

Article

Who Responds to Estate Recovery? Survey Evidence from Switzerland on Long-Term Care Insurance and Informal Care Decisions

Laura Iveth Aburto Barrera ^{1,*} , Christophe Courbage ²  and Joël Wagner ^{1,3} 

¹ Department of Actuarial Science, Faculty of Business and Economics (HEC), University of Lausanne, 1015 Lausanne, Switzerland; joel.wagner@unil.ch

² Geneva School of Business Administration, University of Applied Sciences Western Switzerland (HES-SO), 1227 Geneva, Switzerland; christophe.courbage@hesge.ch

³ Swiss Finance Institute, University of Lausanne, 1015 Lausanne, Switzerland

* Correspondence: lauraiveth.aburtobarrera@unil.ch

Abstract

Estate recovery is a policy whereby the state recovers public long-term care (LTC) benefits from the estates of deceased beneficiaries. Using data from a Swiss survey, this study examines which individuals are most responsive to estate recovery in their decisions to purchase LTC insurance and provide informal care. Generalized linear models with a binomial logit specification assess the role of bequest motives, concern about future dependence, beliefs about financial responsibility, and demographic factors. Results show the important role of the bequest motive in shaping the impact of estate recovery on informal care decisions, but not on LTC insurance decisions. In contrast, concerns about future dependence influence both types of decisions. Younger individuals and those who believe that financing LTC is a citizen's responsibility are more sensitive to estate recovery when purchasing LTC insurance. Conversely, individuals who feel legally obligated to help their dependent parents or who provide assistance due to high professional care costs are more likely to report estate recovery as a relevant factor in caregiving decisions. These findings provide valuable information for more targeted LTC policy design by identifying individuals most responsive to estate recovery in their decisions to purchase LTC insurance and provide informal care.

Keywords: estate recovery; long-term care insurance; informal care; dependency care; bequest motive



Received: 18 September 2025

Revised: 20 October 2025

Accepted: 27 October 2025

Published: 4 November 2025

Citation: Aburto Barrera, Laura Iveth, Christophe Courbage, and Joël Wagner. 2025. Who Responds to Estate Recovery? Survey Evidence from Switzerland on Long-Term Care Insurance and Informal Care Decisions. *Risks* 13: 216. <https://doi.org/10.3390/risks13110216>

Copyright: © 2025 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

1. Introduction

Long-term care (LTC) represents one of the most critical financial risks for the older population, as it can incur considerable costs for at-home care and nursing homes (FSO 2018). In Switzerland, the number of older individuals needing LTC is expected to increase 2.5 times by 2045 (Fuino and Wagner 2018), resulting in rising future LTC costs. Financing LTC risk is becoming a critical issue for Switzerland, as it is for most developed countries facing an ageing population.

Individuals can rely on three primary sources—government assistance, family support, and insurance—to finance the increasing need for LTC, in addition to utilizing their resources (Courbage and Montoliu-Montes 2020). Public spending accounts for a large share of LTC financing (Colombo et al. 2011), averaging 1.7% of GDP in OECD countries

in 2015, and projections suggest that this share will at least double by 2060 (OECD 2017). The family plays an important role, as a large proportion of LTC needs are met in the form of informal care¹ by family members, especially children (Zigante 2018). Finally, LTC insurance products covering the financial risks associated with LTC have been developed, but with limited success, even in the most developed insurance markets such as Switzerland.

These three LTC financing sources interact, and their dynamics have been widely studied. From a theoretical standpoint, Pauly (1990) argues that public LTC financing may crowd out the demand for LTC insurance. Empirical studies further suggest that public LTC financing can also reduce the supply of informal care. For instance, Ettner (1994) analyzes data from the US and finds that better Medicaid LTC coverage reduces the likelihood of adult children providing informal care to their parents. Similarly, Stabile et al. (2006), using data from Canada, shows that increased public subsidies for LTC lead to a decline in informal caregiving.

A recently proposed solution to limit the public LTC budget is estate recovery, which consists of recovering a portion of the public LTC benefits from deceased beneficiaries' estates. It can be thought of as a special type of co-payment paid at the end of life from the beneficiary's estate. Such a policy exists in some US states for Medicaid benefits (Greenhalgh-Stanley 2012), and in France (see CASF 2000, art. L132-8) and Belgium (LOCPAS 1976, art. 100-1) for social assistance to nursing home residents. Similar mechanisms exist in Spain, the United Kingdom, and New Zealand for financing nursing home costs (Colombo et al. 2011) and are under discussion/implementation in Switzerland (see SHG 2024, art. 28-1).

Although estate recovery policies can improve public LTC budgets, such policies are likely to influence both LTC insurance and informal care decisions, primarily because these decisions serve as a means of protecting the bequest, either from the parent in the case of LTC insurance or from the children in the case of informal care. However, to our knowledge, very little research has addressed this issue except for two theoretical papers. Thiébaud et al. (2012) theoretically examine the impact of recovering LTC subsidies from the inheritance on the level of informal care provided in the specific context of France, highlighting the role of descendants' altruism and their motivation to preserve the inheritance. More recently, Courbage and Montoliu-Montes (2020) theoretically investigated the effect of estate recovery on the demand for LTC insurance, using the bequest motive as a qualifier for various child preferences with respect to informal care.

While individuals with a bequest motive are likely to be incentivized by estate recovery in their decisions to purchase LTC insurance and to provide informal care, other individual characteristics may also make individuals more sensitive to estate recovery in their decisions to purchase LTC insurance and provide informal care. In particular, age, gender, wealth, family composition, political orientation, culture, perception of LTC costs, financial literacy, motivations to purchase LTC insurance, and motivations to provide informal care could be important determinants of the role of estate recovery in driving LTC insurance and informal care decisions. Indeed, most of these variables have been shown to influence the purchase of insurance (see, e.g., Brown and Finkelstein 2008; Coe et al. 2015) and/or the provision of informal care (Gentili et al. 2017; Mentzakis et al. 2009).

In this study, we not only empirically examine whether estate recovery is reported as a relevant incentive in the decision to purchase LTC insurance and the decision to provide informal care, but we also go a step further and identify the characteristics of individuals for whom estate recovery is considered an incentive when purchasing LTC insurance and when providing informal care. This is an important contribution because it allows us to identify individuals who are more sensitive to estate recovery when deciding whether to purchase LTC insurance or provide informal care, thereby offering evidence to support the design of more targeted LTC policies. Thus, by framing estate recovery for these individuals, it

would be possible to further influence the decision to purchase LTC insurance and the decision to provide informal care.

This paper uses data from a novel survey conducted in 2019 on a sample of middle-aged individuals (ages 40 to 65). This survey has been used in recent publications on interest in and motivations for purchasing LTC insurance (see [Courbage et al. 2023](#); [Fuino et al. 2022](#)). The survey explicitly asked respondents whether estate recovery would encourage them to purchase LTC insurance and provide more informal care. The survey also asked respondents about their motivation to purchase LTC insurance and their motivation to provide informal care, as well as other socio-economic, cultural, and political variables.

First, we show that the bequest motive plays an important role in driving the effect of estate recovery on informal care decisions, but not on LTC insurance decisions. Second, concerns about future dependence influence both types of decisions, albeit to a lesser extent. Third, we show that younger individuals and individuals who believe that it is the role of citizens to finance LTC are more sensitive to estate recovery when purchasing LTC insurance. On the other hand, individuals who believe they have a legal obligation to help their dependent parents or who provide assistance because of the high cost of professional care are more likely to report estate recovery as a relevant incentive in their decision to provide informal care. These findings may have important implications for LTC financing policies.

The rest of this paper is organized as follows. Section 2 briefly describes and reviews how estate recovery is related to LTC insurance and informal care. Section 3 describes the dataset, variables used, and the regression models. Section 4 presents the results of the econometric analysis. The final section provides some concluding remarks and policy recommendations.

