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Financial planning time horizon and end-of-life mortality expectations

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Abstract

Previous studies demonstrate that individuals' financial planning time horizons significantly impact spending, saving, charitable giving, and bequest decisions. Using longitudinal and cross-sectional Health and Retirement Study data, the analyses in this paper reveal that older American adults' financial planning horizons are strongly determined by their self-perceived life expectancy. Over time, the changes in self-perceived life expectancy, marital and retirement status, health conditions, and wealth level will cause individuals to shift their financial planning horizons. The insight gained in this study helps financial planners to better understand the factors driving changes in client financial planning horizons and consequent financial decision-making. © 2023 Academy of Financial Services. All rights reserved.

JEL classifications: G4; D12

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1. Introduction and literature review

Financial planning time horizon is an essential area of economic decision-making for both individuals and households (Dow & Jin, 2013). Various studies have used financial planning horizon as an independent variable to predict various outcomes of interest (Hong & Hanna, 2014).

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Using the Survey of Consumer Finances data, Fisher and Montalto (2010) identify that households with longer financial planning horizons are more likely to meet saving guidelines. Rutherford and Devaney (2009) find that households with more than five-year planning horizons are more likely to plan their consumption based on their income and use credit cards for convenience rather than revolving debt vehicles. A longer financial planning horizon also influences individuals' risk preferences (Castro-González et al., 2020). For example, He and Hu (2007) point out that households with longer financial planning horizons tend to hold relatively more stocks in their portfolios.

When studying the medical cost risk, Ayyagari and He (2017) find that when facing increased medical expenditure risk, people who have a planning horizon longer than five years are willing to take more equity exposure. Liu et al. (2021) study how the financial planning horizon is associated with investors' stock market return expectations. They conclude that having a financial planning horizon of one year or less is related to higher expectations of a 20% loss in the next year's stock market.

Financial planning horizon also impacts the actual investment behavior. Asebedo and Browning (2020) found that a longer financial planning horizon is associated with a lower retirement portfolio withdrawal rate. Munnell et al. (2001) conclude that employees with short financial planning horizons have a lower taste of saving and a smaller probability of participating in a pension plan. Using the Health and Retirement Study (HRS) data, Liu and James (2017) find that individuals with longer financial planning horizons are more likely to have valid estate planning documents. Liu and James (2020) find that such individuals are also more likely to make substantial gifts to charity.

Past studies found that the financial planning horizon is related to psychological and self-perceived financial well-being. For example, Malroutu and Xiao (1995) conclude that pre-retirees who plan to save for the next five years are more likely to perceive having adequate retirement income versus those who do not have saving plans. Choung et al. (2022) found that people with major depression tend to have a shorter financial planning horizon.

While most studies treat people's financial planning horizon as a measure of time preference (Khwaja, Sloan, & Salm, 2006). Hong and Hanna (2014) point out that it is unclear whether financial planning horizons reflect time preferences or situational variables. They indicate that the financial planning horizon is not measuring time preference but a situational variable because it is significantly related to the demographic variables of the respondents using the Survey of Consumer Affairs (SCF) data. They also suggest that time preference is constant, but the financial planning horizon is not constant. Therefore, the financial planning horizon is not measuring time preference. However, as proposed by Becker and Mulligan (1997), time preference can be endogenously determined, and over time, investment in education and practice in imagining future outcomes will decrease time discounting. This is consistent with rising time preference into middle age (such as 43).

Additionally, time preference should be expected to change in later life based primarily upon changes in life expectancy. Baranov and Kohler (2018) find that individuals actively change their investment decisions based on their subjective longevity, even in a low-income environment. Indeed, it would be irrational if an individual maintains a high preference for rewards paid over 30 years, as one's life expectancy shortens with aging (moved from 40 to

20 to 10 to five years.) The explanation is consistent with an increasing rate of time discounting later in life, and it is the focus of the current study.

