0.194	0.0568	-0.0441	-0.111
	(0.29)	(3.01)	(-0.46)	(-0.68)	(0.15)	(-0.66)	(-1.38)	(0.42)	(-0.30)	(-0.80)
$S_{6H,3}$	-0.000293	0.0817	0.0458	0.113	-0.0668	-0.161	-0.260*	0.108	0.104	-0.400***
	(-0.00)	(0.50)	(0.32)	(0.61)	(-0.48)	(-1.23)	(-1.73)	(0.72)	(0.71)	(-2.69)
$S_{6H,4}$	0.217	0.409	0.0113	-0.145	0.0319	-0.586**	-0.361	0.294	0.189	-0.146
	(0.84)	(1.32)	(0.04)	(-0.47)	(0.15)	(-2.32)	(-1.41)	(1.07)	(0.69)	(-0.52)
$S_{6H,5}$	-0.643*	0.324	0.0704	0.171	-0.0646	0.463	0.0968	-0.00724	0.0631	-0.570
	(-1.93)	(0.84)	(0.21)	(0.34)	(-0.18)	(1.41)	(0.24)	(-0.02)	(0.17)	(-1.56)
$S_{7,1}$	-0.301	-0.273	0.534*	0.137	0.211	0.171	-0.304	-0.121	-0.363*	-0.373
	(-1.34)	(-1.18)	(1.77)	(0.52)	(0.92)	(0.76)	(-1.44)	(-0.57)	(-1.77)	(-1.50)
$S_{7,2}$	-0.223**	-0.0157	0.0369	-0.0932	0.144	0.508***	-0.123	-0.264***	0.0347	-0.273***
	(-2.17)	(-0.15)	(0.35)	(-0.66)	(1.47)	(5.01)	(-1.14)	(-2.66)	(0.30)	(-2.75)
$S_{7,3}$	-0.114	0.384***	0.0642	0.199	-0.151	0.459***	0.147	-0.340***	-0.540***	-0.327***
	(-0.98)	(3.06)	(0.53)	(1.27)	(-1.39)	(3.76)	(1.16)	(-2.81)	(-4.51)	(-2.73)
$S_{7,4}$	0.132	0.473*	-0.253	0.300	-0.132	0.632***	-0.490**	-0.131	-0.736***	-0.310*
	(0.63)	(1.71)	(-1.16)	(0.98)	(-0.66)	(2.84)	(-2.50)	(-0.54)	(-3.14)	(-1.74)
$S_{7,5}$	0.452	0.171	-0.0780	0.622**	-0.549**	-0.0532	-0.0278	-0.0830	-0.264	-0.358
	(1.38)	(0.57)	(-0.19)	(2.03)	(-2.11)	(-0.17)	(-0.10)	(-0.29)	(-0.67)	(-1.09)
$S_{7H,1}$	0.419	0.263	-0.653*	0.156	-0.330	0.118	-0.262	-0.0581	0.640**	0.0751
	(1.58)	(0.97)	(-1.90)	(0.51)	(-1.20)	(0.43)	(-0.99)	(-0.24)	(2.47)	(0.26)
$S_{7H,2}$	0.0160	0.0814	0.0364	0.212	-0.148	-0.0465	-0.0995	0.0920	-0.0135	-0.0230
	(0.13)	(0.64)	(0.28)	(1.30)	(-1.18)	(-0.34)	(-0.75)	(0.67)	(-0.09)	(-0.18)
$S_{7H,3}$	0.0238	-0.179	-0.394**	0.135	0.00750	-0.172	-0.362**	0.281*	0.149	-0.0138
	(0.16)	(-1.10)	(-2.54)	(0.66)	(0.05)	(-1.05)	(-2.24)	(1.69)	(0.95)	(-0.09)
$S_{7H,4}$	-0.306	-0.351	0.789***	-0.235	0.114	-0.283	0.00477	0.0253	0.194	0.0887
	(-1.16)	(-1.06)	(2.75)	(-0.65)	(0.46)	(-0.96)	(0.02)	(0.08)	(0.69)	(0.36)
$S_{7H,5}$	-0.506	0.697*	0.259	-0.659*	0.351	0.241	-0.0452	-0.281	-0.272	0.0658
	(-1.34)	(1.81)	(0.58)	(-1.75)	(1.07)	(0.60)	(-0.11)	(-0.80)	(-0.61)	(0.16)
$S_{8,1}$	-0.388	-0.197	0.339	-0.0714	0.253	0.103	-0.425**	0.472**	-0.426	-0.665**
	(-1.53)	(-0.77)	(1.10)	(-0.15)	(1.16)	(0.39)	(-1.97)	(2.26)	(-1.49)	(-2.10)
$S_{8,2}$	-0.114	0.104	0.0167	-0.00581	0.119	0.399***	-0.0817	-0.276**	-0.156	-0.198*
	(-1.05)	(0.98)	(0.15)	(-0.04)	(1.12)	(3.82)	(-0.72)	(-2.57)	(-1.36)	(-1.86)

	$m=1$	$m=2$	$m=3$	$m=4$	$m=5$	$m=6$	$m=7$	$m=8$	$m=9$	$m=10$
$S_{8,3}$	0.0744	0.597***	0.0192	0.0486	-0.0164	0.419***	-0.219*	-0.485***	-0.501***	-0.251**
	(0.68)	(4.56)	(0.16)	(0.33)	(-0.15)	(3.44)	(-1.81)	(-4.17)	(-4.46)	(-2.25)
$S_{8,4}$	0.154	0.446**	-0.409*	0.519***	-0.257	0.271	-0.276	-0.0346	-0.563***	-0.149
	(0.73)	(2.28)	(-1.91)	(2.73)	(-1.34)	(1.34)	(-1.51)	(-0.14)	(-2.79)	(-0.66)
$S_{8,5}$	0.547**	0.376	0.686**	0.0843	-0.419	0.209	-0.423	-0.397	-0.728***	-0.260
	(2.05)	(1.28)	(2.27)	(0.27)	(-1.38)	(0.81)	(-1.48)	(-1.25)	(-2.92)	(-0.88)
$S_{8H,1}$	0.316	0.485*	-0.381	0.724	-0.433	-0.0356	-0.0267	-0.520**	0.491	0.0681
	(1.09)	(1.66)	(-1.08)	(1.47)	(-1.58)	(-0.12)	(-0.10)	(-2.09)	(1.46)	(0.19)
$S_{8H,2}$	-0.0367	0.357**	0.0629	-0.0667	-0.179	-0.0553	-0.311**	0.170	-0.0169	-0.0672
	(-0.26)	(2.48)	(0.44)	(-0.37)	(-1.32)	(-0.40)	(-2.15)	(1.18)	(-0.11)	(-0.50)
$S_{8H,3}$	-0.0710	0.0626	-0.247*	0.0566	-0.222	-0.0698	-0.0626	0.363**	-0.0274	-0.196
	(-0.51)	(0.38)	(-1.68)	(0.30)	(-1.52)	(-0.45)	(-0.41)	(2.26)	(-0.18)	(-1.38)
$S_{8H,4}$	-0.379	0.00614	1.128***	-0.595**	0.161	-0.0989	-0.203	-0.167	-0.0946	0.0428
	(-1.41)	(0.02)	(3.65)	(-2.01)	(0.67)	(-0.35)	(-0.78)	(-0.56)	(-0.38)	(0.15)
$S_{8H,5}$	-0.512	0.552	-0.456	0.205	0.399	-0.218	-0.0574	-0.215	0.0936	0.0770
	(-1.56)	(1.50)	(-1.31)	(0.55)	(1.15)	(-0.67)	(-0.16)	(-0.58)	(0.28)	(0.21)
Nuisance parameters										
A_1	0	0.112	-0.129	0.0837	0.109	-0.143*	-0.00206	0.166**	0.132	0.152**
	(.)	(1.43)	(-1.49)	(0.88)	(1.51)	(-1.87)	(-0.02)	(2.06)	(1.49)	(2.00)
A_2	-0.198**	0	-0.127	0.00745	0.0564	-0.133*	-0.0643	-0.0354	0.0940	0.0992
	(-2.51)	(.)	(-1.49)	(0.08)	(0.73)	(-1.80)	(-0.68)	(-0.44)	(0.99)	(1.29)
A_3	0.432***	0.204**	0	0.399***	0.371***	0.250***	0.254***	0.431***	0.345***	0.525***
	(5.32)	(2.46)	(.)	(3.82)	(4.89)	(3.24)	(2.91)	(5.09)	(3.84)	(6.54)
A_4	0.478***	0.369***	0.705***	0	0.673***	0.309***	0.499***	0.626***	0.378***	0.801***
	(6.12)	(4.70)	(8.81)	(.)	(9.13)	(4.18)	(5.55)	(7.44)	(4.41)	(9.96)
A_5	0.0314	-0.0313	-0.129	-0.0641	0	0	-0.0250	0.0821	0.0421	0.165**
	(0.40)	(-0.38)	(-1.60)	(-0.66)	(.)	(.)	(-0.28)	(0.97)	(0.52)	(2.25)
A_6	0	0	0	0	0	0	0	0	0	0
	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)
A_7	-0.294***	-0.215***	-0.212***	-0.385***	-0.517***	-0.175**	0	-0.411***	-0.225***	0.00712
	(-3.92)	(-2.68)	(-2.76)	(-4.04)	(-7.13)	(-2.34)	(.)	(-5.04)	(-2.65)	(0.10)
A_8	0.0707	-0.0982	-0.134	-0.160*	-0.415***	-0.0208	-0.226***	0	-0.154*	0.244***
	(0.95)	(-1.35)	(-1.64)	(-1.67)	(-6.34)	(-0.28)	(-2.59)	(.)	(-1.84)	(3.12)
A_9	-0.226***	-0.337***	-0.191**	-0.181**	-0.549***	-0.211***	-0.587***	-0.512***	0	0
	(-3.16)	(-4.51)	(-2.46)	(-2.04)	(-7.71)	(-2.94)	(-6.93)	(-6.43)	(.)	(.)
