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Resumen

Los cambios demográficos que se han producido en los países europeos en las últimas décadas han convertido el sistema público de pensiones en una de las políticas del estado de bienestar más sometidas a debate. En este trabajo se analizan las actitudes de la opinión pública ante las diferentes alternativas de reforma que se están barajando en el debate público. Para ello se utilizan datos comparativos del Eurobarómetro con el fin de comparar las diferencias en los climas de opinión por países. En el trabajo se constata que existen importantes diferencias entre países que pueden ser parcialmente explicadas en función de la tipología de estados de bienestar. Al mismo tiempo, se contrasta empíricamente si la formación de las opiniones en torno a la reforma del sistema de pensiones viene determinada por motivaciones ideológicas o si, por el contrario, las preferencias individuales pueden explicarse en función de la posición en la estructura social. Los resultados muestran que los principios distributivos que inspiran los diferentes modelos de estado de bienestar tienen una gran influencia sobre el tipo de reforma del sistema de pensiones preferida. Los principios liberal y familista correlacionan positivamente con la preferencia por un incremento de la edad de jubilación, mientras que los principios universalista y conservador correlacionan positivamente con la preferencia por un incremento de la cotizaciones sociales.

Abstract

The demographic changes occurring in European countries in recent decades have made the public pension system one of the most debated policies of the welfare state. This paper analyzes attitudes in public opinion to the different reform alternatives being discussed in the public debate. To perform this analysis, we use comparative data from the Eurobarometer to compare the differences in the climates of opinion by country. The paper argues that there are significant differences between countries that may be explained in part by the typology of welfare state in each. At the same time, we contrast empirically whether the formation of opinions around the reform of the pension system is determined by ideological issues or whether, in contrast, individual preferences can be explained based on position in the social structure. In order to test the joint influence of national characteristics and individual variables on attitudes toward the reform, we use a combination of methodologies for multilevel analysis and joint estimation.

Keywords: retirement, welfare state, pensions, preferences.

1   Introduction

Demographic changes that have occurred in European countries in recent decades have made the public pension system one of the most debated policies of the welfare state in the public sphere (Bonoli, 2003; Taylor-Gooby, 2002). Numerous proposals, especially by international institutions like the OECD or the World Bank, argue the impossibility of sustaining PAYG (pay-as-you-go) public pension systems in the long term due to the contraction of the active population paying into the system and the growth of the financial burdens on Social Security produced by the increase in life expectancy and the consequent aging of the population (Pierson, 1998). This debate has moved into public opinion in several European countries since the 1980s, while at the same time there have been important reforms in some pension systems (Taylor-Gooby, 2002; Whitehouse and Queisser, 2007). In the context of the countries in the European Union, the reforms that have occurred have primarily affected the age of retirement (both eligibility and incentives to delay retirement) and the introduction of complementary private pension plans, whether mandatory or encouraged by means of incentives (Whitehouse, 2006; Whitehouse and Queisser, 2007).

In spite of the considerable volume of research on attitudes to social policies (which can be seen in a recent survey in Alesina and Giuliano, 2009), the subject of attitudes to different pension provision systems has received little treatment in the literature. On the one hand, we have evidence that the reforms have generated significant resistance movements in countries where they have occurred (Boeri, Börsch-Supan and Tabellini, 2002; Bonoli, 1997b; Pierson, 1996), although demobilization protest strategies have in some cases facilitated the reforms (Béland and Marier, 2006). At the same time, a good part of the literature on political economy has argued that preferences concerning the pension system tend to be inconsistent. In a study of public opinion toward the pension system in Germany and Italy, Boeri, Börsch-Supan and Tabellini (2002) indicate that, while citizens are conscious that the current pension systems are not sustainable in the long term and recognize the need to reform them, they tend to ignore or underestimate the costs of this system. Likewise, Janky and Gál (2007) maintain that, despite consciousness of the impact of demographic problems on the pension system, Europeans continue to oppose the reforms, although resistance is not uniform.

This paper focuses specifically on the analysis of attitudes of public opinion toward the different reform alternatives present in the public debate in the European context. We analyze the attitudes toward changes in the con-

tributions to Social Security, to changes in the retirement age, and to the introduction of private pension plans. The theoretical frame of reference is twofold. We consider both the literature on redistribution that stresses the importance of pecuniary factors (Meltzer and Richard, 1981) and the literature that emphasizes ideological factors (Feldman and Zaller, 1992) in explaining preferences toward social policies; and institutionalist theory, which argues the influence of institutional characteristics of welfare regimes on individual preferences (Arts and Gelissen, 2001; Gelissen, 2001). The essential innovation of this paper is that it studies the effect of different principles of solidarity at the individual level. In contrast to the usual institutional focuses, which assume that the welfare regime is what conditions individual preferences, we seek here to analyze how adhesion to different principles of solidarity (or abstract models of the welfare state) affect attitudes to reform of the pension provision system. To contrast the hypotheses derived from this proposal, we use comparative data from the Eurobarometer that cover a total of fifteen countries in the European Union. To test the joint influence of the national characteristics and individual variables on preferences, we combine the multilevel approach with a traditional methodology.

The rest of the study is organized as follows. The following section presents the main theoretical focuses in explaining preferences for pension systems within the framework of the literature on redistribution. The third section explains some of the basic traits of the situation and the recent evolution of pension systems in the European context, as well as the reactions of public opinion as the basis for proposing some explanatory hypotheses. In the following section, we present the data and the methodology used. The fifth section explains the results. The paper ends with a section on conclusions that lists the main implications of the results found and the lines of future research in this area.