Some initial evidence appears inconsistent with this argument. However, if the measurement for the financial planning horizon does not extend beyond 10 or 20 years, then longevity predictions would not be expected to greatly influence this factor until the end of life. In particular, this occurs when subjective life expectancy falls below the highest financial planning measurement categories. It is this end-of-life subjective life expectancy effect that the current paper explores.

The important implications of the households' and individuals' financial planning horizons motivate this study to investigate the different factors that affect people's planning horizons. In particular, this study is interested in analyzing the relationship between people's financial planning horizon and their self-perceived life expectancy.

Using the HRS data, both cross-sectional and longitudinal regressions demonstrate the existence of such a relationship. This paper provides robust evidence affirming the following hypothesis: Individuals' self-perceived life expectancies significantly affect their financial planning horizon. This relationship reveals that the financial planning horizon is, at least in part, a measure of rational (but not fixed) time discounting, based on life expectancy.

2. Data

This paper uses the HRS survey data to conduct cross-sectional and longitudinal regression analyses. Variables are selected from the RAND (Version P) HRS data, the cross-wave tracker file, as well as the core HRS data sets from 1998 to 2018. Since the HRS survey does not include direct life expectancy variables, this study constructs respondent-level, self-perceived life expectancy variables for each of the available HRS survey waves. The underlining principle for constructing such variables is described as follows: An individual's self-perceived life expectancy is equal to her/his estimated probability of living to a target age multiplied by the difference between the target age and this individual's current age. Under this principle, the respondents' self-perceived life expectancy variables are constructed using the formula below (the formula uses the 2018-year wave as an example; life expectancy variables are generated similarly for all the available waves):

$$\text{YearstoLive2018} = (\text{R14LIV10})/100 * (\text{R14LIV10A} - \text{Age2018})$$

In this formula, the variable "YearstoLive(wave)" represents the respondent's self-perceived life expectancy at the point of the survey. The variables R(wave)LIV10 and R(wave) LIV10A are selected from the RAND HRS data. Among them, R(wave)LIV10 is the self-reported probability of living to a certain target age, selected according to the HRS guidelines, where 0 means "absolutely no chance," and 100 means "absolutely certain." For respondents whose age is less than 65 at the point of the survey, this target age is set to be 85. For respondents whose age is between 65 and 69, this target is set to be 80. For those between 70 and 74 years old, this target age is set to be 85. For those between 75 and 79, the

Table 1 Summary statistics for the imputed life expectancy variables

Variables	Number of observations	Mean (weighted)	Standard deviation (weighted)
YearstoLive2000	15,554	8.934495	0.0989592
YearstoLive2002	14,420	8.322585	0.0827116
YearstoLive2004	16,780	9.37001	0.0876633
YearstoLive2006	15,467	8.93313	0.099443
YearstoLive2008	14,450	9.078261	0.0825122
YearstoLive2010	18,911	9.804211	0.1208808
YearstoLive2012	17,925	9.176823	0.1041344
YearstoLive2014	16,452	8.87597	0.1146203
YearstoLive2016	12,429	9.110994	0.1268747
YearstoLive2018	12,500	8.509271	0.1353772

Note. Respondent-level weights are applied to each wave.

target is 90. For respondents in the 80-84 age range, the target age is 95. Finally, for respondents whose age is between 85 and 89, the target age is set to be 100. The variable R (wave)LIV10A gives the specific age used in the questionnaire for each respondent during the survey, which ranges from 80 to 100.

The summary statistics for the constructed self-perceived life expectancy variables (YearstoLive(wave)) from the year 2000 to 2018 are reported in Table 1. Note that the RAND HRS dataset does not contain the R(wave)LIV10 and R(wave)LIV10A variables before the 2000 wave. Therefore, this summary statistics table uses the 2000-2018 wave range to demonstrate the respondents' self-perceived life expectancies.

The following figure is plotted using the 2018 wave data with individual-level weight applied. This graph indicates that the constructed life expectancy variable has an inverse relationship with the respondent's age at the survey. This relationship is verified with OLS regression: with high levels of significance, a one-year increase in respondents' age will, on average, decrease their self-perceived life expectancy by 0.295 years. The control variables of this weighted OLS regression include marital status, presence of children, years of education, wealth level, retirement status, and various health indicators.