2. Estate Recovery and LTC

LTC estate recovery programs have been implemented in various countries. In the US, such programs have been in place since 1965 ([ASPE 2005](#)) for beneficiaries of Medicaid, designed to provide healthcare coverage to low-income people, where the state seeks reimbursement for all LTC costs from the estate of deceased beneficiaries, typically through the recovery of assets such as the home. Medicaid estate recovery is handled differently in each state ([American Council on Aging 2021](#)).

In France, estate recovery applies when net assets exceed EUR 46,000, covering expenses related to home social assistance, home healthcare, special care allowance or daily allowance, provided they surpass EUR 760. The solidarity allowance for older adults (allocation de solidarité aux personnes âgées, ASPA) can also be recovered from the beneficiary's estate under certain conditions ([Ministère des Solidarités de l'Autonomie et des Personnes Handicapées 2021](#); [Notaires du Grand Paris 2019](#)).

In the United Kingdom, eligibility for public assistance towards the cost of a nursing home stay is determined by an asset test, which may consider the value of the primary residence. For individuals who would meet the asset test if they did not own their home, some local authorities offer deferred payment agreements, allowing postponement of home sale and fee repayment.

In Switzerland, estate recovery in the context of LTC is still under discussion, although a federal law came into force in January 2021 ([OFAS 2022](#)). This law pertains to the use of supplementary benefits (prestations complémentaires, PC) intended to cover costs not covered by the old-age and survivors' insurance (OASI) or disability insurance, including nursing home costs. Upon the death of a beneficiary, the benefits received during the previous ten years must be repaid from the estate. However, repayment is only due for the

portion of the estate that exceeds CHF 40,000. In addition, in some cantons, such as Zurich, social welfare benefits may also be recovered from the estate (SHG 2024).

Despite the highly developed insurance market in Switzerland, private LTC insurance remains underdeveloped, with a relatively limited supply and low demand (Fuino et al. 2022). As discussed by Fuino et al. (2022), this situation arises from a mismatch between the supply and demand expectations, generally driven by factors such as information asymmetry and uncertainty regarding frequency and severity of LTC insurance claims. These challenges contribute to high premiums, limited coverage, and a lack of customer confidence, constraining the expansion of private LTC insurance.

While these estate recovery programs have been introduced in several countries for some time, there is limited evidence on the effect of estate recovery on the financing of LTC and old-age-related decisions. Research is primarily concerned with the (non-)use of public LTC benefits, specifically Medicaid in the US. For example, Kapp (2006) discusses the public policy implications of the US estate recovery program as an alternative for funding LTC and identifies some of the major ethical issues raised by this program. Dick (2007) addresses the effect of the estate recovery program in discouraging potential Medicaid beneficiaries from seeking public assistance. Greenhalgh-Stanley (2012) also examines the impact of estate recovery programs on the housing and portfolio decisions of older adults in the United States. They find that estate recovery programs induce older people to reduce their home ownership and home equity, and to decrease the housing share of their wealth portfolio, thereby preserving wealth and fulfilling bequest motives at death. Regarding informal care decisions, Thiébaud et al. (2012) theoretically study the impact of a hypothetical estate recovery program on informal care using the example of the “Allocation Personnalisée d’Autonomie”, the main public LTC benefit in France. They show that this depends on the degree of altruism of the offspring and their motivation to preserve the future bequest. More recently, Courbage and Montoliu-Montes (2020) theoretically studied the effect of estate recovery on the demand for LTC insurance, with the bequest motive as a qualifier. While estate recovery can incentivize LTC insurance purchases by reducing inheritance, they show that its impact depends on the amount of parental bequests and whether and how parents anticipate children’s preferences for informal care.

3. Data and Methods

3.1. Data

Our study is based on a survey on LTC conducted in Switzerland in February 2019 by a professional polling institute in German and French. The total number of selected respondents in the Swiss population includes 1066 people living in Switzerland’s French- and German-speaking parts. The respondents are between 40 and 65 years old. The sample was stratified by age, gender, and region to reflect the demographic distribution of the Swiss population. In addition to estate recovery, the survey also examined other policies that might be associated with the decision to purchase LTC insurance (e.g., tax deductions, employer participation in savings, and reductions in health insurance or state subsidies) or provide informal care (e.g., state financial support, social recognition, and part-time work flexibility). However, this study focuses exclusively on estate recovery. In the Supplementary Materials, we provide an English translation of the questions used in this study.

3.2. Dependent Variables

In this study, we aim to investigate the relationship between estate recovery and individuals’ decisions to purchase LTC insurance and provide informal care to dependent parents. We seek to answer the following two research questions:

- (A) Estate recovery as an incentive to purchase LTC insurance: To what extent is estate recovery associated with individuals' decision to purchase insurance to protect themselves financially in the event of dependency, and what are the characteristics of those individuals for whom estate recovery plays a role in their decision to purchase LTC insurance?
- (B) Estate recovery as an incentive to help more dependent parents: To what extent is estate recovery associated with individuals' decision to provide more help to dependent parents (in-laws), and what are the characteristics of those individuals for whom estate recovery plays a role in their decision to provide more help to dependent parents?

In the first part of this study (question A), we are interested in how estate recovery is associated with the decision to purchase LTC insurance. We investigate whether estate recovery incentivizes the purchase of LTC insurance and identify the determinants. To construct the reduced sample, we first focus on individuals interested in purchasing LTC insurance (see the Supplementary Materials for information on the operationalization in the survey instrument). Among these respondents, we then assess their level of agreement that estate recovery is an incentive to purchase LTC insurance. The response is recorded on a five-point Likert scale, ranging from "strongly disagree" to "strongly agree." This response defines the value of our first key variable and provides the basis for the analysis of research question (A) (see Section 3.4 for the descriptive statistics).

In the second part (question B), we are interested in how estate recovery is associated with the decision to provide informal care, i.e., adult children helping their parents (in-laws) in need of care and for whom estate recovery is an incentive. We are also interested in identifying the determinants. In this part, we focus on individuals who have dependent parents (in-laws) and who provided assistance to them during the previous 12 months. Among those respondents, we examine their level of agreement that estate recovery is an incentive to provide more help to dependent parents. Again, the response is recorded using the five options: strongly disagree, disagree, neutral, agree, and strongly agree. The response defines our second key variable for further analysis. Further details on the sample construction and survey flow are described in the Supplementary Materials.

For both research questions, we construct a binary key variable from the original five-point Likert scale by aggregating the responses "agree" and "strongly agree" as one category and "disagree" and "strongly disagree" as the other category. Respondents who chose the neutral option are excluded. This binary outcome is used in the descriptive and regression models to examine the association with estate recovery as an incentive.

3.3. Independent Variables

The original survey on which our study is based contains a rich set of variables describing the characteristics of the respondents. We provide the questions used in this study in the Supplementary Material. To study the determinants of the answers recorded in the two key variables introduced above, we consider several demographic factors, including age group (categorized as 40–49, 50–59, or 60–65 years, representing 40%, 40%, and 20%, respectively), gender (evenly distributed between male and female), and language region (67% German-speaking and 33% French-speaking, which represents over 90% of the population). Whether or not the respondent has children is another variable considered, as is the size of the respondent's household (1, 2 or more than 2 members).

We also consider socio-economic factors, such as the respondent's employment status (retired, employed, or other), as this is an essential factor in parental care decisions (Checkovich and Stern 2002), the respondent's overall wealth (wealthy, above average, below average, or modest), and monthly income, categorized as <CHF 5000, CHF 5000–9000, >CHF 9000, or unknown. This income distribution is consistent with national

data from the Swiss Federal Statistical Office (FSO 2020), which indicates that approximately 32% of employed individuals fall into the lowest income category, 45% into the second category, 18% into the highest level, and 5% are unknown. Previous research has shown that individuals with higher net incomes are significantly more likely to influence their parents' LTC insurance coverage (Courbage et al. 2023). Furthermore, we collect information on the respondents' level of education (mandatory school, high school, or higher education) and housing status (homeowner, renter, or other).