2 Theoretical approaches

The literature on preferences for social policies takes two clearly defined theoretical approaches: that of self-interest and the ideological focus. The focus on self-interest, inspired by models of redistribution developed in Meltzer and Richard (1981) and Browning (1975), holds that welfare programs generate redistributive effects, which make the net beneficiaries favorable to these policies, whereas the net payers oppose them (Galasso, 2006; Lynch and Myrsylä, 2009). In particular, mature welfare states show a distinct cleavage between the working-age population and the retired population,

which constitutes the beneficiaries of the public pension system. For this reason, Weaver (2003) indicates that cuts in the pension system are especially risky for governments, because the losses are strongly felt by the social group benefitting and because the elderly population has high electoral participation in many countries. Likewise, the idea of retrenchment developed by Pierson (1995; 1996) is based on the assumption that cuts in social policies will be opposed essentially by the groups that benefit from the policies. Further, Pierson indicates that the beneficiary groups (including retired people) are more important in the "new politics" of welfare state reform than the wide range of public interest organizations. These theoretical predictions are based on the micro-foundations of prospect theory (Kahneman and Tversky, 1979), which argues that we attribute more importance (in the negative sense) to losses than to gains; and on the logic of collective action (Olson, 1965), which predicts a positive relationship between these specific interests and the capacity for political mobilization. Likewise, Campbell (2003) argues that the development of Social Security can only be understood from the dynamics of support that are generated from beneficiary groups.

It is not always easy, however, to derive specific theoretical predictions concerning preferences for different pension systems. Thus, the effect of the aging process on the welfare state has been interpreted in radically opposed ways by two rival theories within the focus of self-interest: the theory of 'elderly power' and the theory of 'fiscal leakage' (Tepe and Vanhuysse, 2009). According to the former, the aging process should create a demand for more generous pension systems, a demand proportional to the increase in the number of potential beneficiaries (Galasso, 2006; Galasso and Profeta, 2000; Galasso and Profeta, 2007; Persson and Tabellini, 2000). According to the second theory, however, low fertility rates and increased life expectancy reduce the value of public pensions systems, since workers today expect that it will be difficult for them to collect their pensions when they reach retirement age due to the collapse of the system caused by the aging process itself (Breyer and Stolte, 2001; Razin and Sadka, 2007). Faced with this situation, workers of active age lose confidence in the implicit generational pact that sustains the public pension system and oppose contributing in the present, as they think that they will not become beneficiaries in the future (Tepe and Vanhuysse, 2009). And given that, in spite of the aging process, most of the population is not retired, there will be a demand to reduce contributions to the public pension system and a shift to private pension systems. These predictions fit with the idea that the pension system fulfils both a redistributive and a security function (Tepe, 2006). In this respect, Iversen (2005) argues that preferences for social policies do not reflect so

much a demand for redistribution as a demand for security. We should add, regarding the pension policy, that insofar as current contributions cannot provide security against future contingencies, support for the public system will be eroded and demands for reform will emerge.

In spite of the predominance of the self-interest focus in the literature on redistribution, the empirical results do not always confirm that preferences for the social expenditure programs are determined primarily by self-interest (Sears and Funk, 1990). Taylor-Gooby (2001) shows that position on the labor market and gender are fairly weak predictors of support for cuts in welfare programs. Likewise, Tepe (2006) indicates that preferences for different pension systems cannot be explained only by pecuniary interest and finds that political ideology and political trust are also significant predictors. In addition, Groezen (2009) has found recently that the preferred pension provision system depends fundamentally on ideological preferences. Boeri, Börsch-Supan and Tabellini (2002), in turn, find mixed evidence when they analyze specific attitudes toward the pension reform system. They conclude that both pecuniary factors and ideological principles have a significant effect on preferences. In essence, the ideological focus predicts that attitudes to social policies are explained in terms of values and basic political orientations (Feldman and Zaller, 1992; Jacoby, 1994). On the other hand, Jacoby (2000) indicates that the gestation process for climates of opinion toward social policies is conditioned by the effects of framing induced by political elites. Following this approach, we can expect political parties on the left to attempt to focus the debate about the pension system on the issue of positive effects for the elderly population and disadvantaged groups, whereas parties on the right fix the debate around the system's lack of viability and its negative effects on economic growth. Thus, the framing effect introduces the idea that the way in which reform proposals are presented in the public opinion will have important consequences.

Finally, from the institutional focus, we predict a causal relation between the kind of welfare regime and attitudes to social policies, as socio-political institutions have a socializing function for individuals (Andreâ and Heien, 2001; Gelissen, 2001; Forma, 1997; Jaeger, 2006; Mau, 2004). Velladics, Henkens and Van Dalen (2006) analyze the differences between countries in Eastern and Western Europe and find that Eastern Europeans tend to favor reforms in which the beneficiaries depend on the number of children, a result of their adherence to traditional values promoted during the Communist period. The institutional theses are based on the idea that different welfare regimes are inspired by different criteria of distributive justice. Arts and Gellisen (2001) argue that each 'ideal type' of welfare state will produce

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different patterns of solidarity. The liberal type is based on equality of opportunities, which implies that each person is responsible for his or her own welfare and thus that the state's mission will be to guarantee equal conditions of access to vital opportunities without concerning itself with equality of results. The conservative type is based fundamentally on a hierarchy of class and status, which produces a segmentation of welfare based on corporate lines of division. Finally, the social-democratic model is inspired by universalism and egalitarianism, which leads to an inclination to equality of results, with significant emphasis on income redistribution.

According to Gelissen (2001), these different principles inspiring welfare regimes translate into different models of organization for pension systems. Gelissen predicts that the liberal model will attribute the greatest importance to the institutions of private provision, with a modest role for the state and a relatively important role for employers and employees. In the corporate or conservative model, private pension funds will have a modest role, whereas great importance will be given to the participation of employers and employees, and the role of the state is relatively important. In the social-democratic model, the state's role will be very important, while pension funds and the role of employers and employees will be of modest importance. Gelissen (2001) also takes into account the Mediterranean model, in which both the state and private funds have marginal importance, with a relatively significant role for employees and employers. His empirical results support the idea that preferences for different models of provision depend on the welfare regime, although significant differences remain to be explained between countries belonging to the same welfare regime.

