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Pension Freedom Day in the United Kingdom: Early evaluation of consumer response

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Cäzilia Loibl
Department of Human Sciences, The Ohio State University
and Centre for Decision Research, Leeds University Business School

Barbara Summers
Centre for Decision Research, Leeds University Business School

Simon McNair
Centre for Decision Research, Leeds University Business School

Wändi Bruine de Bruin
Centre for Decision Research, Leeds University Business School and
Department of Engineering and Public Policy, Carnegie Mellon University

Corresponding author:
Cäzilia Loibl, Department of Human Sciences, The Ohio State University, 1787 Neil Avenue, Columbus, Ohio 43210, U.S.A., Email: loibl.3@osu.edu

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Abstract

Understanding decumulation decisions in retirement is an important component of public policy that influences pension regulations in aging societies. This research examined a recent, substantial change to pension regulation in the United Kingdom: the newly established flexibility to obtain a lump sum payout from personal or occupational pension savings. Conducting an online survey of individuals eligible to take advantage of the Pension Freedom regulation, we find that almost half of study participants plan to obtain a lump sum payout, on average £33,741, intending it for an average of three different investments or purchases. The decision to obtain a lump-sum withdrawal was related to better knowledge of the new regulation. It was also more likely among older respondents and those not worried about a decline in standard of living during retirement. Dispositional measures did not affect the lump sum decision. Close to one-third of study participants still planned to invest retirement savings into an annuity, especially those who retire at a later age, have concerns about care costs and worry about decline in standard of living in retirement. Comments about the changes to pension regulation were slightly more positive than negative. From our analysis of the effect of the Pension Freedom regulation on savings decumulation decisions, we conclude that the new Pension Freedom regulations do meet consumer demands, and demonstrate that pension knowledge and retirement expectations, in particular, influence consumer evaluations. We further conclude that annuity investments continue to play a role for older adults in the U.K., especially for those concerned about meeting financial needs during retirement.

Keywords (10 max.)
Retirement savings, asset decumulation, Pension Freedom regulation, financial literacy, retirement expectations, dispositional measures, aging

Introduction

On 6 April 2015, the U.K.'s Conservative government implemented profound changes to pension regulation. It relaxed access to private and employer-based pension savings including some defined-benefit employer-based pensions, set pension contribution limits to £40,000 per year, abolished tax charges on pension funds at death before age 75, established new consumer advisory services, and announced an increase in state pension age to 67 for men and women over the period 2026-2028 (Her Majesty's Treasury 2014, Work and Pensions Committee 2016). Prior to these changes, ways in which pension savings could be used had specific limitations. People could take a tax-free lump sum amounting to 25 percent of pension savings, however, there were limits on drawdown and buying an annuity was effectively compulsory at age 75.

Like many developed nations, the U.K. is responding to an aging population due to increasing life expectancy. The marked increase in the population at older ages has led to a relative reduction in state pension payments in many nations, increasing the individual's responsibility to provide for older age (Lundbergh, Laros, and Rebel 2013). In the U.K. the number of people of pensionable age for every one thousand people of working age is projected to rise from 310 in 2014 to 370 over the next 25 years, even taking into account the planned increase in state pension age to 67 (U.K. Office for National Statistics 2015). The U.K. government has responded with a series of new pension regulations, resulting in the revision of savings plans and products for the accumulation phase as well as the liberalization of the decumulation phase (for review see Leisering 2012, Brennan and Ritch 2010).

Regulatory changes have given more flexible access to pension savings from age 55. Older adults now have complete freedom over whether to take an income or lump sum from their

employer-based and personal defined contribution plans. Individuals can elect to withdraw the whole fund as cash in one go (25% tax free, rest taxed as ordinary income), withdraw smaller lump sums when they like (25% tax free, rest taxed as ordinary income) and/or withdraw up to 25% tax free and take a regular taxable income from the rest (Her Majesty's Treasury 2014). The changes aim to "make pension saving more attractive and encourage people to take greater responsibility for their financial future" (p. 3, Her Majesty's Treasury 2010).

With these changes, the U.K. therefore offers an interesting case study of a place where previously annuity purchase was effectively compulsory, but which has moved to a situation with little limit on how to access pension saving. While economists generally argue in favor of annuities, we capitalized on a unique opportunity to assess consumer reaction and sentiment about greater freedom of access to pensions.

Lump sum-vs-annuity decision

There is a long-standing academic literature on annuities that concludes that there is a mismatch between the suggestions of economic analysis and consumer behavior (for a review see Benartzi, Previtero, and Thaler 2011). This mismatch has been characterized as an "annuities puzzle" (e.g., Davidoff, Brown, and Diamond 2005). At the heart of the arguments in favor of annuities is that they provide a lifelong guaranteed income. Yet, Davidoff et al. observe that "the near absence of voluntary annuitization is puzzling in the face of theoretical results that suggest large benefits to annuitization" (p. 1589). Several explanations have been put forward for this finding. Various researchers have found that psychological phenomena such as mental accounting of payments in our minds, loss/regret aversion, and simplified, rule-of-thumb decision heuristics can explain

some of this mismatch (e.g., Hu and Scott 2007, Brown et al. 2008, Brown 2007). In the U.K. specifically, Duxbury et al. (2013) found that consumers do not feel that annuities offer good value for money, particularly where there is financial- and health-related state-provision for the elderly (as in the U.K.).

An experimental module in the 2004 Health and Retirement Study (HRS) provides further insights (Brown, Casey, and Mitchell 2007). About 990 HRS survey participants between the ages 50 to 64 responded to a scenario that asked them to indicate whether they would prefer a $1,000 monthly Social Security payment for life or a one-half reduction of their Social Security benefits in exchange for a one-time lump-sum payment. About 59% of respondents chose the lump sum payment combined with a reduced annuity benefit. Lower health and life expectancy, lower financial literacy (when controlling for education), and lower expectations for Social Security benefits in future years was inversely related to lump sum choice. The study did not find that demographics, such as gender, marital status, children, income or wealth, served as predictors for lump sum choice. Given its focus on consumer behavior based on financial literacy, retirement expectations, dispositional measures, and demographic characteristics, this experimental module in the HRS provides an approach for investigating consumer responses in the United Kingdom.

