University of Victoria | Economics

Department Discussion Paper DDP2002

ISSN 1914-2838

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Abstract

This note studies the determinants of life satisfaction for the elderly and near-elderly in the U.S., using data from the Health and Retirement Study. The econometric analysis exploits the 2008-09 financial crisis as a source of exogenous variation in wealth, caused by a long-lasting decrease in asset prices. Although absolute changes in wealth are not found to systematically affect individuals' well-being, losing 60% or more of the pre-crisis wealth negatively impacted measures of life satisfaction.

Keywords: Wealth, Uninsurable shocks, Life Satisfaction, Subjective Well-Being.

JEL Classifications: D14, E21, I31, J14.

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Acknowledgments: *We are grateful to Martin Farnham for useful comments on an early draft of this paper.*

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1 Introduction

An influential literature, e.g. Krueger and Perri (2006) and Blundell, Pistaferri and Preston (2008), considers the consequences of income shocks and the importance of partial insurance in shaping the distribution of consumption. Ultimately, the goal is to assess if income shocks are transmitted to individual welfare, and how to alleviate their detrimental effects. However, little is known regarding the role of wealth shocks and whether they translate into changes in measures of individual well-being. Filling this gap is important, as the impact of economic shocks provides a rationale for a number of public interventions, and drives the actual implementation of social insurance programs.

One major obstacle to this line of inquiry is the endogeneity of wealth accumulation. To identify the causal effect of wealth shocks on the life satisfaction of the elderly (and near-elderly) in the US, we exploit the aftermath of the so-called "financial crisis," arguably an exogenous source of variation. The great recession represented an unexpected, large, and long-lasting aggregate shock to asset prices, allowing to mitigate the simultaneity issues in the econometric analysis.[1] The data come from the Health and Retirement Study (HRS, hereafter), a longitudinal dataset that includes information on both Subjective Well-Being (SWB) and wealth.

The consequences of the financial crisis for the value of assets typically held in the households' portfolios are clearly visible in Figure (1), which plots the behavior of two indexes over time. The top panel displays a house price index, while the bottom panel the behavior of the U.S. stock market, as represented by the NYSE composite index. The two shaded areas highlight the data collection time windows of the 2008 and 2010 HRS waves used in our analysis. Given the house price dynamics, it seems plausible to conjecture that households viewed the shock as being highly persistent, if not permanent.[2]

[Figure 1 about here]

Related Literature: The field of happiness economics has stressed the importance of economic conditions on SWB, often finding highly non-linear effects in income.[3] Few studies focused on the role of wealth. A notable exception is Headey and Wooden (2004): using Australian data, they found a statistically significant effect of wealth holdings on SWB, which they argue to be sizable. As we will discuss below, this is not always the case for the HRS data, which is surprising given the older average age in our sample, with retirees often relying on capital income and individual retirement accounts to finance their expenses. An issue with their analysis stems from the log transformation of wealth they implement, because it affects the magnitude of the standardized coefficients they report.[4] Moreover, their cross-sectional data did not allow to study the role of wealth shocks.

[1] Notice that standard difference-in-differences techniques cannot be applied, because the financial crisis was a macroeconomic shock.

[2] In the sample, we select respondents that were 50+ in 2010, so that they could all legally work, and gather economic information, already in the mid 70's.

[3] Some recent and exhaustive surveys are Clark, Frijters and Shields (2008), Deaton (2008) and MacKerron (2012).

[4] We cannot follow their procedure, as a non-trivial number of households have negative wealth. Selecting only the households with positive wealth, and running linear regressions as done in Headey and Wooden (2004), reveals that the beta coefficients of log wealth are 2.8 times larger than their counterparts for wealth in levels.

Deaton (2012) used high frequency data, namely daily Gallup surveys, to analyze the response of SWB to stock market fluctuations. He found that, during the 2008–10 period, the well-being measure tracked closely the stock market outcomes. He suggested that the stock market acted as a leading indicator, and movements in SWB captured a "fear factor" reflecting, for example, expectations of reduced employment prospects. Since housing represents the largest fraction of wealth for the majority of households, using total wealth holdings, as we do, improves upon Deaton (2012). Focusing on an older population also represents an advantage, as these individuals are less reliant on labor income and labor market outcomes in general. Finally, exploiting the answers to the life satisfaction questions collected after February of 2010 bypasses Deaton's argument, as the NBER dates the end of the recession in June of 2009.

Although our contribution shares some elements with McInerney, Mellor and Nicholas (2013), there are some fundamental differences. First, there is a distinction in the main focus of the analysis, as they consider if changes in mental health, between 2006 and 2008, were due to changes in wealth. Second, the identification strategy is different: they rely on the timing of the survey responses relative to the 2008 stock market crash, while we exploit the persistence of the drop in asset prices. Finally, there are some crucial limitations their sample suffers from: the treatment and control groups are not observationally similar, and there are few treated respondents.[5]

More recently, Liu, Zhong, Zhang and Li (2020) used the China household finance survey to understand the relationship between debt and happiness. They found that total household debt affects negatively SWB, and that different types of debt have heterogeneous effects, with housing and education debt representing the driving sources of this negative effect. Obviously, their cross-sectional data does not allow to address the endogeneity of household debt, or analyze wealth shocks.

2 Econometric Analysis

The main analysis is performed using as dependent variable the seven possible ordered responses (from "strongly disagree" to "strongly agree") to a life satisfaction question asked in 2010. The respondents rated their agreement with the following statement: "The conditions of my life are excellent."[6] The longitudinal nature of the HRS allows to compute the change in wealth that occurred between the 2008 and 2010 waves, using it as an explanatory variable in ordered logit regressions for measures of SWB.[7]

The measures of SWB represent individual information, while income and wealth are household-level variables. Following standard procedures, and for comparability with Headey and Wooden (2004), we transform the last two variables into their equivalized counterparts, dividing them by the square root of the household size.