A_{10}	0	0	0	0	0	0	0	0	0	0
	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)
Threshold parameters										
$\widehat{\nu_1}$	-2.188***	-2.355***	-0.234	0.831***	-2.917***	-1.758***	-2.326***	-1.277***	-1.891***	-1.025***
	(-11.31)	(-11.22)	(-1.13)	(3.21)	(-14.82)	(-8.91)	(-9.55)	(-5.46)	(-7.79)	(-4.54)
$\widehat{\nu_2}$	-1.161***	-1.398***	1.123***	1.923***	-1.725***	-0.847***	-1.203***	0.168	-0.860***	0.410*
	(-6.11)	(-6.75)	(5.35)	(7.36)	(-8.94)	(-4.33)	(-4.95)	(0.71)	(-3.53)	(1.83)
$\widehat{\nu_3}$	-0.177	-0.319	2.002***	2.838***	-0.644***	0.320	-0.229	1.115***	-0.0187	1.545***
	(-0.94)	(-1.55)	(9.36)	(10.58)	(-3.36)	(1.64)	(-0.94)	(4.71)	(-0.08)	(6.80)
$\widehat{\nu_4}$	0.996***	0.890***	2.698***	3.629***	0.598***	1.699***	0.941***	2.154***	1.000***	2.595***
	(5.23)	(4.33)	(12.39)	(12.99)	(3.11)	(8.65)	(3.86)	(8.98)	(4.06)	(11.27)
Random effect										
$\widehat{\sigma_u^2}$	1.203***	1.689***	1.688***	2.566***	1.427***	1.739***	1.942***	2.007***	1.949***	1.606***
	(15.77)	(16.64)	(14.89)	(14.20)	(16.53)	(16.72)	(16.88)	(16.81)	(16.97)	(15.54)
	54.6%	62.8%	62.8%	72.0%	58.8%	63.5%	66.0%	66.7%	66.1%	61.6%
Groups	1796	1770	1778	1848	1847	1831	1836	1785	1813	1788
Observations	8386	8279	8315	8645	8545	8650	8568	8390	8541	8381
Log-likelihood	-11528.1	-10735.6	-9712.7	-7048.9	-11146.0	-11110.7	-10971.7	-10707.8	-10581.2	-10473.8

Notes: *, ** and *** denote significance at 90%, 95%, and 99% respectively. t-statistics clustered by individual in parentheses. Recall that $m=1$ denotes the precautionary motive, $m=2$ the precautionary health motive, $m=3$ the life-span risk motive, $m=4$ the intended bequest motive, $m=5$ the liquidity motive, $m=6$ the intra-household bequest motive, $m=7$ the autonomy motive, $m=8$ the security motive, $m=9$ the self-gratification motive, and $m=10$ the political risk motive. See Table 2 for the full-text saving motives.

Table 13: Robustness check 3. Random Effects Ordered Probit estimates per saving motive clustered on household.

	$m=1$	$m=2$	$m=3$	$m=4$	$m=5$	$m=6$	$m=7$	$m=8$	$m=9$	$m=10$
Personal characteristics										
male	-0.0732	-0.307***	0.0116	0.308***	0.0177	0.153**	-0.0745	-0.0000742	0.0571	-0.0340
	(-1.20)	(-4.27)	(0.15)	(3.32)	(0.27)	(2.13)	(-0.97)	(-0.00)	(0.74)	(-0.47)
partner	-0.0405	-0.157*	0.0166	0.125	-0.0842	0.552***	0.0109	-0.0793	-0.0740	-0.0382
	(-0.55)	(-1.87)	(0.20)	(1.16)	(-1.11)	(6.56)	(0.12)	(-0.88)	(-0.84)	(-0.47)
children	0.0357	0.0345	-0.0542	0.363***	0.0230	-0.0930	-0.0359	-0.0813	-0.0685	0.0300
	(0.58)	(0.47)	(-0.73)	(3.84)	(0.35)	(-1.27)	(-0.48)	(-1.01)	(-0.87)	(0.40)
INC_3_4	-0.0409	0.0797	0.0507	-0.0613	-0.0171	-0.0839	0.119	-0.0166	0.267***	-0.277***
	(-0.59)	(0.98)	(0.62)	(-0.59)	(-0.22)	(-1.01)	(1.40)	(-0.18)	(2.97)	(-3.49)
homeowner	-0.00851	-0.00739	-0.0389	-0.117	0.00714	0.0302	-0.0204	-0.0228	0.225**	-0.172**
	(-0.11)	(-0.08)	(-0.43)	(-1.01)	(0.09)	(0.32)	(-0.22)	(-0.24)	(2.49)	(-2.05)
religious	-0.0839	0.142*	0.0702	0.0401	0.155**	-0.0901	-0.00880	0.00797	-0.284***	0.0212
	(-1.32)	(1.89)	(0.93)	(0.42)	(2.32)	(-1.20)	(-0.11)	(0.10)	(-3.60)	(0.30)
born_country	-0.0858	0.0221	-0.135	-0.0581	0.0495	0.185*	0.0489	-0.172*	0.181*	-0.118
	(-0.95)	(0.23)	(-1.20)	(-0.46)	(0.56)	(1.83)	(0.46)	(-1.65)	(1.73)	(-1.15)
SLE1_high	-0.0288	-0.0621	0.0775	-0.101	-0.0886	0.0269	0.0403	0.0186	0.122	-0.0178
	(-0.47)	(-0.87)	(1.07)	(-1.12)	(-1.34)	(0.38)	(0.54)	(0.24)	(1.58)	(-0.26)
Personality related										
ret_plan	-0.202***	-0.0106	-0.0232	-0.237**	-0.146**	0.115	0.102	0.0440	0.0491	0.0916
	(-2.94)	(-0.13)	(-0.28)	(-2.26)	(-1.96)	(1.50)	(1.21)	(0.51)	(0.59)	(1.13)
pens_cap	0.170**	0.254***	0.103	-0.408***	0.0840	-0.0816	0.0351	0.0789	0.127	-0.379***
	(2.52)	(3.18)	(1.29)	(-4.04)	(1.21)	(-1.07)	(0.42)	(0.88)	(1.50)	(-5.03)
pens_kno_std	0.00954	0.0321	-0.0161	-0.0444	0.0545	-0.0888**	0.00421	-0.0178	0.00566	-0.0146
	(0.31)	(0.82)	(-0.40)	(-0.90)	(1.49)	(-2.20)	(0.11)	(-0.42)	(0.15)	(-0.39)
risk1_std	-0.0744**	-0.0644*	0.0117	0.0301	-0.0422	-0.0271	0.0887**	0.0419	0.0544	0.0456
	(-2.49)	(-1.76)	(0.33)	(0.65)	(-1.35)	(-0.78)	(2.42)	(1.11)	(1.41)	(1.34)
imp_fin_beh_std	-0.00226	-0.0594	-0.0135	-0.00380	0.0176	0.0694*	-0.0316	0.00778	0.0331	-0.103***
	(-0.07)	(-1.64)	(-0.36)	(-0.08)	(0.48)	(1.83)	(-0.81)	(0.19)	(0.82)	(-2.81)