Next, this study explores the relationship between the financial planning horizon variable and the constructed life expectancy variable. For the 2018 wave, two types of cross-sectional regressions (OLS and ordered probit) are conducted. The summary statistics for the cross-sectional regression variables are reported in the following table:

3. Model

Becker and Mulligan (1997) provide both theoretical and empirical evidence to conclude that time preference varies across individuals and wealth causes patience. Trostel and Taylor (2001) argue that future discounting occurs because the expected marginal utility of consumption is declining. In other words, an individual's ability to enjoy future consumption is expected to be lower. If the financial planning horizon measures people's time discounting preference, it should be strongly correlated with rational life expectancy changes as well as wealth changes. The following model and the empirical analysis presented in the next sections of this paper provide both theoretical and empirical evidence for this hypothesis.

In the general form of Becker's model of patience formation, a consumer is assumed to live a finite number of periods. Therefore, the consumer maximizes

$$V = \sum_{i=0}^{T} \beta(S)^{i} \cdot f_i(c_i) \tag{1}$$

where T represents the length of the consumer's life span, c_i's are the consumption levels at period i, the functions $f_i(\cdot)$ map the consumptions at period i into pleasures at that period, aka utility function. Future utilities are discounted based on the discount function $\beta(\cdot)$, which is less than 1. Becker and Mulligan define S to be the effort people make to increase their appreciation of future utility. S is determined by the time and effort spent in the appreciation of pleasures of the future, by spending on certain goods that distract one's attention away from current pleasure, and toward future ones by schooling, saving, and so forth. In other words, S is the "patient" factor (Becker & Mulligan, 1997). Applying the patience formation model to this paper, which analyzes the determinants of financial planning horizons, S could represent the effort and time spent by the respondents to make long-term financial plans.

Assuming the present values of all assets and earnings are calculated into an initial endowment of wealth A_0, then the intertemporal budget constraint can be described as

$$\sum_{i=0}^{T} R_i c_i + \pi S = A_0 \tag{2}$$

where R_i's represent the interest factors and π stands for the price of S. The first-order conditions with respect to consumption at each period are as follows:

$$\beta'(S)\left[\sum_{i=0}^{T} i \cdot \left[\beta(S)\right]^{i-1} \cdot f_i(c_i)\right] = \lambda_0 = f_0{}'(c_0) \tag{3}$$

where λ_0 denotes the marginal utility of wealth. The marginal benefit of S depends on the length of the consumer's life (T), the level of future utilities, and the level of discount rate.[1]

From the first order conditions depicted by Eq. (3), if an increase in life expectancy (from T to T + Δt) is accompanied by an increase of lifetime earnings' that maintains the marginal utility of wealth, λ_0, then this change (Δt) will increase the marginal benefit from investing in future-oriented capital – the patient factor S.[2] Therefore, longer lifetime, or self-perceived life expectancy increase, will directly motivate consumers to plan further into the future. Hence, this model predicts a positive relationship between the consumers' life expectancy and their financial planning horizons.

4. Results

To examine which factors and to what extent each of these factors drive the change in people's financial planning horizons, this study compares the OLS and ordered probit

Table 2 Summary statistics for the 2018 wave cross-sectional analysis

Variables	Mean	Standard deviation
Financial planning horizon (next few months = 1; next year = 2; next few years = 3; next 5–10 years = 4; longer than 10 years = 5)	3.345433	1.171501
Years to Live (constructed variable measuring self-perceived life expectancy)	8.118878	5.552278
Male (male = 1; female = 0)	0.4724504	0.4992765
Age	68.72538	7.4852
Black race (White = 0; Black = 1; else = 0)	0.0805977	0.2722359
Other race (White = 0; Black = 0; else = 1)	0.0591926	0.2360019
Married (married = 1; else = 0)	0.6936006	0.4610309
Presence of child (have children = 1; no children = 0)	0.904557	0.2938471
Retired (retired = 1; else = 0)	0.5474733	0.5326426
Years of education	13.83241	2.736728
Cancer (have cancer (excluding skin) = 1; else = 0)	0.1679238	0.3738256
Heart condition (diagnosed with heart condition = 1; else = 0)	0.241735	0.4281654
Wealth (natural logarithm of total wealth)	12.43344	1.98501