[5]The post-crash sample differs systematically in average wealth (they own 27% more, \$521k vs. \$409k), average income (they earn 34% more, \$79k vs. \$59k), average age (they are 3 years younger, 66.8 vs. 69.7), and location (they are 6 percentage points more likely to live in the South); notably, less than 10% of the sample was interviewed after the bankruptcy of Lehman Brothers, leading to only 526 observations with a valid response to the well-being questions.

[6]We repeated the analysis with other life satisfaction questions, such as: "I am satisfied with my life." The results are similar, but the models have a lower pseudo R^2.

[7]A full-blown panel data analysis is omitted as it suffers from important limitations. The SWB questions were asked to the same respondents only twice, and every other wave (i.e., every 4 years). This likely invalidates our identification strategy, as the wealth change between 2004 and 2006 was not affected by the financial crisis, and cannot be considered a shock.

We adjust these variables for inflation using the CPI index. Since large medical expenditures can be the cause of substantial wealth changes, they can induce a simultaneity problem, as deteriorating health conditions lower both wealth and measures of subjective well-being. To control for this separate cause of decreases in wealth, we start by considering only the individuals whose number of medical conditions did not increase between the two HRS waves.

Results: The benchmark regression results are reported in Panel A of Table (1). We consider seven specifications: each column refers to a different definition of the regressor $\Delta wealth$, i.e. the wealth loss (a gain is a negative value). In column (2), $\Delta wealth$ stands for the total wealth loss in levels, while in column (3) for the percentage wealth loss.[8] Income and wealth are both highly significant and with the expected signs, but the latter has marginal effects, plotted for each choice category in Figure (2), that are 20 times smaller. The magnitude of the marginal effects can be gauged by comparing them to the shares of each choice category, reported in Table (2). An interesting result is that wealth shocks in levels are not statistically significant. Instead, wealth losses in percentage terms do affect negatively SWB. To further explore this relationship, we ran a series of regressions that included a dummy variable representing whether the respondents' wealth loss was larger than a given percentage. The results in columns (4-7) show that the larger the percentage loss, the more negative (and significant) the associated estimate. This provides empirical evidence that only substantial relative wealth shocks, 60% and higher, matter for the determination of SWB. This can be interpreted as a manifestation of the adaptation phenomenon described by Kahneman and Krueger (2006), among others.

From the perspective of quantitative analysis, these findings offer insights on how to specify and test theoretical models, as done by Bayer and Juessen (2015) and Frijters, Johnston, Shields and Sinha (2015). In particular, dynamic models with standard time-separable preferences imply that, controlling for labor or pension income, current wealth is a sufficient statistic for both explaining consumption expenditures and capturing welfare dispersion. The regression results are not consistent with this notion, as large wealth shocks negatively affect well-being, while standard models imply that this term should not be statistically significant. This result supports models of habit formation, which on the other hand typically imply that any negative wealth shock, irrespective of its size, should decrease welfare.

Table (1) also reports some robustness analysis. In Panel B, we show that the results are robust to the interview date in 2008. In these regressions, respondents interviewed after the bankruptcy of Lehman Brothers are dropped because they had already experienced a fall in their financial wealth. The results are virtually unaffected, likely because housing represents the largest fraction of asset holdings for the vast majority of households. In Panel C, we kept all respondents in the sample, irrespective of their health changes. Also in this case the results are robust. However, not controlling for a deteriorating health does affect both the size and the significance of the dummies for the percentage losses. The estimates for the wealth shock are consistently lower compared to the benchmark. This is to be expected, as in this sample more than $1,000$ respondents experience a worsening of their health conditions, forcing them to decumulate part of their wealth.

[8] All regressions include these exogenous controls: geographical dummies, number of children, educational attainment dummies, a gender dummy, race dummies, a home ownership dummy, self-reported health dummies, number of health conditions, and a quadratic polynomial in age.

Splitting the sample in two age groups, 50-65 (approximately, one third of the sample) and 66-100, reveals that the SWB of the near-elderly is more responsive to income. Their marginal effects, displayed in the bottom row plots of Figure (2), are twice as large. For the former demographic group, the role of wealth is more complex: it does not play a significant role in explaining their life satisfaction, while the wealth shocks in percentage terms have marginal effects similar to those of the older group. This is perhaps counterintuitive, as older people are less likely to see the value of their assets recovering, and should be more negatively affected by wealth shocks driven by a sharp fall in asset prices. An explanation for the first result is that for pre-retirement individuals a home ownership dummy is highly significant, which is not the case for the respondents in the older group. The near-elderly appear to value possessing their home, irrespective of the associated market value. Data limitations do not allow to address the complex issue of the role of expectations, regarding the perceived likelihood of house and stock prices to recover. In this regard, working with a two-year time window represents an advantage, because the respondents had more time to accurately assess their financial and housing wealth losses.

