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Financial Market Participation and Retirement Age of the UK Population

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Abstract: Recently, many papers have shown evidence of a positive association between financial market participation and wealth holdings. It is often claimed that individuals with a higher level of financial market participation exhibit a higher propensity for planning retirement. In their planning process, individuals seek to achieve an optimal wealth level before their retirement by considering both their average saving rate and their retirement age. In this paper, we tested whether UK individuals with a higher level of financial market participation and, therefore, with a higher propensity for planning retirement were more likely to delay their retirement age than individuals with lower financial participation. On the basis of regression analyses using the English Longitudinal Study of Aging (ELSA) database for waves 1–6, our results support the hypothesis of a positive relationship between financial market participation and retirement age, reinforcing previous results.

Keywords: financial market participation; wealth; business cycle; retirement age

JEL Classification: D14; G01; G11; J26

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1. Introduction

Financial market participation seems to be behind many lifecycle consumption goals. Cole et al. (2014) showed that this participation affects financial outcomes, including the ability to meet ongoing financial needs and the prospect of a comfortable retirement. In this sense, following Fisch and Seligman (2022), the willingness to participate in the financial markets could certainly be one of the several factors affecting retirement decision patterns in the lifecycle consumption framework (Modigliani and Brumberg 1954).

An extensive body of literature has analyzed how financial market participation can be related to economic wellbeing. Following this framework, Brown et al. (2004) reported that individuals who participate in the stock market accumulate significantly more wealth, relative to a given level of savings, than individuals who do not. Moreover, Fichtner and Seligman (2018) found that active participation in the stock market was an important predictor of wealth preservation for retired households over the 2008–2014 period.

These previous studies stated that strategies in financial market participation could be the cause of increasing wealth for retirement while also affecting the retirement age. However, this retirement age is also conditioned by the aging of the population (Foster 2018). For example, according to the 2021 census undertaken by the Office for National Statistics UK (2023), life expectancy at the age of 65 years was 18.5 years for males and 21.0 years for females. Therefore, someone retiring at age 65 needs to have saved enough—along with Social Security benefits—to support themselves financially for at least 18 years.

These changes in the retirement age directly affect pension expenditure (De Preter et al. 2013). In fact, most countries have legislated an increase in the legal retirement age mainly due to increased longevity. In the United Kingdom, as in many other countries, the government response to the aging population resulted in an increase in the State Pension

Age (SPA), reaching 67 by 2028 and 68 by 2039, equalizing women's SPA with men's (Holman et al. 2020). In 2018, the UK government equalized the retirement age for men and women, encouraging its citizens to delay the retirement age through increases in the benefit level. These changes in SPA are likely to cause people to lengthen their working careers (Phillipson et al. 2016).

Despite the aforementioned findings, to the best of our knowledge, no paper has analyzed the relationship between financial market participation in the UK and the retirement age variable, which can be crucial in financial planning decisions. In this sense, we would expect that, for most people seeking to optimize their retirement wealth, a delay in the retirement age could be related to a higher involvement in the financial markets.

In this context, the aim of this paper was to test our main hypothesis that a positive relationship between financial market participation and the retirement age exists in the UK population. With this in mind, we used data from the English Longitudinal Study of Aging (ELSA), a unique database that allowed us to characterize individuals at retirement. Our results, after controlling for several socioeconomic variables and for the business cycle, showed evidence supporting our hypothesis, and that the UK population with high financial participation actually plans their retirement, supporting previous evidence.

The remainder of the paper is organized as follows: in Section 2, we develop our methodology and construct input data from ELSA data and financial market data; in Section 3, we analyze the relationship between financial literacy and the retirement age for the UK population; Section 4 concludes the paper.

2. Methodological Scheme

2.1. The English Longitudinal Study of Aging (ELSA)

ELSA is a resource for information on the health, social, wellbeing, and economic circumstances of the English population aged 50 and older. The primary objective of ELSA is to collect longitudinal multidisciplinary data from a representative sample of this English population. In this way, this database aims to measure outcomes across a wide range of domains and to provide high-quality multidisciplinary data that can shed light on the causes and consequences of outcomes of interest.

The aim of the chained survey is to extend the panel data to give significant potential for longitudinal analyses, allowing the examination of causal processes. The survey data "are designed to be used for the investigation of a broad set of topics relevant to understanding the aging process" and include variables such as health, economic position, household and family structure, and determinants and consequences of social, civic, and cultural participation. One of these variables, especially important in this paper, is the nature and timing of retirement and post-retirement labor market activity.