fut_or_std	0.0874***	0.0910**	-0.0288	-0.0160	-0.0679**	-0.00699	-0.0351	0.00852	-0.0762*	0.0135
	(2.76)	(2.21)	(-0.72)	(-0.32)	(-1.98)	(-0.18)	(-0.92)	(0.21)	(-1.76)	(0.37)
TIPI_Con_std	0.0666**	0.0429	-0.0918**	-0.128***	0.0444	0.0497	0.0449	-0.0492	0.0806**	-0.0581
	(2.19)	(1.19)	(-2.46)	(-2.72)	(1.29)	(1.34)	(1.19)	(-1.26)	(2.06)	(-1.60)
AUSTRALIA	-0.179**	-0.278***	1.194***	0.225**	-0.900***	-0.425***	0.0401	1.175***	-0.0310	-0.613***
	(-2.43)	(-3.29)	(13.50)	(2.04)	(-11.49)	(-5.19)	(0.47)	(12.43)	(-0.34)	(-7.43)
Interaction terms (1st stage)										
$S_{1,1}$	-0.179*	-0.0430	0.252**	-0.181	-0.0917	0.0472	0.0185	0.0735	-0.0782	0.0179
	(-1.68)	(-0.40)	(2.00)	(-1.17)	(-0.80)	(0.48)	(0.17)	(0.66)	(-0.60)	(0.18)
$S_{1,2}$	-0.159***	-0.0126	-0.0385	0.153	0.116*	-0.0468	0.00703	0.0251	0.0754	-0.00590
	(-2.61)	(-0.20)	(-0.52)	(1.63)	(1.76)	(-0.72)	(0.10)	(0.38)	(1.01)	(-0.09)
$S_{1,3}$	-0.0685	0.284***	-0.00681	0.400***	-0.0988	-0.0157	-0.145	0.0207	-0.138	-0.00495
	(-0.78)	(3.25)	(-0.07)	(3.48)	(-1.10)	(-0.18)	(-1.56)	(0.24)	(-1.43)	(-0.05)
$S_{1,4}$	0.303**	0.189	0.0161	0.0180	-0.177	-0.114	0.200	0.0960	-0.300**	0.335**
	(2.39)	(1.50)	(0.11)	(0.10)	(-1.39)	(-0.85)	(1.37)	(0.79)	(-2.42)	(2.46)
$S_{1,5}$	-0.0848	0.306**	0.142	0.213	0.0205	-0.184	0.0898	0.0931	-0.396***	0.0661
	(-0.56)	(2.15)	(0.88)	(1.22)	(0.12)	(-1.26)	(0.54)	(0.62)	(-2.78)	(0.41)
$S_{2,1}$	-0.227**	0.0768	0.0343	-0.202	-0.209*	0.249**	0.0161	0.00983	0.0734	0.00919
	(-2.16)	(0.64)	(0.27)	(-1.21)	(-1.83)	(2.22)	(0.13)	(0.09)	(0.55)	(0.07)
$S_{2,2}$	-0.0688	0.0236	-0.0502	0.0369	0.0270	0.0648	-0.0560	-0.0683	0.0690	0.0357
	(-1.09)	(0.40)	(-0.70)	(0.42)	(0.40)	(1.09)	(-0.80)	(-1.14)	(0.94)	(0.58)
$S_{2,3}$	0.0160	0.272***	0.00649	0.409***	-0.0966	-0.0476	-0.0496	0.164*	-0.300***	-0.102
	(0.19)	(3.14)	(0.07)	(3.55)	(-1.14)	(-0.58)	(-0.55)	(1.84)	(-3.21)	(-1.14)
$S_{2,4}$	0.0946	0.609***	-0.106	0.379**	-0.0848	-0.0796	0.112	0.212	-0.307**	-0.0861
	(0.64)	(4.48)	(-0.66)	(2.43)	(-0.61)	(-0.51)	(0.71)	(1.45)	(-2.19)	(-0.50)
$S_{2,5}$	0.0956	0.404**	-0.216	0.777***	0.0202	0.00783	-0.0983	-0.333	-0.524***	0.196
	(0.54)	(2.31)	(-0.94)	(3.30)	(0.09)	(0.04)	(-0.42)	(-1.51)	(-2.97)	(1.00)
$S_{3,1}$	-0.389**	0.0312	0.114	0.113	-0.145	0.263	-0.211	-0.113	0.331*	-0.223
	(-2.54)	(0.18)	(0.68)	(0.54)	(-0.85)	(1.63)	(-1.03)	(-0.57)	(1.88)	(-1.30)
$S_{3,2}$	0	0	0	0	0	0	0	0	0	0
	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)
$S_{3,3}$	-0.0106	0.371***	0.0131	0.384***	-0.0598	0.00172	-0.00627	-0.00275	-0.378***	0.0277
	(-0.12)	(4.32)	(0.14)	(3.33)	(-0.69)	(0.02)	(-0.07)	(-0.03)	(-3.80)	(0.32)
$S_{3,4}$	0.0570	0.532***	0.0742	0.395**	0.111	0.151	-0.135	-0.0749	-0.611***	0.103
	(0.38)	(3.40)	(0.41)	(2.03)	(0.77)	(0.91)	(-0.79)	(-0.38)	(-3.69)	(0.60)
$S_{3,5}$	0.213	0.291	-0.242	0.502**	-0.149	-0.0741	0.0710	-0.168	-0.420**	0.181
	(1.16)	(1.60)	(-1.18)	(2.05)	(-0.75)	(-0.37)	(0.33)	(-0.79)	(-2.21)	(0.89)

	$m=1$	$m=2$	$m=3$	$m=4$	$m=5$	$m=6$	$m=7$	$m=8$	$m=9$	$m=10$
Interaction terms (2nd stage)										
$S_{5,1}$	-0.187	-0.372	0.383	0.197	0.292	-0.198	-0.105	0.0340	-0.494	0.186
	(-0.62)	(-1.45)	(1.32)	(0.54)	(1.32)	(-0.79)	(-0.44)	(0.13)	(-1.55)	(0.57)
$S_{5,2}$	-0.201**	-0.197*	-0.0998	0.0528	0.0666	0.149	0.0962	-0.0844	0.0620	-0.0298
	(-1.96)	(-1.95)	(-0.92)	(0.39)	(0.66)	(1.59)	(0.87)	(-0.81)	(0.59)	(-0.30)
$S_{5,3}$	-0.121	0.267**	-0.0556	0.459***	-0.100	0.117	0.0367	-0.424***	-0.365***	0.00218
	(-1.04)	(2.12)	(-0.43)	(3.11)	(-0.92)	(1.04)	(0.28)	(-3.72)	(-3.02)	(0.02)
$S_{5,4}$	-0.225	0.676***	0.332	0.404	-0.248	0.189	-0.0750	-0.286	-1.009***	-0.387*
	(-0.95)	(2.72)	(1.20)	(1.15)	(-1.33)	(0.84)	(-0.34)	(-1.18)	(-4.35)	(-1.79)
$S_{5,5}$	-0.135	0.736**	0.335	0.424	-0.320	-0.0835	-0.402	-0.317	-0.557	0.234
	(-0.49)	(2.17)	(1.17)	(1.05)	(-0.88)	(-0.30)	(-1.17)	(-1.18)	(-1.48)	(0.87)
$S_{5H,1}$	0.0893	0.00177	-0.182	-0.0608	-0.411	0.143	0.0376	-0.201	0.657*	-0.238
	(0.27)	(0.01)	(-0.53)	(-0.15)	(-1.61)	(0.49)	(0.13)	(-0.66)	(1.85)	(-0.66)
$S_{5H,2}$	0.0771	0.137	0.0122	-0.00995	-0.219*	0.108	-0.299**	0.116	-0.0646	0.0522
	(0.60)	(1.04)	(0.09)	(-0.06)	(-1.66)	(0.86)	(-2.20)	(0.84)	(-0.45)	(0.43)
$S_{5H,3}$	-0.0201	0.0110	-0.0480	-0.134	-0.226	-0.129	-0.324*	0.344**	0.374**	-0.224
	(-0.13)	(0.07)	(-0.30)	(-0.68)	(-1.47)	(-0.92)	(-1.93)	(2.10)	(2.48)	(-1.40)