3 Conclusions

In this paper we found that large relative wealth shocks can be painful for elderly individuals. A plausible economic channel that might explain this result is that seniors holding little wealth are very vulnerable to shocks, as they are poorly insured against health risks and the related costs (such as hefty medical bills and expensive treatments). In contrast, the related marginal effects are small possibly because, following a wealth shock, elderly parents might reassess the planned bequests and inter-vivos transfers, allowing them to partially mitigate the direct detrimental effects of the shock. Future work could try to assess whether the empirical findings are a puzzle, or if they can be rationalized by a life-cycle model, featuring habit formation, and shocks to income, wealth and health.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	No w-loss	*w-loss*	*w-loss%*	*w-loss>20%*	*w-loss>40%*	*w-loss>60%*	*w-loss>80%*
Panel A:							
income	0.280***	0.270***	0.283***	0.278***	0.280***	0.281***	0.281***
	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
wealth	0.0156***	0.0176**	0.0146***	0.0158***	0.0151***	0.0147***	0.0146***
	(0.004)	(0.010)	(0.005)	(0.004)	(0.005)	(0.005)	(0.006)
$\Delta wealth$	–	-0.00485	-0.0340***	-0.00946	-0.0772	-0.131*	-0.166**
		(0.577)	(0.004)	(0.869)	(0.213)	(0.054)	(0.025)
N	4230	4056	4056	4056	4056	4056	4056
Pseudo R^2	0.055	0.055	0.055	0.054	0.055	0.055	0.055
Panel B:							
income	0.280***	0.268***	0.290***	0.281***	0.284***	0.286***	0.286***
	(0.001)	(0.003)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
wealth	0.0157***	0.0183***	0.0144***	0.0159***	0.0152***	0.0147***	0.0146***
	(0.003)	(0.008)	(0.005)	(0.003)	(0.004)	(0.005)	(0.005)
$\Delta wealth$	–	-0.00629	-0.0440***	-0.00160	-0.0737	-0.139*	-0.177**
		(0.506)	(0.001)	(0.979)	(0.269)	(0.056)	(0.029)
N	3704	3561	3561	3561	3561	3561	3561
Pseudo R^2	0.056	0.056	0.057	0.056	0.056	0.056	0.056
Panel C:							
income	0.364***	0.303***	0.306***	0.304***	0.305***	0.306***	0.306***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
wealth	0.0164***	0.0159***	0.0148***	0.0159***	0.0153***	0.0148***	0.0147***
	(0.001)	(0.004)	(0.003)	(0.002)	(0.003)	(0.003)	(0.003)
$\Delta wealth$	–	-0.000776	-0.0242**	0.0166	-0.0365	-0.0848	-0.111*
		(0.899)	(0.024)	(0.744)	(0.503)	(0.154)	(0.087)
N	6947	5177	5177	5177	5177	5177	5177
Pseudo R^2	0.056	0.056	0.056	0.056	0.056	0.056	0.056
Controls	YES	YES	YES	YES	YES	YES	YES

Table 1: Ordered logit regressions for life-satisfaction, parameter estimates. The definition of the regressor $\Delta wealth$ changes across specifications: in column *w-loss* it stands for the total wealth loss, in *w-loss%* for the percentage wealth loss, in *w-loss>x%* for a dummy variable equal to 1 for the respondents whose wealth loss was greater than *x%*. Income and wealth are equivalized (and in \$100k). All regressions include the same controls, listed in footnote (8). p-values in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

	(1) *Strongly dis.*	(2) *Somewhat dis.*	(3) *Slightly dis.*	(4) *Neit. ag. nor dis.*	(5) *Slightly ag.*	(6) *Somewhat ag.*	(7) *Strongly ag.*
Panel A	7.15	9.00	8.87	9.24	16.72	31.85	17.16
Panel B	6.95	8.56	8.96	9.06	16.93	32.14	17.40
Panel C	7.87	9.18	9.28	9.31	16.81	31.35	16.19
Age 50-65	7.32	9.17	10.69	8.77	15.96	33.38	14.71
Age 66-100	7.07	8.92	7.98	9.47	17.09	31.11	18.36

Table 2: Tabulations of the life-satisfaction categories (%).

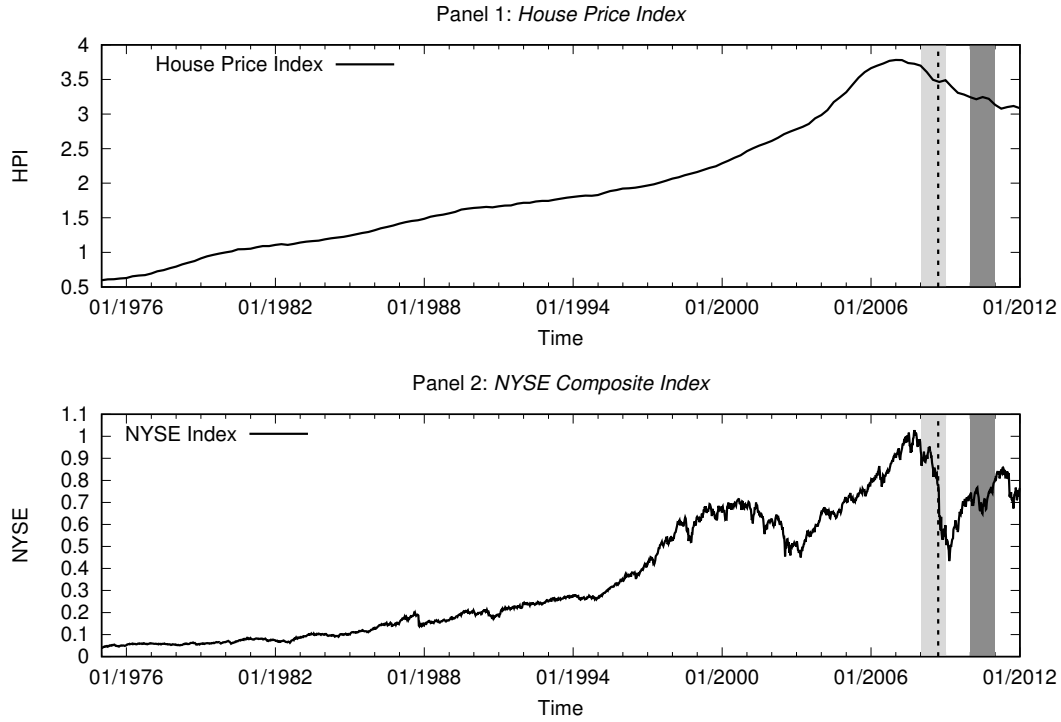

Figure 1: House Price Index, U.S. Federal Housing Finance Agency, and NYSE Composite Index (Bottom panel), 01/1975-01/2012. The dashed vertical lines represent the bankruptcy of Lehman Brothers, while the shaded areas are the HRS data collection periods.