The current study

The present study contributes to the asset-decumulation literature by investigating lump sum decisions of older adults in the United Kingdom following new regulations granting greater freedom of access to pension funds. The unique strength of this study is its cohort: people at or

approaching retirement age facing the real-life decision of how to access their pension funds. Our research questions are:

1. If people are planning to take the lump sum, what are they expecting to do with it?
2. Are financial literacy, retirement expectations, dispositional measures, and demographic characteristics associated with the decision to take a lump sum payout and the intended withdrawal amount?
3. What factors influence the choice to take an annuity now that it is optional?
4. How did respondents feel about the changes to pension regulation?

Method

Sample

Participants in an online consumer panel maintained by the market research company Research Now completed our survey from 18 to 22 May 2015. The survey was conducted about six weeks after the pension freedoms came into effect, which was on 06 April 2015. This timing was chosen because it allowed older adults to make up their minds and to take first steps toward accessing their pension.

A total of 2,198 panel members - targeted according to age and gender - accessed the survey after receiving invitation emails from the market research company. Five hundred and three individuals passed the screener questions and completed the survey (see Table 1 in the Appendix for details). Five hundred responses entered the analyses; three individuals were excluded due to missing data on lump sum choice. Average time needed to complete the survey

was 24:34 minutes. Following ethics requirements, study participants were able to skip questions and not provide an answer.

As shown in Table 1, participants were on average 64 years old and about half were male (54%). The majority was married or living with a partner (79%). On average, the respondents' households consisted of two household members. About half of respondents were retired (48%) and had post-secondary education (54%). The average number of pension pots was 2.4.[1] More than half had a Defined Benefit plan (58%); less than a quarter had a Defined Contribution plan from an employer (22%). Household income averaged £38,242 per annum, with average liquid household savings reaching £134,354, and average household debt totalling £4,327. Median values were £30,000 for household income, £50,000 for household savings, and £0 for household debt. Distribution of the desired lump sum amount, household income, savings and debt variables were positively skewed but responded well to a natural log transformation that was employed in multivariate analyses. While not representative for the U.K. population, due to it being stratified in terms of age group, gender, and contribution to a personal or employer-based pension plan, the survey sample meets the survey goal, which was to examine the responses of different population groups (older and younger seniors, males and females) to the pension freedom regulation.

[Table 1 about here]

[1] Our survey included two open-ended questions asking "How much money do you currently have in defined contribution schemes?" and "How much money do you currently have in defined benefit schemes?" We were unable to include responses in our analyses, because, respectively, 36% and 6% of data were missing, and values were extreme, with respective ranges of £1-£4,000,000 and £1-£1,300,000. Because of variability in the payout options of these schemes, we were also unable to calculate total amounts in cases where respondents entered monthly or annual amounts. An anonymous reviewer pointed out that income may be a proxy for the amount of pension savings.

Measures

Table 2 in the Appendix provides the description and coding of all variables used in the analyses. Three measures served as dependent variables: interest in obtaining a lump sum payment, lump sum amount, and interest in making an annuity investment. Three sets of independent variables measured financial literacy, retirement expectations, and dispositional measures. Financial literacy was measured with five individual measures: a pension-knowledge score, a measure of numeracy, and three measures of accessing pension-advisory services. We asked six questions about expectations for retirement, adapted from the U.S. Health and Retirement Study, whose construct and predictive validity has been documented (Hurd and McGarry 2002) (see Table 2 in the Appendix).

Dispositional measures were assessed with five individual concepts, in order to align our study with recent behavioral explanations in the annuity literature (e.g., Hu and Scott 2007, Brown et al. 2008, Brown 2007): financial planning, financial self-efficacy, risk tolerance, materialism, and future orientation. The financial planning variable was taken from the U.S. Health and Retirement Study (Lusardi and Mitchell, 2008). It measures the extent to which older adults make financial plans, using a series of three questions, which we adapted for our study. Financial self-efficacy measured self-assuredness in making financial decisions (Lown 2011, Montford and Goldsmith 2016). Risk tolerance was measured with a single-item measure derived from the annuity literature (Duxbury et al. 2013, Duxbury et al. 2005). A measure of materialism that refers to the importance, or centrality, of making purchases in people's lives was used to examine whether those with stronger materialistic tendencies are more predisposed to availing themselves of the new Pension Freedoms and accessing lump sum payment (Richins

and Dawson 1992). Time orientation was measured with three items of the "Consideration of Future Consequences" scale (Strathman et al. 1994) (see Table 2 in the Appendix).

Socio-demographic covariates were taken from the U.K. Household Longitudinal Study, Mainstage Questionnaire (Wave 6) to allow for comparison (see Table 2 in the Appendix).

Analysis plan

Descriptive analysis such as the calculation of means and cumulative sums were used to answer Research Question 1 about respondents' plans for the lump sum. To investigate Research Question 2 regarding the role of financial literacy, retirement expectations, dispositional measures, and demographic characteristics for withdrawal decisions, three regression analyses were performed. First, to assess differences between undecided and decided study participants, a multinomial regression analysis was conducted. Undecided respondents, who selected "don't know" as their response to whether they plan to take a lump sum payout, served as the base category. Second, binary logistic regression was employed to examine factors associated with lump sum take-up among decided study respondents. The dependent variable was a binary, yes/no variable indicating whether a respondent planned to take a lump sum payout of pension savings. Undecided respondents were excluded. Third, the amount of the lump sum served as dependent variable in an OLS regression. In all three of these regressions, four sets of variables, measuring financial literacy, retirement expectations, dispositional measures, and demographic characteristics served as predictors. Research Question 3 investigating factors influencing annuity decisions was examined with a binary logistic regression analysis using annuity investing as the dependent variable and the previously used four sets of predictors. Descriptive

analysis such as counts of words repeated in the statements and means comparison tests were used to answer Research Question 4, which examined survey exit statements about respondents' opinions toward the policy changes.

