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Support for pension reforms: What is the role of financial literacy and pension knowledge?

Noemi Oggero, Francesco Figari, Elsa Fornero, Mariacristina Rossi

Abstract

Despite the relevance of the issue of pension system sustainability in most advanced economies, the factors associated with the opposition to pension reforms are still under-studied. In this paper, we investigate the correlation between financial, pension and institutional knowledge and support for pension reforms. Using an ad hoc module of the SHARE data for Italy, we find that financially literate and pension knowledgeable individuals are more willing to accept pension reforms. In particular, individuals with a basic level of pension knowledge recognize that population ageing, low economic growth, and low contributions by the young make the public pension system hardly sustainable.

Keywords: Pension reforms, Retirement, Pension knowledge, Financial literacy

JEL Classification: G53, H55, J26

Support for pension reforms: What is the role of financial literacy and pension knowledge?

1. Introduction

To maintain the sustainability of social security systems, many developed countries underwent radical reforms of their pension schemes in the last decades (OECD, 2021). Although these reforms have generally been successful in recovering the systems' financial sustainability, they have typically met a strong opposition by large groups of the population (see, e.g., Boeri, Börsch-Supan, and Tabellini, 2001; O'Donnell and Tinios, 2003; Boeri and Tabellini, 2012). Changes in the pension legislation aiming at reducing the "generosity" of welfare provisions (in terms of excess benefits with respect to contributions) may indeed disrupt households' life plans and generate a wave of popular discontent, if not properly understood in terms of an intergenerational financial rebalancing.

Despite the massive presence of pension issues in public debates and the relevance of the financial sustainability of public Pay-as-you-go systems in most countries, the drivers of social opposition to these reforms are still under-investigated. Thus, exploring the reasons behind citizens' opinions about the pension system and the feasibility of pension reforms is crucial to the policy debate in advanced economies. In this paper, we explore the possible underlying factors behind the popular hostility to pension reforms. We investigate the relative importance of different channels in explaining individuals' (lack of) support for pension reforms and hence to rebalance the intergenerational economic relationship in favor of the young. More specifically, we analyze whether and how the consensus towards the fundamentals of pension reforms is shaped by general financial knowledge, knowledge about the functioning of the pension system, and beliefs that individuals have about population ageing and public expenditure for pensions.

The complexity of our research question required a novel collection of data. In fact, in this paper we use an ad hoc module that we devised and fielded in the last wave of the Survey of Health, Ageing, and Retirement in Europe (SHARE), a dataset that is representative of people aged 50 and

over in several European countries. To answer our research question, we developed new questions, specifically designed to investigate individuals' perceptions on the scope and basic motivations of pension reforms, which generally entail a postponement of the retirement age. Additional questions on financial literacy, pension and institutional knowledge were also asked.

To explore the factors related to individuals' opposition or support for pension reforms, we use data from Italy, a country that has undergone major reforms of the pension system in the last decades (see, e.g., Bottazzi, Jappelli, and Padula, 2006; Baldini, Mazzaferro, and Onofri, 2019; Fornero, 2020; Oggero, 2023). The analysis focuses on individuals either retired or close to the retirement age in order to concentrate on the age group that usually oppose more strongly to pension reforms because they are more sensitive to the topic. While this allows us to study a more homogeneous group of individuals, the large sample size also permits to explore the presence of possible heterogeneous effects among subgroups of the older population.

Our contribution to the literature is twofold. First, we collect new data, now publicly available for research purposes, on individuals' opposition to or acceptance of pension reforms, a crucial topic for both academic research and policy-making. Second, and importantly, we show the role of financial literacy and pension knowledge on the acceptance of pension reforms.

The rest of the paper is organized as follows. Section 2 discusses the background literature, Section 3 introduces the data, and Section 4 presents the main estimation results. Section 5 concludes the paper.

2. Background Literature

Citizens mandate political parties and governments to implement their general preferences in democratic elections (Armingeon and Bürgisser, 2020). In the context of pension reforms, the formation of individual preferences over the design and subsequent reforms of social security – and the possible implications in terms of electoral votes – has to be considered in an intergenerational

perspective (Conde-Ruiza and Galasso, 2004). In fact, a Pay-as-you-go system is an implicit intergenerational contract: retirees' pensions are financed by the contributions paid by current workers, who participate in the system under the assumption that future generations will finance their own pensions. Pension reforms generally aim at reducing the financial burden on young and future generations by reducing the generosity of the pension formula and increasing the average retirement age. However, this intergenerational link might be difficult to be perceived by the public opinion. If individuals are not aware of the intergenerational bond implicit in a social security system, they may act as if their preferences over more generous rules will not imply costs for their offspring and increased debt on future generations.