Sample members are drawn from respondents to the Health Survey for England (HSE) and have a face-to-face interview every 2 years of the study and a nurse assessment every 4 years. In this study, six waves are used, covering a period of 11 years (from March 2002 to June 2013), where the size[1] and representativeness of the panel are maintained. To enable longitudinal analysis, the same key topics are included in the content of the questionnaire for each wave, while others may be rotated on and off.[2] ELSA provides sufficient financial and sociodemographic information about individuals' economic position as they plan for, move into, and progress beyond retirement.

2.2. Variables

2.2.1. Sociodemographic Variables

Individual Characteristics (Age, Gender, Race, Ethnicity, and Children under 18)

These variables define the individual characteristics for the respondents included in the sample. For each wave, the survey differentiates between white and nonwhite, while ethnicity refers to the birth country (UK or outside of the UK). The database also includes the variable "having children less than 18 years", as this might have important economic implications for the respondents.

Marital Status (Marital_Status)

This variable considers information about respondents' current and previous marital status. In particular, individuals are divided into three groups: those who are currently single (i.e., not cohabiting) and have never been married (or in a civil partnership); those who are currently married, in a civil partnership, or cohabiting; those who are currently single (i.e., not cohabiting) but were previously married or in a civil partnership (that is, they are now separated, divorced, or widowed, or their civil partnership has been dissolved).

Employment: Working or Not Working (Employed)

Individuals reported as workers when interviewed had a paid job or were self-employed during the month prior to the interview. The dataset defines individuals as "inactive" when they were not engaged in any form of employment or self-employment during the month prior to the interview. In other words, our model includes economically inactive individuals, as well as individuals who are unemployed.

Employment: Employee or Employer (Employee)

This variable defines whether the respondent is an employee or an employer. This situation takes into account the relevant mechanisms via which the private financial sector helps people save for retirement in their apportionment of risk broken down between employers and employees.

Education Level (Education)

Education level is defined using the following items from National Vocational Qualification (NVQ):

1. NVQ4/NVQ5/degree or equivalent,
2. Higher education below degree,
3. NVQ3/GCE A Level equivalent,
4. NVQ2/GCE O Level equivalent,
5. NVQ1/CSE other grade equivalent,
6. Foreign/other,
7. No qualification.

The General Certificate of Education Advanced Level (GCE A Level), more commonly referred to as the A Level, is a school-leaving qualification offered by educational bodies in the UK to students completing secondary or pre-university education. Education levels are grouped into three categories: those who left at or before the obligatory A level (referred in the paper as "low"' education), those leaving school after A level (referred to as "mid"' education), and those leaving at or after age 19 (referred to as "high" education). Those who did not know or refused to report the age at which they left full-time education are classified as low education; those who reported still being in full-time education are excluded from all analysis in which education is used.

2.2.2. Economic and Financial Variables

Financial Assets

The following question in ELSA yields information as to the type of assets people have: "Which, if any, of these savings and investments do you (or your spouse) have?" The possible answers by the respondents are as follows:

1. Current account at a bank, building society, or elsewhere.
2. Savings account at a bank, building society, or elsewhere.
3. Tax-Exempt Special Savings Account (TESSA) (not for stocks).
4. Individual Saving Account (ISA): If the respondent has an ISA, then they are asked which kind of ISA: cash, life insurance, or stocks.
5. Premium bonds.
6. National savings accounts or certificates.

7. Personal Equity Plan (PEP) (for stock).
8. Stocks and/or shares.
9. Share options/employee share ownership.
10. Share clubs.
11. Unit or investment trusts.
12. Bonds and gilts (government or corporate).
13. Other savings or investments.
14. None of the above.

This classification is very valuable because it includes different investment options with different expected returns and risks and allows analysis from different perspectives.

Housing Market (House)

Concerning housing, ELSA asks about the ownership status of individuals' household, and allows the following answers:

1. Owning it outright.
2. Buying it with the help of a mortgage or loan.
3. Paying part rent and part mortgage (shared ownership).
4. Renting it.
5. Living rent-free (including rent-free with relative or friend).
6. Squatting.
7. Refusal (individuals did not want to answer this particular question).