Arts and Gelissen (2001) point out that it would be ingenuous to think that individual preferences are entirely determined by contextual factors. Welfare regimes are inspired by generally accepted principles of solidarity, but they also generate differences between social groups as a result of the different redistributive conflicts produced in each regime (Svallfors, 1997). The different welfare regimes are a product of the social cleavages produced in the transition from the industrial to the post-industrial society (Esping-Andersen, 1990). This leads Pettersen (1995) and Gelissen (2001) to predict that attitudes toward any kind and intensity of intervention from the public sector on pension provision should change based on the social categories to which their holders belong. We should add that the principles of distributive justice that inspire individual preferences are introduced into a specific culture but also have an idiosyncratic base. This leads to the fact that individuals moved by different principles have different preferences concerning the pension provision system.

3 Preferences and reforms of pension systems

As mentioned above, numerous proposals for reform in the public pension systems have appeared in the last two decades in the European context. A good portion of these reform proposals have been justified by the aging process in the population (Pierson, 1998), despite the fact that other important questions influence the problem, such as changes in professional careers or globalization of capital markets (Bonoli, 2003). It is often argued that, given that public pension systems were created in societies where pensions were small and the years of retirement relatively few, the growth of both quantities will cause the mature welfare systems to become unsustainable at some point in the course of this century (Bonoli, 2003; Pierson, 1998). The projections of the OECD show that the aging process is especially intense in the developed countries. According to these previsions, the proportion of people over 65 years old in the total population of countries like Spain, Italy, Greece, Portugal and Finland will be over 30 % in the year 2050. Thus, as the fiscal pressure on an ever smaller active population increases, the intergenerational contract will be increasingly doomed to collapse (Pierson, 1998).

However, the reforms produced in European pension systems have not gone as far as the arguments by international institutions or some of the academic literature over this time period. Pierson (1995; 1996) indicates that resistance to the systemic cuts in welfare programs is as intense as the gains (through tax reductions) are diffuse, whereas the losses are clearly focused on highly visible social groups, just the opposite of what happens when welfare programs are expanded, a situation in which the losses are diffuse and the gains focused. Esping-Andersen (1996) interprets the process differently, calling attention to the threats for a frozen welfare state, which lacks the capacity for innovation to confront the challenges that the changing economic and demographic structure faces in developed countries. And he warns that this lack of innovative capacity can lead ultimately to the collapse of the welfare system. However, Taylor-Gooby (1999) argues in an analysis of the reforms in pension systems in France, Germany, Italy and the United Kingdom that changes do in fact occur, in spite of resistance, and that the success of reforms depends to a great extent on the institutional structure. Thus, whereas the German system has shown a great capacity for reform within the system itself, reforms in the cases of France and Italy have proven much more difficult to implement. Along the same lines, Anderson (2001) argues in support of power resource theory that the pension reform in Sweden in the 1990s succeeded (in contrast to the reform of the

unemployment insurance system) precisely because of the involvement of and agreement with the unions.

Table 1: Economic Indicators by Country

	Net replac. on average	Pension spending	Pension spending per head	Social security contrib.	Taxes average worker	Population over 65 years
Austria	93.2	10.3	3025.7	14.6	46.9	15.5
Belgium	63.1	6.6	1834.5	14.2	56.7	16.9
Denmark	54.1	4.7	1352.5	1.7	43.6	14.8
Finland	71.5	6.2	1620.3	12.0	46.4	15.1
France	68.8	10.1	2567.6	16.0	49.8	16.2
Germany	71.8	9.7	2532.9	14.4	53.0	16.9
Greece	99.9	7.6	1465.5	10.6	38.2	17.0
Ireland	36.6	1.7	509.1	4.3	25.8	11.2
Italy	88.8	10.6	2767.1	12.0	46.0	18.6
Luxembourg	109.8	3.7	1996.4	10.9	37.0	13.9
Netherlands	84.1	4.6	1355.2	13.8	37.2	13.6
Portugal	79.8	7.1	1224.4	10.5	36.4	16.4
Spain	88.3	7.1	1554.7	12.3	38.8	16.9
Sweden	68.2	6.6	1846.2	14.2	49.1	17.2
United Kingdom	47.6	4.2	1114.9	6.3	32.2	15.9

Notes: Data refer to 2001. Net replacement on average and taxes for average worker as percentage of earnings, pension spending per head in dollars (PPP), pension spending and social security contributions as percentage of GDP, population over 65 years as percentage of total population.
Source: OECD database (2009).

Although the debates on the European pensions systems have revolved around similar topics in most of the European countries, the data in Table 1 show the persistence of some different characteristics by country, both in the generosity of the pensions and in the levels of expenditure (per capita or as a percentage of the GDP) and the means of financing the system and its corresponding tax effects. Bonoli (2003) and Whitehouse (2006) show that, although European pension systems face relatively similar challenges, the way in which different countries have responded to these challenges has varied considerably from country to country, despite the process of European integration. Both Bonoli (2003) and Taylor-Gooby (1999) insist that the possibilities for evolution of each pension system are determined, at least to a great extent, by institutional limitations. Thus, it will be easier to make reforms in countries with systems of mixed provision, in which both the public sector and occupational schemes are present, as this enables some compensation between the two (Bonoli, 2003). We must then ask what

effect institutional design has on individual preferences and attitudes to the reforms of the provision system.

Table 2: Preferred Pension System by Country

	Public pensions	Occupational schemes	Private pension plans
Austria	68.8	23.4	7.9
Belgium	80.2	15.0	4.8
Denmark	49.0	44.1	6.9
Finland	36.0	62.2	1.9
France	64.8	26.0	9.2
Germany	53.2	39.0	7.8
Greece	85.4	10.2	4.4
Ireland	66.5	27.9	5.7
Italy	70.9	18.8	10.3
Luxembourg	69.8	18.3	11.9
Netherlands	40.8	43.2	16.1
Portugal	78.0	18.1	3.9
Spain	94.4	4.4	1.2
Sweden	73.9	20.4	5.7
United Kingdom	61.1	30.8	8.1

Source: OECD database (2009).