Considerations on electoral costs and gains of reforming are inevitable for broad policy measures such as changes in retirement legislation (Brugiavini and Galasso, 2004; Galasso, 2008; Galasso, 2014; Fornero, 2017). Pension reforms are often unpopular, but pension information and knowledge can help citizens to understand the rationale behind reforms and oppose less when changes in legislation, although lowering the utility of the median voter, have a positive effect on future generations' welfare (Hollanders and Vis, 2013). For instance, in the Netherlands, public discussions and reports on the budgetary costs of ageing published by independent agencies led the public opinion to gradually become more favorable toward later retirement (Parlevliet, 2017). A relatively recent branch of economic literature has studied the main determinants of opposition to reforms of the pension systems. Using Italian and European survey data, Boeri, Börsch-Supan, and Tabellini (2001, 2002) and Boeri and Tabellini (2012) found that better information about the functioning of the pension system itself might result in higher willingness to accept reforms that reduce its generosity (for current generations). The relevance of both transparent information and basic financial knowledge is also highlighted by Holzmann and Jørgensen (2001), Fornero, Oggero, and Puglisi (2019), and Debets et al. (2022), and, from a macroeconomic perspective, Fornero and Lo Prete (2019) show that financial literacy significantly reduces the political costs of pension reforms. Several

studies have also found a strong association between financial literacy and retirement readiness (van Rooij et al., 2012; Lusardi, Michaud, and Mitchell, 2017; Laurin, Messacar, and Michaud, 2021). We build on this literature and provide new evidence on the role of knowledge on the support for pension reforms in a context where changes to the pension system have been daily commented in public debates contributing to define a setting where the role of information, financial literacy and pension knowledge was pivotal.

3. The Data

The data used in our empirical analysis are drawn from the Wave 8 of SHARE, a dataset that is representative of people aged 50 and over in several countries.¹ For the survey conducted in Italy, we designed a special ad hoc module to investigate individuals' support for pension reforms. The data collection process of Wave 8 started in October 2019 and the fieldwork activities were interrupted in March 2020 due to the COVID-19 outbreak. However, at that time, the great majority of all expected longitudinal interviews had been conducted.² The advantage of using the SHARE data is twofold. First, they focus on the age group that we want to explore, i.e., older individuals. Hence, these data ensure a particularly large sample size, essential to explore the presence of heterogeneous effects over subgroups of the investigated population. Second, the SHARE data contain important individual characteristics that are fundamental to control for in our analyses, in order to reduce at most the risk of omitted variable bias when estimating our relations of interest.

Our goal in devising the special module was to capture individuals' support for a policy aimed at improving the financial sustainability of the pension system, i.e., reducing the cost of the demographic transition imposed on the young and future generations. To make the questions as comprehensible as possible and to explore preferences over measures with tangible effects on

¹ For more details on the SHARE dataset, see Börsch-Supan et al. (2013) and Börsch-Supan (2021).

² By March 2020, about 70% of all expected interviews across countries had been conducted. Information retrieved from the most recent SHARE Release Guide available at: https://share-eric.eu/fileadmin/user_upload/Release_Guides/SHARE_release_guide_8-0-0.pdf

individual behavior and wellbeing, we asked respondents to express their agreement on several statements. In particular, we formulated five questions to capture the consensus towards the fundamentals of pension reforms. The precise wording is as follows:

On a scale from 1 to 5, where 1 means “I strongly disagree” and 5 means “I strongly agree,” how strongly do you agree or disagree with the following statements?

- *To keep the public pension system sustainable, it is necessary to increase the retirement age.*
- *If life expectancy increases, retirement age needs to be increased accordingly.*
- *Low economic growth and low contributions paid by young people (due to reduced working hours and lower wages) threaten the sustainability of the public pension system.*
- *Population ageing (increasing number of people at old ages and falling number of births) makes the public pension system unsustainable. That is, the expenses of the pension system are higher than the revenues.*
- *A flexible retirement age should be allowed, but those who decide to retire at a younger age should get a lower pension compared to someone with the same contribution profile.*

The module also aimed at capturing the level of general financial literacy and more specific basic pension knowledge as well as beliefs that individuals have about population ageing and the public expenditure for pensions. Hence, the module included a question from the “Big Three” financial literacy questions that allows us to assess respondents’ understanding of a basic concept like risk diversification, which is usually the least known among the Big Three (Lusardi and Mitchell, 2014). To elicit the more specific pension knowledge, we asked respondents about the main source of financing of the current Italian pension system, i.e., we tested whether they knew that current workers’ contributions are used to pay for current retirees’ pension benefits, according to the Pay-as-you-go functioning (although, in the Italian case, there is a structural deficit that the government has to fill with resources coming from general taxation or new debt). To measure individuals’ knowledge on population ageing, we asked respondents to report the share of people aged 65+ on the overall population and whether they thought the poverty rate among the elderly was higher or lower than among the young. The module also included a question to capture individuals’ opinion on the share

of public pension expenditure over the total public expenditure. Finally, respondents were asked whether their retirement had been delayed as a consequence of the last major pension reform implemented in Italy in 2011.

4. Empirical Analysis

Our sample is made up of 1,393 SHARE respondents that gave an answer on the 1-to-5 scale to all the questions capturing the support for pension reforms. For these observations, we retrieved several socio-demographics such as education, marital status, income, and wealth.