Among the health and behavioral factors, we include self-perceived health (good, fair, or poor), since health status is one of the most critical determinants of the choice of any home care (informal and formal, see Firgo et al. 2020), concern about future dependence (worried or not worried), and the likelihood of dependence (improbable, unlikely, likely, or probable). This is because a positive relationship exists between children's understanding of LTC and their willingness to influence their parents' LTC insurance (Courbage et al. 2023). In addition, we consider factors related to LTC literacy, such as the respondent's opinion about the contribution of private insurance, social insurance, the state, and personal assets to LTC costs (large, considerable, small, none, or unknown), and their opinion about professional home care and institutional care costs (<CHF 5000, CHF 5000–10,000, >CHF 10,000, or other). For political factors, we include the role of the state, citizens, and insurers in financing care (agree, disagree, or indifferent) and political orientation (left, center, or right). As an additional variable, we specify the policy model for LTC (institutional care, at-home care, mixed, or other).

Finally, we also explored specific questions about motivations for purchasing LTC insurance, including insufficient savings to cover care costs, and the protection of children's inheritance. Individuals who attach great importance to leaving an inheritance for their children are more likely to relate to an increased demand for private insurance (Brown and Finkelstein 2009; Klimaviciute et al. 2019). Other motives include concerns about financial implications, relieving the burden on the family, and lack of family support (agree, disagree, or indifferent). On the other hand, the motives for helping dependent parents (in-laws) include satisfaction from helping parents, concern for parents' quality of life, high cost of professional help, protection of future inheritance, and moral and legal obligation to help parents (agree, disagree, or indifferent). This last motive is interesting because the likelihood of receiving formal or informal care is higher in countries where families are legally obligated to care for their dependent parents (Vilaplana Prieto et al. 2011).

3.4. Descriptive Statistics

3.4.1. Statistics on the Dependent Variables

We start with the entire sample and the original responses coded on a five-point Likert scale (see Section 3.1). The original data contain 449 respondents for research question (A) and 415 responses for question (B). For both questions, we summarize the opinion on estate recovery as an incentive in a binary variable with levels *disagree*, which includes the original strongly disagree and disagree responses, and *agree*, which includes the original agree and strongly agree responses. We keep only respondents who agree or disagree, i.e., we exclude respondents who gave a neutral opinion. Our sample size is reduced to 318 respondents for (A) and 278 for (B). Disagreement with the statement that estate recovery is an incentive is interpreted as the absence of a positive incentive. This means that estate recovery does not encourage the respondent to purchase LTC insurance or provide additional support to dependent parents.

In Table 1, we report statistics on the original responses and the retained aggregated responses in the reduced sample. We observe that 59.43% of the respondents disagree in (A) and 67.63% in (B), i.e., more than half of the individuals have responded negatively

to the incentive to use estate recovery. Summary statistics and regression results for both agreement and disagreement groups are in Appendix A. In this study, we are interested in the individuals who agree on estate recovery as an incentive to purchase LTC insurance or to provide more help to their parents (in-laws), as well as the determinants that influence these responses. Thus, we consider a total of 129 positive responses for (A) and 90 positive responses for (B), which we examine in more detail below.

Table 1. Levels of agreement on estate recovery incentive in (A) and (B) in the original and reduced samples.

	Original Sample										Reduced Sample					
	Strongly Disagree %	Disagree (n)	Disagree %	Neutral (n)	Neutral %	Agree (n)	Agree %	Strongly Agree (n)	Strongly Agree %	N	Disagree %	Disagree (n)	Agree %	Agree (n)	$\tilde{N}$	
(A)	27.39	(123)	14.70	(66)	29.18	(131)	18.71	(84)	10.02	(45)	449	59.43	(189)	40.57	(129)	318
(B)	30.12	(125)	15.18	(63)	33.01	(137)	10.36	(43)	11.33	(47)	415	67.63	(188)	32.37	(90)	278

Note: The labels (A) and (B) refer to the corresponding research and survey questions laid out in Section 3.2. The number of responses in the original sample is reported by *N*. In the reduced sample, we excluded respondents who gave a neutral opinion and are left with $\tilde{N}$ responses. Shares are expressed in % with respect to the relevant subsample.

Using the aggregated responses and the reduced sample (see the right panel of Table 1), we report summary statistics on the level of agreement with estate recovery in questions (A) and (B) along different categories of respondents. In Table 2, we show a total of 20 factors that appear in both questions. In addition, in Tables 3 and 4, we report opinions on motivations addressed explicitly in either question (A) or (B).

Table 2. Summary statistics on the level of agreement to estate recovery in questions (A) and (B).

Variable	Agreement to Estate Recovery				Variable	Agreement to Estate Recovery			
	(A)		(B)			(A)		(B)	
	%	(n)	%	(n)		%	(n)	%	(n)
Demographic factors					Health and behavior				
Age class					Self-perceived health				
40–49	53.10	(60)	41.58	(42)	Good	44.08	(67)	29.03	(36)
50–59	31.20	(39)	30.77	(36)	Fair	39.81	(43)	30.69	(31)
60–65	37.50	(30)	20.00	(12)	Poor	32.76	(19)	43.40	(23)
Gender					Concern about future dependence				
Male	42.44	(73)	34.03	(49)	Worried	45.64	(68)	38.33	(46)
Female	38.36	(56)	30.60	(41)	Not worried	36.09	(61)	27.85	(44)
Language region					Probability of dependence				
German	40.64	(76)	30.94	(56)	Probable	50.00	(15)	38.10	(8)
French	40.46	(53)	35.05	(34)	Likely	34.31	(35)	31.82	(28)
Children					Unlikely	45.00	(54)	30.25	(36)
Yes	41.59	(94)	31.63	(62)	Improbable	37.88	(25)	36.00	(18)
No	38.04	(35)	34.15	(28)	LTC literacy				
Socio-economic factors					Private insurance participation in LTC costs				
Professional situation					Large	55.56	(15)	50.00	(10)
Retired	45.95	(17)	30.77	(8)	Considerable	43.48	(30)	39.39	(26)
Employed	40.60	(95)	32.71	(70)	Small	36.73	(36)	34.12	(29)
Other	36.17	(17)	31.58	(12)	None	33.77	(26)	22.73	(15)

Table 2. Cont.