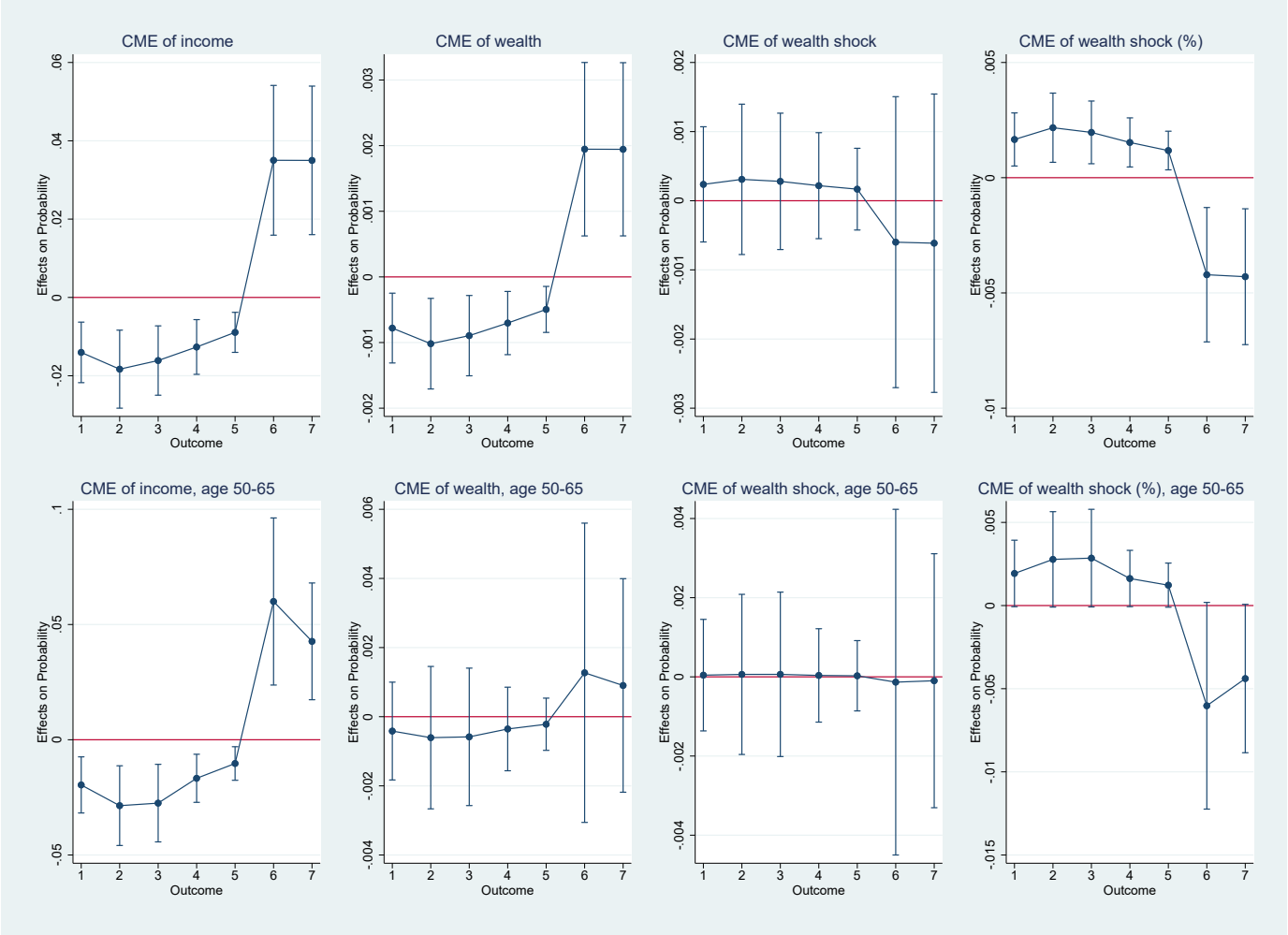

Figure 2: Conditional Marginal Effects (CME) of income, wealth, wealth shock (in levels), wealth shock (in %), with 95% Confidence Intervals.