The top panel of Table 1 summarizes the socio-demographic characteristics of our sample, obtained by combining the ad hoc module with the SHARE core data. All these variables will be used as controls in our empirical analysis, including dummies indicating income quartiles. The bottom panel of Table 1 provides an overview of individuals' knowledge and beliefs (the Appendix reports the exact wording of the questions). More than one in two respondents (53%) answered correctly to the basic question on risk diversification, hence we define them as financially literate. The percentage of those who have a basic level of pension knowledge is slightly higher, with 56% of respondents knowing the functioning of a Pay-as-you-go pension system. More than one third (35%) of the SHARE respondents in our sample correctly reported that the risk of being poor is lower among the elderly. When asked the percentage of the Italian population over 65, 14% of respondents gave the correct answer, i.e., between 21% and 30%, while 74% of individuals in our sample reported it was even higher than 30%. Finally, only 7% answered correctly to the question about government spending on pensions, reporting that the percentage of public expenditure that goes into pension payments is higher than 30%. Also, the SHARE dataset provides a numeracy index that reflects

respondent's ability to apply a minimal level of mathematical literacy, and the average score is 3.22 over 5.³

Table 1 here

To investigate the determinants of the elderly's support for pension reforms, we conduct a multivariate analysis for each of the five outcomes of interest, estimating ordered probit models. The dependent variables assume values from 1 to 5, reported in each column, according to the answer given to the question: "How strongly do you agree or disagree with the following statement?" where 1 means "I strongly disagree" and 5 means "I strongly agree."

The regression models include socio-demographic controls, basic financial literacy and pension knowledge, the actual knowledge with respect to the size and conditions of older people, and the weight of pension spending over the total public expenditure. Also, we control for whether an individual has been affected by the 2011 pension reform in Italy. We include survey month fixed effects, too.

Table 2 focuses on the extent to which respondents agreed to the general statement that it is necessary to increase the retirement age to keep the public pension system sustainable. While socio-demographic characteristics like gender, employment status, and asset-to-income ratio are not consistently linked to this outcome, age and educational level are positively related with support for pension reforms. Indeed, individuals older than 70 are 11.3 percentage points (or around 26%) less likely to strongly disagree with age postponement, probably because they are less likely to be directly affected by pension reforms. Also, individuals with a degree are 8.9 percentage points (or around 21%) less likely to strongly disagree. Looking at knowledge, individuals who have a basic level of financial literacy are more likely to agree with an increase in retirement age to guarantee the sustainability of pension systems. In particular, the estimates reported in Table 2 show that financially

³ The numeracy index is based on the answers to four questions aimed at understanding whether respondents know how to compute a percentage, the price of a good offered at a 50% discount, the price of a second-hand car that sells at two-thirds of its cost when new, and interest rate in a saving account. See Jappelli and Padula (2015) for details on the construction of the index.

literate individuals are 10.7 percentage points (or around 25%) less likely to strongly disagree on the necessity to raise the retirement age, and 6.9 percentage points more likely to agree or strongly agree that it is necessary. We note that financial literacy is statistically significant even after controlling for the level of education, meaning that this specific knowledge has an effect above and beyond educational attainment. A possible explanation is that people who are financially literate have a better knowledge of the working of a (public) budget. On the other hand, pension knowledge is not statistically significant. In fact, there is no reference to the working of the pension system in such a statement. We also note that numeracy is not associated with support for raising the retirement age. While financial literacy is positively correlated with numeracy, they do measure different types of knowledge. Indeed, financial knowledge may reflect skills that can be measured in mathematics assessments – such as the numeracy questions asked to the SHARE respondents – but a significant part of this knowledge reflects factors that are uniquely captured by a financial literacy assessment (OECD, 2014).

Table 2 here

The results reported in Table 2 also show that respondents knowing that the risk of being poor is lower among the elderly are 4.7 percentage points more likely to agree or strongly agree with retirement age postponement, and 7.3 percentage points (or around 17%) less likely to strongly disagree. Also, those correctly reporting that the elderly are 21-30% of the population are 4.9 percentage points more likely to agree/strongly agree with retirement age postponement than those who think the percentage is lower, while we find no evidence that being directly affected by implemented reforms plays a role. Table 3 shows the factors associated with the consensus to an increase in retirement age if life expectancy rises. Similarly to what observed in Table 2, individuals with a basic level of financial knowledge are more likely to accept the link between retirement age and life expectancy, answering 3, 4 and 5 on the 1-to-5 scale. Also, those who know the size and

conditions of older people agree with this critical feature of a pension reform in the face of a rapidly ageing population.

Table 3 here

When respondents are asked about their degree of agreement with more technical sentences on the sustainability of the public pension system, we find that more specific pension knowledge plays a key role. Indeed, results presented in Table 4 show that pension knowledge explains why some people agree that low economic growth and lower contributions paid by young people (due to reduced working hours and lower wages) threaten the sustainability of the public pension system. Once again, those who know that the elderly represent a sizeable share of the population, recognize that low economic growth and low contributions are a problem for the sustainability of the pension system.

Table 4 here

Pension knowledge is proven to be crucial when another potential threat to the sustainability of pension systems is considered, namely population ageing (Table 5). In fact, individuals with some knowledge on pensions are more likely to agree (by answering 4 and 5 on the 1-to-5 scale) that population ageing creates a strain on the public pension system. Also in this case, those who know the percentage of the elderly with respect to the overall population (or overestimate it) show greater consensus towards this fundamental of pension reforms.