Note. Respondent-level sample weight of the 2018 wave HRS data is applied to the summary statistics.

regression results cross-sectionally. This paper also conducts longitudinal robustness checks to examine whether intrapersonal changes in these factors cause changes in the financial planning horizon over time. Table 2 reports the weighted means for the variables of interest in the 2018 wave. Figure 1 demonstrates how the “years to live” variable measuring self-perceived life expectancy varies with age. Table 3 reports the ordinary least squares regression results with the 2018 wave respondent level weight applied.

The results in Table 3 demonstrate significant relationships between the financial planning horizon variable and the independent variables such as self-perceived longevity, race, marital status, retirement status, and wealth levels. Note that the age variable becomes significant after omitting the life expectancy variable from the OLS regression. This finding indicates that the effect of aging on financial planning horizon is captured by the self-perceived life expectancy variable. Similarly, the heart condition variable becomes marginally significant after omitting the life expectancy variable from the OLS regression. This suggests that part of the effect of a heart condition diagnosis on financial planning horizon is captured by the self-perceived life expectancy variable.

Table 4 reports a more detailed analysis, showing the average marginal effect of the ordered probit regression for the 2018 wave data. This regression also takes the 2018 respondent-level sample weight into consideration. Based on the results of both OLS and the ordered probit regression, there is a strong relationship between the respondent’s self-perceived life expectancy and their financial planning horizon.

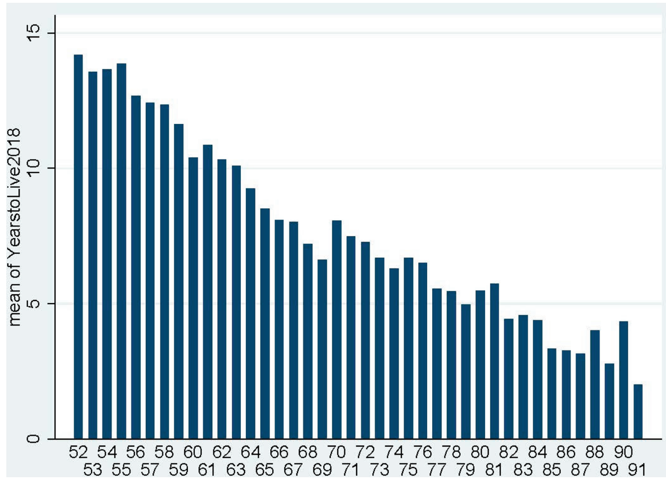

Fig. 1. Average life expectancy across age spectrum.

Both the OLS and the ordered probit regression results show that a respondent's financial planning horizon is strongly correlated with her or his self-perceived life expectancy, race, marital status, retirement status, and wealth level. Ceteris paribus, individuals with longer self-perceived life expectancy, on average, tend to report longer financial planning horizons. This result provides direct evidence for the main hypothesis of this study and agrees with the prediction of Becker and Mulligan's (1997) model of patience formation. Married couples, on average, are more likely to report longer financial planning horizons. Wealth level is also associated with the respondents' financial planning horizon, indicated by both OLS and the ordered probit results. Everything else equal, people who have more wealth are more likely to plan relatively longer into the future. Retirement status also stands out as a potential factor affecting financial planning horizon.

Interestingly, age is only a marginal significant determinant of people's financial planning horizons. This result agrees with the findings of Trostel and Taylor (2001). The following graph (Fig. 2) captures the average financial planning horizon in each age category.