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Appendix A - Data Sources

The Health and Retirement Study: The HRS is a biennial survey designed to be representative of American individuals over the age of 50. It spans the period between 1992 and 2018. The survey began with an initial cohort of individuals and their spouses in 1992, and subsequent cohorts were added to keep the sample representative of the target population. Over time, younger individuals entered the panel: in order to focus the analysis on the elder population, we restrict the sample to the individuals that were between the age 50 and 100 in 2010. Most of the variables used in the analysis come from the RAND version of the HRS, a cleaned dataset containing a subset of variables from the raw survey. However, a number of variables, such as the life satisfaction and house ownership ones, are merged in from the raw HRS files. Starting in 2004 (wave 7), respondents were asked a series of questions about life satisfaction. Respondents have been asked to rate their agreement with the following statements: Question A: "In most ways my life is close to ideal." Question B: "The conditions of my life are excellent." Question C: "I am satisfied with my life." Question D: "So far, I have gotten the important things I want in life." Question E: "If I could live my life again, I would change almost nothing." In each case, the possible answers are: strongly disagree (1), somewhat disagree (2), slightly disagree (3), neither agree nor disagree (4), slightly agree (5), somewhat agree (6), and strongly agree (7). In a previous version of the paper, we recoded the answers into five categories centered around the neutral choice (neither agree nor disagree). One of the reasons was that, after the sample selection on age, categories 3 and 4 had a relatively small number of observations. The main results were similar both qualitatively and quantitatively. For more information see: https://hrs.isr.umich.edu/about

The U.S. House Price Index: The HPI is computed by the U.S. Federal Housing Finance Agency. It is based on all house transactions. It can be retrieved from FRED, Federal Reserve Bank of St. Louis (USSTHPI): https://fred.stlouisfed.org/series/USSTHPI

The U.S. Stock Market Index: For stock prices, we displayed the New York Stock Exchange Composite Index (^NYA). This is a popular stock market index that covers all common stock listed on the NYSE. We chose it because, among the most popular stock market indexes, it is the one based on the largest number of stocks (more than 2,000). It can be retrieved at: https://finance.yahoo.com/quote/%5ENYA/

Appendix B - Complete Estimation Results and Robustness Analysis

	(1) *No w-loss*	(2) *w-loss*	(3) *w-loss%*	(4) *w-loss>20%*	(5) *w-loss>40%*	(6) *w-loss>60%*	(7) *w-loss>80%*
Panel A:							
income	0.412***	0.416***	0.426***	0.417***	0.415***	0.415***	0.418***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
wealth	0.00872	0.00885	0.00589	0.00819	0.00634	0.00475	0.00450
	(0.565)	(0.581)	(0.691)	(0.589)	(0.670)	(0.745)	(0.757)
$\Delta wealth$	–	-0.000929	-0.0417*	-0.0235	-0.157	-0.287**	-0.322**
		(0.952)	(0.055)	(0.818)	(0.156)	(0.016)	(0.012)
N	1407	1339	1339	1339	1339	1339	1339
Pseudo R^2	0.066	0.064	0.065	0.064	0.064	0.065	0.066
Panel B:							
income	0.177*	0.156	0.175*	0.172	0.175*	0.174*	0.174
	(0.092)	(0.170)	(0.098)	(0.104)	(0.099)	(0.100)	(0.101)
wealth	0.0192***	0.0219***	0.0188***	0.0196***	0.0193***	0.0192***	0.0190***
	(0.002)	(0.009)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
$\Delta wealth$	–	-0.00566	-0.0307**	-0.00818	-0.0440	-0.0573	-0.0953
		(0.610)	(0.040)	(0.908)	(0.563)	(0.496)	(0.310)
N	2823	2717	2717	2717	2717	2717	2717
Pseudo R^2	0.053	0.053	0.054	0.053	0.053	0.053	0.053
Controls	YES	YES	YES	YES	YES	YES	YES

Table 3: Ordered logit regressions for life-satisfaction by age groups, parameter estimates. Panel A (B) is for the age group 50-65 (66-100). The definition of the regressor $\Delta wealth$ changes across specifications: in column *w-loss* it stands for the total wealth loss, in *w-loss%* for the percentage wealth loss, in *w-loss>x%* for a dummy variable equal to 1 for the respondents whose wealth loss was greater than $x\%$. All regressions include the same controls, listed in footnote (8). p-values in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	No w-loss	*w-loss*	*w-loss%*	*w-loss>20%*	*w-loss>40%*	*w-loss>60%*	*w-loss>80%*
Panel A:							
income	0.280***	0.270***	0.283***	0.278***	0.280***	0.281***	0.281***
	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
wealth	0.0156***	0.0176**	0.0146***	0.0158***	0.0151***	0.0147***	0.0146***
	(0.004)	(0.010)	(0.005)	(0.004)	(0.005)	(0.005)	(0.006)
$\Delta wealth$	–	-0.00485	-0.0340***	-0.00946	-0.0772	-0.131*	-0.166**
		(0.577)	(0.004)	(0.869)	(0.213)	(0.054)	(0.025)
*geo dummy*1	-0.0818	-0.0544	-0.0528	-0.0553	-0.0516	-0.0472	-0.0453
	(0.347)	(0.541)	(0.553)	(0.534)	(0.562)	(0.596)	(0.611)
*geo dummy*2	0.0459	0.0848	0.0906	0.0841	0.0897	0.0936	0.0960
	(0.592)	(0.334)	(0.302)	(0.338)	(0.308)	(0.288)	(0.276)
*geo dummy*3	-0.148	-0.110	-0.0890	-0.106	-0.0943	-0.0880	-0.0872
	(0.125)	(0.265)	(0.369)	(0.286)	(0.343)	(0.376)	(0.380)
*geo dummy*4	-0.383	-0.548*	-0.543	-0.541	-0.520	-0.497	-0.544
	(0.414)	(0.098)	(0.114)	(0.104)	(0.125)	(0.150)	(0.119)
children	0.0343**	0.0404***	0.0414***	0.0401***	0.0406***	0.0414***	0.0417***
	(0.018)	(0.007)	(0.005)	(0.007)	(0.006)	(0.005)	(0.005)
*edu dummy*1	-0.594***	-0.584***	-0.594***	-0.586***	-0.590***	-0.597***	-0.601***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
*edu dummy*2	-0.111	-0.112	-0.112	-0.113	-0.115	-0.115	-0.117
	(0.272)	(0.290)	(0.291)	(0.288)	(0.280)	(0.277)	(0.271)
*edu dummy*3	-0.293***	-0.282**	-0.278**	-0.281**	-0.282**	-0.282**	-0.283**
	(0.005)	(0.011)	(0.012)	(0.011)	(0.010)	(0.011)	(0.010)
*edu dummy*4	0.0384	0.0342	0.0357	0.0359	0.0345	0.0336	0.0336
	(0.730)	(0.768)	(0.758)	(0.757)	(0.766)	(0.772)	(0.772)
gender dummy	0.00174	-0.00963	-0.0109	-0.00985	-0.00891	-0.00847	-0.00830
	(0.975)	(0.867)	(0.850)	(0.864)	(0.877)	(0.883)	(0.885)
*race dummy*1	-0.112	-0.121	-0.111	-0.120	-0.116	-0.112	-0.111
	(0.193)	(0.183)	(0.220)	(0.185)	(0.201)	(0.216)	(0.219)
*race dummy*2	0.344**	0.324**	0.316**	0.324**	0.331**	0.334**	0.333**
	(0.014)	(0.029)	(0.033)	(0.029)	(0.026)	(0.024)	(0.025)
house dummy	0.115	0.110	0.0716	0.111	0.101	0.0897	0.0771
	(0.157)	(0.209)	(0.417)	(0.204)	(0.245)	(0.305)	(0.381)
*health dummy*1	0.431***	0.454**	0.464***	0.453**	0.454**	0.457***	0.457***
	(0.009)	(0.010)	(0.009)	(0.010)	(0.010)	(0.010)	(0.009)