Table 5 here

Furthermore, pension knowledge affects the perception that a flexible retirement age should be allowed, and that those who decide to retire at a younger age should get a lower pension compared to someone with the same contribution profile retiring at an older age (Table 6). Instead, throughout the regression models, we find no evidence that being directly affected by the 2011 reform affects individuals' preferences.

Table 6 here

5. Conclusion and Discussion

Many institutions of the welfare state are Pay-as-you-go and base their functioning on an implicit deal among generations. Generally, however, their financing is through taxes (or debt, corresponding to future taxes) and not through direct contributions on labor income. While the general ageing process and the structural reduction of economic growth threaten the pension system's stability, short term myopic behavior of political parties and governments may lessen the determination to pursue full and transparent information on the intergenerational nature of a Pay-as-you-go system as well as on the structural changes that weaken its financial equilibrium (Fornero and Lo Prete, 2019). In many countries, this has contributed to a slow implementation and reluctant reforms.

The evidence presented in this paper contributes to the debate on the redesign of the social security (and possibly to other welfare programs) by focusing on how much and how correctly people understand the basic elements of the programs and their reforms. Our empirical analysis shows that financially literate and pension knowledgeable individuals are more willing to accept pension reforms. In particular, we found that individuals knowing the functioning of a Pay-as-you-go system recognize that population ageing, low economic growth and low contributions by the young make the public pension system hardly sustainable. Also, those who know the size and conditions of older people are more likely to express their consensus towards the fundamentals of pension reforms.

These findings suggest that basic financial literacy and specific basic pension knowledge may induce less opposition to pension reforms (particularly among the elderly), with important consequences not only for the adequacy of provisions for old age, but also in terms of a country's social cohesion. It should be the role of information, both at the institutional and at the media levels, to provide full and correct knowledge, possibly in simple, understandable terms. In particular, transparent information by the public pension institute could increase citizens' awareness.

Finally, Italy was – even before the pandemic – a country with a high public debt and a heavy social expenditure for pensions and thus older generations, which meant higher exposure to financial risks and prominence of pension reform in the recommendations of international institutions and evaluation agencies. Other European countries have been less under pressure but the demographic trends are similar and consequently also their necessity of a pension reform (Ebbinghaus and Hassel, 2000; Featherstone, 2005; Ebbinghaus, 2019; Hassel, Naczyk, and Wiß, 2019). Therefore, the main implications of our study, namely that pension reforms need to be explained and understood by the population in order to be socially accepted, are relevant for other developed countries.

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Table 1. Descriptive statistics.**A. Socio-demographic characteristics.**

	<i>Mean</i>	<i>Min</i>	<i>Max</i>
Female	0.53	0	1
Age 60-65	0.22	0	1
Age 66-70	0.17	0	1
Age 70+	0.45	0	1
Lower secondary education	0.30	0	1
Upper secondary education	0.26	0	1
Tertiary education	0.09	0	1
Single	0.04	0	1
Divorced	0.03	0	1
Widowed	0.10	0	1
Having children	0.90	0	1
Asset-to-income ratio	154.99	-8,000	68,000
Retired	0.55	0	1
Affected by the 2011 reform	0.11	0	1

B. Individuals' knowledge.

	<i>Mean</i>	<i>Min</i>	<i>Max</i>
Financial literacy	0.53	0	1
Pension knowledge	0.56	0	1
“The elderly are less poor”	0.35	0	1
Share elderly 21-30% (correct answer)	0.14	0	1
Share elderly +30%	0.74	0	1
Pension expenditure +30% (correct answer)	0.07	0	1
Numeracy	3.22	1	5

Note: N=1,393.