As one can see from the illustration above, the average financial planning horizons in different age groups do not follow a declining pattern with age increases. In other words, age is not closely related to self-reported financial planning horizon among these older American adults. Dow and Jin (2013) also point out that age is not a primary driver of an individual's financial planning horizon, which agrees with the finding of this paper. However, this study does not support Dow and Jin's (2013) argument, which indicates that "life expectancy is a poor predictor of financial planning horizon." Instead, robust evidence has been provided by this study supporting the hypothesis that older American adults' self-perceived life expectancy affects their financial planning horizon positively and significantly. Based on the model of patience formation from Becker and Mulligan (1997), the patience factor, which measures the respondents' efforts and time spent to make long-term financial plans in this case, should decrease later in life based on life expectancy after peaking around the middle age. Therefore, self-perceived life expectancy should affect financial planning time horizon at an older age when the life expectancy is closer to the financial planning horizon measurement

Table 3 OLS regression results on financial planning horizon

Variables	Coefficients	Coefficients ("Years to Live" variable omitted)
Years to live	0.0195***	
(constructed variable measuring self-perceived life expectancy)	(0.0040)	
Male	0.0228	0.0005
(male = 1; female = 0)	(0.0358)	(0.0357)
Age	−0.0047	−0.0115***
	(0.0025)	(0.0023)
Black race	−0.2500***	−0.2488**
(White = 0; Black = 1; else = 0)	(0.0709)	(0.0730)
Other race	−0.0794	−0.1288
(White = 0; Black = 0; else = 1)	(0.0744)	(0.0725)
Married (married = 1; else = 0)	0.1264**	0.1437***
	(0.0399)	(0.0389)
Presence of child	−0.0752	−0.0634
(have children = 1; no children = 0)	(0.0679)	(0.0637)
Retired	0.1063**	0.1005**
(retired = 1; else = 0)	(0.0326)	(0.0327)
Years of education	0.0004	0.0069
	(0.0063)	(0.0061)
Cancer	−0.0045	−0.0286
(have cancer (excluding skin) = 1; else = 0)	(0.0463)	(0.0450)
Heart condition	−0.0585	−0.0828*
(diagnosed with heart condition = 1; else = 0)	(0.0390)	(0.0403)
Wealth	0.1033***	0.1083***
(natural logarithm of total wealth)	(0.0152)	(0.0144)

Notes. The number of observations is 11,433 for the OLS regression, including all the variables listed above. The number of observations is 11,826 for the OLS regression without the "Years to Live" variable. Respondent-level ample weights are applied. Standard errors are reported in parentheses.
***Statistically significant at 0.1- percent level. **Statistically significant at 1- percent level. *Statistically significant at 5- percent level.

zones. Since the respondents in the HRS data set are older American adults, one should see a significant impact of subjective longevity on the financial planning horizon.

5. Longitudinal robustness check

After confirming the cross-sectional relationship between the people's financial planning horizon and their self-perceived life expectancy, the next step is to check whether this relationship persists with the same individual over time. As Fig. 3 indicates, the average values of the respondent's self-perceived life expectancies do not vary significantly across different HRS sample waves from the year 2000 to the year 2018. This figure demonstrates the consistency of our different sample waves.

Table 4 shows the fixed-effect longitudinal analyses and Table 5 shows random-effect longitudinal analyses from the year 2000 to 2018. Notice that the control variables that do not vary over time for our respondent sample (such as race, gender, years of education, etc.) are excluded from the longitudinal regression analyses.