2.2.3. Timing of Retirement

State Pension Age (SPA)

The State Pension is a regular payment from the government that you can claim if you reach the SPA. The State Pension is financed on a pay-as-you-go basis where the amount of the pension depends on the number of qualifying years the individual has built up from their National Insurance (NI) contribution history. ELSA shows the SPA for each individual and for each wave.

The SPA is different between waves because it is in the process of being increased and can be different between men and women. Until April 2010, the SPA was 60 for women and 65 for men. The *Pensions Act 1995* provided for the SPA for women to increase from 60 to 65 over the period April 2010 to 2020. However, the Coalition Government legislated in the *Pensions Act 2011* an acceleration of the latter part of this timetable, so that women's SPA could reach 65 in November 2018. Furthermore, the *Pensions Act 2011* raised the SPA to 66 for both men and women between 6 October 2018 and 6 October 2020. Under the *Pensions Act* 2007, the SPA for both men and women will be raised to 68 between 2044 and 2046. Under the Pensions Act 2014,[3] the government brought forward the rise in SPA to 67 for both men and women between 6 April 2026 and 6 April 2028.

Age of Retirement (ReAge)

In addition to the age of the individual, ELSA provides information about when the individual decides to retire. This allows us to know each individual's retirement age. Thus, the database provides information of the respondents' current situation (retired or not) for each of the six waves. Once an individual makes the retirement decision, they will maintain the status of retired in the next waves. In the UK system, the individual has the option of early retirement; however, they do not obtain the state benefit until the state pension age is reached.

As previously stated, the main objective of this paper is to provide evidence of a positive association between financial market participation and retirement planning; that is, we hypothesize that individuals with higher financial involvement are more likely to extend the date of retirement to achieve their optimal wealth level. To test our hypothesis, we used ELSA primary data. The initial sample obtained from ELSA included 11,882 observations for the 15 items analyzed.

As a first step, and to avoid observations on retirement age that were not due to a real choice by individuals, we filtered the age of the individuals in the sample. The age range selected was between 55 and 75 years, thereby avoiding undesirable outliers in regression analyses. Following this filtering process, the sample was reduced to 9793 observations. From the trimmed sample, we selected for each individual the first observation in which "retired" appeared, using the Retra variable. This yielded a final sample with only one observation for each individual who has retired, resulting in a total of 3180 observations.

Some of ELSA's variables, defined in the previous section, allow us to control for possible determinants of the retirement age other than financial literacy. These variables are gender, race, ethnicity, having children under 18 years, education level, marital status, work status, employer or employed status, and the age at which individuals reach SPA. We transformed each of these nine sociodemographic variables into dichotomous variables.

In this way, the respective dummy variable took a value of one if sex was male, race was white, ethnicity was birthed in the UK, and respondent had children under 18. For education level, the dummy variable was equal to one if the respondent had a degree or equivalent or had completed higher education below a degree. For levels below A level (NVQ3/GCE in UK), the variable took a value of zero. Regarding marital status, we used a dichotomous variable that was equal to one if the respondent was single (never married), legally separated, divorced, or widowed and zero if the respondent was married (first and only marriage) or remarried (second or later marriage).

If the individual was defined as working, i.e., having engaged in any paid type of employment or self-employment in the last month at the time they reported, the variable employed took a value of one. If the individual was inactive, i.e., not engaged in any form of employment or self-employment in the month prior to the interview, they were considered unemployed and the dummy variable took a value of zero. To distinguish individuals who were employees from those who were employers, the former took a value of one and the latter took a value of zero.

Concerning the SPA variable, we created a new variable that captures the influence of this item on the age of retirement, differentiating between individuals under or above this age at the moment of retirement. Thus, if the age of retirement was greater or equal to the SPA, the variable took a value of one; if the age of retirement was less than the SPA, the variable took a value of zero. In this way, we controlled for whether individuals received State Pension benefits.

As the dummies ethnicity and having children under 18 did not provide the necessary statistical variability (92% of the sample was from UK, and only 1% had children under the age of 18), to enrich the study, they were removed for subsequent analysis. Thus, we kept seven socioeconomic variables as control variables in our work.

The Measurement of Financial Market Participation (Fin_Participation) and Wealth

To measure financial market participation, we found several measures in the related literature such as Balloch et al. (2015), Yeh and Ling (2022), or Fisch and Seligman (2022). All of them, regardless of their degree of disaggregation, considered the holding of financial assets beyond the basic ones, i.e., savings and deposit accounts. Using ELSA, we proxied financial market participation by selecting whether individuals invested in financial markets, either directly or indirectly, via mutual funds or banking products. Thus, we transformed information from the database financial assets item in a dichotomous variable that was equal to one if individuals had financial assets other than current accounts and saving accounts and zero if they only had current accounts and saving accounts.