Table 2. Multivariate analysis of support for pension reforms: raising retirement age.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Financial literacy	-0.107*** (0.023)	0.005** (0.002)	0.034*** (0.008)	0.047*** (0.010)	0.022*** (0.006)
Pension knowledge	0.036 (0.023)	-0.002 (0.001)	-0.011 (0.007)	-0.016 (0.010)	-0.007 (0.005)
Female	0.032 (0.025)	-0.001 (0.001)	-0.010 (0.008)	-0.014 (0.011)	-0.007 (0.005)
Age 60-65	-0.070* (0.038)	0.003 (0.002)	0.022* (0.012)	0.030* (0.017)	0.014* (0.008)
Age 66-70	-0.088* (0.045)	0.004 (0.002)	0.028* (0.014)	0.038* (0.020)	0.018* (0.010)
Age 70+	-0.113** (0.044)	0.005* (0.003)	0.036** (0.014)	0.049** (0.019)	0.023** (0.010)
Lower secondary education	0.027 (0.030)	-0.001 (0.001)	-0.009 (0.009)	-0.012 (0.013)	-0.006 (0.006)
Upper secondary education	0.011 (0.032)	-0.000 (0.001)	-0.003 (0.010)	-0.005 (0.014)	-0.002 (0.007)
Tertiary education	-0.089** (0.045)	0.004 (0.002)	0.028** (0.014)	0.038* (0.020)	0.018* (0.009)
Single	0.027 (0.066)	-0.001 (0.003)	-0.008 (0.021)	-0.012 (0.029)	-0.005 (0.014)
Divorced	-0.135** (0.060)	0.006* (0.003)	0.043** (0.019)	0.058** (0.026)	0.028** (0.013)
Widowed	-0.069* (0.041)	0.003 (0.002)	0.022* (0.013)	0.030* (0.018)	0.014* (0.009)
Having children	-0.001 (0.044)	0.000 (0.002)	0.000 (0.014)	0.000 (0.019)	0.000 (0.009)
Income 2 nd quartile	-0.059* (0.035)	0.003 (0.002)	0.019* (0.011)	0.026* (0.015)	0.012* (0.007)
Income 3 rd quartile	-0.048 (0.032)	0.002 (0.002)	0.015 (0.010)	0.021 (0.014)	0.010 (0.007)
Income 4 th quartile	-0.071** (0.034)	0.003* (0.002)	0.023** (0.011)	0.031** (0.015)	0.015** (0.007)
Asset-to-income ratio	-0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
Retired	0.032 (0.032)	-0.001 (0.001)	-0.010 (0.010)	-0.014 (0.014)	-0.007 (0.007)
Numeracy	0.008 (0.012)	-0.000 (0.001)	-0.003 (0.004)	-0.004 (0.005)	-0.002 (0.003)
“The elderly are less poor”	-0.073*** (0.023)	0.003** (0.002)	0.023*** (0.007)	0.032*** (0.010)	0.015*** (0.005)
Share elderly 21-30%	-0.076* (0.045)	0.003 (0.002)	0.024* (0.014)	0.033* (0.020)	0.016* (0.009)
Share elderly +30%	-0.001 (0.037)	0.000 (0.002)	0.000 (0.012)	0.000 (0.016)	0.000 (0.008)
Pension expenditure +30%	0.010 (0.045)	-0.000 (0.002)	-0.003 (0.014)	-0.004 (0.020)	-0.002 (0.009)
Affected by the 2011 reform	0.048 (0.039)	-0.002 (0.002)	-0.015 (0.012)	-0.021 (0.017)	-0.010 (0.008)
Observations	1,393	1,393	1,393	1,393	1,393

Note: The related survey question is: *On a scale from 1 to 5, where 1 means “I strongly disagree” and 5 means “I strongly agree,” how strongly do you agree or disagree with the following statement? To keep the public pension system sustainable, it is necessary to increase the retirement age.* The distribution of the answers over the 1-to-5 scale is 0.43, 0.20, 0.20, 0.13, and 0.04, respectively. Ordered probit average marginal effects, standard errors in parentheses. Month fixed effects are included. * p<0.10, ** p<0.05, *** p<0.01

Table 3. Multivariate analysis of support for pension reforms: life expectancy.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Financial literacy	-0.086*** (0.022)	-0.002 (0.001)	0.021*** (0.006)	0.038*** (0.010)	0.029*** (0.008)
Pension knowledge	0.017 (0.022)	0.000 (0.001)	-0.004 (0.005)	-0.008 (0.010)	-0.006 (0.007)
Female	0.022 (0.024)	0.001 (0.001)	-0.005 (0.006)	-0.010 (0.011)	-0.007 (0.008)
Age 60-65	-0.050 (0.037)	-0.001 (0.001)	0.012 (0.009)	0.022 (0.016)	0.017 (0.012)
Age 66-70	-0.092** (0.043)	-0.002 (0.002)	0.023** (0.011)	0.041** (0.019)	0.031** (0.015)
Age 70+	-0.124*** (0.042)	-0.003 (0.002)	0.030*** (0.010)	0.055*** (0.019)	0.041*** (0.014)
Lower secondary education	0.033 (0.028)	0.001 (0.001)	-0.008 (0.007)	-0.015 (0.013)	-0.011 (0.009)
Upper secondary education	0.002 (0.031)	0.000 (0.001)	-0.000 (0.007)	-0.001 (0.014)	-0.001 (0.010)
Tertiary education	-0.076* (0.043)	-0.002 (0.002)	0.019* (0.011)	0.034* (0.019)	0.025* (0.015)
Single	-0.056 (0.062)	-0.001 (0.002)	0.014 (0.015)	0.025 (0.028)	0.019 (0.021)
Divorced	-0.094 (0.058)	-0.002 (0.002)	0.023 (0.014)	0.042 (0.026)	0.031 (0.020)
Widowed	-0.039 (0.039)	-0.001 (0.001)	0.010 (0.010)	0.017 (0.017)	0.013 (0.013)
Having children	-0.009 (0.042)	-0.000 (0.001)	0.002 (0.010)	0.004 (0.019)	0.003 (0.014)
Income 2 nd quartile	-0.046 (0.033)	-0.001 (0.001)	0.011 (0.008)	0.020 (0.015)	0.015 (0.011)
Income 3 rd quartile	-0.038 (0.031)	-0.001 (0.001)	0.009 (0.008)	0.017 (0.014)	0.013 (0.010)
Income 4 th quartile	-0.064** (0.032)	-0.002 (0.001)	0.016** (0.008)	0.029** (0.014)	0.021* (0.011)
Asset-to-income ratio	0.000 (0.000)	0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)
Retired	-0.006 (0.031)	-0.000 (0.001)	0.002 (0.008)	0.003 (0.014)	0.002 (0.010)
Numeracy	0.001 (0.012)	0.000 (0.000)	-0.000 (0.003)	-0.000 (0.005)	-0.000 (0.004)
“The elderly are less poor”	-0.056** (0.022)	-0.001 (0.001)	0.014** (0.006)	0.025** (0.010)	0.019** (0.008)
Share elderly 21-30%	-0.080* (0.043)	-0.002 (0.002)	0.020* (0.011)	0.036* (0.019)	0.027* (0.015)
Share elderly +30%	-0.027 (0.035)	-0.001 (0.001)	0.007 (0.009)	0.012 (0.016)	0.009 (0.012)
Pension expenditure +30%	-0.024 (0.043)	-0.001 (0.001)	0.006 (0.011)	0.011 (0.019)	0.008 (0.014)
Affected by the 2011 reform	0.030 (0.037)	0.001 (0.001)	-0.007 (0.009)	-0.013 (0.017)	-0.010 (0.012)
Observations	1,393	1,393	1,393	1,393	1,393