*health dummy*2	1.319***	1.363***	1.375***	1.363***	1.364***	1.366***	1.368***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
*health dummy*3	1.934***	1.974***	1.986***	1.975***	1.974***	1.975***	1.976***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
*health dummy*4	2.529***	2.557***	2.569***	2.560***	2.559***	2.561***	2.564***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
health conditions	-0.0708***	-0.0649***	-0.0645***	-0.0653***	-0.0654***	-0.0655***	-0.0652***
	(0.003)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)
age	0.150***	0.163***	0.162***	0.163***	0.162***	0.161***	0.161***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
age^2	-0.000945***	-0.00104***	-0.00104***	-0.00104***	-0.00103***	-0.00103***	-0.00103***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
N	4230	4056	4056	4056	4056	4056	4056
Pseudo R^2	0.055	0.055	0.055	0.054	0.055	0.055	0.055
Panel B:							
income	0.280***	0.268***	0.290***	0.281***	0.284***	0.286***	0.286***
	(0.001)	(0.003)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
wealth	0.0157***	0.0183***	0.0144***	0.0159***	0.0152***	0.0147***	0.0146***
	(0.003)	(0.008)	(0.005)	(0.003)	(0.004)	(0.005)	(0.005)
$\Delta wealth$	–	-0.00629	-0.0440***	-0.00160	-0.0737	-0.139*	-0.177**
		(0.506)	(0.001)	(0.979)	(0.269)	(0.056)	(0.029)
*geo dummy*1	-0.102	-0.0814	-0.0794	-0.0821	-0.0786	-0.0742	-0.0721
	(0.275)	(0.394)	(0.404)	(0.389)	(0.410)	(0.437)	(0.450)
*geo dummy*2	0.0129	0.0486	0.0556	0.0476	0.0528	0.0567	0.0589
	(0.887)	(0.601)	(0.549)	(0.608)	(0.569)	(0.542)	(0.526)
*geo dummy*3	-0.233**	-0.204*	-0.179*	-0.199*	-0.187*	-0.181*	-0.179*
	(0.024)	(0.053)	(0.092)	(0.060)	(0.078)	(0.089)	(0.091)
*geo dummy*4	-0.168	-0.387	-0.328	-0.372	-0.319	-0.262	-0.337
	(0.802)	(0.377)	(0.462)	(0.395)	(0.465)	(0.549)	(0.461)
children	0.0316**	0.0393**	0.0417***	0.0389**	0.0398**	0.0407***	0.0410***
	(0.038)	(0.012)	(0.008)	(0.013)	(0.011)	(0.009)	(0.009)
*edu dummy*1	-0.555***	-0.580***	-0.591***	-0.581***	-0.584***	-0.592***	-0.596***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
*edu dummy*2	-0.120	-0.152	-0.156	-0.153	-0.155	-0.156	-0.159
	(0.263)	(0.179)	(0.169)	(0.178)	(0.171)	(0.166)	(0.160)
*edu dummy*3	-0.317***	-0.336***	-0.329***	-0.333***	-0.334***	-0.334***	-0.334***
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)