Regression analysis was conducted with the missing values of the independent variables replaced at the mean value. We chose this simple approach, instead of using a multiple imputation approach, because the number of missing values for any variable was below 15% (Allison 2001). The four independent variables with the largest number of missing values were 14.6% for household income, 14.4% for liquid savings, 7.2% for household debt, and 6.4% for risk tolerance. All other variables had missing values below 5%. To check for robustness of results, we repeated the regression analyses without replacing values. The reduced sample, which left out the people with missing responses, provided similar results.

Results

If people are planning to take the lump sum, what are they expecting to do with it?

A total of 45.4% of respondents said that they would like to take a lump sum (N=229), 35.5% responded with "No" (N=179), and 18.5% responded "Do Not Know" (N=93). A total of 0.6% (N=3) refused to answer this question. The average amount of lump sum that respondents expected to take was £33,741 (SD=£36,444). The distribution of the lump sum amount variable was positively skewed with the median value being £25,000 (min=£150, max=£300,000). A natural log transformation was therefore employed in the regression analysis.

The most frequent goals for the lump sum, selected by more than 20% of respondents, were to go on holiday/travel (40.4%); put it into a savings account (26.1%); to renovate or

improve the home (24.8%); to enjoy life while one can (23.4%); and to invest in financial markets, such as in stocks or bonds (20.6%). The least frequently mentioned goals were to purchase a home for oneself (2.3%) or to buy-to-let (2.3%; see Table 2, Column 5). The largest number of respondents, 41.5%, planned to spend the lump sum on one goal.[2] The average amount of lump sum depended on the type and number of planned uses. For example, respondents who planned home renovation and improvement also planned on average two other uses (total of 3.07 uses; Table 1, Column 4). On average, the amount of £28,912 was withdrawn as a lump sum to fund a bundle that included home renovation/improvement (Table 2, Column 2). The median withdrawal amount for this bundle was £20,000.

[Table 2 about here]

Are financial literacy, retirement expectations, dispositional measures, and demographic characteristics associated with the decision to obtain a lump sum payout and the intended withdrawal amount?

Multinomial regression results show that, compared to undecided respondents, lump sum takers had higher pension freedom knowledge, lower expectations/experiences of declining living standards in retirement, and were less likely to have obtained advice from the government's Pensions Advisory Service. Lump sum takers tended to have about 20% higher incomes and were twice as likely retired.

[2] One respondent indicated plans to "spend it all right away" and reported the amount of £777,500. Because it is an untypically high amount, about 23 times the average lump sum amount and much larger than the second-highest amount of £300,000, it could be a typo. We excluded this outlier from the regression analysis in Tables 3 and 4.

When comparing non-takers to undecided respondents, only two differences emerge. Similar to lump sum takers, respondents not interested in obtaining a lump sum were less likely than undecided study participants to have obtained advice from the Pensions Advisory Service and they were more than twice as likely retired. The results are presented in Table 3.

[Table 3 here]

Binary logistic regression results show that the odds of planning to take a lump sum payout were greater for respondents with higher knowledge of the pension freedom regulation. Expected or experienced reduction in standard of living during retirement and expectations about the number of years spent in retirement were inversely associated with lump sum withdrawals. Dispositional measures of financial decision-making were unrelated to lump sum withdrawals. Among the socio-demographic characteristics of the sample, the odds of planning a lump sum withdrawal were greater at younger ages and marginally significantly greater for smaller households and more highly indebted households (see Table 4, Columns 1 and 2).

Among those who expressed the intention to withdraw a lump sum, the intended withdrawal amount was significantly positively associated with expected or experienced reduction in standard of living during retirement, risk tolerance, materialism, male sex of respondent, and higher household savings. The results are presented in Table 4, Column 3.

[Table 4 about here]

What factors influence the choice to take an annuity now it is optional?

A total of 29.2% (N=147) of survey respondents indicated annuities as a top-three choice for investing their pension savings of a list of eight savings and investment options. There was no

difference between the responses of lump sum takers and non-takers: 28.8% of lump-sum takers and 28.7% of non-takers were planning to invest in an annuity. A slightly larger portion of undecided study participants, 32.3%, planned to invest their retirement savings in an annuity, although the difference was not statistically significant. As presented in Table 4, Columns 4 and 5, annuity investment, which was one option from a list of eight savings and investment options, was associated with higher planned/ actual age at retirement, higher expectations about the costs of care, higher expectations/ experience of decreased standard of living during retirement, and higher expectations of living to age 85. Annuity investment was reversely associated with materialistic orientation. The odds of an annuity investment were higher among younger respondents and respondents with a larger number of pension pots.

How did respondents feel about the changes to pension regulation?

A total of 336 survey respondents (67.2%) left a comment at the end of the survey. Comments averaged 22 words; the median number of words was 15. Coding was conducted by a single researcher and it was based on signal words identified among the research team members. About 39.3% commented positively on the changes (N=132), 34.2% commented negatively (N=115), and 26.5% provided a neutral response, said they don't apply, or were unfamiliar with the changes (N=85). Negative comments were concerned with older adults spending pension savings too quickly (42.6% of neg. comments; N=49). A second theme was confusion about the changes as well as a lack of suitable information (29.6% of neg. comments; N=34). With regard to positive comments, the majority was fully supportive of the changes (60.6% of pos. comments; N=80). About one third of positive comments though included concerns about possible problems

(35.6% of pos. comments; N=47). Examples of comments are presented in Table 5.