Note: The related survey question is: *On a scale from 1 to 5, where 1 means “I strongly disagree” and 5 means “I strongly agree,” how strongly do you agree or disagree with the following statement? If life expectancy increases, retirement age needs to be increased accordingly.* The distribution of the answers over the 1-to-5 scale is 0.38, 0.20, 0.19, 0.16, and 0.06, respectively. Ordered probit average marginal effects, standard errors in parentheses. Month fixed effects are included. * p<0.10, ** p<0.05, *** p<0.01

Table 4. Multivariate analysis of support for pension reforms: low economic growth and low contributions.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Financial literacy	0.001 (0.006)	0.001 (0.007)	0.001 (0.008)	0.000 (0.001)	-0.002 (0.022)
Pension knowledge	-0.035*** (0.007)	-0.038*** (0.007)	-0.048*** (0.008)	-0.003 (0.003)	0.124*** (0.021)
Female	-0.004 (0.006)	-0.004 (0.007)	-0.005 (0.009)	-0.000 (0.001)	0.014 (0.023)
Age 60-65	0.018* (0.010)	0.019* (0.011)	0.024* (0.014)	0.002 (0.002)	-0.063* (0.035)
Age 66-70	0.012 (0.012)	0.013 (0.013)	0.016 (0.016)	0.001 (0.002)	-0.042 (0.042)
Age 70+	0.013 (0.012)	0.014 (0.013)	0.017 (0.016)	0.001 (0.002)	-0.045 (0.041)
Lower secondary education	-0.023*** (0.008)	-0.025*** (0.009)	-0.031*** (0.011)	-0.002 (0.002)	0.082*** (0.027)
Upper secondary education	-0.021** (0.009)	-0.023** (0.009)	-0.029** (0.012)	-0.002 (0.002)	0.076** (0.030)
Tertiary education	0.009 (0.012)	0.010 (0.013)	0.013 (0.016)	0.001 (0.001)	-0.033 (0.042)
Single	-0.033* (0.018)	-0.037* (0.019)	-0.046* (0.024)	-0.003 (0.003)	0.119* (0.062)
Divorced	0.012 (0.016)	0.013 (0.018)	0.016 (0.022)	0.001 (0.002)	-0.042 (0.057)
Widowed	-0.009 (0.011)	-0.010 (0.012)	-0.013 (0.015)	-0.001 (0.001)	0.033 (0.038)
Having children	-0.010 (0.012)	-0.011 (0.013)	-0.013 (0.016)	-0.001 (0.001)	0.035 (0.042)
Income 2 nd quartile	0.013 (0.009)	0.014 (0.010)	0.018 (0.012)	0.001 (0.001)	-0.047 (0.032)
Income 3 rd quartile	0.007 (0.008)	0.008 (0.009)	0.010 (0.011)	0.001 (0.001)	-0.026 (0.030)
Income 4 th quartile	0.014 (0.009)	0.015 (0.010)	0.019 (0.012)	0.001 (0.001)	-0.049 (0.031)
Asset-to-income ratio	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	0.000 (0.000)
Retired	-0.009 (0.008)	-0.010 (0.009)	-0.013 (0.012)	-0.001 (0.001)	0.033 (0.030)
Numeracy	-0.001 (0.003)	-0.001 (0.004)	-0.002 (0.004)	-0.000 (0.000)	0.005 (0.011)
“The elderly are less poor”	0.005 (0.006)	0.005 (0.007)	0.006 (0.008)	0.000 (0.001)	-0.017 (0.022)
Share elderly 21-30%	-0.022* (0.012)	-0.025* (0.013)	-0.031* (0.016)	-0.002 (0.002)	0.080* (0.042)
Share elderly +30%	-0.026*** (0.010)	-0.028*** (0.011)	-0.036*** (0.013)	-0.003 (0.002)	0.093*** (0.034)
Pension expenditure +30%	-0.017 (0.012)	-0.019 (0.013)	-0.023 (0.017)	-0.002 (0.002)	0.060 (0.043)
Affected by the 2011 reform	-0.004 (0.010)	-0.004 (0.011)	-0.005 (0.014)	-0.000 (0.001)	0.013 (0.036)
Observations	1,393	1,393	1,393	1,393	1,393