Table 4 Average marginal effect of the ordered probit regression results

Variables	Average marginal effects				
Financial planning horizon Threshold parameters	Next few months 1	Next year 2	Next few years 3	Next 5–10 years 4	Longer than 10 years 5
Years to live	−0.0033***	−0.0021***	−0.0021***	0.0029***	0.0045***
	(0.0006)	(0.0004)	(0.0004)	(0.0006)	(0.0009)
Male	−0.0030	−0.0019	−0.0019	0.0027	0.0042
	(0.0058)	(0.0037)	(0.0036)	(0.0051)	(0.0079)
Age	0.0010*	0.0006*	0.0006*	−0.0009*	−0.0013*
	(0.0004)	(0.0003)	(0.0003)	(0.0003)	(0.0006)
Black race	0.0335**	0.0216**	0.0210**	−0.0299**	−0.0462**
	(0.0111)	(0.0074)	(0.0073)	(0.0101)	(0.0157)
Other race	0.0090	0.0058	0.0056	−0.0080	−0.0124
	(0.0117)	(0.0075)	(0.0073)	(0.0104)	(0.0162)
Married	−0.0183**	−0.0118**	−0.0114**	0.0163**	0.0252**
	(0.0063)	(0.0041)	(0.0040)	(0.0057)	(0.0086)
Presence of child	0.0127	0.0082	0.0080	−0.0113	−0.0176
	0.0109	0.0069	0.0067	0.0097	0.0149
Retired	−0.0214***	−0.0138***	−0.0134***	0.0191***	0.0296***
	(0.0052)	(0.0035)	(0.0035)	(0.0046)	(0.0075)
Years of education	0.0000	0.0000	0.0000	0.0000	0.0000
	(0.0010)	(0.0007)	(0.0006)	(0.0009)	(0.0014)
Cancer	0.0003	0.0002	0.0002	−0.0002	−0.0004
	(0.0072)	(0.0047)	(0.0045)	(0.0064)	(0.0100)
Heart condition	0.0084	0.0054	0.0053	−0.0075	−0.0116
	(0.0060)	(0.0039)	(0.0037)	(0.0054)	(0.0082)
Wealth	−0.0155***	−0.0100***	−0.0097***	0.0138***	0.0214***
	(0.0024)	(0.0015)	(0.0014)	(0.0021)	(0.0033)

Notes. Number of observations is 11,433. Respondent-level ample weights are applied. Standard errors are reported in parentheses.
***Statistically significant at 0.1- percent level. **Statistically significant at 1- percent level. *Statistically significant at 5- percent level.

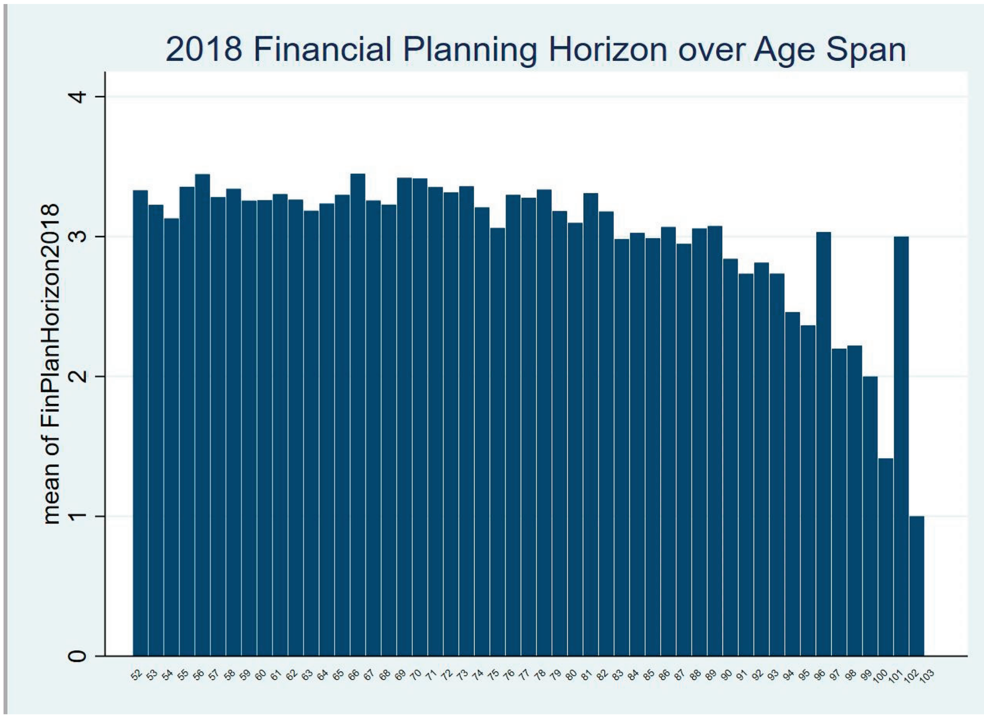

Fig. 2. Average financial planning horizon in different age categories (2018). *Note:* The 2018 HRS respondent-level sample weight is applied to this summary graph.