*edu dummy*4	0.0246	-0.00367	-0.00389	-0.00172	-0.00363	-0.00475	-0.00586
	(0.837)	(0.977)	(0.975)	(0.989)	(0.977)	(0.970)	(0.962)
gender dummy	-0.0131	-0.00949	-0.0116	-0.00999	-0.00877	-0.00770	-0.00753
	(0.829)	(0.877)	(0.850)	(0.871)	(0.887)	(0.900)	(0.903)
*race dummy*1	-0.173*	-0.174*	-0.164*	-0.173*	-0.169*	-0.165*	-0.164*
	(0.058)	(0.069)	(0.084)	(0.070)	(0.077)	(0.084)	(0.086)
*race dummy*2	0.385***	0.372**	0.366**	0.371**	0.380**	0.385**	0.383**
	(0.007)	(0.015)	(0.017)	(0.015)	(0.013)	(0.012)	(0.012)
house dummy	0.152*	0.149	0.0957	0.152	0.141	0.126	0.112
	(0.082)	(0.109)	(0.308)	(0.103)	(0.130)	(0.179)	(0.233)
*health dummy*1	0.451**	0.478**	0.494***	0.476**	0.477**	0.482***	0.484***
	(0.010)	(0.010)	(0.008)	(0.010)	(0.010)	(0.009)	(0.009)
*health dummy*2	1.323***	1.366***	1.385***	1.365***	1.367***	1.370***	1.373***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
*health dummy*3	1.979***	2.018***	2.038***	2.019***	2.019***	2.021***	2.023***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
*health dummy*4	2.646***	2.667***	2.690***	2.670***	2.671***	2.674***	2.677***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
health conditions	-0.0526**	-0.0498*	-0.0487*	-0.0502*	-0.0502*	-0.0503**	-0.0499*
	(0.036)	(0.052)	(0.058)	(0.051)	(0.051)	(0.050)	(0.052)
age	0.142***	0.156***	0.154***	0.156***	0.155***	0.154***	0.153***
	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
age^2	-0.000889***	-0.000999***	-0.000988***	-0.000999***	-0.000988***	-0.000982***	-0.000978***
	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
N	3704	3561	3561	3561	3561	3561	3561
Pseudo R^2	0.056	0.056	0.057	0.056	0.056	0.056	0.056
Panel C:							
income	0.364***	0.303***	0.306***	0.304***	0.305***	0.306***	0.306***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
wealth	0.0164***	0.0159***	0.0148***	0.0159***	0.0153***	0.0148***	0.0147***
	(0.001)	(0.004)	(0.003)	(0.002)	(0.003)	(0.003)	(0.003)
$\Delta wealth$	–	-0.000776	-0.0242**	0.0166	-0.0365	-0.0848	-0.111*
		(0.899)	(0.024)	(0.744)	(0.503)	(0.154)	(0.087)
*geo dummy*1	-0.0589	-0.0561	-0.0531	-0.0566	-0.0543	-0.0514	-0.0510
	(0.386)	(0.473)	(0.497)	(0.469)	(0.488)	(0.512)	(0.515)
*geo dummy*2	0.0567	0.0812	0.0869	0.0805	0.0840	0.0866	0.0879
	(0.378)	(0.286)	(0.254)	(0.291)	(0.271)	(0.257)	(0.249)

*geo dummy*3	-0.0953	-0.0722	-0.0573	-0.0739	-0.0659	-0.0601	-0.0596
	(0.198)	(0.411)	(0.514)	(0.400)	(0.455)	(0.496)	(0.499)
*geo dummy*4	-0.242	-0.677**	-0.677**	-0.678**	-0.669**	-0.654**	-0.681**
	(0.602)	(0.020)	(0.023)	(0.019)	(0.023)	(0.029)	(0.023)
children	0.0351***	0.0361***	0.0367***	0.0360***	0.0363***	0.0369***	0.0372***
	(0.002)	(0.005)	(0.004)	(0.005)	(0.005)	(0.004)	(0.004)
*edu dummy*1	-0.581***	-0.502***	-0.507***	-0.501***	-0.504***	-0.509***	-0.510***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
*edu dummy*2	-0.231***	-0.107	-0.106	-0.107	-0.108	-0.108	-0.109
	(0.003)	(0.243)	(0.246)	(0.244)	(0.240)	(0.238)	(0.235)
*edu dummy*3	-0.397***	-0.277***	-0.275***	-0.277***	-0.277***	-0.276***	-0.277***
	(0.000)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
*edu dummy*4	-0.120	0.0328	0.0344	0.0331	0.0332	0.0328	0.0328
	(0.162)	(0.745)	(0.732)	(0.742)	(0.741)	(0.744)	(0.744)
gender dummy	0.0353	-0.0104	-0.0103	-0.0104	-0.00997	-0.00974	-0.00973
	(0.419)	(0.838)	(0.839)	(0.837)	(0.844)	(0.848)	(0.848)
*race dummy*1	-0.141**	-0.137*	-0.128	-0.138*	-0.135*	-0.131	-0.130
	(0.022)	(0.091)	(0.115)	(0.089)	(0.097)	(0.107)	(0.110)
*race dummy*2	0.264***	0.255*	0.251*	0.253*	0.258*	0.261*	0.262*
	(0.008)	(0.058)	(0.063)	(0.060)	(0.056)	(0.052)	(0.052)
house dummy	0.197***	0.134*	0.110	0.135*	0.129*	0.120	0.112
	(0.001)	(0.079)	(0.150)	(0.075)	(0.090)	(0.115)	(0.143)
*health dummy*1	0.618***	0.668***	0.673***	0.667***	0.668***	0.669***	0.670***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
*health dummy*2	1.304***	1.472***	1.477***	1.471***	1.472***	1.471***	1.473***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
*health dummy*3	1.941***	2.130***	2.134***	2.130***	2.130***	2.128***	2.129***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
*health dummy*4	2.445***	2.704***	2.707***	2.704***	2.704***	2.704***	2.705***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
health conditions	-0.0738***	-0.0643***	-0.0646***	-0.0643***	-0.0643***	-0.0642***	-0.0640***
	(0.000)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.003)
age	0.0989***	0.128***	0.128***	0.128***	0.128***	0.127***	0.127***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
age^2	-0.000579***	-0.000794***	-0.000796***	-0.000795***	-0.000790***	-0.000787***	-0.000788***
	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
N	6947	5177	5177	5177	5177	5177	5177