If we move from the characteristics of real provision systems to preferences for one system or another in the abstract, we see that Gelissen (2001) has shown some patterns. The greatest support for the public pension provision system is found in countries in Southern Europe (Spain, Greece and Portugal), as well as in Sweden and Belgium, whereas Finland, the Netherlands, Denmark and Germany provide the least support. Conversely, the greatest support of the private pension system is found in the Netherlands, Luxembourg and Italy. Support for occupational schemes also shows great variability from country to country. The only countries in which it is the majority option are Finland (where 62.2 % of the population considers it the preferred system), Denmark and the Netherlands. According to Gelissen (2001), the greater demand for public systems in countries in Southern Europe could be explained by the immature development of the welfare state, which is characterized by the combination of generous retirement pensions for those who have been paying into the system on the labor market and some low, non-contributory pensions. The data suggest that public opinion is demanding a more active role of the public sector in pension provision, given the lack of alternative provision schemes (Gelissen, 2001). At the same time, the relatively low demand for public provision in the Nordic countries

would be explained by the saturation of these systems, a product of the greater development of the welfare state.

A next level of analysis is that of preferences for specific reforms in the provision systems. According to Bonoli (2003), in the face of the current challenges, there are only two possible alternatives for achieving the viability of the European pension model. It must either raise contributions to maintain the level of pensions or reduce the pensions (which could be done by reducing either quantity or duration). For this reason, Table 3 focuses attention on the attitudes to three implicit proposals for reform in the previous approach: raising the contributions, raising the retirement age, and permitting the transfer of contributions to private pension plans or freely chosen insurance policies. It is important to point out that each individual's response to these reforms refers to the pension system in effect in each country, which introduces a certain problem for comparison of the responses. For example, when an individual shows a preference for raising the retirement age, he or she expresses something different in the different countries if the retirement ages differ from country to country. However, the basic interest of this study is to compare attitudes to reform of the pension system with respect to the status quo in each country. An initial visual examination of the data suggests that there is a certain framing effect (Jacoby, 2000), according to which the reform proposals presented in positive terms (like giving freedom to choose between public and private contributions), evoking more support than those that are presented in negative terms (such as delaying retirement), as Janki and Gál (2007) also indicate. Thus, all countries share a common pattern of a majority of public opinion in favor of liberalizing contributions to private pension plans, whereas raising the retirement age is the least preferred option in all of the countries analyzed. As we can see, support for free choice in the dedication of contributions ranges from 71.5 % in Sweden to 94.7 % in Ireland. This also shows the existence of significant differences by country concerning support for the different reform proposals, although these differences are not easy to explain from the institutionalist theses.

The greatest support for raising contributions occurs in the Netherlands, the United Kingdom, Denmark, Spain, Sweden and Luxembourg, where more than two thirds of the population are in favour of raising contributions. In contrast, the greatest resistance to this reform is in Portugal, where less than half of the population would support the measure. It is interesting to note that the correlation between support for this measure and contributions to the Social Security system (as a percentage of the GDP) is negative but nonsignificant and very small in size (around 0.120). The greatest resistance

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Table 3: Attitudes toward Pension Reform by Country

	Raising contributions	Raising retirement age	Allow private pension funds
Austria	65.3	27.4	82.9
Belgium	59.2	23.9	90.5
Denmark	68.0	29.1	92.8
Finland	63.9	26.8	88.4
France	58.4	26.3	85.7
Germany	60.9	16.8	85.4
Greece	60.8	14.0	88.7
Ireland	58.9	48.7	94.7
Italy	59.3	31.2	88.3
Luxembourg	66.2	19.0	88.4
Netherlands	75.7	26.0	86.5
Portugal	49.8	31.1	92.1
Spain	67.5	22.2	76.6
Sweden	67.2	13.8	71.5
United Kingdom	73.9	25.8	93.2

Notes: Cells display percentage of individuals who "strongly agree" or "slightly agree" on the measure to be taken.
Source: OECD database (2009).

to the increase in retirement age occurs in Sweden, Greece, Germany and Luxembourg, where the proportion of individuals who would accept this possibility is less than one fifth of the population. In contrast, almost half of the population of Ireland would be willing to accept delaying the age of retirement.

From the previous results, we can conclude, as do Janki and Gäl (2007), that the resistance to reform of the pension systems is significant but not homogeneous and depends both on the country and on the specific reform measure. However, the distribution of preferences by country does not fit at all well with the idea that preferences change according to the institutional design. The thesis proposed here is that principles of solidarity are not limited only to the institutional variables of the welfare regime. Rather, we can also investigate the effect of different principles of solidarity at the individual level on attitudes toward pension systems and their reform. On the empirical level, the problem is how to measure individual adhesion to different principles of solidarity. However, Eurobarometer 56.1 asks the degree of agreement with a series of statements that reflect reasonably well the principles inspiring different models of welfare state. We will discuss the operationalization of this survey in the next section.

On the theoretical level, we propose the following definitions. First, we understand that an individual subscribes to a universalist principle in pension provision if he or she considers that pension benefits constitute a universal social right for all citizens. Second, we understand that an individual adheres to a conservative principle if he or she subscribes to the idea that the goal of pensions is to maintain status or one's income prior to retirement. Third, we understand an individual to subscribe to a liberal principle if he or she believes that the pension each person receives should depend exclusively on his or her individual contributions. In the classification of welfare regimes by Esping-Andersen (1990) and their corresponding principles of solidarity, however, it is necessary to take into account the Mediterranean model (Gelissen, 2001), also known as the Southern Model (Bonoli, 1997a; Ferrera, 1996; Moreno, 2000) or Latin Rim (Leibfried, 1992). This model is distinguished from the others by a strong implementation of familistic values. Individuals who ascribe to the principle of equivalent solidarity should value the importance of inter-generational solidarity in the provision of income for the elderly. Thus, we will understand an individual to subscribe to a familistic principle if he or she believes that the family has the obligation to guarantee the protection of retired people. It is important to note that, from previous definitions, an individual does not seem to be classified exclusively in one principle of solidarity. Rather, each individual has different degrees of commitment to each of the principles proposed.