Agreement to Estate Recovery					Agreement to Estate Recovery				
Variable	(A)		(B)		Variable	(A)		(B)	
	%	(n)	%	(n)		%	(n)	%	(n)
<i>Overall wealth</i>					Unknown	46.81	(22)	24.39	(10)
Wealthy	50.00	(7)	28.57	(4)	<i>Social insurance participation in LTC costs</i>				
Above average	38.39	(43)	27.17	(25)	Large	38.60	(22)	35.42	(17)
Below average	43.14	(44)	41.30	(38)	Considerable	37.50	(33)	35.87	(33)
Modest	38.89	(35)	28.75	(23)	Small	39.25	(42)	25.30	(21)
Political factors					None	54.55	(6)	36.84	(7)
<i>State's role in financing care</i>					Unknown	47.27	(26)	33.33	(12)
Agree	39.39	(104)	33.65	(71)	<i>State participation in LTC costs</i>				
Disagree	42.86	(3)	41.18	(7)	Large	38.18	(21)	42.00	(21)
Indifferent	46.81	(22)	24.00	(12)	Considerable	46.84	(37)	38.67	(29)
<i>Citizen's role in financing care</i>					Small	36.19	(38)	27.72	(28)
Agree	57.14	(72)	37.37	(37)	None	36.11	(13)	19.05	(4)
Disagree	26.26	(26)	34.34	(34)	Unknown	46.51	(20)	25.81	(8)
Indifferent	33.33	(31)	23.75	(19)	<i>Personal wealth participation in LTC costs</i>				
<i>Insurer's role in financing care</i>					Large	48.39	(30)	32.73	(18)
Agree	42.08	(77)	36.43	(47)	Considerable	41.56	(32)	32.35	(22)
Disagree	35.29	(18)	28.07	(16)	Small	40.26	(31)	40.28	(29)
Indifferent	40.48	(34)	29.35	(27)	None	24.62	(16)	20.37	(11)
<i>Political orientation</i>					Unknown	54.05	(20)	34.48	(10)
Left	44.44	(32)	27.85	(22)	<i>Opinion on home care costs</i>				
Center	35.33	(53)	33.59	(44)	<CHF 5000	39.88	(67)	26.43	(37)
Right	45.83	(44)	35.29	(24)	CHF 5000–10,000	41.67	(40)	34.44	(31)
Other variables					>CHF 10,000	57.14	(4)	71.43	(5)
<i>LTC policy model</i>					Unknown	38.30	(18)	41.46	(17)
Institutional care	61.90	(13)	33.33	(7)	<i>Opinion on institutional costs</i>				
At-home care	37.76	(37)	34.21	(26)	<CHF 5000	27.50	(11)	27.27	(9)
Mixed	40.37	(65)	32.67	(49)	CHF 5000–10,000	39.39	(78)	31.36	(53)
Other	36.84	(14)	25.81	(8)	>CHF 10,000	48.84	(21)	32.56	(14)
					Unknown	51.35	(19)	42.42	(14)

Note: Statistics are based on 318 and 278 records for (A) and (B), respectively. Shares are expressed in % with respect to the subsample. The number of respondents who agreed on each category is reported in parentheses.

Table 3. Statistics on the levels of agreement to estate recovery as an incentive for buying LTC insurance (question A).

Variable	Agreement to Estate Recovery		Variable	Agreement to Estate Recovery	
	%	(n)		%	(n)
Motivations for purchasing LTC insurance					
Insufficient savings to cover costs			Protect the children's inheritance		
Agree	38.40	(96)	Agree	41.82	(69)
Disagree	53.57	(15)	Disagree	28.72	(27)
Indifferent	45.00	(18)	Indifferent	55.93	(33)
Concern about financial implications			Ease family's burden		
Agree	40.00	(114)	Agree	40.86	(105)
Disagree	46.15	(6)	Disagree	32.14	(9)
Indifferent	45.00	(9)	Indifferent	45.45	(15)
No family support					
Agree	36.11	(52)			
Disagree	41.67	(45)			
Indifferent	48.48	(32)			

Note: see Table 2.

Table 4. Statistics on the levels of agreement to estate recovery as an incentive for helping dependent parents (question B).

Variable	Agreement to Estate Recovery		Variable	Agreement to Estate Recovery	
	%	(n)		%	(n)
Motivations for helping dependent parents					
<i>Satisfaction for helping parents</i>			<i>Concern about parents' quality of life</i>		
Agree	34.67	(78)	Agree	32.26	(80)
Disagree	18.75	(3)	Disagree	20.00	(2)
Indifferent	24.32	(9)	Indifferent	40.00	(8)
<i>High cost of professional help</i>			<i>Protect future inheritance</i>		
Agree	40.51	(64)	Agree	71.43	(40)
Disagree	13.79	(8)	Disagree	19.44	(35)
Indifferent	29.03	(18)	Indifferent	35.71	(15)
<i>Moral obligation to help parents</i>			<i>Legal obligation to help parents</i>		
Agree	33.81	(71)	Agree	47.06	(40)
Disagree	30.77	(8)	Disagree	19.83	(24)
Indifferent	26.19	(11)	Indifferent	36.11	(26)

Note: see Table 2.

3.4.2. Summary Statistics on the Independent Variables

Some factors show significant differences for both questions. Middle-aged respondents (40–49 years old) are generally more likely to view estate recovery as an incentive for both purchasing LTC insurance and providing informal care. Respondents who express concern about future dependence and those who believe that a large portion of LTC costs will be covered by private insurance also show higher levels of agreement. Respondents who believe that the average monthly cost of professional home care exceeds CHF 10,000 are more likely to agree with estate recovery as an incentive. In addition, individuals who believe that citizens should finance LTC costs, with government subsidies used only in extreme cases of misfortune, and those who think private insurers are responsible for providing solutions that allow citizens to supplement government financing of LTC, are also the most likely to agree with both (A) and (B). Detailed percentage distributions are provided in Table 2.

3.4.3. Statistics on the Motivations Regarding Purchasing LTC Insurance

For (A), individuals who report buying LTC insurance to protect children's inheritance are the most likely to view estate recovery as an incentive in that decision (41.82%). On the other hand, individuals who report buying LTC insurance because of not having enough savings to cover the costs, worrying about the financial consequences, not having family support, and relieving the family burden, have the largest percentage of disagreement with estate recovery as an incentive in that decision (see Table 3).

3.4.4. Statistics on the Motivations Regarding Helping Dependent Parents

For (B), we find the highest percentage of agreement for estate recovery to be an incentive to provide more help to parents for individuals reporting to provide informal care to protect future inheritance (71.43%), because of the legal obligation to help parents (47.06%) or of the high cost of professional help (40.51%) (see Table 4).

3.5. Regression Models

We specify the regression models using a variable selection procedure for each research question. Given the binary nature of the two response variables (see Section 3.4), we consider generalized linear models (GLMs) for the regression analysis. The use of GLMs is

a well-established approach to modeling binary data with covariates. Compared to linear models, GLMs offer more flexibility in analyzing non-normally distributed data (Mihaylova et al. 2011; Ravindra et al. 2019). We therefore fit a binomial GLM to both response variables, considering all the variables described in Section 3.3. Considering the Akaike Information Criterion (AIC), which is most commonly used for model selection, we find that a logit regression model performs better than a probit regression model. We then determine the most parsimonious regression model by performing a stepwise (backward and forward) variable selection procedure based on the AIC.

The selection process started with a broad set of variables described in Tables 2–4, including demographic characteristics, socio-economic and political factors, health status and behavior, LTC literacy, and motivational factors specific to each research question. Table 5 lists the final set of retained variables, representing the most informative predictors for each model. Variables not included in the final models—such as language region, overall wealth, and professional situation—were excluded due to lack of statistical significance, as determined by the AIC-based stepwise procedure. To improve interpretability, baseline categories were selected based on consistency: the most common category was used for demographic factors such as age class, and the most positive or affirmative response category was chosen for variables related to health, political factors, and motivational variables.

Table 5. Variables retained in the regression models.

Regression for Question A		Regression for Question B	
Variable	Label	Variable	Label
CR	Citizen’s role in financing care	PH	Protect future inheritance
AG	Age class	HC	High cost of professional help
PI	Protect the children’s inheritance	LO	Legal obligation to help parents
CD	Concern about future dependence	CD	Concern about future dependence
		GH	Self-perceived health

Note: The table lists the variables retained through AIC-based stepwise selection from the initial set of predictors.

For the first research question, we examine the determinants of estate recovery as an incentive to purchase LTC insurance by conducting the following binomial GLM:

$$g(ER_A) = \beta_0 + \beta_{CR_i} CR_i + \beta_{AG_i} AG_i + \beta_{PI_i} PI_i + \beta_{CD} CD, \quad (1)$$

where $g(\cdot)$ is the logit link function used for binary responses, ER_A refers to the response variable for question (A), β_0 is the intercept, and the other β s are the regression coefficients associated with the following variables: citizen’s role in financing care (CR), age class (AG), protecting the children’s inheritance (PI), and concern about future dependence (CD).