However, as Van Rooij et al. (2011) noted, the disadvantage of using proxies for financial market participation is the difficulty in distinguishing the effect of this variable from the effect of the wealth variable. In our case, having financial market assets was part of individuals' wealth and was, thus, strongly related to wealth level. When we used this variable as a proxy for financial market participation, we could not differentiate a priori

the effect on the retirement age due to financial participation from the effect due to wealth level per se.

Nevertheless, we could condition our regression analysis on individuals with a high or low wealth level to isolate the effect due to participation. For this, we needed a proxy of wealth level different to having financial market assets. From ELSA, we used available information about house owning as a proxy of the level of wealth—independently of whether they had bought it outright or with a mortgage or loan. Thus, we transformed the variable house ownership into a dichotomous variable that was equal to one if individuals owned a house and zero if they did not.

Table A1 includes the list of variables and their description.

2.3. Regression Models

2.3.1. Basic Model

To test our main hypothesis, we used the following model, in which we included the control variables:

$$\begin{aligned} ReAge_{i,t} = {} & \beta_0 + \beta_1 \cdot Gender_{i,t} + \beta_2 \cdot Race_{i,t} + \beta_3 \cdot Education_{i,t} + \beta_4 \cdot Marital\_status_{i,t} + \beta_5 \cdot Employee_{i,t} \\ & + \beta_6 \cdot Employed_{i,t} + \beta_7 \cdot House_{i,t} + \beta_8 \cdot SPA_{i,t} + \beta_9 \cdot Fin\_participation_{i,t} + \varepsilon_{i,t}. \end{aligned} \quad (1)$$

2.3.2. Influence of Economic Cycle

As Coile and Levine (2006), Hurd et al. (2009), and Disney et al. (2015) noted, a number of US studies have examined the effect of fluctuations in stock market prices over the economic cycle on retirement decisions. In this sense, increases in financial asset prices in economic upturns are assumed to induce people to retire earlier. In this respect, McFall (2011) outlined that stock market performance has a small impact on the planned retirement age, and Goda et al. (2011) found a small effect of changes in the stock market on plans for retirement. To try to capture possible effects on the age of retirement, and as a control variable for the economic cycle, we introduced the FTSE all share index as a proxy variable. However, we transformed it into a dichotomous variable for each wave, taking a value of one if returns for the index in the period were positive and a value of 0 when they were negative:

$$\begin{aligned} ReAge_{i,t} = {} & \beta_0 + \beta_1 \cdot Gender_{i,t} + \beta_2 \cdot Race_{i,t} + \beta_3 \cdot Education_{i,t} + \beta_4 \cdot Marital\_status_{i,t} + \beta_5 \cdot Employee_{i,t} \\ & + \beta_6 \cdot Employed_{i,t} + \beta_7 \cdot House_{i,t} + \beta_8 \cdot SPA_{i,t} + \beta_9 \cdot Fin\_participation_{i,t} + \beta_{10} \\ & \cdot FTSE_{i,t} + \varepsilon_{i,t}. \end{aligned} \quad (2)$$

2.3.3. Conditional Model

For our conditional analysis for wealth, we used Model (2) twice, sorting individuals by their different level of wealth:

$$\begin{aligned} & ReAge_{i,t}(House_{i,t} = 1) \\ & = \beta_0 + \beta_1 \cdot Gender_{i,t} + \beta_2 \cdot Race_{i,t} + \beta_3 \cdot Education_{i,t} + \beta_4 \cdot Marital\_status_{i,t} + \beta_5 \\ & \cdot Employee_{i,t} + \beta_6 \cdot Employed_{i,t} + \beta_7 \cdot SPA_{i,t} + \beta_8 \cdot Fin\_participation_{i,t} + \beta_9 \\ & \cdot FTSE_{i,t} + \varepsilon_{i,t}; \end{aligned} \quad (3a)$$

$$\begin{aligned} & ReAge_{i,t}(House_{i,t} = 0) \\ & = \beta_0 + \beta_1 \cdot Gender_{i,t} + \beta_2 \cdot Race_{i,t} + \beta_3 \cdot Education_{i,t} + \beta_4 \cdot Marital\_status_{i,t} + \beta_5 \\ & \cdot Employee_{i,t} + \beta_6 \cdot Employed_{i,t} + \beta_7 \cdot SPA_{i,t} + \beta_8 \cdot Fin\_participation_{i,t} + \beta_9 \\ & \cdot FTSE_{i,t} + \varepsilon_{i,t}. \end{aligned} \quad (3b)$$