Post-hoc tests for mean differences indicated that lump sum takers provided a greater number of positive comments (mean=0.51) compared to non-takers and undecided study participants (mean=0.29 each; $p<0.01$ each, Games-Howell). As expected, lump sum takers left more fully supportive comments (mean=0.33) compared to non-takers and undecided study participants (mean=0.18 and 0.11, respectively; $p<0.01$, Games-Howell). Undecided study participants more often reported being confused about the changes to pension regulation and lacking information, especially compared to lump sum takers (mean=0.19 vs 0.06; $p=0.05$). There were no differences in the number of negative comments and in positive yet concerned comments among the three groups.

[Table 5 about here]

Discussion and conclusion

This research investigated consumer financial decisions following a recent, substantial change to pension regulation in the United Kingdom. Given the nature of the change from almost compulsory annuities to free choice, our findings provide new insights on factors that influence lump sum choice in a real-world setting. Our analysis confirms government analysis about substantial consumer interest in lump sum withdrawals (Financial Conduct Authority 2015), a decision we found to be influenced by knowledge of the reforms and retirement expectations rather than dispositional measures. We further documented that annuity investments continued to play a role for older adults in the U.K., especially for those concerned about meeting financial needs during retirement.

With regard to Research Question 1, we found that nearly half of study participants, 45%, planned to obtain a lump sum payout. This amount is somewhat lower than has been found in experimental survey research in the United States, in which 59% reported an interest in hypothetically obtaining a lump sum payment (Brown, Casey, and Mitchell 2007). Our difference may reflect the more cautious, status-quo-biased decision-making of real decision situations, compared to the hypothetical decision task of the Brown et al. (2007) survey. However, it may also reflect a preference to keep one's options open by remaining undecided. For those who are not yet retired and are unsure what the future holds, it may well be that deferring the decision seems prudent. In contrast to Brown et al. (2007), our distinguishing of "undecided" study participants as a category may further account for our reduced number of takers compared to theirs. The three most frequently indicated intended uses of the lump sum were holiday/travelling, home improvement, and moving the funds into an easy access savings account. These findings are highly comparable to what has been described for the U.S., that smaller distributions are more likely spent and larger distributions more likely saved (for a review see Engelhardt 2002). In line with this literature, the respondents of the current study typically indicated several different uses for the lump sum. Planned uses for the lump sum payout differ by lump sum amount, with investment goals being, as expected, associated with larger sums.

We investigated for Research Question 2 whether and how older adults who plan to take a lump sum payout differed from those who do not or from those who are undecided about whether to take a lump sum payout. This investigation responds to political concerns about whether older adults may overspend their pension savings on short-term goals or big-ticket purchases. Examples cited in public policy discussions include home improvement, support of

family members, or the purchase of a car (Brancati and Franklin 2015, Chancellor of the Exchequer 2014). These expenses may leave people short of cash in the subsequent retirement phases. Withdrawal of large lump sums at one time can also have non-trivial tax implications that consumers need to know and correctly take into account in their financial planning (West 2012). Our results show that lump sum takers tended to have higher pension-freedom related knowledge, confirming earlier findings about the significant role of financial literacy for navigating the complex annuity-related financial decisions late in life (Banks, Crawford, and Tetlow 2015). This finding further suggests that lump sum takers gathered information about financial consequences of taking advantage of the Pension Freedom regulation rather than making this decision impulsively. Lump sum choice was also associated with lower expectancy for the number of years spent in retirement and lower odds of expected (or experienced) reduction in standard of living during retirement. It is possible, that respondents who indicated that they did not expect a reduction in living standards during retirement might have thought that precisely because they knew they would be taking a lump sum out in order to maintain their living standards. While lump sum choice was not associated with the number of pension pots, it was associated with higher household incomes, when comparing decided to undecided study participants. This finding points to the role of larger pension savings for considering a lump sum withdrawal. Taken together, these results provide insights into the "annuity puzzle" that motivated the current study. Lump sum choice appears to be positively related to pension knowledge, household income, age to retire, and marital status. These factors point to rational arguments concerning pension preferences. In particular, higher pension knowledge and higher household income can increase the interest in lump sum withdrawals because of a better understanding of its financial consequences, such as tax implications, and greater financial

flexibility. In contrast, higher expected retirement age and respondent's living in a partnership can increase the interest in annuities because of financial constraints and concerns about the partner's welfare after one's death, as had been shown in earlier annuity research (Dushi and Webb 2004).

The lack of influence of dispositional measures on lump sum choice is perhaps surprising. Behaviors that are related to complex asset management and controlling, such as planning and self-efficacy investigated in the current study, have been positively associated with behavior in the decumulation phase, particularly with a greater interest in annuity investment decisions (Brown 2009, Goedde-Menke, Lehmensiek-Starke, and Nolte 2014, Duxbury et al. 2013). However, dispositional measures in annuity decision-making were typically measured in hypothetical rather than real decision situations. It is a topic for future research to test which other dispositional measures are more closely related to lump sum choice, especially in real-life decision situations. Since the decisions were for real rather than hypothetical, future research should investigate whether the decisions might be family decisions rather than individual decisions, thus explaining why personal disposition measures did not have an effect in the current study.

Restricting the sample to those who plan to take a lump sum and provided information on the intended withdrawal amount, the results indicate that some factors that are not associated with lump sum take up are associated with the preferred lump sum amount. In particular, a higher lump sum withdrawal is associated with higher risk tolerance and stronger materialistic tendencies, pointing to the role of dispositional measures for decumulation decisions (De Nardi, French, and Jones 2009).