Through the second model, we examine the determinants of estate recovery as an incentive for adult children to provide more assistance to their parents (in-laws). In this case, the binomial GLM with a logistic link function is expressed as follows:

$$g(ER_B) = \beta_0 + \beta_{PH_i} PH_i + \beta_{HC_i} HC_i + \beta_{LO_i} LO_i + \beta_{CD} CD + \beta_{GH_i} GH_i, \quad (2)$$

where ER_B represents the response variable for question (B) and the β s represent the intercept and regression coefficients associated with each variable, i.e., protect future inheritance (PH), high cost of professional help (HC), legal obligation to help parents (LO), concern about future dependence (CD), and self-perceived health (GH).

Although the same methodological approach is used for both research questions, their nature differs significantly. Question (A) focuses on the stated intention to purchase LTC insurance, a hypothetical decision that may be shaped by perceptions of future financial security, dependence risk and bequest motives. In contrast, question (B) examines past

behavior in providing informal care to dependent parents, a decision that may be shaped by family obligations and financial constraints. We discuss the results further in the following section.

4. Results

4.1. Regression Results

In Table 6, we present the estimated coefficients and significance levels for the regression models in Equations (1) and (2). Starting with estate recovery as an incentive to purchase LTC insurance, we first observe that while individuals who report bequest protection as a motivation are more likely to consider estate recovery a relevant factor than those who disagree with this motive, this relationship is not statistically significant. Notably, individuals who are indifferent to this motive are 7.16% more likely to agree with the estate recovery incentive compared to those who explicitly agree with inheritance protection ($\beta_{PI_{indifferent}} = 0.664$).

Second, age is the primary socio-economic determinant of the influence of estate recovery, as younger individuals (those aged 40–49 years) are significantly more likely incentivized by estate recovery to purchase LTC insurance than older individuals. In probability terms, this translates to a 16.68% decrease in the probability of agreeing for individuals aged 50–59 and a 15.68% decrease for those aged 60–65.

Third, individuals who believe that it is the citizen's role to finance LTC are more sensitive to the incentive of estate recovery to purchase LTC insurance. Individuals who disagree or are indifferent to the role of citizens in financing LTC exhibit a significant negative effect on the response variable. The corresponding estimated coefficients $\beta_{CR_{disagree}} = -1.336$ and $\beta_{CR_{indifferent}} = -0.999$ imply a 26.19% and 18.24% decrease in the probability of agreeing, respectively.

Finally, people who are more worried about becoming dependent in the future are significantly more likely to be influenced by estate recovery to buy LTC insurance (those who are not worried are expected to be 8.38% less likely to agree).

Regarding the effect of estate recovery on informal caregiving, we find that the bequest motive is a significant determinant. Individuals who report protecting future inheritances as a motivation for providing informal care are more likely to be encouraged by estate recovery to provide more help to their parents. In other words, children who disagree or are indifferent to this motive are significantly less likely to agree that estate recovery is an incentive, with the probability of agreeing and decreasing by 36.17% and 20.30%, respectively.

Still related to the motivations for providing informal care, individuals who help their parents because the cost of professional help is high, or those who feel legally obligated to help them, are significantly more likely to be sensitive to estate recovery. Therefore, such an incentive would make professional help even more costly by implicitly increasing co-payments or making individuals even more obligated to help their dependent parents when needed, thereby supporting informal care.

Finally, individuals who are concerned about future dependence are also more likely to be influenced by estate recovery to provide more help to their dependent parents (in-laws). For these individuals, estate recovery seems to make them more aware of the negative consequences of LTC and, therefore, significantly more likely to provide informal care (the change in the probability of agreeing is 5.34%).

Table 6. Results for generalized linear models for questions (A) and (B).

Variables	Regression Model (1)			Regression Model (2)		
	Coefficient	Sig.	Prob. of Agreeing	Coefficient	Sig.	Prob. of Agreeing
Intercept	1.643	***	83.79%	2.573	***	92.91%
<i>Demographic factors</i>						
Age class						
40–49	(baseline)					
50–59	−0.929	**	−16.68%			
60–65	−0.884	**	−15.68%			
<i>Health and behavior</i>						
Self-perceived health						
Good				(baseline)		
Fair				−0.365		−2.81%
Poor				0.511		+2.71%
Concern about future dependence						
Worried	(baseline)			(baseline)		
Not worried	−0.522	*	−8.38%	−0.620	*	−5.34%
<i>Political factors</i>						
Citizen’s role in financing care						
Agree	(baseline)					
Disagree	−1.336	***	−26.19%			
Indifferent	−0.999	***	−18.24%			
<i>Motivations for LTC insurance</i>						
Protect the children’s inheritance						
Agree	(baseline)					
Disagree	−0.366		−5.60%			
Indifferent	0.664	*	+7.16%			
<i>Motivations for informal care</i>						
High cost of professional help						
Agree				(baseline)		
Disagree				−1.209	**	−13.27%
Indifferent				−0.540		−4.49%
Protect future inheritance						
Agree				(baseline)		
Disagree				−2.302	***	−36.17%
Indifferent				−1.598	***	−20.30%
Legal obligation to help parents						
Agree				(baseline)		
Disagree				−0.922	*	−9.01%
Indifferent				0.017		+0.11%
$\tilde{N}$	318			278		

Note: Regression models (1) and (2) relate to the research questions (A) and (B), respectively. The significance levels are * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. The “Prob. of Agreeing” column refers to the probability of agreeing in the case of the intercept, and to the change in the same probability when a variable changes from the baseline to another category value. Empty cases related to variables are not included or not available in the concerned regression model. Baseline categories were chosen according to the most common category for age class, and the positive response category for the other selected variables.

4.2. Robustness Tests

We perform the following tests to assess the goodness of fit and the robustness of our regression results. First, we confirm that our models meet the assumptions required for logistic regression. Then, we verify that our results remain consistent when neutral opinions are included in a multinomial regression framework.

First, a key assumption of the logit regression model is the absence of multicollinearity among the independent variables. A widely used approach to test for multicollinearity in (generalized) linear regression models is the variance inflation factor (VIF), which calculates

the extent to which the standard error of the predictor variable is increased by the correlation of the predictor with the other independent variables (Fox and Monette 1992). However, this method is not applicable when variables have more than two categories, as is the case in our models. Therefore, we use the generalized variance inflation factor (GVIF, Fox and Monette 1992), which adjusts the VIF for the degrees of freedom of the predictor variable. Since the minimum GVIF value is one and values greater than five indicate the presence of multicollinearity, we conclude that there is no strong correlation between the independent variables in either of our regression models. The GVIF values obtained for our predictors in both models range from 1.02 to 1.14.

A second assumption for logit regression is the linearity of the independent variables and log odds, i.e., the relationship between the logit of the outcome (log odds) and each continuous independent variable is linear. However, this check only needs to be performed for continuous and ordinal variables, not for nominal data, as is the case in our model. Third, we visually assessed the independence of the observations by plotting the deviance residuals from our models. Thus, the assumption of independence of the observations is indeed fulfilled.

Finally, we want to assess how our results would change if we included neutral responses from the original data (see Table 1). Therefore, we run multinomial regression models for questions (A) and (B) using a three-level response variable (disagree, neutral, and agree levels) for the dependent variable, with the neutral opinion as the reference level. We start with the same total set of variables as for the logit regressions and report the variables retained after the AIC stepwise selection procedure in Table 7.

Table 7. Variables retained in the multinomial regression models.

Regression for Question A		Regression for Question B	
Variable	Label	Variable	Label
CR	Citizen's role in financing care	PH	Protect future inheritance
AG	Age class	HC	High cost of professional help
PI	Protect the children's inheritance	CD	Concern about future dependence
CD	Concern about future dependence	AG	Age class
FS	No family support	CR	Citizen's role in financing care
CH	Children		
IS	Insufficient savings to cover costs		

Note: The table lists the variables retained through AIC-based stepwise selection from the initial set of predictors.