Note: The related survey question is: *On a scale from 1 to 5, where 1 means “I strongly disagree” and 5 means “I strongly agree,” how strongly do you agree or disagree with the following statement? Low economic growth and low contributions paid by young people (due to reduced working hours and lower wages) threaten the sustainability of the public pension system.* The distribution of the answers over the 1-to-5 scale is 0.05, 0.09, 0.19, 0.32, and 0.35, respectively. Ordered probit average marginal effects, standard errors in parentheses. Month fixed effects are included. * p<0.10, ** p<0.05, *** p<0.01

Table 5. Multivariate analysis of support for pension reforms: population ageing.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Financial literacy	0.014 (0.009)	0.012 (0.007)	0.011 (0.007)	-0.004 (0.003)	-0.032 (0.020)
Pension knowledge	-0.052*** (0.009)	-0.043*** (0.007)	-0.039*** (0.007)	0.016*** (0.004)	0.118*** (0.019)
Female	0.001 (0.009)	0.001 (0.008)	0.001 (0.007)	-0.000 (0.003)	-0.002 (0.021)
Age 60-65	0.018 (0.014)	0.015 (0.012)	0.013 (0.011)	-0.005 (0.004)	-0.041 (0.032)
Age 66-70	0.008 (0.017)	0.007 (0.014)	0.006 (0.013)	-0.003 (0.005)	-0.019 (0.038)
Age 70+	-0.011 (0.017)	-0.009 (0.014)	-0.008 (0.012)	0.003 (0.005)	0.024 (0.038)
Lower secondary education	-0.022** (0.011)	-0.018** (0.009)	-0.017** (0.008)	0.007* (0.004)	0.050** (0.025)
Upper secondary education	-0.032*** (0.012)	-0.026*** (0.010)	-0.024*** (0.009)	0.010** (0.004)	0.073*** (0.027)
Tertiary education	-0.039** (0.017)	-0.032** (0.014)	-0.029** (0.013)	0.012** (0.006)	0.088** (0.039)
Single	-0.048* (0.026)	-0.040* (0.021)	-0.036* (0.019)	0.015* (0.008)	0.109* (0.057)
Divorced	-0.011 (0.023)	-0.009 (0.019)	-0.008 (0.017)	0.003 (0.007)	0.025 (0.053)
Widowed	-0.041*** (0.016)	-0.034*** (0.013)	-0.031*** (0.012)	0.013** (0.005)	0.093*** (0.035)
Having children	0.005 (0.017)	0.004 (0.014)	0.004 (0.013)	-0.002 (0.005)	-0.012 (0.038)
Income 2 nd quartile	0.018 (0.013)	0.015 (0.011)	0.014 (0.010)	-0.006 (0.004)	-0.041 (0.030)
Income 3 rd quartile	0.021* (0.012)	0.017* (0.010)	0.016* (0.009)	-0.006* (0.004)	-0.047* (0.027)
Income 4 th quartile	-0.000 (0.013)	-0.000 (0.010)	-0.000 (0.009)	0.000 (0.004)	0.001 (0.029)
Asset-to-income ratio	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
Retired	0.011 (0.012)	0.009 (0.010)	0.008 (0.009)	-0.003 (0.004)	-0.025 (0.027)
Numeracy	-0.004 (0.005)	-0.003 (0.004)	-0.003 (0.003)	0.001 (0.001)	0.009 (0.010)
“The elderly are less poor”	-0.014 (0.009)	-0.011 (0.007)	-0.010 (0.007)	0.004 (0.003)	0.031 (0.020)
Share elderly 21-30%	-0.035** (0.017)	-0.029** (0.014)	-0.026** (0.013)	0.011* (0.005)	0.078** (0.039)
Share elderly +30%	-0.029** (0.014)	-0.024** (0.011)	-0.022** (0.010)	0.009** (0.004)	0.067** (0.031)
Pension expenditure +30%	-0.021 (0.017)	-0.018 (0.014)	-0.016 (0.013)	0.006 (0.005)	0.048 (0.039)
Affected by the 2011 reform	0.020 (0.015)	0.016 (0.012)	0.015 (0.011)	-0.006 (0.005)	-0.045 (0.033)
Observations	1,393	1,393	1,393	1,393	1,393

Note: The related survey question is: *On a scale from 1 to 5, where 1 means “I strongly disagree” and 5 means “I strongly agree,” how strongly do you agree or disagree with the following statement? Population ageing (increasing number of people at old ages and falling number of births) makes the public pension system unsustainable. That is, the expenses of the pension system are higher than the revenues.* The distribution of the answers over the 1-to-5 scale is 0.08, 0.12, 0.23, 0.27, and 0.30, respectively. Ordered probit average marginal effects, standard errors in parentheses. Month fixed effects are included. * p<0.10, ** p<0.05, *** p<0.01