Undecided respondents, about 18.5% of the sample, differed more strongly from lump sum takers than they did from non-takers. Compared to those who had made up their minds, undecided respondents tended to have sought advice from the Pensions Advisory Service, one of the governmental advisory services, and were less likely retired. This finding indicates a role for publicly available advisory services for complex later life financial decisions, as suggested by the U.K. government (Her Majesty's Treasury 2014). It further shows that non-retired respondents have more time to seek information in order to make a choice they are comfortable with, as the decision to take a lump sum remains an option if they retain funds.

Despite the new regulation, close to one-third of study participants still planned to invest retirement savings into an annuity, as identified for Research Question 3. This choice was associated with higher retirement age, a larger number of pension assets, higher expected care costs, expectations (or experience) that living standards during retirement might decrease, and younger ages. That annuities appeal to healthier and wealthier individuals confirms earlier findings about annuity investing in the U.K. (Inkmann, Lopes, and Michaelides 2011). Our findings emphasize that younger study participants are still considering annuities despite the liberated investment environment. This finding seems to indicate that some individuals still consider annuitizing part of their pension wealth in this environment, as is typically recommended in decumulation literature (Lockwood 2012). In addition, our survey points to the important role of expectations about care costs (with social rather than health related costs being the bigger issues in the U.K.) and living standards for the annuity decision, adding to the long-standing discussion about its well-documented role in financing long-term care (e.g., Pauly 1990).

Investigating Research Question 4, about equally-sized groups of study participants commented positively and negatively about the changes to pension regulation. Positive comments addressed flexibility and choice for investing pension savings; negative comments highlighted self-control issues and information gaps.

Suggestions for future research and limitations

Future research should follow-up with individuals who were eligible to take advantage of the Pension Freedoms. Research should assess the financial well-being of lump sum takers over time and compare it to individuals who continued with the traditional approach of investing in annuities to answer the question of whether those that take lump sums end up in better or worse financial situations as a result. Another interesting follow-up to the current research would be with regard to the undecided respondents. The goal would be to examine when they eventually made a decision, which decision they made, why and what factors influenced them. Relatedly, it would be important to understand if the numbers of people accessing lump sums remains as high as it has been in the initial months following the pension changes.

It is worth noting that the current study is limited by the fact that older persons who participate in an online survey may not be representative for all older persons, due to limitations on access to the internet with age. It is possible that only those people who have in general a higher affinity to modern communication devices and who are in general better informed participate in such an online survey. In addition, the current study is limited by the use of cross-sectional data and that does not allow testing for causal relationships. Given the cross-sectional data and the omission of other variables, a different interpretation (reverse causality) could be

offered. For example, it is possible that older adults have a higher financial literacy because they want to take a cash lump sum. They are planning to make a decision and therefore search for information. Further, the data are based on self-reporting of subjects and limited to participants of a commercially-maintained consumer panel of residents of the United Kingdom. It is possible that an unwillingness to disclose financial information led to socially-desirable, biased responses to survey questions (Garbinsky, Klesse, and Aaker 2014).

Despite these limitations, the present research provided evidence of a new era of asset decumulation decisions in the United Kingdom. We document that these decisions are associated with knowledge of the legislation, retirement expectations, as well as older adults' age, gender, household size, and financial security. Such findings should help researchers as well as professionals working as financial advisors and counselors to design risk communication that reflect the gravest misconceptions and knowledge gaps with regard to financial planning strategies, along with how they might be addressed.

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Tables

Table 1: Means and means comparison of participant characteristics for the full sample and for the sample divided by whether or not a respondent plans to take a lump sum payout

Variable	N	All	Lump sum: yes (1)	Lump sum: no (2)	Lump sum: DK (3)
			Mean	Mean	Mean
Financial literacy					
Pension knowledge	487	2.29	2.66	2.02**	1.92**
Numeracy	479	0.26	0.28	0.24	0.25
Used pension advisory service	500	0.32	0.30	0.29	0.46*
Used Citizens Advice Bureau	500	0.06	0.06	0.07	0.06
Used Pension Wise	500	0.06	0.06	0.04	0.09
Retirement expectations					
Age to retire	494	61.43	61.89	60.41	62.31
Yrs. in retirement	492	22.57	22.09	23.62	21.72
Free of problems	493	53.59	53.42	52.77	55.63
Care costs	478	25.19	22.88	24.59	32.21*
Live to 85	496	56.90	56.62	58.07	55.32
Standard of living in retirement	494	3.22	3.11	3.23	3.50**
Dispositional measures					
Simple financial planner	480	0.48	0.53	0.45	0.45
Risk tolerance	468	1.46	1.51	1.43	1.40
Materialism	498	2.82	2.92	2.71	2.76
Future orientation	497	3.79	3.84	3.78	3.72
Financial self-efficacy	487	2.33	2.29	2.28	2.53*
Socio-Demographics					
Age	499	64.39	63.77	65.63**	63.53
Male	500	0.54	0.60	0.50	0.48
Married or living w/partner	500	0.79	0.83	0.75	0.81
Household size	497	2.06	2.06	2.06	2.04
Retired	499	0.48	0.46	0.60*	0.32
Post-secondary degree	496	0.54	0.56	0.52	0.57
Number pension pots	500	2.40	2.44	2.37	2.39
Household income	427	£38,242	£38,287	£39,020	£36,546
Household debt	464	£4,327	£6,003	£2,916	£2,920
Household liquid savings	428	£134,354	£123,030	£155,154	£122,164

Note: Significantly different from lump sum takers at *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$

Table 2: Planned uses of lump sum, sorted by "average lump sum" (Column 1); N=218 respondents who planned to take a lump sum and provided the intended withdrawal amount