Our results confirm the consistency of the variable selection in the logit regression models when neutral opinions are included. In the multinomial regression for question (A), we observe that, in addition to the variables retained in the binomial model, three additional variables appear that are related to motivations to purchase LTC insurance, such as not having family support, not having enough savings to cover care costs, and having children. In particular, and not surprisingly, individuals who have children and consider home care very costly are more likely to be encouraged by estate recovery to purchase insurance, supporting the role of the bequest motive.

As for informal care (question B), the most significant variables that appear in the binary regression model (2) are retained in our multinomial model and are also the most significant variables, namely, protection of future inheritance (PH) and the high cost of professional help (HC). In the multinomial regression, concern about future dependence also emerges as a significant variable. More details can be found in the summary statistics of the selected variables (Appendix A) and the regression models and results for the multinomial models (Appendix B).

5. Discussion and Conclusions

This paper utilizes a unique Swiss survey to identify the characteristics and primary motivations of individuals who report estate recovery as a relevant factor in their decisions to purchase LTC insurance and provide informal care.

The findings highlight several key insights into how estate recovery relates to decisions to purchase LTC insurance and to provide informal care. First, individuals who express indifference toward inheritance protection are more likely to support estate recovery as an incentive compared to those who endorse the bequest motive. Although this result may initially seem counterintuitive, it is consistent with the findings of [Courbage and Montoliu-Montes \(2020\)](#), who show that estate recovery can actually discourage LTC insurance uptake among altruistic parents, i.e., those motivated by a bequest motive, particularly when they expect their children to be reluctant to provide care. Unfortunately, the current survey does not include data that would allow for a direct test of this interpretation.

Second, concern about future dependence emerges as another important driver. Individuals who express greater worry about becoming dependent are more likely to perceive estate recovery as a relevant factor influencing both insurance and informal caregiving decisions. In this context, estate recovery may heighten existing concerns by increasing the perceived financial burden of LTC, thereby encouraging a stronger demand for LTC insurance.

A third finding is that age is an essential determinant of the effect of estate recovery on LTC insurance but not on informal caregiving decisions. Younger individuals (aged 40–49) are more likely to be influenced by estate recovery in their LTC insurance decisions. This is an interesting finding, as LTC insurance is more affordable when purchased at a younger age. Thus, targeting estate recovery to younger individuals would strongly incentivize the purchase of LTC insurance.

Political factors also appear to play a role, as those who believe financing LTC is the citizen's responsibility are more sensitive to estate recovery when purchasing LTC insurance. This is natural, as estate recovery increases the individual's responsibility to finance LTC by implicitly decreasing public LTC subsidies. Therefore, insurance is encouraged as individuals become more responsible for financing LTC. People who value individual solutions may also be more interested in LTC insurance and, therefore, most positively associated with estate recovery.

Regarding informal caregiving, the motivations for providing informal care are significant determinants of the effects of estate recovery. In addition to the bequest motive, those who offer help because the cost of professional help is high or those who feel legally obligated to help their dependent parent are more likely to be sensitive to estate recovery in their decision to provide help. Thus, estate recovery would make professional help even more costly by implicitly increasing out-of-pocket costs or making individuals even more obligated to help their dependent parents when needed. This finding is consistent with the theoretical results of [Thiébaud et al. \(2012\)](#), which show that when children provide informal care only to preserve the future bequest, estate recovery incentivizes them to help more because it reduces the cost of formal care and thereby reduces the amount recovered from the bequest. Interestingly, when children provide help for altruistic reasons, i.e., because they are concerned about their parents' quality of life or derive satisfaction from helping their parents, estate recovery does not affect the decision to provide informal care. This occurs because estate recovery is unlikely to influence children's level of altruism.

These findings provide empirical support for previous theoretical work on the role of the bequest motive in shaping perceptions of estate recovery, particularly in relation to informal care decisions. While individuals motivated by bequest protection are more likely to view estate recovery as relevant, especially concerning informal caregiving, we also find

that indifference toward inheritance protection is associated with greater responsiveness to estate recovery in LTC insurance decisions.

Targeted policy messaging and program design can harness this responsiveness to improve uptake and support. For example, not framing LTC insurance as a way to protect the bequest could incentivize those individuals with a bequest motive to purchase insurance. Similarly, raising awareness of estate recovery among younger adults, who benefit most from early enrollment due to lower premiums, could effectively boost LTC insurance coverage in this group, as stressed earlier. Another insight is that by making people more aware and concerned about LTC risks, for example, through information campaigns, the existence of estate recovery policies could also encourage the purchase of LTC insurance.

Finally, policies aimed at informal care should pay particular attention to the motivations for providing such care. For example, making informal caregivers aware of the high cost of professional help or of the legal obligation for children to care for their needy parents, as is the case in most countries, should accompany the implementation of an estate recovery program to increase the supply of informal care. However, such policies must also balance with the risk of overburdening family caregivers, particularly those with limited resources. Beyond their financial and behavioral dimensions, estate recovery policies raise important ethical and social implications. Future policy discussions should address fairness, intergenerational equity considerations, and social acceptability.

Several limitations of this study must be noted. First, as with many survey-based studies, self-reported responses could be manipulated or affected by self-report bias. In addition, respondents' prior familiarity with estate recovery may have varied, and some may have formed their opinions based on the information provided in the survey. This limitation should be considered when interpreting the observed associations.

Second, this study lacks a time dimension, as the survey was conducted only once, which prevents direct observation of time preferences. Therefore, our results primarily reflect associations rather than causal effects and should be interpreted as perceived sensitivity to estate recovery. The cross-sectional design also limits external validity, as the findings primarily apply to middle-aged (40–65 years old) individuals and may not be generalizable to other populations. Future research could employ longitudinal or experimental designs to enable causal analysis, identify potential mediating factors influencing LTC-related decisions, and examine how differing planning horizons shape sensitivity to estate recovery in both insurance and caregiving decisions.

Third, the analysis focuses on a subset of respondents, resulting in relatively modest sample sizes (318 for LTC insurance decisions and 278 for informal caregiving decisions), which may affect the robustness and generalizability of the findings. In the case of informal care, the sample includes only individuals already engaged in caregiving for dependent parents. Consequently, this study does not capture the initial decision to provide care (the extensive margin), but rather investigates the factors associated with providing more help (the intensive margin). This offers a focused lens on estate recovery's role, though it excludes broader motivational factors that may also influence LTC-related decisions such as reductions in health insurance and pension benefits, changes to state subsidies for low-income individuals, or tax deductions. Examining these aspects could be a valuable direction for future research.

Fourth, the use of logistic and multinomial regression models with stepwise selection could be strengthened by applying machine learning methods, such as random forests, to improve variable selection and model performance. Future research could explore the intertemporal optimization and dynamic interaction between estate recovery, LTC insurance, and informal care, which may yield further insights into long-term care financing decisions. Finally, this study is limited to the Swiss context. Extending the analysis to other

national settings would provide a more comprehensive understanding of estate recovery's effects in diverse policy environments.

Despite these limitations, our findings offer actionable insights for LTC financing policy by identifying individuals who are particularly responsive to estate recovery in their decisions to purchase LTC insurance and provide informal care. These insights contribute to a better understanding of the critical role of estate recovery in shaping LTC decisions and provide a prelude for further research in this field.

Supplementary Materials: Information on the survey and survey questions can be downloaded at: <https://www.mdpi.com/article/10.3390/risks13110216/s1>.

Author Contributions: All authors contributed to the analysis and drafted the manuscript. All authors have read and agreed to the published version of the manuscript.

Funding: The development of the original survey and collection of the survey data was partially supported by the Swiss National Science Foundation (grant no. 100018_169662).

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: The data presented in this study are available on request from the corresponding author due to ongoing research.