Table 6. Multivariate analysis of support for pension reforms: flexible retirement age.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Financial literacy	0.005 (0.009)	0.004 (0.007)	0.004 (0.007)	-0.003 (0.005)	-0.010 (0.018)
Pension knowledge	-0.016* (0.009)	-0.013* (0.007)	-0.012* (0.007)	0.009* (0.005)	0.031* (0.018)
Female	0.017* (0.010)	0.014* (0.008)	0.013* (0.007)	-0.010* (0.005)	-0.034* (0.019)
Age 60-65	-0.007 (0.015)	-0.006 (0.012)	-0.006 (0.011)	0.004 (0.008)	0.015 (0.029)
Age 66-70	-0.023 (0.017)	-0.019 (0.014)	-0.018 (0.013)	0.013 (0.010)	0.047 (0.034)
Age 70+	-0.027 (0.017)	-0.022 (0.014)	-0.020 (0.013)	0.015 (0.010)	0.054 (0.034)
Lower secondary education	-0.028** (0.011)	-0.022** (0.009)	-0.021** (0.009)	0.016** (0.007)	0.055** (0.023)
Upper secondary education	-0.045*** (0.013)	-0.036*** (0.010)	-0.034*** (0.010)	0.025*** (0.007)	0.089*** (0.025)
Tertiary education	-0.050*** (0.018)	-0.041*** (0.015)	-0.037*** (0.014)	0.028*** (0.010)	0.099*** (0.035)
Single	-0.050* (0.026)	-0.041* (0.021)	-0.038* (0.019)	0.028* (0.015)	0.100* (0.051)
Divorced	-0.033 (0.024)	-0.027 (0.020)	-0.025 (0.018)	0.019 (0.014)	0.066 (0.048)
Widowed	-0.012 (0.016)	-0.010 (0.013)	-0.009 (0.012)	0.007 (0.009)	0.024 (0.032)
Having children	0.007 (0.017)	0.006 (0.014)	0.005 (0.013)	-0.004 (0.010)	-0.014 (0.034)
Income 2 nd quartile	-0.011 (0.013)	-0.009 (0.011)	-0.008 (0.010)	0.006 (0.008)	0.023 (0.027)
Income 3 rd quartile	-0.016 (0.012)	-0.013 (0.010)	-0.012 (0.009)	0.009 (0.007)	0.033 (0.025)
Income 4 th quartile	-0.021 (0.013)	-0.017* (0.011)	-0.016 (0.010)	0.012 (0.007)	0.043* (0.026)
Asset-to-income ratio	-0.000* (0.000)	-0.000* (0.000)	-0.000* (0.000)	0.000* (0.000)	0.000* (0.000)
Retired	0.015 (0.012)	0.012 (0.010)	0.011 (0.009)	-0.009 (0.007)	-0.030 (0.025)
Numeracy	-0.004 (0.005)	-0.003 (0.004)	-0.003 (0.004)	0.002 (0.003)	0.008 (0.009)
“The elderly are less poor”	0.004 (0.009)	0.003 (0.007)	0.003 (0.007)	-0.002 (0.005)	-0.007 (0.018)
Share elderly 21-30%	0.003 (0.018)	0.003 (0.014)	0.003 (0.013)	-0.002 (0.010)	-0.007 (0.035)
Share elderly +30%	0.020 (0.014)	0.016 (0.012)	0.015 (0.011)	-0.011 (0.008)	-0.039 (0.028)
Pension expenditure +30%	-0.026 (0.018)	-0.021 (0.014)	-0.019 (0.013)	0.015 (0.010)	0.052 (0.035)
Affected by the 2011 reform	-0.008 (0.015)	-0.007 (0.012)	-0.006 (0.011)	0.005 (0.008)	0.017 (0.030)
Observations	1,393	1,393	1,393	1,393	1,393

Note: The related survey question is: *On a scale from 1 to 5, where 1 means “I strongly disagree” and 5 means “I strongly agree,” how strongly do you agree or disagree with the following statement? A flexible retirement age should be allowed, but those who decide to retire at a younger age should get a lower pension compared to someone with the same contribution profile.* The distribution of the answers over the 1-to-5 scale is 0.08, 0.12, 0.27, 0.29, and 0.24, respectively. Ordered probit average marginal effects, standard errors in parentheses. Month fixed effects are included. * p<0.10, ** p<0.05, *** p<0.01

Appendix: SHARE ad hoc module questions

Does buying a single company's stock usually provide a safer return than a stock mutual fund?

- Yes;
- No;
- I don't know.

What is the main funding source for paying public pensions in Italy?

- Contributions of people who are currently working;
- Contributions accumulated by each person over his/her working life;
- General taxation;
- I don't know.

What percentage of the population is over 65?

- 0-10%;
- 11-20%;
- 21-30%;
- 31-40%;
- 41-50%;
- 51-60%;
- 61-70%;
- I don't know.

In Italy, the risk of being poor is:

- Higher among the elderly (65+) than among working-age individuals;
- Lower among the elderly (65+) than among working-age individuals;
- Equal among the elderly (65+) and working-age individuals;
- I don't know.

What percentage of the government spending goes into pension payments?

- 0-10%;
- 11-20%;
- 21-30%;
- 31-40%;
- 41-50%;
- 51-60%;
- 61-70%;
- I don't know.

Did you have to postpone (if retired) or will you have to postpone (if not retired) your retirement as a consequence of the Monti–Fornero pension reform?

- Yes;
- No.