3. Results

Table 1 shows the main descriptive statistics for the variables used in our analysis. It can be observed that the average age at which people retired in the UK was 61.81, the majority of individuals (97%) were white, 40% of respondents completed higher education, and 74% were married. A total of 13% of the sample were employers, while 37% of

individuals were unemployed. A total of 85% of individuals owned a house, while 45% of the individuals showed some kind of financial market participation.

Table 1. Main descriptive statistics of the sample.

Variable	Mean	SD	p25	Median	p75
Retirement age	61.81	4.60	58	61	65
Retra	0.32	0.47	0	0	1
Gender	0.45	0.50	0	0	1
Race	0.97	0.16	1	1	1
Employee	0.87	0.33	1	1	1
Employed	0.63	0.48	0	1	1
SPA	0.43	0.50	0	0	1
Education level	0.40	0.49	0	0	1
Marital status	0.74	0.44	0	1	1
House owner	0.85	0.36	1	1	1
Financial participation	0.45	0.50	0	0	1

Retirement age: individuals' retirement age; Retra: dichotomous variable equal to one if individuals are retired, and zero otherwise; gender: dichotomous variable equal to one for males, and zero for females; race: dichotomous variable equal to one if white, and zero if nonwhite; employee: dichotomous variable equal to one if individual is employee, and zero if employer; employed: dichotomous variable equal to one if employed, and zero if unemployed; SPA: dichotomous variable equal to one if Retra $\geq$ SPA, and zero otherwise; education level: dichotomous variable equal to one if high or higher education, and zero if low education; marital status: dichotomous variable equal to one if married or similar, and zero if single or similar; house owner: dichotomous variable equal to one if the individual owns a house, and zero otherwise; financial participation: dichotomous variable equal to one if the individual has financial assets, and zero otherwise. Initial sample: 9793 observations. Number of individuals who became retirees during the six waves: 3180.

The first-stage regression reported in Table 2—Model 1 for the retirement age shows that our instruments were statistically significant for gender, education, employee, and employed status at the 1% level, and all, except gender, showed a negative correlation with the dependent variable. In this way, individuals with a higher level of educational attainment retired earlier than individuals with low education. The same applied to employers (versus employees) and employees (versus individuals who are unemployed). The variable *house owner* was not significant. These results are different to those of Blanchett (2018), who found that respondents who planned to retire later had lower income levels, fewer financial assets saved, and lower Social Security benefits. However, in the same study, it was found that certain variables (e.g., years of education completed, income, or financial assets) were not good predictors, suggesting that the timing of the actual retirement age is random. Since the variable of interest in Blanchett (2018) was close to ours—but not the same exactly—these results should be taken with caution. In contrast, in a review of recent longitudinal studies on retirement, Scharn et al. (2018) found eight significant factors including sociodemographic, employment, and financial factors in the retirement preferences that may influence retirement age. Furthermore, Fagereng et al. (2017) and Wiafe et al. (2020), in the context of the asset market participation and portfolio choice over the lifecycle, found that the households' timing access to stock market could potentially be a key factor. Moreover, Crawford and O'Dea (2020) concluded that only the most patient households (later retirement) achieved the replacement rates based on final earnings often recommended by policymakers and industry as reasonable benchmarks for retirement preparedness.

Table 2. Regression for the retirement age.