Planned uses of lump sum	(1) Average lump sum	(2) SD	(3) Median	(4) Mean frequency of uses	(5) % sample (N)
Renovate or improve your home	£28,912	£33,046	£20,000	3.07	24.8% (55)
Keep it in an easily accessible savings account	£32,345	£34,022	£25,000	2.84	24.3% (56)
Repay debt	£32,734	£26,495	£25,000	2.69	13.3% (29)
Go on holiday, travel	£34,311	£35,346	£25,000	3.34	40.4% (89)
Put into a savings account	£36,499	£34,059	£25,000	2.92	26.1% (59)
Purchase a car	£36,879	£34,358	£25,000	3.54	17.9% (41)
Enjoy life while you can	£39,303	£39,642	£25,000	3.50	23.4% (52)
Provide financial support to children	£43,348	£44,789	£25,000	3.78	13.8% (32)
Provide financial support to grandchildren	£43,592	£41,039	£25,000	4.36	6.4 % (14)
Other	£53,500	£58,975	£25,000	1.00	4.6% (10)
Invest in financial markets, such as in stocks or bonds	£55,184	£56,446	£45,000	2.81	20.6% (47)
Purchase a home for yourself	£63,030	£45,030	£65,000	4.17	2.3% (6)
Purchase a home for buy-to-let	£83,000	£23,874	£100,000	3.17	2.3% (6)
Spend it all right away	£777,500	--	--	1.00	0.5% (1)

Table 3: Parameter estimates and odds ratios from multinomial logistic regression of lump sum take-up (yes/no/don't know) on explanatory variables; missing values replaced with mean value; base category=don't know (N=93)

Variable	**Lump sum: yes**		**Lump sum: no**	
	(1)	(2)	(3)	(4)
	B (S.E.)	Exp(B)	B (S.E.)	Exp(B)
(Intercept)	5.490* (2.708)		0.719 (2.747)	
Financial literacy				
Pension knowledge	0.356** (0.103)	1.428	0.090 (0.106)	1.094
Numeracy	-0.148 (0.317)	0.863	-0.073 (0.331)	0.929
Used Pension Wise	-0.254 (0.542)	0.776	-0.431 (0.598)	0.650
Used Pension Advisory Service	-0.560+ (0.295)	0.571	-0.586+ (0.307)	0.557
Used Citizens Advice Bureau	0.829 (0.608)	2.291	0.819 (0.609)	2.269
Retirement expectations				
Age to retire	-0.011 (0.015)	0.989	-0.014 (0.015)	0.986
Yrs. in retirement	-0.019 (0.025)	0.981	0.013 (0.025)	1.013
Free of problems	-0.012 (0.007)	0.988	-0.011 (0.007)	0.989
Care costs	-0.006 (0.005)	0.994	-0.007 (0.005)	0.993
Live to 85	0.006 (0.007)	1.006	0.005 (0.007)	1.005
Standard of living in retirement	-0.458* (0.195)	0.632	-0.112 (0.204)	0.894
Dispositional measures				
Simple financial planner	0.186 (0.307)	1.205	0.171 (0.320)	1.186
Risk tolerance	-0.027 (0.259)	0.974	-0.088 (0.273)	0.915
Materialism	0.093 (0.122)	1.097	-0.083 (0.128)	0.920
Future orientation	-0.010 (0.196)	0.99	0.026 (0.200)	1.026
Financial self-efficacy	-0.177 (0.242)	0.838	-0.209 (0.249)	0.811
Demographics				
Age	-0.049 (0.033)	0.952	0.019 (0.034)	1.019
Male	0.260 (0.291)	1.297	0.147 (0.301)	1.159
Married or living w/partner	-0.054 (0.420)	0.948	-0.652 (0.416)	0.521
Household size	0.012 (0.222)	1.012	0.315 (0.222)	1.371
Retired	0.733+ (0.400)	2.081	0.949* (0.408)	2.584
Post-secondary degree	-0.304 (0.281)	0.738	-0.460 (0.289)	0.631
Number pension pots	-0.010 (0.158)	0.99	-0.071 (0.164)	0.931
Household income, natural log	0.177* (0.075)	1.194	0.126 (0.077)	1.134
Household debt, natural log	-0.008 (0.035)	0.992	-0.055 (0.038)	0.946
Household liquid savings, natural log	-0.078 (0.053)	0.925	-0.049 (0.057)	0.952
Df, Likelihood ratio Chi-square	52, 103.717***			
-2Log likelihood	934.467			
Cox Snell R^2 / Nagelkerke R^2	0.187/0.214			
N	229		178	

Note: Significance levels include *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$ + $p < 0.10$

Table 4: Parameter estimates and odds ratios from binary logistic regression of lump sum take-up and annuity investments on explanatory variables; missing values replaced with mean value