The results from the longitudinal OLS regression confirm that the respondents' financial planning horizons are strongly correlated with their self-perceived life expectancy. Moreover, changes in self-perceived longevity result in changes to financial planning horizons.

The marginal effects of the longitudinal ordered probit regression in Table 6 confirm that, ceteris paribus, respondents with longer self-perceived life expectancy tend to have longer

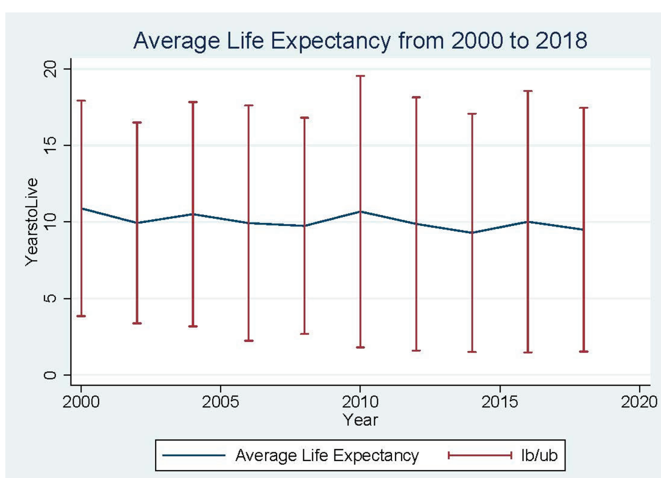

Fig. 3. Average life expectancy summary and shift-trend (2000-2018).

Table 5 Longitudinal OLS regressions on financial planning horizon

Variables	Fixed-effect	Random-effect
Years to live	0.00479***	0.00847***
	(−0.00121)	(−0.000765)
Married	−0.0614*	0.0692***
	(−0.0265)	(−0.0146)
Presence of child	0.0796	−0.0505*
	(−0.0715)	(−0.0243)
Retired	0.0780***	0.0340**
	(−0.0171)	(−0.0125)
Cancer	−0.0498	−0.016
	(−0.0348)	(−0.0195)
Heart condition	−0.0541*	−0.0519**
	(−0.0275)	(−0.0164)
Wealth	0.0294***	0.103***
	(−0.00704)	(−0.00329)

Notes. The number of observations is 49,690.
***Statistically significant at 0.1- percent level. **Statistically significant at 1- percent level. *Statistically significant at 5- percent level.

financial planning horizons, controlling their marital and retirement status, presence of children, wealth levels, and health conditions.

The longitudinal analysis results from the tables above affirm the main conclusion of this study: The respondent's financial planning horizon is strongly correlated with rational life expectancy changes as well as wealth changes. Hence, financial planning horizon is a partial measure of rational (not fixed) time discounting. Overall, multivariate regression results show evidence that people's life expectancy influences their planning horizon, even after controlling for their financial and health conditions.

6. Conclusion

Using both cross-sectional and longitudinal analyses with the HRS data, this paper examines the potential factors that drive both differences and changes in American adults' (age 50+) financial planning time horizons and reviews the significance of people's financial planning horizon shifts. The empirical analysis in this study provides direct evidence to support the hypothesis that an individual's financial planning horizon is strongly correlated with their self-perceived life expectancy, race, marital status, retirement status, and wealth level. Ceteris paribus, people with longer self-perceived longevity tend to have longer financial planning horizons. Over time, changes in self-perceived life expectancy, marital and retirement status, health conditions, and wealth level will cause individuals to shift their financial planning horizons.