From the foregoing discussion and other prior theoretical considerations, we formulate the following hypotheses on attitudes to the reform of pension systems in Europe:

Hypothesis 1:*Attitudes to reform of the pension system depend on position in the social structure. The higher the socio-economic status, the greater the preference for restricting the public system and favoring private systems.*

Hypothesis 2:*Attitudes to the reform of the pension system depend on political ideology. Individuals on the left will tend to oppose reforms that involve cuts in the public and the growth of the private system.*

Hypothesis 3:*Attitudes to reform of the pension system depend on principles of solidarity at the individual level. Individuals who subscribe to liberal principles will tend to favor reforms that expand the role of private provision systems, whereas those who subscribe to universalist principles will tend to oppose private systems. Individuals who subscribe to conservative and familistic principles still tend to be located in intermediate positions.*

Hypothesis 4:*Given that the principles of solidarity have a cultural basis, individuals living in different countries will tend to develop different preferences for reform of the pension system.*

4   Data and methods

4.1   Data and variables

The data used in this research come from Eurobarometer 56.1 (2001). We analyze three dependent variables that refer to different aspects of the reform of the pension system. In this survey, the interviewees were asked about their level of agreement with the following statements: (i) "Contributions should not be raised even if this means lower pensions"; (ii) "The age of retirement should be raised so that people work longer;" and (iii) "The government should allow people to put their contributions into a private pension fund or life insurance policies of their choice." The ordinal response scale for this variable is: (1) " Strongly agree", (2) "Slightly agree", (3) " Slightly disagree", y (4) "Strongly disagree." However, we have inverted the order of the categories of response for the last two statements to make them easier to understand.

Table 4: Descriptive Statistics

Variable	Mean	Std. Dev.	Min.	Max.
Raising contributions	2.773	0.953	1	4
Raising the age of retirement	1.873	0.958	1	4
Allow private pension funds	3.252	0.792	1	4
Female	1.523	0.5	1	2
Age	45.205	18.376	15	99
Age^2	2381.127	1782.356	225	9801
Years of education	2.092	0.691	1	3
Marital status	2.433	1.768	1	5
Ideology	5.197	1.916	1	10
Universalistic principle	3.552	0.636	1	4
Conservative principle	3.399	0.689	1	4
Liberal principle	2.879	0.931	1	4

Source: OECD database (2009).

Three kinds of explanatory variables have been included in the analysis: principles of solidarity based on different models of the welfare state, ideology and socio-demographic variables. The universalist principle is measured by the degree of agreement with the statement: "A guaranteed minimum pension should be a basic social right of every citizen." The conservative principle is measured through the degree of agreement with the statement, "A good pension system should allow everybody to maintain an adequate standard of living relative to their income before retirement." The liberal principle is measured through the degree of agreement with the statement,

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"The amount of one's pension should be strictly based on the amount of contributions one has paid into the pension scheme;" and the familistic principle is measured through the degree of agreement with the statement, "There should be a legal obligation for children to financially support their elderly parents if they don't have enough income of their own." The ordinal scale of response to these variables is: (1) " Strongly agree," (2) "Slightly agree," (3) " Slightly disagree," and (4) "Strongly disagree." We have, however, inverted the order of the response categories to make them easier interpret. Ideology is measured through a ten-point semantic differential scale where 1 indicates extreme left and 10 extreme right.

The socio-demographic variables include those that reflect differences in the sources of income according to the literature on the labor market and inequality, as research has attempted to correlate these variables with preferences for redistribution in different comparative studies (Alesina and Giuliano, 2009). This group of variables includes: gender (0 = "Male," and 1 = "Female"), age and age squared in order to capture a possible linear relationship with this variable, years of education[1] (1 = "Up to 14 years of education", 2 = "15-20 years of education", and 3 = "Over 20 years of education"), marital status (0 = "Married or living in a couple," 1 = "Single," and 2 = "Divorced, separated or widowed"). We were not able to include other relevant variables, such as occupation or income level, in the analysis due to the high number of missing values in the national samples. A descriptive analysis of the variables included in the analysis is shown in Table 4.

4.2 Statistical methodology

Given that the dependent variable is ordinal categorical, we used an ordinal logit model to estimate the effect of the explanatory variables (Greene, 2008; McKelvey and Zavoina, 1975). We assume that, for individual i, the degree of agreement with each of the reform measures for the pension system analyzed can be measured by a latent variable y_i^*, which is a function of a vector of individual characteristics x_i:

$$y_i^* = \beta' x_i + \varepsilon_i \tag{1}$$

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[1]This variable was recodified from its original values, following the specification by Groezen (2009), as the Eurobarometer does not include data on educational levels achieved. In the definition used here, the first category could correspond to the group without education and primary study, the second category to secondary studies, and the third category to university education.

Empirically, it is not possible to observe y_i^*, but a variable y_i that takes values from 1 to 4 and grows as the degree of agreement with each of the proposed statements on reform increases. Thus, the probability of seeing an individual i whose degree of agreement y_i would be m can be expressed as the probability that y_i^* is between the cut-off points μ_{m-1} and μ_m:

$$P(y_i = m|x_i) = P(\mu_{m-1} \leq y_i^* < \mu_m|x_i) \tag{2}$$

From Equation (2), we can calculate the probability that an individual i belongs to category m as:

$$P(y_i = m|x_i) = \Lambda(\mu_m - \beta'x_i) - \Lambda(\mu_{m-1} - \beta'x_i) \tag{3}$$

Assuming that the distribution of the term for random error ε_i is logistic, we have estimated an ordinal logit model. We used Wald's test proposed by Brant (1990) to test the assumption of parallel regression (also known as the proportional odds assumption), which implies that the coefficients of the $m-1$ binary logistic regressions implicit in the ordinal logit share the same regression parameters. However, we were not able to retain all of the independent variables in the binary logistic regression, since the extreme categories of the dependent variables are less populated. Therefore, the assumption of parallel regression cannot be guaranteed.