$S_{5H,4}$	-0.0212	-0.453	0.300	-0.460	0.186	-0.294	-0.0924	-0.0221	0.448	0.299
	(-0.07)	(-1.51)	(0.93)	(-1.17)	(0.77)	(-1.02)	(-0.34)	(-0.07)	(1.61)	(1.12)
$S_{5H,5}$	0.0883	-0.438	-0.518	-0.0879	0.200	0.358	0.176	0.399	-0.00995	-0.568
	(0.25)	(-1.09)	(-1.51)	(-0.19)	(0.47)	(0.96)	(0.44)	(1.06)	(-0.02)	(-1.61)
$S_{6,1}$	-0.143	-0.502**	0.924***	0.130	0.335	-0.0639	-0.578**	-0.411	-0.136	-0.215
	(-0.56)	(-2.03)	(3.02)	(0.43)	(1.61)	(-0.25)	(-1.98)	(-1.55)	(-0.48)	(-0.58)
$S_{6,2}$	-0.0584	-0.0300	0.0315	0.101	0.0664	0.112	-0.0637	-0.204*	-0.00697	-0.137
	(-0.56)	(-0.28)	(0.30)	(0.70)	(0.63)	(1.11)	(-0.57)	(-1.87)	(-0.06)	(-1.24)
$S_{6,3}$	0.0294	0.783***	-0.0933	0.201	-0.101	0.0788	-0.0752	-0.287***	-0.554***	-0.146
	(0.27)	(6.06)	(-0.79)	(1.31)	(-0.98)	(0.79)	(-0.60)	(-2.64)	(-4.86)	(-1.32)
$S_{6,4}$	0.00127	0.229	0.176	0.340	-0.0901	0.253	-0.107	-0.521**	-0.812***	-0.0578
	(0.01)	(0.92)	(0.76)	(1.31)	(-0.54)	(1.26)	(-0.56)	(-2.43)	(-3.35)	(-0.25)
$S_{6,5}$	0.476*	0.514*	0.210	-0.0232	-0.110	-0.311	-0.388	0.0347	-0.857**	0.225
	(1.79)	(1.69)	(0.75)	(-0.05)	(-0.35)	(-1.23)	(-1.27)	(0.13)	(-2.57)	(0.75)
$S_{6H,1}$	0.323	0.562*	-1.123***	0.0139	-0.198	-0.241	0.379	0.181	0.334	0.0320
	(1.07)	(1.80)	(-3.03)	(0.04)	(-0.75)	(-0.82)	(1.14)	(0.59)	(0.99)	(0.08)
$S_{6H,2}$	0.0385	0.417***	-0.0647	-0.116	0.0206	-0.0873	-0.194	0.0568	-0.0441	-0.111
	(0.29)	(3.02)	(-0.47)	(-0.68)	(0.15)	(-0.66)	(-1.37)	(0.42)	(-0.29)	(-0.80)
$S_{6H,3}$	-0.000293	0.0817	0.0458	0.113	-0.0668	-0.161	-0.260*	0.108	0.104	-0.400***
	(-0.00)	(0.50)	(0.32)	(0.60)	(-0.48)	(-1.24)	(-1.73)	(0.73)	(0.71)	(-2.69)
$S_{6H,4}$	0.217	0.409	0.0113	-0.145	0.0319	-0.586**	-0.361	0.294	0.189	-0.146
	(0.84)	(1.32)	(0.04)	(-0.46)	(0.15)	(-2.32)	(-1.41)	(1.08)	(0.71)	(-0.52)
$S_{6H,5}$	-0.643**	0.324	0.0704	0.171	-0.0646	0.463	0.0968	-0.00724	0.0631	-0.570
	(-1.97)	(0.84)	(0.22)	(0.34)	(-0.17)	(1.41)	(0.26)	(-0.02)	(0.17)	(-1.56)
$S_{7,1}$	-0.301	-0.273	0.534*	0.137	0.211	0.171	-0.304	-0.121	-0.363*	-0.373
	(-1.34)	(-1.19)	(1.83)	(0.52)	(0.92)	(0.76)	(-1.42)	(-0.55)	(-1.77)	(-1.49)
$S_{7,2}$	-0.223**	-0.0157	0.0369	-0.0932	0.144	0.508***	-0.123	-0.264***	0.0347	-0.273***
	(-2.17)	(-0.15)	(0.35)	(-0.66)	(1.47)	(5.02)	(-1.14)	(-2.64)	(0.30)	(-2.75)
$S_{7,3}$	-0.114	0.384***	0.0642	0.199	-0.151	0.459***	0.147	-0.340***	-0.540***	-0.327***
	(-0.98)	(3.06)	(0.53)	(1.26)	(-1.41)	(3.76)	(1.17)	(-2.83)	(-4.54)	(-2.72)
$S_{7,4}$	0.132	0.473*	-0.253	0.300	-0.132	0.632***	-0.490**	-0.131	-0.736***	-0.310*
	(0.63)	(1.72)	(-1.16)	(0.98)	(-0.66)	(2.82)	(-2.52)	(-0.53)	(-3.14)	(-1.74)
$S_{7,5}$	0.452	0.171	-0.0780	0.622**	-0.549**	-0.0532	-0.0278	-0.0830	-0.264	-0.358
	(1.43)	(0.57)	(-0.19)	(2.03)	(-2.10)	(-0.17)	(-0.11)	(-0.29)	(-0.72)	(-1.08)
$S_{7H,1}$	0.419	0.263	-0.653**	0.156	-0.330	0.118	-0.262	-0.0581	0.640**	0.0751
	(1.58)	(0.98)	(-1.96)	(0.50)	(-1.20)	(0.43)	(-0.97)	(-0.23)	(2.47)	(0.26)
$S_{7H,2}$	0.0160	0.0814	0.0364	0.212	-0.148	-0.0465	-0.0995	0.0920	-0.0135	-0.0230
	(0.13)	(0.63)	(0.27)	(1.29)	(-1.16)	(-0.33)	(-0.75)	(0.66)	(-0.09)	(-0.18)
$S_{7H,3}$	0.0238	-0.179	-0.394**	0.135	0.00750	-0.172	-0.362**	0.281*	0.149	-0.0138
	(0.16)	(-1.10)	(-2.55)	(0.66)	(0.05)	(-1.05)	(-2.24)	(1.69)	(0.96)	(-0.09)
$S_{7H,4}$	-0.306	-0.351	0.789***	-0.235	0.114	-0.283	0.00477	0.0253	0.194	0.0887
	(-1.16)	(-1.06)	(2.75)	(-0.65)	(0.46)	(-0.96)	(0.02)	(0.08)	(0.68)	(0.36)
$S_{7H,5}$	-0.506	0.697*	0.259	-0.659*	0.351	0.241	-0.0452	-0.281	-0.272	0.0658
	(-1.38)	(1.81)	(0.58)	(-1.75)	(1.07)	(0.61)	(-0.12)	(-0.79)	(-0.64)	(0.16)
$S_{8,1}$	-0.388	-0.197	0.339	-0.0714	0.253	0.103	-0.425*	0.472**	-0.426	-0.665**
	(-1.53)	(-0.77)	(1.16)	(-0.15)	(1.16)	(0.39)	(-1.95)	(2.19)	(-1.48)	(-2.10)
$S_{8,2}$	-0.114	0.104	0.0167	-0.00581	0.119	0.399***	-0.0817	-0.276**	-0.156	-0.198*
	(-1.06)	(0.99)	(0.14)	(-0.04)	(1.12)	(3.82)	(-0.72)	(-2.55)	(-1.35)	(-1.84)

	$m=1$	$m=2$	$m=3$	$m=4$	$m=5$	$m=6$	$m=7$	$m=8$	$m=9$	$m=10$
$S_{8,3}$	0.0744	0.597***	0.0192	0.0486	-0.0164	0.419***	-0.219*	-0.485***	-0.501***	-0.251**
	(0.67)	(4.58)	(0.16)	(0.32)	(-0.15)	(3.45)	(-1.81)	(-4.16)	(-4.47)	(-2.24)
$S_{8,4}$	0.154	0.446**	-0.409*	0.519***	-0.257	0.271	-0.276	-0.0346	-0.563***	-0.149
	(0.73)	(2.29)	(-1.93)	(2.73)	(-1.34)	(1.34)	(-1.52)	(-0.14)	(-2.80)	(-0.66)