Acknowledgments: The authors thank Michel Fuino and Guillem Montoliu-Montes for their help developing the survey.

Conflicts of Interest: The authors declare no conflicts of interest.

Abbreviations

The following abbreviations are used in this manuscript:

LTC	Long-Term Care
US	United States
GDP	Gross Domestic Product
OECD	Organisation for Economic Co-operation and Development
ASPA	Allocation de solidarité aux personnes
PC	Prestations complémentaires
OASI	Old-Age and Survivors' Insurance
GLM	Generalized Linear Model
AIC	Akaike Information Criterion

Appendix A. Summary Statistics of the Selected Variables in the Multinomial Regression Models

Table A1. Summary statistics of the variables that appear in the multinomial regression models (3) and (4).

Variable	(A)				(B)			
	Agreement		Disagreement		Agreement		Disagreement	
	%	(n)	%	(n)	%	(n)	%	(n)
Demographic factors								
<i>Age class</i>								
40–49	33.90	(60)	29.94	(53)	25.00	(42)	35.12	(59)
50–59	22.54	(39)	49.71	(86)	21.69	(36)	48.80	(81)
60–65	30.30	(30)	50.51	(50)	14.81	(12)	59.26	(48)
<i>Children</i>								
Yes	31.02	(94)	43.56	(132)	21.68	(62)	46.85	(134)

Table A1. Cont.

Variable	(A)				(B)			
	Agreement		Disagreement		Agreement		Disagreement	
	%	(n)	%	(n)	%	(n)	%	(n)
No	23.97	(35)	39.04	(57)	21.71	(28)	41.86	(54)
Health and behavior								
<i>Concern about future dependence</i>								
Worried	34.00	(68)	40.50	(81)	27.22	(46)	43.79	(74)
Not worried	24.50	(61)	43.37	(108)	17.89	(44)	46.34	(114)
Political factors								
<i>Citizen's role in financing care</i>								
Agree	42.60	(72)	31.95	(54)	27.21	(37)	45.59	(62)
Disagree	20.31	(26)	57.03	(73)	24.64	(34)	47.10	(65)
Indifferent	20.39	(31)	40.79	(62)	13.48	(19)	43.26	(61)
Motivations for LTC insurance								
<i>Insufficient savings to cover costs</i>								
Agree	27.91	(96)	44.77	(154)				
Disagree	44.12	(15)	38.24	(13)				
Indifferent	25.35	(18)	30.99	(22)				
<i>Protect the children's inheritance</i>								
Agree	32.39	(69)	45.07	(96)				
Disagree	20.00	(27)	49.63	(67)				
Indifferent	32.67	(33)	25.74	(26)				
<i>No family support</i>								
Agree	27.37	(52)	48.42	(92)				
Disagree	31.47	(45)	44.06	(63)				
Indifferent	27.59	(32)	29.31	(34)				
Motivations for informal care								
<i>High cost of professional help</i>								
Agree					25.81	(64)	37.90	(94)
Disagree					10.39	(8)	64.94	(50)
Indifferent					20.00	(18)	48.89	(44)
<i>Protect future inheritance</i>								
Agree					54.79	(40)	21.92	(16)
Disagree					12.92	(35)	53.51	(145)
Indifferent					21.13	(15)	38.03	(27)
N	449				415			

Note: Statistics are based on 449 and 415 records for (A) and (B), respectively. Shares are expressed in % with respect to the relevant subsample. The number of respondents agreeing/disagreeing in each category is reported in parentheses.

Appendix B. Multinomial Regression Models and Results

Table A2. Results for multinomial regression models (3) and (4).

	Regression Model (3)				Regression Model (4)			
	Agreement		Disagreement		Agreement		Disagreement	
	Coefficient	Sig.	Coefficient	Sig.	Coefficient	Sig.	Coefficient	Sig.
Intercept	2.703	***	1.090	.	2.304	***	−0.258	
<i>Demographic factors</i>								
Age class								
40–49	(baseline)				(baseline)			

Table A2. Cont.

	Regression Model (3)				Regression Model (4)			
	Agreement		Disagreement		Agreement		Disagreement	
	Coefficient	Sig.	Coefficient	Sig.	Coefficient	Sig.	Coefficient	Sig.
50–59	−0.105		0.810	**	0.198		0.555	*
60–65	0.274		1.118	**	−0.148		0.835	*
Children								
Yes	(baseline)							
No	−0.629	*	−0.697	*				
<i>Health and behavior</i>								
Concern about future dependence								
Worried	(baseline)				(baseline)			
Not worried	−0.656	*	0.027		−0.781	*	−0.149	
<i>Political factors</i>								
Citizen’s role in financing care								
Agree	(baseline)				(baseline)			
Disagree	−0.596	.	0.767	*	0.164		−0.022	
Indifferent	−1.059	***	−0.056		−0.874	*	−0.486	.
<i>Motivations for LTC insurance</i>								
Insufficient savings to cover costs								
Agree	(baseline)							
Disagree	1.031	.	0.287					
Indifferent	−0.441		−0.599	.				
Protect the children’s inheritance								
Agree	(baseline)							
Disagree	−0.593	.	−0.148					
Indifferent	−0.328		−0.979	**				
No family support								
Agree	(baseline)							
Disagree	0.124		0.025					
Indifferent	−0.550		−0.934	**				
<i>Motivations for informal care</i>								
High cost of professional help								
Agree					(baseline)			
Disagree					−0.313		0.881	**
Indifferent					0.108	**	0.521	.
Protect future inheritance								
Agree					(baseline)			
Disagree					−1.918	***	0.441	
Indifferent					−1.464	**	0.082	
N	449				415			

Note: Regression models (3) and (4) relate to the research questions (A) and (B), respectively. The “Agreement” and “Disagreement” models have the neutral opinions for reference level. The significance levels are . $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Empty cases related to variables are not included or not available in the concerned regression model.

The multinomial regression model with respect to research question (A) is as follows:

$$g(ER_{j,A}) = \beta_{j,0} + \sum_{i \in \mathcal{U}} \beta_{j,i} \mathbf{1}_i, \quad (\text{A1})$$

where $g(\cdot)$ denotes the logit link function used for the three-level responses (agree, neutral, and disagree), $ER_{j,A}$ represents the response variable for question (A), where $j = 1$ refers to the comparison of the “agree” opinion with the neutral one (reference), and $j = 2$ refers to

the “disagree” opinion model. The set $\mathcal{U}$ contains the related variables specified in Table 7, i.e., CR, AG, PI, CD, FS, CH , and IS . The $\beta_{j,i}$ s refer to the respective coefficients, while $\mathbf{1}_i$ is the indicator function corresponding to the variables in $\mathcal{U}$.

As for the question (B), we formulate the multinomial model as follows:

$$g(ER_{j,B}) = \beta_{j,0} + \sum_{i \in \mathcal{V}} \beta_{j,i} \mathbf{1}_i, \quad (\text{A2})$$

where $ER_{j,B}$ represents the response variable and $\mathcal{V}$ contains the variables for the regression relating to question B, i.e., $\mathcal{V} = \{PH, HC, CD, AG, CR\}$. The $\beta_{j,i}$ s refer to the respective variable coefficients for the agree or disagree levels ($j = 1$ or $j = 2$), while $\mathbf{1}_i$ values are the corresponding variables in the subset $\mathcal{V}$.

Note

- ¹ Informal care is defined as regular and unpaid assistance with the activities of daily living provided to somebody having lost their personal autonomy (Colombo et al. 2011).