Even if the results of a hypothetical violation of the foregoing assumption are difficult to evaluate in this context, a bivariate examination of the data (as well as the theoretical considerations), suggests that the differences between the categories "slightly agree" and "slightly disagree" could be larger than the differences between the categories "strongly agree" and "slightly agree" or the differences between "strongly disagree" and "slightly disagree." For this reason, we have also estimated a binomial logit as an alternative model for each dependent variable. In this specification, the dependent variable takes a value of 0 if the individual "strongly disagrees" or "slightly disagrees" with the measure proposed and a value of 1 if he or she "strongly agrees" or "slightly agrees." The results indicate that the significance and direction of the influence of the explanatory variables do not change in this alternative specification. Finally, in order to test the robustness of the estimates, we have also estimated an ordinal probit model for each of the dependent variables, although the results are not presented in Table 5 for the shake of brevity. However, the sign, significance and magnitude of the coefficients are nearly the same as the estimates with the ordinal logit.

Although the results presented indicate great robustness for different specifications, we must remember that the individuals have been grouped by countries that have welfare regimes with different pensions and characteristics. Thus, multilevel analysis could be proposed as a methodological alternative to estimate the logistical regression coefficients (Goldstein, 2003; Rabe-Hesketh, Skrondal and Pickles, 2005; Raudenbush and Bryk, 2002). The statistical consequence of individuals belonging to different countries is that the coefficient vector β in Equation (3) can vary from group to group. Thus, we have used a multilevel approach to study the effects of the country, even though it is not possible to analyze the effect of national variables on the dependent variables, due to the low number of second-level sample units.[2] The results are shown in Table 6. In the specifications used, we assume that the effect of each explanatory variable is fixed across the countries, but there is a random effect associated with the country that accounts for the variations in response between the countries. This means that the errors are constant within the countries but not between different countries, while we assume also that the errors are not correlated between countries. Thus, we can rewrite the cut-off point (μ_{mj}) in Equation (3) as a function of a fixed effect (γ_m) and a random effect by country (μ_{mj}). We can thus write μ_{mj} for country j as:

$$\mu_{mj} = \gamma_m + u_{mj} \tag{4}$$

The multilevel model thus proposed includes both fixed and random effects. However, the estimation by maximum likelihood (ML) of the multi-level models with categorical dependent variables involves significant computational problems due to the high dimensionality of the likelihood function. In the literature, there are two main focuses for tackling this problem: estimating penalized and maximum quasi-likelihood (PQL and MQL) and approaching the likelihood function through some numerical integration method. While the methods of quasi-likelihood are less computationally demanding, their main disadvantage is that they do not involve the use of the likelihood function. At the same time, the QL estimators are biased negatively in the presence of large variances or variables of response that deviate greatly from the normal distribution (as is the case here). For these reasons, we have used the Adaptive Gaussian Quadrature (AGP) approximation of the maximum likelihood, as proposed by Rabe-Hesketh, Skrondal and Pick-

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[2]Although there is no definitive consensus in the literature on multi-level analysis, most of the authors agree on establishing a minimum threshold around thirty observations per level of analysis (Goldstein, 2003).

les (2005), which scales and translates the points of quadrature, taking into account the properties of the integration. The Newton-Raphson algorithm was then used to maximize the likelihood function. The calculations were performed using the GLAMM routine for Stata.

5   Findings and discussion

The results of the different estimations for each of the dependent variables show a consistent pattern, although the predictive capacity of each of the variables varies considerably. On the one hand, the variables associated with socio-economic status have a significant influence on attitudes to the different reform measures in the direction expected by the theory of pecuniary interest (Hypothesis H1), although their effect is quite modest. Gender is only significant in the case of attitude to the introduction of private pension plans, such that being a woman increases the likelihood that one will oppose private pension plans. Age has a U-shaped effect on preferences to the different kinds of reforms, as it does on many other political preferences. As age increases from youth to adulthood, support for contributions increases and support for extending the retirement age decreases. However, if one moves from adulthood to old age, the effect is reversed. In this case, the probability of supporting contributions decreases and support for raising retirement age increases.

The effect of education is somewhat more problematic. Education does not have a significant effect on attitudes toward privatization of the pension system, but it does have a significant positive effect on attitudes toward raising both contributions and the retirement age. According to the self-interest thesis, the sign of the two equations should be different, as the two reforms have opposite redistributive effects. This leads us to seek a possible alternative explanation in the fact that the most educated people are more informed concerning problems of the pension system and are thus more willing to accept reforms. However, we do not have data to test this possibility empirically. Finally, the fact of being divorced, separated or widowed (caeteris paribus) increases the likelihood of opposing a raise in contributions.