$S_{8,5}$	0.547**	0.376	0.686**	0.0843	-0.419	0.209	-0.423	-0.397	-0.728***	-0.260
	(2.11)	(1.23)	(2.28)	(0.27)	(-1.38)	(0.80)	(-1.48)	(-1.25)	(-2.92)	(-0.88)
$S_{8H,1}$	0.316	0.485*	-0.381	0.724	-0.433	-0.0356	-0.0267	-0.520**	0.491	0.0681
	(1.09)	(1.65)	(-1.12)	(1.47)	(-1.58)	(-0.12)	(-0.10)	(-2.04)	(1.45)	(0.19)
$S_{8H,2}$	-0.0367	0.357**	0.0629	-0.0667	-0.179	-0.0553	-0.311**	0.170	-0.0169	-0.0672
	(-0.26)	(2.48)	(0.44)	(-0.37)	(-1.31)	(-0.40)	(-2.15)	(1.17)	(-0.11)	(-0.50)
$S_{8H,3}$	-0.0710	0.0626	-0.247*	0.0566	-0.222	-0.0698	-0.0626	0.363**	-0.0274	-0.196
	(-0.51)	(0.38)	(-1.69)	(0.30)	(-1.52)	(-0.45)	(-0.41)	(2.26)	(-0.18)	(-1.38)
$S_{8H,4}$	-0.379	0.00614	1.128***	-0.595**	0.161	-0.0989	-0.203	-0.167	-0.0946	0.0428
	(-1.40)	(0.02)	(3.60)	(-2.01)	(0.69)	(-0.35)	(-0.77)	(-0.56)	(-0.39)	(0.15)
$S_{8H,5}$	-0.512	0.552	-0.456	0.205	0.399	-0.218	-0.0574	-0.215	0.0936	0.0770
	(-1.59)	(1.46)	(-1.33)	(0.55)	(1.15)	(-0.66)	(-0.16)	(-0.58)	(0.28)	(0.21)
Nuisance parameters										
A_1	0	0.112	-0.129	0.0837	0.109	-0.143*	-0.00206	0.166**	0.132	0.152**
	(.)	(1.44)	(-1.48)	(0.88)	(1.52)	(-1.86)	(-0.02)	(2.09)	(1.50)	(1.99)
A_2	-0.198**	0	-0.127	0.00745	0.0564	-0.133*	-0.0643	-0.0354	0.0940	0.0992
	(-2.50)	(.)	(-1.49)	(0.08)	(0.72)	(-1.81)	(-0.70)	(-0.44)	(0.99)	(1.31)
A_3	0.432***	0.204**	0	0.399***	0.371***	0.250***	0.254***	0.431***	0.345***	0.525***
	(5.30)	(2.46)	(.)	(3.83)	(4.83)	(3.25)	(2.94)	(5.08)	(3.82)	(6.58)
A_4	0.478***	0.369***	0.705***	0	0.673***	0.309***	0.499***	0.626***	0.378***	0.801***
	(6.13)	(4.70)	(8.81)	(.)	(9.03)	(4.19)	(5.60)	(7.44)	(4.45)	(10.02)
A_5	0.0314	-0.0313	-0.129	-0.0641	0	0	-0.0250	0.0821	0.0421	0.165**
	(0.40)	(-0.38)	(-1.59)	(-0.66)	(.)	(.)	(-0.27)	(0.96)	(0.52)	(2.26)
A_6	0	0	0	0	0	0	0	0	0	0
	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)
A_7	-0.294***	-0.215***	-0.212***	-0.385***	-0.517***	-0.175**	0	-0.411***	-0.225***	0.00712
	(-3.89)	(-2.67)	(-2.75)	(-4.04)	(-7.15)	(-2.34)	(.)	(-4.99)	(-2.63)	(0.10)
A_8	0.0707	-0.0982	-0.134	-0.160*	-0.415***	-0.0208	-0.226***	0	-0.154*	0.244***
	(0.94)	(-1.35)	(-1.63)	(-1.68)	(-6.32)	(-0.28)	(-2.64)	(.)	(-1.84)	(3.13)
A_9	-0.226***	-0.337***	-0.191**	-0.181**	-0.549***	-0.211***	-0.587***	-0.512***	0	0
	(-3.15)	(-4.50)	(-2.45)	(-2.05)	(-7.72)	(-2.94)	(-7.03)	(-6.35)	(.)	(.)
A_{10}	0	0	0	0	0	0	0	0	0	0
	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)
Threshold parameters										
$\widehat{\nu_1}$	-2.186***	-2.361***	-0.234	0.830***	-2.916***	-1.757***	-2.327***	-1.276***	-1.893***	-1.025***
	(-11.30)	(-11.16)	(-1.12)	(3.20)	(-14.78)	(-8.84)	(-9.76)	(-5.47)	(-7.86)	(-4.55)
$\widehat{\nu_2}$	-1.159***	-1.404***	1.123***	1.922***	-1.724***	-0.846***	-1.205***	0.168	-0.862***	0.410*
	(-6.10)	(-6.74)	(5.34)	(7.33)	(-8.90)	(-4.29)	(-5.06)	(0.72)	(-3.57)	(1.83)
$\widehat{\nu_3}$	-0.175	-0.325	2.002***	2.836***	-0.643***	0.321	-0.231	1.115***	-0.0204	1.545***
	(-0.93)	(-1.57)	(9.35)	(10.52)	(-3.35)	(1.63)	(-0.97)	(4.71)	(-0.08)	(6.83)
$\widehat{\nu_4}$	0.998***	0.884***	2.697***	3.628***	0.599***	1.700***	0.939***	2.155***	0.998***	2.595***
	(5.24)	(4.28)	(12.34)	(12.92)	(3.10)	(8.59)	(3.92)	(8.98)	(4.08)	(11.31)
Random effect										
$\widehat{\sigma_u^2}$	1.203***	1.689***	1.688***	2.566***	1.427***	1.739***	1.942***	2.007***	1.949***	1.606***
	(15.81)	(16.63)	(14.98)	(14.12)	(16.50)	(16.55)	(16.68)	(16.71)	(16.98)	(15.33)
	54.6%	62.8%	62.8%	72.0%	58.8%	63.5%	66.0%	66.7%	66.1%	61.6%
Groups	1796	1770	1778	1848	1847	1831	1836	1785	1813	1788
Observations	8386	8279	8315	8645	8545	8650	8568	8390	8541	8381
Log-likelihood	-11528.1	-10735.6	-9712.7	-7048.9	-11146.0	-11110.7	-10971.7	-10707.8	-10581.2	-10473.8

Notes: *, ** and *** denote significance at 90%, 95%, and 99% respectively. t-statistics clustered by individual in parentheses. Recall that $m=1$ denotes the precautionary motive, $m=2$ the precautionary health motive, $m=3$ the life-span risk motive, $m=4$ the intended bequest motive, $m=5$ the liquidity motive, $m=6$ the intra-household bequest motive, $m=7$ the autonomy motive, $m=8$ the security motive, $m=9$ the self-gratification motive, and $m=10$ the political risk motive. See Table 2 for the full-text saving motives.

Table 14: Robustness check 4. Ordered Probit estimates per saving motive.