The findings of this paper can help financial planners to identify the factors, such as self-perceived longevity and wealth changes, that may cause potential shifts to the financial planning time horizon of their clients. Practitioners can also benefit from this study in terms of educating their clients about the importance of their decisions on the financial planning

Table 6 Marginal effects of longitudinal ordered probit regression

Variables	Average marginal effects				
Financial planning horizon	Next few months	Next year	Next few years	Next 5-10 years	Longer than 10 years
Threshold parameters	1	2	3	4	5
Years to live	−0.0019***	−0.0009***	−0.0006***	0.0014***	0.0019***
	(0.0001)	(0.0001)	(0.0000)	(0.0001)	(0.0001)
Married	−0.0135***	−0.0062***	−0.0042***	0.0104***	0.0135***
	(0.0027)	(0.0012)	(0.0009)	(0.0021)	(0.0027)
Presence of child	0.0129**	0.0059**	0.0040**	−0.0100**	−0.0129**
	(0.0045)	(0.0021)	(0.0014)	(0.0035)	(0.0045)
Retired	−0.0083***	−0.0038***	−0.0026***	0.0064***	0.0083***
	(0.0024)	(0.0011)	(0.0007)	(0.0018)	(0.0023)
Cancer	0.0031	0.0014	0.0010	−0.0024	−0.0031
	(0.0036)	(0.0017)	(0.0011)	(0.0028)	(0.0036)
Heart condition	0.0102***	0.0047***	0.0032***	−0.0079***	−0.0102***
	(0.0031)	(0.0014)	(0.0010)	(0.0024)	(0.0030)
Wealth	−0.0190***	−0.0087***	−0.0059***	0.0147***	0.0190***
	(0.0006)	(0.0003)	(0.0002)	(0.0005)	(0.0006)

Notes. The number of observations is 49,690. Respondent-level sample weights are applied. Standard errors are reported in parentheses.
***Statistically significant at 0.1- percent level. **Statistically significant at 1- percent level. *Statistically significant at 5- percent level.

horizon, which is one of the most important areas of economic decision-making for both individuals and households. The discoveries in this paper demonstrate that financial planning time horizon is not stable among older American adults and can be expected to change in later life, both rationally and empirically. Therefore, practitioners should take into consideration that clients' self-perceived life expectancy has a significant impact on their financial planning time horizon later in life. If the practitioners want to encourage longer financial planning horizon at the later life stages, non-consumption issues, such as bequest motives, may become more important.

7. Future research

This paper presents a new way to construct the variable that depicts the respondents' self-perceived life expectancy using the Health and Retirement Study data. This life expectancy variable has an inverse relationship with the respondent's age and this inverse relationship is verified with OLS regression analysis. More robust tests can be performed on this self-perceived life expectancy variable to examine whether it is a good measurement of the respondents' longevity expectation and whether it can be used to construct an indicator for their mortality salience. Once these tests are performed and approved positive, this variable can then be widely used as a measure of self-perceived longevity (or mortality salience) for studies in different financial planning fields such as bequest motives, investment choices, long-term care insurance adoptions, and estate planning decisions.

Literature review suggests that, everything else equal, individuals with longer financial planning time horizons tend to enjoy good implications of their financial decision making. For instance, long-term planners are more likely to meet certain saving guidelines, use credit cards for convenience instead of revolving debts, hold relatively more stocks in their portfolio, and have valid estate planning documents. Future studies can further explore different behavioral strategies on how to educate clients about the importance of longer-term planning and promote this type of financial planning based on each client's unique situation.

Notes

1 In the special two-period case, that is, T=1, equation (2) can be simplified as

$$\beta'(S)\left[f_1(c_1)\right] = \lambda_0 = f_0{}'(c_0) \tag{4}$$

2 If the discount rate is unchanged, Becker and Mulligan (1997) suggest that consumption in the first T years would not be affected. The consumption during Δt would be positive. By Eq. (3), this will cause an increase of the marginal benefit from time preference investing. Thus, the equilibrium accumulation of future-oriented capital is increased.

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