Retirement Age	Model 1	Model 2
Gender	2.034 ***	2.028 ***
	(0.000)	(0.000)
Race of respondents—white or nonwhite	−0.422	−0.393
	(0.256)	(0.288)
Education level	−0.392 ***	−0.400 ***
	(0.002)	(0.002)
Marital status	−0.045	−0.044
	(0.746)	(0.749)
Employee/employer	−0.845 ***	−0.847 ***
	(0.000)	(0.000)
Employed/unemployed	−1.044 ***	−1.038 ***
	(0.000)	(0.000)
House owner	−0.259	−0.327 *
	(0.147)	(0.066)
SPA new	5.873 ***	5.912 ***
	(0.000)	(0.000)
Financial participation	0.181	0.299 **
	(0.166)	(0.024)
FTSE		0.840 ***
		(0.000)
Constant	60.997 ***	60.224 ***
	(0.000)	(0.000)
Obs.	2884	2884
F	249.582	229.073
r^2	0.439	0.444
RMSE	3.179	3.165
r^2_a	0.437	0.442

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Retirement age: individuals' retirement age; gender: dichotomous variable equal to one for males, and zero for females; race: dichotomous variable equal to one if white, and zero if nonwhite; employee: dichotomous variable equal to one if individual is employee, and zero if employer; employed: dichotomous variable equal to one if employed, and zero if unemployed; SPA: dichotomous variable equal to one if Retra $\geq$ SPA, and zero otherwise; education level: dichotomous variable equal to one if high or higher education, and zero if low education; marital status: dichotomous variable equal to one if married or similar, and zero if single or similar; house owner: dichotomous variable equal to one if the individual owns a house, and zero otherwise; financial participation: dichotomous variable equal to one if the individual has financial assets, and zero otherwise; FTSE: dichotomous variable equal to one if positive economic cycle, and zero if negative cycle.

In this regard, the estimated coefficients showed that the most important variable was whether individuals were above the SPA. On the basis of these results, individuals that were above the SPA were more likely to make the decision to retire at the 1% significance level. We can also observe that our interest variable in this paper, financial participation, was far from being significant. Therefore, individuals with financial participation did not decide to retire in a different way from those with nonfinancial participation.

However, results for the basic model, where neither financial participation nor home tenure was significant, may have been distorted by an economic cycle effect. It should be noted that, if we were working with (contemporary) cross-sectional data, we would have avoided this problem. Nevertheless, our framework (no contemporary) required the use of pooled data. To this end, the second-stage regression, Table 2—Model 2, included the changes in the FTSE returns as a proxy of the business cycle. It can be observed that, after this control, all variables were significant, with a positive coefficient for financial market participation and a negative coefficient for house owner. However, although both variables were now significant, we do not know whether financial participation acted as such or as a variable of wealth. In this line, Kronick and Laurin (2016) highlighted that wealth among aging populations is related to full home ownership among retirees, since most pay off their mortgages upon retirement. This phenomenon implies that the wealth (poverty) rate is significantly affected by home ownership in the aging population. Property can be

considered as an additional pillar to provide another layer of income, and it is typically considered as a last resort (Skinner 2007).

Motivated by the above, we carried out a conditional analysis, reported in Table 3, considering individuals' wealth level. We used home ownership as a proxy for individuals' wealth level to condition Model 2, which became Models 3a and 3b, respectively. The control variables gender, education level, employee, employer, and SPA remained significant at 1%, but the variable marital status now also became significant. The most important result in this table is the fact that financial market participation was significant and positively correlated with retirement age at a 1% confidence level for individuals with wealth. This result shows that individuals with active financial market participation were expected to delay their retirement decision if they had a certain level of wealth. However, the variable participation was not significant for individuals with a lesser level of wealth; therefore, their decision was based on other factors listed among the control variables used. These results can be explained through the approach of Xu et al. (2023), who, using data from the 2018 New Zealand Household Economic Survey (HES), examined the impact of direct participation in the post-retirement financial market on retirement income in New Zealand. Their results demonstrated the importance of participation in the financial market after retirement on improving the financial wellbeing of retirees. In particular, they concluded that retirees who participate in the financial market enjoy a 78% increase in annualized total net wealth.

Table 3. Regression for the retirement age conditioned by wealth.

Retirement Age	Model 3a	Model 3b
	Wealth	No Wealth
Gender	2.138 ***	1.506 ***
	(0.000)	(0.000)
Race of respondents—white or nonwhite	−0.680 *	0.772
	(0.092)	(0.395)
Education level	−0.359 ***	−0.741 *
	(0.007)	(0.085)
Marital status	−0.329 **	0.938 ***
	(0.028)	(0.006)
Employee/employer	−0.845 ***	−0.382
	(0.000)	(0.597)
Employed/unemployed	−1.193 ***	−0.303
	(0.000)	(0.429)
SPA new	5.900 ***	5.884 ***
	(0.000)	(0.000)
Financial participation	0.395 ***	−0.276
	(0.004)	(0.504)
FTSE	0.579 ***	2.024 ***
	(0.001)	(0.000)
constant	60.590 ***	57.409 ***
	(0.000)	(0.000)
N	2443	441
F	234.146	27.634
r^2	0.464	0.366
RMSE	3.071	3.551
r^2_a	0.462	0.353