	$m=1$	$m=2$	$m=3$	$m=4$	$m=5$	$m=6$	$m=7$	$m=8$	$m=9$	$m=10$
Personal characteristics										
male	-0.0346	-0.170***	-0.0138	0.168***	-0.0116	0.0768*	-0.0214	0.0334	0.0523	-0.0359
	(-0.85)	(-3.82)	(-0.29)	(3.16)	(-0.27)	(1.72)	(-0.46)	(0.72)	(1.14)	(-0.78)
partner	-0.0238	-0.114**	-0.0190	0.0734	-0.0619	0.314***	0.0174	-0.0832	-0.0546	-0.0272
	(-0.49)	(-2.17)	(-0.37)	(1.24)	(-1.26)	(6.14)	(0.33)	(-1.55)	(-1.05)	(-0.54)
children	0.0143	0.0216	-0.0494	0.190***	0.0124	-0.0382	-0.0183	-0.0828*	-0.0437	0.0104
	(0.34)	(0.48)	(-1.09)	(3.67)	(0.29)	(-0.86)	(-0.41)	(-1.77)	(-0.95)	(0.23)
INC_3_4	-0.0198	0.0448	0.0161	-0.000590	-0.0196	-0.0405	0.0447	-0.0244	0.146***	-0.164***
	(-0.42)	(0.90)	(0.32)	(-0.01)	(-0.40)	(-0.82)	(0.89)	(-0.47)	(2.73)	(-3.35)
homeowner	-0.00188	-0.00639	0.00867	-0.0399	0.0202	-0.0171	-0.00906	-0.0000466	0.119**	-0.112**
	(-0.04)	(-0.11)	(0.16)	(-0.61)	(0.38)	(-0.30)	(-0.16)	(-0.00)	(2.20)	(-2.08)
religious	-0.0702	0.0920**	0.0441	0.0332	0.106**	-0.0573	-0.00539	0.0179	-0.147***	0.00475
	(-1.63)	(1.97)	(0.96)	(0.63)	(2.43)	(-1.25)	(-0.12)	(0.39)	(-3.17)	(0.11)
born_country	-0.0560	0.0186	-0.0941	-0.0118	0.0140	0.148**	0.0625	-0.108*	0.0807	-0.0636
	(-0.90)	(0.32)	(-1.39)	(-0.17)	(0.24)	(2.37)	(1.00)	(-1.78)	(1.29)	(-1.04)
SLE1_high	-0.0217	-0.0386	0.0322	-0.0370	-0.0620	0.0171	0.00609	0.0236	0.0759*	-0.00543
	(-0.53)	(-0.88)	(0.72)	(-0.74)	(-1.46)	(0.39)	(0.14)	(0.52)	(1.69)	(-0.13)
Personality related										
ret_plan	-0.117***	0.0232	-0.0206	-0.154***	-0.0926*	0.0879*	0.0515	0.0294	0.0467	0.0533
	(-2.59)	(0.46)	(-0.41)	(-2.66)	(-1.94)	(1.84)	(1.02)	(0.57)	(0.96)	(1.07)
pens_cap	0.0996**	0.122**	0.0789	-0.182***	0.0406	-0.0475	-0.0233	0.0797	0.0367	-0.252***
	(2.25)	(2.45)	(1.62)	(-3.27)	(0.90)	(-1.01)	(-0.47)	(1.54)	(0.73)	(-5.35)
pens_kno_std	0.0100	0.0136	0.0101	-0.0179	0.0477**	-0.0485**	0.00405	-0.0248	-0.00177	0.00674
	(0.46)	(0.56)	(0.42)	(-0.64)	(2.07)	(-1.99)	(0.17)	(-0.99)	(-0.08)	(0.30)
risk1_std	-0.0566***	-0.0420*	0.0152	0.0228	-0.0244	-0.0263	0.0468**	0.0207	0.0239	0.0221
	(-2.77)	(-1.88)	(0.70)	(0.90)	(-1.21)	(-1.20)	(2.18)	(0.92)	(1.06)	(1.04)
imp_fin_beh_std	-0.00191	-0.0317	-0.00642	0.0219	0.00209	0.0337	-0.0146	0.00911	0.0295	-0.0639***
	(-0.09)	(-1.41)	(-0.27)	(0.82)	(0.09)	(1.45)	(-0.64)	(0.38)	(1.26)	(-2.80)
fut_or_std	0.0585***	0.0605**	-0.0263	-0.0136	-0.0450**	-0.0114	-0.0136	-0.0153	-0.0448*	0.0184
	(2.80)	(2.30)	(-1.08)	(-0.51)	(-1.99)	(-0.48)	(-0.60)	(-0.64)	(-1.72)	(0.79)
TIPI_Con_std	0.0470**	0.00720	-0.0438*	-0.0821***	0.0334	0.0251	0.0195	-0.0255	0.0590***	-0.0448*
	(2.32)	(0.32)	(-1.90)	(-3.06)	(1.51)	(1.08)	(0.85)	(-1.11)	(2.62)	(-1.93)
AUSTRALIA	-0.140***	-0.175***	0.712***	0.101*	-0.599***	-0.232***	0.0383	0.673***	-0.00634	-0.399***
	(-2.82)	(-3.42)	(13.44)	(1.66)	(-11.64)	(-4.64)	(0.75)	(12.41)	(-0.12)	(-7.76)
Interaction terms (1st stage)										
$S_{1,1}$	-0.143*	-0.0611	0.210**	-0.00126	0.00963	-0.0928	-0.0880	0.155*	-0.0644	0.0672
	(-1.75)	(-0.81)	(2.30)	(-0.01)	(0.11)	(-1.19)	(-1.04)	(1.94)	(-0.71)	(0.84)
$S_{1,2}$	-0.0641	0.0438	-0.0204	0.113*	0.0711	-0.0279	-0.0599	-0.0559	0.0458	-0.00491
	(-1.34)	(0.93)	(-0.39)	(1.88)	(1.40)	(-0.59)	(-1.22)	(-1.21)	(0.87)	(-0.10)
$S_{1,3}$	0.0204	0.191***	-0.0723	0.366***	-0.0415	-0.0852	-0.103	0.0183	-0.229***	-0.0127
	(0.30)	(2.76)	(-0.98)	(4.80)	(-0.61)	(-1.28)	(-1.51)	(0.28)	(-3.16)	(-0.19)
$S_{1,4}$	0.312***	0.0431	-0.00251	0.129	-0.169*	-0.106	0.185*	-0.0105	-0.427***	0.225**
	(3.04)	(0.42)	(-0.02)	(1.08)	(-1.69)	(-1.02)	(1.80)	(-0.11)	(-4.63)	(2.07)
$S_{1,5}$	0.0309	0.131	0.271**	0.249*	-0.0384	-0.262**	-0.0397	-0.0416	-0.332***	0.119
	(0.27)	(1.20)	(2.18)	(1.95)	(-0.32)	(-2.36)	(-0.35)	(-0.37)	(-3.08)	(1.07)
$S_{2,1}$	-0.169**	-0.0369	0.0794	0.0311	-0.0658	0.0676	-0.0818	0.0754	-0.0297	0.111
	(-2.06)	(-0.47)	(0.88)	(0.31)	(-0.74)	(0.83)	(-0.95)	(0.88)	(-0.33)	(1.30)
$S_{2,2}$	-0.0116	0.0785*	-0.0179	0.0348	0.0154	0.0594	-0.0389	-0.107**	0.00804	-0.0199
	(-0.24)	(1.72)	(-0.35)	(0.60)	(0.31)	(1.36)	(-0.80)	(-2.41)	(0.16)	(-0.41)
$S_{2,3}$	0.0980	0.164***	-0.0802	0.365***	-0.0504	-0.131**	-0.0723	0.0967	-0.266***	-0.0364
	(1.49)	(2.60)	(-1.22)	(4.86)	(-0.75)	(-2.13)	(-1.12)	(1.52)	(-3.90)	(-0.55)
$S_{2,4}$	0.127	0.357***	-0.0122	0.411***	-0.167	-0.261**	-0.0676	0.116	-0.414***	0.0256
	(1.08)	(3.24)	(-0.09)	(3.16)	(-1.50)	(-2.09)	(-0.62)	(1.01)	(-3.94)	(0.21)
$S_{2,5}$	0.169	0.177	0.0928	0.416***	-0.00636	-0.0420	-0.133	-0.359**	-0.446***	0.178
	(1.09)	(1.23)	(0.59)	(2.59)	(-0.04)	(-0.29)	(-0.84)	(-2.35)	(-3.62)	(1.40)
$S_{3,1}$	-0.267**	-0.0642	0.178	0.404***	0.0137	-0.0596	-0.161	-0.0763	-0.0123	-0.0147
	(-2.15)	(-0.58)	(1.42)	(2.96)	(0.10)	(-0.49)	(-1.07)	(-0.56)	(-0.10)	(-0.11)
$S_{3,2}$	0	0	0	0	0	0	0	0	0	0
	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)
$S_{3,3}$	0.103	0.266***	-0.0309	0.337***	-0.0246	-0.0747	-0.108	-0.0244	-0.349***	-0.0226
	(1.52)	(3.85)	(-0.43)	(4.24)	(-0.36)	(-1.14)	(-1.57)	(-0.35)	(-4.69)	(-0.33)