Variable	Lump sum take-up (Yes/No)		Lump sum amount	Annuity investment (Yes/No)	
	(1) B (S.E.)	(2) Exp(B)	(3) Coef B (S.E.)	(4) B (S.E.)	(5) Exp(B)
(Constant)	4.166+ (2.266)	64.470	10.530*** (1.557)	-1.692 (2.363)	0.184
Planned lump sum (yes=1, no, DK=0)	--	--	--	-0.018 (0.227)	0.982
Financial literacy					
Pension knowledge	0.276*** (0.082)	1.317	0.058 (0.058)	0.047 (0.085)	1.048
Numeracy	0.004 (0.261)	1.004	0.153 (0.172)	0.367 (0.251)	1.444
Used Pension Wise	0.037 (0.538)	1.038	-0.429 (0.338)	0.321 (0.454)	1.379
Used Pension Advisory Service	0.033 (0.262)	1.034	-0.051 (0.171)	0.032 (0.250)	1.032
Used Citizens Advice Bureau	0.041 (0.489)	1.042	0.195 (0.334)	-0.061 (0.490)	0.941
Retirement expectations					
Age to retire	0.008 (0.013)	1.008	0.001 (0.009)	0.053** (0.020)	1.054
Yrs. in retirement	-0.037+ (0.020)	0.964	-0.002 (0.015)	0.028 (0.021)	1.028
Free of problems	0.000 (0.006)	1.000	-0.002 (0.004)	-0.007 (0.006)	0.993
Care costs	0.001 (0.004)	1.001	0.000 (0.003)	0.008* (0.004)	1.008
Live to 85	0.001 (0.006)	1.001	0.003 (0.004)	0.010+ (0.006)	1.010
Standard of living in retirement	-0.320* (0.160)	0.726	0.262* (0.110)	-0.236 (0.249)	0.790
Dispositional measures					
Simple financial planner	0.052 (0.255)	1.054	0.024 (0.168)	-0.219 (0.210)	0.803
Risk tolerance	0.049 (0.202)	1.050	0.270* (0.131)	-0.179+ (0.101)	0.836
Materialism	0.168 (0.102)	1.183	0.126+ (0.066)	-0.089 (0.161)	0.915
Future orientation	-0.052 (0.160)	0.949	-0.090 (0.112)	-0.128 (0.196)	0.879
Financial self-efficacy	0.019 (0.197)	1.019	-0.056 (0.130)	0.179 (0.152)	1.196
Demographics					
Age	-0.067* (0.027)	0.936	-0.030 (0.020)	0.561+ (0.338)	1.752
Male	0.102 (0.238)	1.107	0.374* (0.171)	-0.141 (0.228)	0.868
Married or living w/partner	0.499 (0.330)	1.647	0.073 (0.242)	0.727*** (0.144)	2.068
Household size	-0.297+ (0.160)	0.743	-0.196 (0.133)	0.120 (0.075)	1.128
Retired	-0.252 (0.321)	0.777	0.328 (0.216)	-0.019 (0.029)	0.981
Post-secondary degree	0.195 (0.231)	1.215	0.061 (0.153)	-0.051 (0.042)	0.950
Number pension pots	0.051 (0.137)	1.052	-0.108 (0.093)	0.047 (0.085)	1.048
Household income (log)	0.090 (0.066)	1.094	-0.025 (0.049)	0.367 (0.251)	1.444
Household debt (log)	0.050+ (0.029)	1.051	-0.014 (0.019)	0.321 (0.454)	1.379
Household liquid savings (log)	-0.031 (0.042)	0.969	0.048+ (0.027)	0.032 (0.250)	1.032
Df, Likelihood ratio Chi-square	26, 56.585***		--	27, 84.572***	
-2Log likelihood	501.229		--	521.124	
Cox Snell R^2 / Nagelkerke R^2	0.130 / 0.174		--	0.156 / 0.222	
F test			1.670*		
R^2/Adjusted R^2			0.185/0.074		
N	407		218	500	

Note: Significance levels include *** p < 0.001, ** p < 0.01, * p < 0.05 + p < 0.10

Table 5: Example of general comments about the Pension Freedom regulation

Examples of negative comments:
"Many people will make poor choices and suffer in the future;"
"I think many people will squander their pension thus shifting the cost of their retirement to others;"
"Most people are not knowledgeable enough to organize this for themselves, so will end up paying for professional advice or losing money;"
"It is a worry to me as a tax-payer that a certain percentage of the qualifying population will be feckless and irresponsible, and that they will have to be bailed out with various benefits;" and
"My experience is that most people have insufficient knowledge to make a rational decision on pensions. Even if given the info they are unlikely to understand it or be prepared to find out to enable understanding. The decision will be via advice whether pension provider or IFA - the changes mostly only gives more opportunities for good & bad advice plus fraud."
Examples of comments about being confused:
"I do not understand the changes;"
"The tax implications are not known or understood;"
"They [the changes] are not clear enough and include too many ifs and buts;"
"Information through media was quite misleading;"
"Not enough free advice available;" and
"The public needs a simple quick reference guide that is accurate and unbiased."
Example of positive comments:
"I like the idea of people being able to choose when/how they access their pension fund;"
"I am pleased not to be forced to take an annuity;"
"Very pleased we now have control over our own pensions and are being treated as intelligent people who can decide what's best for us;"
"Pension changes are very welcome; flexibility is key for planning retirement;"
"They are very good and allow me to make financial decisions suitable for myself;" and
"I think they are liberating and wish they had applied when my husband and I retired some years ago."
Example of positive comments including concerns about possible problems:
"About time people were trusted to look after their own money, though some people will take the cash and spend/waste it as quick as they can;"
"Flexibility and improved personal choice is commendable; concern about potential for scams and other fraudulent activity;"
"I appreciate being able to use my money as I wish rather than being forced to put it into an annuity where the interest rate received is out of my control. However, finding the best place to invest it is not easy;" and
"I think it's a good idea that people can handle their pension as they please, but good advice is essential."

Appendix

Table 1: Survey Screening Procedure

Screener questions restricted participation to individuals who have an occupational pension from a current or previous employer and/or a personal pension (self-employed, stakeholder, standard, self-invested personal pensions), to individuals aged 55 to 75, and aimed for balanced gender distribution. The screener question about pension schemes looked to identify respondents who would be able to take advantage of the pension freedoms, as those with a state pension only would not be able to do so. The age requirement was selected because Pension Freedoms are available for those aged 55 and older. The upper limit of 75 years of age was selected because it represents the age at which older adults were required to access their pension in the U.K. and purchase an annuity until recently (Spivack 2015). We controlled for obtaining 100 respondents in the two border age groups 55-59 and 70-75 and 150 respondents in the core age groups 60-64 and 65 to 69. Additional controls checked for the gender of respondents by implementing a 50-50 split of male and female respondents in each age group. This was done to make sure both genders are equally represented in each age group.