Table 5: Preferences for Pension Reforms. Ordered Logit

	Raising contributions	Raising retirement age	Allow private pension funds
Female	-0.003	-0.020	-0.077*
	(0.039)	(0.039)	(0.040)
Age	0.014**	-0.017**	-0.006
	(0.007)	(0.007)	(0.007)
Age^2	$<$-0.001	$<$0.001***	$<$0.001
	($<$0.001)	($<$0.001)	($<$0.001)
15-20 years of education[a]	0.133**	-0.027	0.025
	(0.061)	(0.062)	(0.063)
More than 20 years of education[a]	0.217***	0.234***	0.085
	(0.068)	(0.069)	(0.071)
Single[b]	0.065	0.030	-0.159**
	(0.066)	(0.066)	(0.068)
Divorced, separated, or widowed[b]	0.114**	-0.014	-0.085*
	(0.050)	(0.051)	(0.052)
Ideology	-0.032***	0.046***	0.080***
	(0.010)	(0.010)	(0.011)
Universalistic principle	0.271***	-0.337***	0.271***
	(0.033)	(0.033)	(0.034)
Conservative principle	0.123***	-0.273***	0.361***
	(0.030)	(0.030)	(0.031)
Liberal principle	-0.228***	0.159***	0.254***
	(0.022)	(0.022)	(0.023)
Familistic principle	-0.259***	0.261***	0.048**
	(0.021)	(0.021)	(0.021)
France[c]	-0.083	-0.081	0.124
	(0.141)	(0.143)	(0.147)
Belgium[c]	-0.259*	0.269*	0.227
	(0.140)	(0.141)	(0.147)
Netherlands[c]	0.538***	0.056	0.271*
	(0.138)	(0.139)	(0.144)
Germany[c]	-0.130	-0.216*	0.071
	(0.127)	(0.129)	(0.134)
Italy[c]	-0.001	0.283**	-0.032
	(0.144)	(0.144)	(0.150)
Denmark[c]	0.199	0.254*	1.149***

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	Raising contributions	Raising retirement age	Allow private pension funds
	(0.136)	(0.137)	(0.147)
Ireland[c]	-0.117	0.929***	0.821***
	(0.145)	(0.147)	(0.156)
United Kingdom[c]	0.428***	0.015	0.609***
	(0.135)	(0.137)	(0.142)
Greece[c]	-0.170	-0.837***	0.340**
	(0.143)	(0.149)	(0.151)
Spain[c]	0.291**	-0.016	-0.322**
	(0.142)	(0.142)	(0.149)
Portugal[c]	-0.457***	0.461***	-0.146
	(0.146)	(0.146)	(0.152)
Finland[c]	-0.354***	0.151	0.013
	(0.137)	(0.140)	(0.145)
Sweden[c]	0.110	-0.839***	-0.474***
	(0.140)	(0.146)	(0.147)
Austria[c]	-0.102	0.279**	0.231
	(0.142)	(0.142)	(0.151)
Threshold μ_1	-1.495***	-1.259***	0.275
	(0.265)	(0.265)	(0.276)
Threshold μ_2	0.042	0.130	1.409***
	(0.263)	(0.264)	(0.274)
Threshold μ_3	1.783***	1.577***	3.675***
	(0.264)	(0.266)	(0.276)
No. Obs.	9136	9603	9499
McFadden's pseudo-R2	0.035	0.048	0.051
Log likelihood	-11548	-11154	-9770
Chi-Square	843.200	1122.000	1061.000

Significance levels: $***$ p<0.01, $**$ p<0.05, $*$ p<0.10.

Standard errors in brackets.

[a] Up to 14 years of education is the reference category.

[b] Married or living as a couple is the reference category.

[b] Luxembourg is the reference category.

Ideology also has a significant effect on opinions concerning preferences for reform, and the sign agrees with that expected in Hypothesis H2. The

farther to the right the person is, the more likely he or she is to reject a raise in contributions, but the likelihood of accepting a delay in the age of retirement and privatization of the pension system increases. In contrast, the farther to the left the respondent, the more likely he or she is to accept a raise in social contributions, to reject a raise in the retirement age and to oppose privatization of the pension system.

Table 6: Preferences for Pension Reforms. Multilevel Ordered Logit

	Raising contributions	Raising retirement age	Allow private pension funds
Female	-0.004	-0.020	-0.077*
	(0.039)	(0.039)	(0.040)
Age	0.014**	-0.017**	-0.006
	(0.007)	(0.007)	(0.007)
Age^2	$<$-0.001	$<$0.001***	$<$0.001
	($<$0.001)	($<$0.001)	($<$0.001)
15-20 years of education^a	0.142**	-0.026	0.032
	(0.061)	(0.062)	(0.063)
More than 20 years of education^a	0.227***	0.232***	0.092
	(0.068)	(0.069)	(0.071)
Single^b	0.065	0.032	-0.159**
	(0.066)	(0.066)	(0.068)
Divorced, separated, or widowed^b	0.113**	-0.014	-0.085
	(0.050)	(0.050)	(0.052)
Ideology	-0.033***	0.046***	0.081***
	(0.010)	(0.010)	(0.011)
Universalistic principle	0.271***	-0.339***	0.273***
	(0.033)	(0.033)	(0.034)
Conservative principle	0.125***	-0.273***	0.361***
	(0.030)	(0.030)	(0.031)
Liberal principle	-0.229***	0.157***	0.255***
	(0.022)	(0.022)	(0.023)
Familistic principle	-0.263***	0.262***	0.046**
	(0.021)	(0.021)	(0.021)
Threshold μ_1	-1.503***	-1.304***	0.098
	(0.237)	(0.257)	(0.265)
Threshold μ_2	0.034	0.083	1.232***
	(0.236)	(0.256)	(0.263)

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	Raising contributions	Raising retirement age	Allow private pension funds
Threshold μ_3	1.773***	1.529***	3.495***
	(0.237)	(0.258)	(0.265)
Level 2 Variance (U_{0j})	0.994	0.183	0.159
	(0.025)	(0.060)	(0.060)
No. Obs. Level 1 (Individuals)	9136	9603	9499
No. Obs. Level 2 (Countries)	15	15	15

Significance levels: $*** \ p<0.01$, $** \ p<0.05$, $* \ p<0.10$.

Standard errors in brackets.

[a] Up to 14 years of education is the reference category.

[b] Married or living as a couple is the reference category.

Source: Eurobarometer 56.1.