$S_{3,4}$	0.161	0.423***	-0.0470	0.499***	0.0843	-0.114	-0.167	-0.183	-0.639***	0.251**
	(1.28)	(3.29)	(-0.34)	(3.40)	(0.71)	(-0.86)	(-1.21)	(-1.32)	(-5.02)	(1.96)
$S_{3,5}$	0.262*	0.0294	0.121	0.321**	-0.284*	-0.141	-0.00595	-0.212	-0.328**	0.208
	(1.87)	(0.23)	(0.82)	(1.97)	(-1.91)	(-0.90)	(-0.04)	(-1.51)	(-2.55)	(1.43)

	$m=1$	$m=2$	$m=3$	$m=4$	$m=5$	$m=6$	$m=7$	$m=8$	$m=9$	$m=10$
Interaction terms (2nd stage)										
$S_{5,1}$	-0.369*	-0.411**	0.461**	0.531**	0.116	-0.0912	-0.199	0.133	-0.473**	0.256
	(-1.88)	(-2.45)	(2.09)	(2.37)	(0.65)	(-0.40)	(-1.02)	(0.68)	(-2.39)	(1.00)
$S_{5,2}$	-0.0551	-0.110	-0.0329	0.0940	0.0416	0.0882	0.0598	-0.0557	-0.0325	0.0252
	(-0.77)	(-1.64)	(-0.44)	(1.15)	(0.58)	(1.36)	(0.82)	(-0.79)	(-0.46)	(0.35)
$S_{5,3}$	0.0268	0.144*	-0.00131	0.426***	-0.0235	0.0353	-0.0362	-0.261***	-0.286***	0.0636
	(0.32)	(1.65)	(-0.01)	(4.42)	(-0.29)	(0.42)	(-0.41)	(-3.03)	(-3.41)	(0.69)
$S_{5,4}$	-0.124	0.349*	0.356*	0.0682	-0.0947	0.238	-0.103	-0.0783	-0.605***	0.0140
	(-0.70)	(1.89)	(1.65)	(0.29)	(-0.61)	(1.37)	(-0.62)	(-0.44)	(-3.52)	(0.08)
$S_{5,5}$	-0.459**	0.313	0.515**	0.370	-0.246	-0.186	-0.128	-0.345	-0.319	0.347*
	(-2.30)	(1.43)	(2.13)	(1.44)	(-1.06)	(-0.87)	(-0.52)	(-1.52)	(-1.28)	(1.94)
$S_{5H,1}$	0.252	0.137	-0.180	-0.180	-0.0287	-0.00765	0.201	-0.243	0.298	-0.186
	(1.09)	(0.67)	(-0.71)	(-0.70)	(-0.14)	(-0.03)	(0.90)	(-1.07)	(1.29)	(-0.66)
$S_{5H,2}$	0.0503	0.125	-0.0231	0.00472	-0.131	0.178**	-0.214**	0.0355	-0.00348	0.0565
	(0.56)	(1.42)	(-0.24)	(0.05)	(-1.43)	(2.01)	(-2.33)	(0.39)	(-0.04)	(0.63)
$S_{5H,3}$	-0.0842	0.0273	-0.112	-0.0160	-0.210*	-0.0393	-0.103	0.215*	0.223**	-0.00358
	(-0.76)	(0.24)	(-0.94)	(-0.12)	(-1.78)	(-0.38)	(-0.90)	(1.83)	(1.98)	(-0.03)
$S_{5H,4}$	0.000661	-0.167	0.0273	0.301	0.00697	-0.347	0.0422	-0.0229	0.187	-0.0563
	(0.00)	(-0.73)	(0.11)	(1.12)	(0.04)	(-1.51)	(0.20)	(-0.10)	(0.86)	(-0.26)
$S_{5H,5}$	0.575**	-0.204	-0.446	0.0383	0.0811	0.307	0.123	0.325	-0.190	-0.370
	(2.27)	(-0.76)	(-1.58)	(0.13)	(0.31)	(1.13)	(0.42)	(1.16)	(-0.69)	(-1.48)
$S_{6,1}$	-0.219	-0.314*	0.784***	0.699***	0.0156	0.0733	-0.351	-0.0196	-0.336*	-0.193
	(-1.14)	(-1.79)	(3.45)	(2.69)	(0.08)	(0.32)	(-1.50)	(-0.11)	(-1.73)	(-0.70)
$S_{6,2}$	0.0433	-0.0336	0.0481	0.137	0.0494	0.0548	-0.0593	-0.122*	-0.0591	0.0292
	(0.58)	(-0.44)	(0.62)	(1.55)	(0.67)	(0.78)	(-0.78)	(-1.67)	(-0.79)	(0.38)
$S_{6,3}$	0.0996	0.462***	0.0242	0.243**	-0.0151	-0.00692	-0.0561	-0.158**	-0.406***	-0.0875
	(1.22)	(5.13)	(0.30)	(2.56)	(-0.19)	(-0.09)	(-0.69)	(-2.02)	(-5.44)	(-1.03)
$S_{6,4}$	0.106	0.156	0.107	0.239	-0.161	0.339**	-0.178	-0.326**	-0.595***	0.232
	(0.57)	(0.82)	(0.66)	(1.29)	(-1.11)	(2.31)	(-1.17)	(-2.28)	(-3.70)	(1.37)
$S_{6,5}$	0.0526	0.216	0.401*	0.0401	0.0258	-0.253	-0.302	-0.288	-0.261	0.279
	(0.23)	(0.98)	(1.72)	(0.14)	(0.12)	(-1.20)	(-1.47)	(-1.37)	(-1.18)	(1.48)
$S_{6H,1}$	0.288	0.301	-0.926***	-0.311	0.181	-0.359	0.243	-0.0249	0.241	0.198
	(1.27)	(1.33)	(-3.36)	(-1.08)	(0.76)	(-1.46)	(0.94)	(-0.12)	(1.03)	(0.65)
$S_{6H,2}$	-0.0191	0.307***	-0.0440	-0.0425	0.0220	0.0431	-0.0768	-0.00283	-0.0340	-0.112
	(-0.19)	(3.11)	(-0.43)	(-0.39)	(0.24)	(0.47)	(-0.79)	(-0.03)	(-0.35)	(-1.17)
$S_{6H,3}$	0.0155	0.152	-0.0704	0.143	-0.0641	-0.0224	-0.210**	0.0193	0.0809	-0.0999
	(0.15)	(1.28)	(-0.70)	(1.14)	(-0.61)	(-0.24)	(-2.02)	(0.18)	(0.80)	(-0.95)
$S_{6H,4}$	0.0269	0.237	0.0775	0.132	0.0652	-0.510***	0.0135	0.217	0.107	-0.274
	(0.12)	(1.04)	(0.37)	(0.60)	(0.37)	(-2.64)	(0.07)	(1.14)	(0.56)	(-1.32)
$S_{6H,5}$	0.0506	0.170	-0.0223	0.341	-0.245	0.225	0.307	0.260	-0.469*	-0.403
	(0.18)	(0.59)	(-0.08)	(1.07)	(-0.94)	(0.84)	(1.22)	(1.00)	(-1.83)	(-1.56)
$S_{7,1}$	-0.227	-0.217	0.217	0.407*	-0.0336	0.162	-0.197	0.226	-0.312*	-0.0309
	(-1.26)	(-1.35)	(1.10)	(1.92)	(-0.19)	(0.85)	(-1.16)	(1.41)	(-1.89)	(-0.14)
$S_{7,2}$	-0.0479	0.0413	0.0754	0.0112	0.0924	0.294***	-0.142**	-0.162**	-0.0308	-0.102
	(-0.67)	(0.60)	(1.04)	(0.13)	(1.34)	(4.19)	(-2.03)	(-2.45)	(-0.41)	(-1.44)
$S_{7,3}$	-0.0239	0.152	0.139	0.251**	-0.00657	0.232**	0.116	-0.222**	-0.433***	-0.167*
	(-0.28)	(1.59)	(1.59)	(2.46)	(-0.08)	(2.52)	(1.36)	(-2.51)	(-5.19)	(-1.79)
$S_{7,4}$	0.103	0.156	-0.0404	0.289	-0.130	0.750***	-0.376**	-0.179	-0.404**	0.0400
	(0.59)	(0.83)	(-0.26)	(1.59)	(-0.82)	(4.03)	(-2.42)	(-1.17)	(-2.01)	(0.27)
$S_{7,5}$	0.0120	-0.0469	0.278	0.651***	-0.360*	-0.255	0.0322	-0.162	-0.0927	-0.179
	(0.05)	(-0.22)	(1.02)	(2.90)	(-1.86)	(-1.13)	(0.18)	(-0.80)	(-0.45)	(-0.83)
$S_{7H,1}$	0.329	0.230	-0.221	-0.00162	0.0444	0.0174	-0.233	-0.306*	0.309	-0.106
	(1.57)	(1.22)	(-0.96)	(-0.01)	(0.22)	(0.08)	(-1.18)	(-1.65)	(1.56)	(-0.44)
$S_{7H,2}$	-0.0621	0.0163	-0.00227	0.159	-0.0953	0.0882	-0.0133	0.0427	0.0461	-0.0422
	(-0.68)	(0.19)	(-0.02)	(1.49)	(-1.06)	(0.95)	(-0.15)	(0.46)	(0.46)	(-0.47)
$S_{7H,3}$	0.0197	0.0297	-0.372***	0.168	-0.0556	-0.0779	-0.161	0.141	0.0756	0.160
	(0.18)	(0.24)	(-3.21)	(1.28)	(-0.50)	(-0.68)	(-1.44)	(1.20)	(0.67)	(1.36)