Table 2: Variable Descriptions

Variable Name	Description
Dependent variables	
Lump sum payment	Coded 0-1, based on response to question, "From April 2015, most people aged at least 55 will have total freedom over how they take an income or lump sum from their pension. You can choose to take the whole fund as cash in one go, take smaller lump sums as and when you like, and/or take a regular income. Would you like to take a lump sum from any of your pension pot(s)?" Response options: yes, no, don't know, prefer not to say.
Lump sum amount	Continuous measure, based on response to question, "What amount would you like to take as a lump sum? If you don't know the exact amount, then please give your best guess." Responses were typed into a text box.
Annuity investment	Coded 0-1, based on response to question, "Where do you think is the best location to park your retirement savings? Please select your top three choices by placing the number 1, 2, or 3 next to each of your top three choices." 10 investment options were provided: cash, current account, savings account, annuity, stocks or bonds, real estate, precious metals, pension account with your pension company for income drawdown, something else, and none of the above.
Financial literacy measures	
Pension knowledge	Summative score ranging from 0 (no correct response) to 5 (all responses are correct); missing answers (2.6%) counted as incorrect. Questions derived from newspaper articles describing changes to pension regulations: (1) "In line with the new pension rules, what percentage of your pension pot can you now take as a tax-free lump sum?" (2) "If you take out cash from your pension in stages, what percentage of this cash will be tax-free?" (3) "You can still continue to save into your pension and benefit from tax relief, even after you have started to withdraw cash. Is this statement true or false?" (4) "You can no longer purchase an annuity with your pension savings from April 2015. Is this statement true or false?" and (5) If you take a lump sum, your creditors can have access to the funds for debt repayment. Is this statement true or false?" Response options for (1), (2): 100%, 50%, 25%, 15%; (3) to (5): true and false; all items "don't know" and "prefer not to say" response options.
Numeracy	Out of 1,000 people in a small town 500 are members of a choir. Out of these 500 members in the choir 100 are men. Out of the 500 inhabitants that are not in the choir 300 are men. What is the probability that a randomly selected man is a member of the choir? Please give your answer as a percentage below (Berlin Numeracy Test Single-Item Format (Cokely et al. 2012)).
Pension Advisory Service Citizen's Advice Bureau Pension Wise	Who would you ask for advice on retirement savings? Please tick all that apply.
Retirement expectations	
Age to retire Yrs. in retirement	"At what age did you (or do you) plan to retire?" "How many years do you expect to spend in retirement?" Respondents entered a number into a text box.
Free of problems Care costs Live to 85	"Assuming that you are still living at 85, what are the chances that you will be free of serious problems in thinking, reasoning, or memory that would interfere with your ability to manage your own affairs?" "What do you think are the chances that social care costs (e.g. help with domestic tasks, needing to live in a care home) will use up all of your savings in the next five years?" "What do you think is the percentage chance that you will live to be 85 years or more?" Slider from 0 to 40 years/0% to 100%, marking five-year/percent-chance intervals; sliders anchored at the left-hand end, at zero.

Standard of living	Since you retired, how have your living standards changed, if at all? (Non-retired participants) When you decide to retire, how do you expect your living standards to change, if at all? (retired participants); response options 1 (increase(d) a lot) to 5 (decline(d) a lot), merged the responses of retired and non-retired respondents into one variable.
Dispositional measures	
Simple financial planner	"Have you ever tried to figure out how much your household would need to save for retirement?" (non-retired respondents; U.S. Health and Retirement Study (Lusardi and Mitchell 2008)), "Have you ever tried to figure out how much your household would need to save for old-age expenses, such as long-term care or home alterations?" (retired respondents); response options: yes, no, don't know, prefer not to say.
Risk tolerance	When I think about investing money, I would describe myself as an investor who would be willing to take on only a minimal amount of risk of losing money (coded as 1), some risk of losing money to improve the chance of making money (coded as 2), a higher risk of losing money to get the chance to make a lot of money (coded as 3) (Duxbury et al. 2013, Duxbury et al. 2005).
Materialism	I like a lot of luxury in my life; response options: 1 (very unlike me) to 5 (very like me) (Materialistic Values Scale (Richins 2004)).
Future orientation	Summative score ranging from 1 (very unlike me) to 5 (very like me), Cronbach's alpha=0.69, based on three items: "I think about how things can change in the future, and try to influence those things in my everyday life," "I am only concerned about the present, because I trust that things will work themselves out in the future (reverse-coded)," "With everything I do, I am only concerned about the immediate consequences; say a period of a couple of days or weeks (reverse)." (Consideration of future consequences scale (Strathman et al. 1994)).
Financial self-efficacy	Summative score ranging from 1 to 5; Cronbach's alpha=0.722. Example items: "It is hard to stick to my spending plan when unexpected expenses arise." "When unexpected expenses occur I usually have to use credit." Response options: 1 (very unlike me) to 5 (very like me) (Financial self-efficacy scale (Lown 2011)).
Demographic measures	
Age, household size, number pension pots	Continuous measures.
Male	Coded 0-1, where code is 1 if respondent is male.
Married or living w/partner	Coded 0-1, where married or living with partner was coded as 1, else was coded as 0.
Retired	Coded 0-1, where retired was coded as 1, else was coded as 0.
Post-secondary degree	Coded 0-1, where post-secondary degree was coded as 1, no post-secondary degree was coded as 0.
Household income, liquid savings, and debt	Continuous measures, open-ended question format with fill-in-the-blanks text box.
Qualitative measures	
Savings shortfall	"What will you do if you run out of pension savings before you die?" Responses categorized using Excel command that searched for specific, pre-defined words in the statements.
General sentiment	"At the end of this survey we would like to ask whether you have any comments about the changes to the pension rules that came into effect in the UK in April 2015. We would appreciate it if you left a comment in the space below." Coding into positive, neutral and negative comments manually by reading the comments.

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