Pseudo R^2	0.056	0.056	0.056	0.056	0.056	0.056	0.056

Table 4: Ordered logit regressions for life-satisfaction, complete regression results of Panels A, B and C in Table (1). p-values in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	No w-loss	*w-loss*	*w-loss%*	*w-loss>20%*	*w-loss>40%*	*w-loss>60%*	*w-loss>80%*
Panel A:							
income	0.162***	0.158***	0.163***	0.161***	0.162***	0.162***	0.162***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
wealth	0.00896***	0.00977***	0.00843***	0.00913***	0.00869***	0.00850***	0.00842***
	(0.003)	(0.007)	(0.005)	(0.003)	(0.004)	(0.005)	(0.005)
$\Delta wealth$	–	-0.00237	-0.0188***	0.00166	-0.0421	-0.0697*	-0.0911**
		(0.547)	(0.007)	(0.961)	(0.244)	(0.076)	(0.034)
N	4230	4056	4056	4056	4056	4056	4056
Pseudo R^2	0.054	0.054	0.054	0.054	0.054	0.054	0.054
Panel B:							
income	0.164***	0.159***	0.170***	0.165***	0.166***	0.167***	0.167***
	(0.001)	(0.001)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)
wealth	0.00943***	0.0108***	0.00863***	0.00962***	0.00908***	0.00879***	0.00870***
	(0.002)	(0.003)	(0.004)	(0.002)	(0.003)	(0.003)	(0.004)
$\Delta wealth$	–	-0.00356	-0.0250***	0.00673	-0.0432	-0.0800*	-0.104**
		(0.405)	(0.001)	(0.851)	(0.266)	(0.059)	(0.026)
N	3704	3561	3561	3561	3561	3561	3561
Pseudo R^2	0.055	0.055	0.056	0.055	0.055	0.055	0.055
Panel C:							
income	0.210***	0.177***	0.178***	0.177***	0.178***	0.178***	0.178***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
wealth	0.00942***	0.00898***	0.00834***	0.00900***	0.00864***	0.00840***	0.00835***
	(0.001)	(0.004)	(0.003)	(0.002)	(0.003)	(0.003)	(0.003)
$\Delta wealth$	–	-0.000591	-0.0136**	0.0131	-0.0197	-0.0473	-0.0602*
		(0.854)	(0.029)	(0.658)	(0.537)	(0.173)	(0.100)
N	6947	5177	5177	5177	5177	5177	5177
Pseudo R^2	0.055	0.055	0.055	0.055	0.055	0.055	0.055
Controls	YES	YES	YES	YES	YES	YES	YES

Table 5: Ordered probit regressions for life-satisfaction, parameter estimates. The definition of the regressor $\Delta wealth$ changes across specifications: in column *w-loss* it stands for the total wealth loss, in *w-loss%* for the percentage wealth loss, in *w-loss>x%* for a dummy variable equal to 1 for the respondents whose wealth loss was greater than *x%*. All regressions include the same controls, listed in footnote (8). p-values in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	No w-loss	*w-loss*	*w-loss%*	*w-loss>20%*	*w-loss>40%*	*w-loss>60%*	*w-loss>80%*
Panel A:							
income	0.242***	0.230***	0.241***	0.239***	0.239***	0.240***	0.239***
	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
wealth	0.00349	0.00553	0.00298	0.00383	0.00348	0.00338	0.00313
	(0.347)	(0.211)	(0.429)	(0.305)	(0.353)	(0.367)	(0.404)
$\Delta wealth$	–	-0.00750	-0.0268**	0.0158	-0.0276	-0.0470	-0.0959
		(0.221)	(0.032)	(0.787)	(0.660)	(0.489)	(0.190)
N	4254	4077	4077	4077	4077	4077	4077
Pseudo R^2	0.039	0.039	0.040	0.039	0.039	0.039	0.039
Panel B:							
income	0.287***	0.279***	0.295***	0.289***	0.290***	0.290***	0.291***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
wealth	0.00325	0.00517	0.00227	0.00329	0.00300	0.00288	0.00255
	(0.400)	(0.249)	(0.569)	(0.400)	(0.444)	(0.464)	(0.520)
$\Delta wealth$	–	-0.00735	-0.0354***	0.0141	-0.0205	-0.0411	-0.102
		(0.252)	(0.009)	(0.823)	(0.762)	(0.577)	(0.199)
N	3723	3579	3579	3579	3579	3579	3579
Pseudo R^2	0.039	0.040	0.041	0.040	0.040	0.040	0.040
Panel C:							
income	0.269***	0.262***	0.270***	0.269***	0.269***	0.269***	0.269***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
wealth	0.00605*	0.00713*	0.00509	0.00613*	0.00576	0.00553	0.00534
	(0.088)	(0.089)	(0.162)	(0.099)	(0.119)	(0.132)	(0.144)
$\Delta wealth$	–	-0.00609	-0.0217*	0.0404	0.00258	-0.0261	-0.0594
		(0.218)	(0.053)	(0.430)	(0.963)	(0.660)	(0.351)
N	6988	5215	5215	5215	5215	5215	5215
Pseudo R^2	0.042	0.043	0.043	0.043	0.043	0.043	0.043
Controls	YES	YES	YES	YES	YES	YES	YES

Table 6: Ordered logit regressions, parameter estimates for the life-satisfaction question: "I am satisfied with my life." The definition of the regressor $\Delta wealth$ changes across specifications: in column *w-loss* it stands for the total wealth loss, in *w-loss%* for the percentage wealth loss, in *w-loss>x%* for a dummy variable equal to 1 for the respondents whose wealth loss was greater than *x%*. All regressions include the same controls, listed in footnote (8). p-values in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.