$S_{7H,4}$	-0.195	-0.0941	0.390*	0.0908	0.0921	-0.438*	0.113	0.152	-0.114	-0.0669
	(-0.94)	(-0.41)	(1.94)	(0.41)	(0.46)	(-1.86)	(0.57)	(0.75)	(-0.48)	(-0.35)
$S_{7H,5}$	0.185	0.375	0.0694	-0.404	0.0970	0.152	0.135	-0.0968	-0.463*	0.176
	(0.65)	(1.29)	(0.23)	(-1.47)	(0.43)	(0.51)	(0.52)	(-0.37)	(-1.81)	(0.65)
$S_{8,1}$	-0.406*	-0.123	0.215	0.324	-0.00254	-0.00266	-0.112	0.401**	-0.294	-0.286
	(-1.95)	(-0.69)	(1.02)	(1.09)	(-0.01)	(-0.01)	(-0.61)	(2.20)	(-1.45)	(-0.98)
$S_{8,2}$	0.0606	0.0426	0.0105	0.0801	0.0784	0.236***	-0.0927	-0.149**	-0.165**	-0.0411
	(0.82)	(0.58)	(0.13)	(0.91)	(1.05)	(3.24)	(-1.23)	(-2.04)	(-2.24)	(-0.55)

	$m=1$	$m=2$	$m=3$	$m=4$	$m=5$	$m=6$	$m=7$	$m=8$	$m=9$	$m=10$
$S_{8,3}$	0.0799	0.380***	0.0978	0.181*	0.0442	0.233***	-0.189**	-0.279***	-0.341***	-0.114
	(1.00)	(4.11)	(1.18)	(1.86)	(0.55)	(2.66)	(-2.41)	(-3.42)	(-4.46)	(-1.34)
$S_{8,4}$	0.256	0.0600	-0.101	0.423***	-0.196	0.356**	-0.107	-0.144	-0.483***	0.0456
	(1.48)	(0.42)	(-0.76)	(2.72)	(-1.36)	(2.47)	(-0.77)	(-0.86)	(-3.39)	(0.28)
$S_{8,5}$	0.0186	0.333	0.784***	0.113	-0.273	-0.0590	-0.269	-0.286	-0.476***	-0.0501
	(0.09)	(1.39)	(3.61)	(0.50)	(-1.46)	(-0.31)	(-1.45)	(-1.27)	(-2.61)	(-0.28)
$S_{8H,1}$	0.304	0.288	-0.114	0.333	-0.0233	0.0337	-0.213	-0.424**	0.178	-0.0114
	(1.32)	(1.43)	(-0.46)	(1.06)	(-0.11)	(0.14)	(-1.01)	(-2.05)	(0.77)	(-0.04)
$S_{8H,2}$	-0.136	0.270***	0.0395	-0.00240	-0.0763	0.0426	-0.126	0.0818	0.00353	-0.0626
	(-1.34)	(2.76)	(0.39)	(-0.02)	(-0.79)	(0.44)	(-1.32)	(0.84)	(0.04)	(-0.66)
$S_{8H,3}$	0.0127	0.117	-0.232**	0.0731	-0.187*	-0.0233	0.0225	0.145	-0.00485	-0.0353
	(0.12)	(1.00)	(-2.22)	(0.59)	(-1.77)	(-0.22)	(0.22)	(1.33)	(-0.05)	(-0.34)
$S_{8H,4}$	-0.312	0.244	0.482**	-0.237	0.0202	-0.183	-0.0656	0.0203	-0.0538	0.113
	(-1.44)	(1.27)	(2.45)	(-1.16)	(0.11)	(-0.87)	(-0.37)	(0.09)	(-0.29)	(0.54)
$S_{8H,5}$	0.128	0.0239	-0.426*	0.334	0.185	0.0743	0.0636	-0.0218	-0.231	0.0142
	(0.49)	(0.08)	(-1.70)	(1.23)	(0.81)	(0.30)	(0.27)	(-0.08)	(-1.00)	(0.06)
Nuisance parameters										
A_1	0	0.0625	-0.0588	0.0264	0.0773*	-0.0632	0.0580	0.0676	-0.0104	0.0843*
	(.)	(1.29)	(-1.17)	(0.48)	(1.65)	(-1.31)	(1.15)	(1.40)	(-0.20)	(1.73)
A_2	-0.172***	0	-0.0937*	0.0186	-0.0148	-0.0377	0.0122	-0.0244	0.0378	0.0822*
	(-3.61)	(.)	(-1.84)	(0.32)	(-0.31)	(-0.80)	(0.25)	(-0.50)	(0.74)	(1.68)
A_3	0.301***	0.152***	0	0.294***	0.311***	0.213***	0.209***	0.282***	0.157***	0.383***
	(6.19)	(3.03)	(.)	(5.16)	(6.48)	(4.51)	(4.19)	(5.65)	(3.10)	(7.51)
A_4	0.342***	0.249***	0.449***	0	0.457***	0.305***	0.400***	0.436***	0.219***	0.512***
	(7.46)	(5.14)	(9.17)	(.)	(9.86)	(6.40)	(8.23)	(8.79)	(4.42)	(10.28)
A_5	0.0204	-0.0359	-0.0211	-0.0662	0	0	0.0334	0.0527	-0.00858	0.0365
	(0.43)	(-0.72)	(-0.43)	(-1.12)	(.)	(.)	(0.67)	(1.07)	(-0.18)	(0.75)
A_6	0	0	0	0	0	0	0	0	0	0
	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)
A_7	-0.199***	-0.111**	-0.173***	-0.231***	-0.329***	-0.144***	0	-0.319***	-0.120**	0.0230
	(-4.42)	(-2.34)	(-3.66)	(-4.37)	(-7.17)	(-3.22)	(.)	(-6.58)	(-2.53)	(0.50)
A_8	0.00345	0.0815*	-0.0893*	-0.0531	-0.216***	-0.0385	-0.232***	0	-0.118**	0.197***
	(0.07)	(1.77)	(-1.86)	(-0.99)	(-4.85)	(-0.84)	(-4.81)	(.)	(-2.47)	(4.15)
A_9	-0.227***	-0.194***	-0.206***	-0.0713	-0.356***	-0.225***	-0.434***	-0.372***	0	0
	(-4.97)	(-4.22)	(-4.38)	(-1.34)	(-7.95)	(-4.90)	(-8.98)	(-7.85)	(.)	(.)
A_{10}	0	0	0	0	0	0	0	0	0	0
	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)
Threshold parameters										
$\widehat{\nu_1}$	-1.537***	-1.394***	-0.204	0.667***	-1.899***	-1.098***	-1.312***	-0.784***	-1.384***	-0.591***
	(-12.40)	(-10.80)	(-1.57)	(4.51)	(-15.16)	(-8.92)	(-9.51)	(-5.63)	(-9.87)	(-4.13)
$\widehat{\nu_2}$	-0.784***	-0.757***	0.673***	1.250***	-1.089***	-0.495***	-0.606***	0.108	-0.706***	0.348**
	(-6.39)	(-5.96)	(5.16)	(8.41)	(-8.84)	(-4.05)	(-4.42)	(0.77)	(-5.06)	(2.43)
$\widehat{\nu_3}$	-0.104	-0.0740	1.221***	1.745***	-0.379***	0.238*	-0.0172	0.658***	-0.194	1.057***
	(-0.85)	(-0.59)	(9.23)	(11.51)	(-3.10)	(1.95)	(-0.13)	(4.69)	(-1.39)	(7.27)
$\widehat{\nu_4}$	0.681***	0.667***	1.640***	2.198***	0.425***	1.074***	0.674***	1.248***	0.401***	1.707***
	(5.54)	(5.28)	(12.14)	(14.10)	(3.46)	(8.76)	(4.92)	(8.80)	(2.87)	(11.55)
Observations	8386	8279	8315	8645	8545	8650	8568	8390	8541	8381
Log-likelihood	-12747.4	-12336.6	-11143.7	-8576.0	-12595.7	-12875.4	-12808.9	-12626.1	-12282.4	-12012.8

Notes: *, ** and *** denote significance at 90%, 95%, and 99% respectively. t-statistics clustered by individual in parentheses. Recall that $m=1$ denotes the precautionary motive, $m=2$ the precautionary health motive, $m=3$ the life-span risk motive, $m=4$ the intended bequest motive, $m=5$ the liquidity motive, $m=6$ the intra-household bequest motive, $m=7$ the autonomy motive, $m=8$ the security motive, $m=9$ the self-gratification motive, and $m=10$ the political risk motive. See Table 2 for the full-text saving motives.