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Retirement age: individuals' retirement age; gender: dichotomous variable equal to one for males, and zero for females; race: dichotomous variable equal to one if white, and zero if nonwhite; employee: dichotomous variable equal to one if individual is employee, and zero if employer; employed: dichotomous variable equal to one if employed, and zero if unemployed; SPA: dichotomous variable equal to one if Retra $\geq$ SPA, and zero otherwise; education level: dichotomous variable equal to one if high or higher education, and zero if low education; marital status: dichotomous variable equal to one if married or similar, and zero if single or similar; house owner: dichotomous variable equal to one if the individual owns a house, and zero otherwise; financial participation: dichotomous variable equal to one if the individual has financial assets, and zero otherwise. FTSE: dichotomous variable equal to one if positive economic cycle, and zero if negative cycle.

4. Concluding Remarks

It is vital to know how an individual plans for retirement to develop an efficient government policy response to population aging. Financial market participation seems to be one of the reasons affecting many lifecycle consumption goals, and it could be certainly one of the several factors influencing retirement decision patterns. Empirical evidence supports a positive association between financial market participation and retirement age. In this sense, the literature has found that the most patient households that participate in financial markets holding assets achieve a good level of final earnings. This level is recommended by policymakers and industry as a reasonable benchmark for retirement preparedness.

This paper focused on analyzing whether individuals in the UK with a higher level of financial market participation and, therefore, with a higher propensity to plan for retirement are more likely to delay their retirement age than individuals with a lower financial participation. As the previous literature was not conclusive, we went further by analyzing whether the business cycle effect may distort this relationship and explaining the positive relationship between the holding financial portfolio and the retirement age. In this regard, our framework was not contemporary, and we included business cycle dependence. Lastly, we conditioned our analysis by the wealth variable separate from financial market participation, which could explain different propensities for planning retirement.

Using the English Longitudinal Study of Aging (ELSA) database, we tested our hypothesis using different models that controlled for several socioeconomic variables, for the economic cycle (proxy as FTSE index returns), and for nonfinancial wealth (proxy as home ownership). The results show that, when we did not control for business cycle and nonfinancial wealth, financial market participation was not related to retirement age. However, when we controlled for business cycle and for nonfinancial wealth, this relationship became significant.

The findings are consistent with the hypothesis that people with financial market participation are more likely to delay their retirement age, after conditioning by business cycle and nonfinancial wealth. In this regard, for the former with a higher level of wealth, there is a clear relationship between financial market participation and retirement age, whereas, for other individuals under that level of wealth, the findings are inconclusive.

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Appendix A

Table A1. Variables list and descriptions.

Retirement age	Individuals' retirement age
Gender	Dichotomous variable equal to 1 for males, and 0 for females
Race	Dichotomous variable equal to 1 if white, and 0 if nonwhite
Employee	Dichotomous variable equal to 1 if individual is employee, and 0 if employer
Employed	Dichotomous variable equal to 1 if employed, and 0 if unemployed
SPA	Dichotomous variable equal to 1 if Retra $\geq$ SPA, and 0 otherwise
Education level	Dichotomous variable equal to 1 if high or higher education, and 0 if low education
Marital status	Dichotomous variable equal to 1 if married or similar, and 0 if single or similar
House owner	Dichotomous variable equal to 1 if the individual owns a house, and 0 otherwise
Financial participation	Dichotomous variable equal to 1 if the individual has financial assets, and 0 otherwise
FTSE	Dichotomous variable equal 1 if positive economic cycle, and 0 if negative cycle

Notes

[1] At waves 3, 4, and 6, the study was replenished with new study participants from HSE.

[2] Waves 7, 8 and 9 were not included in the study due to changes in the definitions of some variables such as the level of educational attainment or the asset holdings.

[3] The Pensions Act 2014 provides for a regular review of the SPA, at least once every five years, ensuring that future generations should spend a certain proportion of their adult life drawing a State Pension. Currently, the Government is not planning to revise the existing timetables for the rise in the SPA to 66 or 67, but the increase in the SPA from 67 to 68 could change as a result of future reviews.

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