References

- American Council on Aging. 2021. State Specific Medicaid Eligibility Requirements. Available online: <https://www.medicaidplanningassistance.org/state-specific-medicaid-eligibility/> (accessed on 4 April 2023).
- ASPE. 2005. *Medicaid Estate Recovery*. Technical Report. Washington: The Assistant Secretary for Planning and Evaluation.
- Brown, Jeffrey R., and Amy Finkelstein. 2008. The Interaction of Public and Private Insurance: Medicaid and the Long-Term Care Insurance Market. *American Economic Review* 98: 1083–102. [CrossRef]
- Brown, Jeffrey R., and Amy Finkelstein. 2009. The Private Market for Long-Term Care Insurance in the United States: A Review of the Evidence. *The Journal of Risk and Insurance* 76: 5–29. [CrossRef] [PubMed]
- CASF. 2000. Code de l’Action Sociale et des Familles. Available online: https://www.legifrance.gouv.fr/codes/texte_lc/LEGITEXT00006074069 (accessed on 10 April 2023).
- Checkovich, Tennille J., and Steven Stern. 2002. Shared Caregiving Responsibilities of Adult Siblings with Elderly Parents. *The Journal of Human Resources* 37: 441–78. [CrossRef]
- Coe, Norma B., Meghan M. Skira, and Courtney Harold Van Houtven. 2015. Long-Term Care Insurance: Does Experience Matter? *Journal of Health Economics* 40: 122–31. [CrossRef] [PubMed]
- Colombo, Francesca, Ana Llana-Nozal, Jérôme Mercier, and Frits Tjadens. 2011. Where To? Providing Fair Protection Against Long-term Care Costs and Financial Sustainability. In *Help Wanted? Providing and Paying for Long-Term Care*. Paris: OECD Publishing, chap. 9, pp. 263–93. [CrossRef]
- Courbage, Christophe, and Guillem Montoliu-Montes. 2020. Estate Recovery and Long-Term Care Insurance. *Journal of Public Economic Theory* 22: 949–72. [CrossRef]
- Courbage, Christophe, Guillem Montoliu-Montes, and Joël Wagner. 2023. On Children’s Motives to Influence Parents’ Long-Term Care Insurance Purchase: Evidence from Switzerland. *Geneva Papers on Risk and Insurance: Issues and Practice* 48: 102–29. [CrossRef]
- Dick, Diana Lourdes. 2007. Tax and Economic Policy Responses to the Medicaid Long-Term Care Financing Crisis: A Behavioral Economics Approach. *Cardozo Public Law, Policy and Ethics Journal* 5: 379–423.
- Ettner, Susan L. 1994. The Effect of the Medicaid Home Care Benefit on Long-Term Care Choices of the Elderly. *Economic Inquiry* 32: 103–27. [CrossRef]
- Firgo, Matthias, Klaus Nowotny, and Alexander Braun. 2020. Informal, Formal, or Both? Assessing the Drivers of Home Care Utilization in Austria Using a Simultaneous Decision Framework. *Applied Economics* 52: 4440–56. [CrossRef]
- Fox, John and Georges Monette. 1992. Generalized Collinearity Diagnostics. *Journal of the American Statistical Association* 87: 178–83. [CrossRef]
- FSO. 2018. *Health Pocket Statistics*. Technical Report. Neuchâtel: Federal Statistical Office.
- FSO. 2020. *Swiss Labour Force Survey*. Technical Report. Neuchâtel: Federal Statistical Office.
- Fuino, Michel, and Joël Wagner. 2018. Old-age Care Prevalence in Switzerland: Drivers and Future Development. *European Actuarial Journal* 8: 321–62. [CrossRef]
- Fuino, Michel, Andrey Ugarte Montero, and Joël Wagner. 2022. On the Drivers of Potential Customers’ Interest in Long-Term Care Insurance: Evidence from Switzerland. *Risk Management and Insurance Review* 25: 271–302. [CrossRef]
- Gentili, Elena, Giuliano Masiero, and Fabrizio Mazzonna. 2017. The Role of Culture in Long-Term Care Arrangement Decisions. *Journal of Economic Behavior & Organization* 143: 186–200. [CrossRef]

- Greenhalgh-Stanley, Nadia. 2012. Medicaid and the Housing and Asset Decisions of the Elderly: Evidence from Estate Recovery Programs. *Journal of Urban Economics* 72: 210–24. [\[CrossRef\]](#)
- Kapp, Marshall B. 2006. Medicaid Planning, Estate Recovery, and Alternatives for Long-Term Care Financing: Identifying the Ethical Issues. *Care Management Journals* 7: 73–78. [\[CrossRef\]](#)
- Klimaviciute, Justina, Pierre Pestieau, and Jérôme Schoenmaeckers. 2019. Family Altruism and Long-Term Care Insurance. *Geneva Papers on Risk and Insurance: Issues and Practice* 44: 216–30. [\[CrossRef\]](#)
- SHG. 2024. Sozialhilfegesetz (SHG). Available online: <http://www.zhlex.zh.ch/Erlass.html?Open&Ordnr=851.1> (accessed on 1 April 2024).
- LOCPAS. 1976. Loi Organique des Centres Publics d'Action Sociale. Available online: <http://www.ejustice.just.fgov.be/eli/loi/1976/07/08/1976A70810/justel> (accessed on 2 August 2023).
- Mentzakis, Emmanouil, Paul McNamee, and Mandy Ryan. 2009. Who Cares and How Much: Exploring the Determinants of Co-residential Informal Care. *Review of Economics of the Household* 7: 283–303. [\[CrossRef\]](#)
- Mihaylova, Borislava, Andrew Briggs, Anthony O'Hagan, and Simon G. Thompson. 2011. Review of Statistical Methods for Analysing Healthcare Resources and Costs. *Health Economics* 20: 897–916. [\[CrossRef\]](#)
- Ministère des Solidarités de l'Autonomie et des Personnes Handicapées. 2021. Récupération des Prestations Sociales. Available online: <https://solidarites.gouv.fr/recuperation-des-prestations-sociales> (accessed on 5 September 2023).
- Notaires du Grand Paris. 2019. Le Principe de la Récupération des Aides Sociales sur la Succession. Available online: <https://notairesdugrandparis.fr/fr/le-reglement-de-la-succession/le-principe-de-la-recuperation-des-aides-sociales-sur-la-succession> (accessed on 10 September 2023).
- OECD. 2017. *Health at a Glance 2017*. Health at a Glance. Paris: OECD Publishing. [\[CrossRef\]](#)
- OFAS. 2022. *Les Prestations Complémentaires*. Technical Report. Berne: Office Fédéral des Assurances Sociales.
- Pauly, Mark V. 1990. The Rational Nonpurchase of Long-Term-Care Insurance. *Journal of Political Economy* 98: 153–68. [\[CrossRef\]](#)
- Ravindra, Khaiwal, Preety Rattan, Suman Mor, and Ashutosh Nath Aggarwal. 2019. Generalized Additive Models: Building Evidence of Air Pollution, Climate Change and Human Health. *Environment International* 132: 104987. [\[CrossRef\]](#)
- Stabile, Mark, Audrey Laporte, and Peter C. Coyte. 2006. Household Responses to Public Home Care Programs. *Journal of Health Economics* 25: 674–701. [\[CrossRef\]](#)
- Thiébaud, Sophie P., Bruno Ventelou, Cecilia Garcia-Penalosa, and Alain Trannoy. 2012. Une Analyse Microéconomique du Gage Patrimonial dans l'Aide aux Personnes Dépendantes. *Revue Economique* 63: 339–72. [\[CrossRef\]](#)
- Vilaplana Prieto, Cristina, Sergi Jiménez-Martín, and Pilar García Gómez. 2011. Trade-Off entre Cuidados Formales e Informales en Europa. *Gaceta Sanitaria* 25: 115–24. [\[CrossRef\]](#)
- Zigante, Valentina. 2018. *Informal Care in Europe: Exploring Formalisation, Availability and Quality*. Technical Report. Brussels: European Commission.

Disclaimer/Publisher's Note: The statements, opinions and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of MDPI and/or the editor(s). MDPI and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions or products referred to in the content.