The effect of the principles of solidarity on the individual level is highly significant and large in size for predicting the three dependent variables (Hypothesis H3), although the effect of familism on the preference for privatization is relatively small. In this case, it is argued that adhesion to universalist and conservative values leads one to accept a raise in social contributions and to reject a raise in the retirement age. Conversely, liberal and familistic values favor the acceptance of the increase in retirement age and the rejection of increase in contributions. However, the effect on the preference for privatization, while significant, is positive for all of the principles of solidarity, a counter-intuitive result.

Once we have estimated the effects of the variables, we simulate the likelihood of support for each of the reform measures from the results obtained in Table 5 (ordinal logit). Figures 1, 2, and 3 represent graphically the change in the likelihood of support for each of the reforms based on principles of universalist, conservative, liberal and familistic solidarity. In each of the three figures, each line represents the likelihood of supporting each of the measures by aggregation of the probability of being in the category "strongly agree" and the probability of being in the category "slightly agree." For each simulation of probabilities, the other explanatory variables are at their average values, as is common practice.

Figure 1 shows the simulated probabilities of support for raising contributions. We see that the effect of values of solidarity on the dependent variable are opposed. On the one hand, universalist and conservative val-

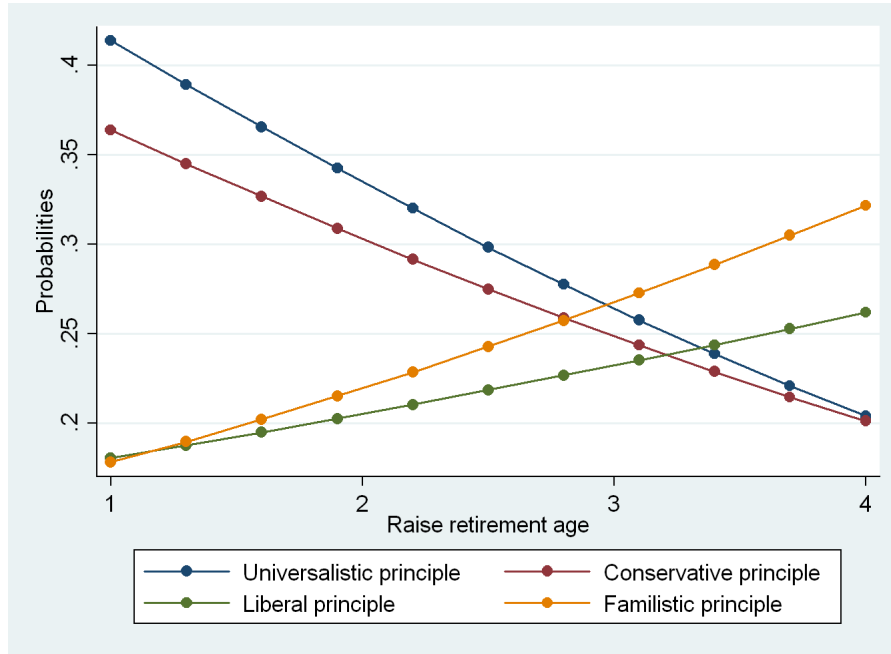**Figure 1:** Support for raising contributions
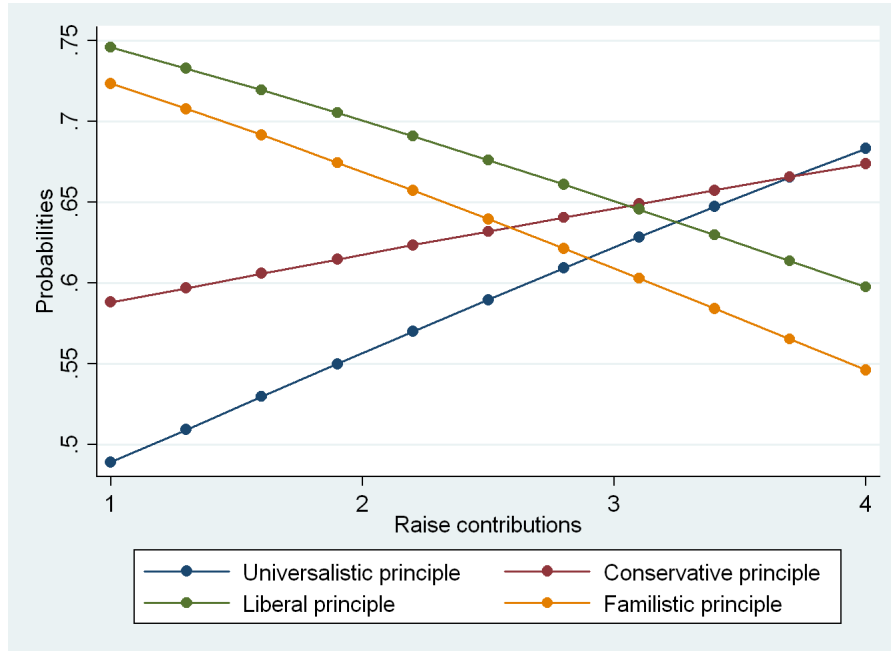
Notes: Simulated probabilities from ordered logit models in Table 5. Support for raising contributions ("strongly agree" and "slightly agree").
Source: Eurobarometer 56.1.

ues lead to accepting a raise in contributions, while liberal and familistic values lead to rejecting it. However, we must also point out that the size of the effect associated with the universalist principle is greater than the effect associated with the conservative principle. In other words, attitudes to contributions are more influenced by the universalist principle than by the conservative principle.

Figure 2 shows the simulated probabilities of supporting an increase in the retirement age. As in the previous figure, the effects of the principles of solidarity are opposed. Liberal and familistic respondents are more in favor of raising the retirement age, whereas the universalists and conservatives oppose it with greater intensity. And, as before, the size of the effect of the universality principle is greater than that of the other variables, as can be seen in the graph.

Figure 3 shows the simulated likelihood of support for permitting private pension plans. In contrast to the previous graphs, all of the principles of

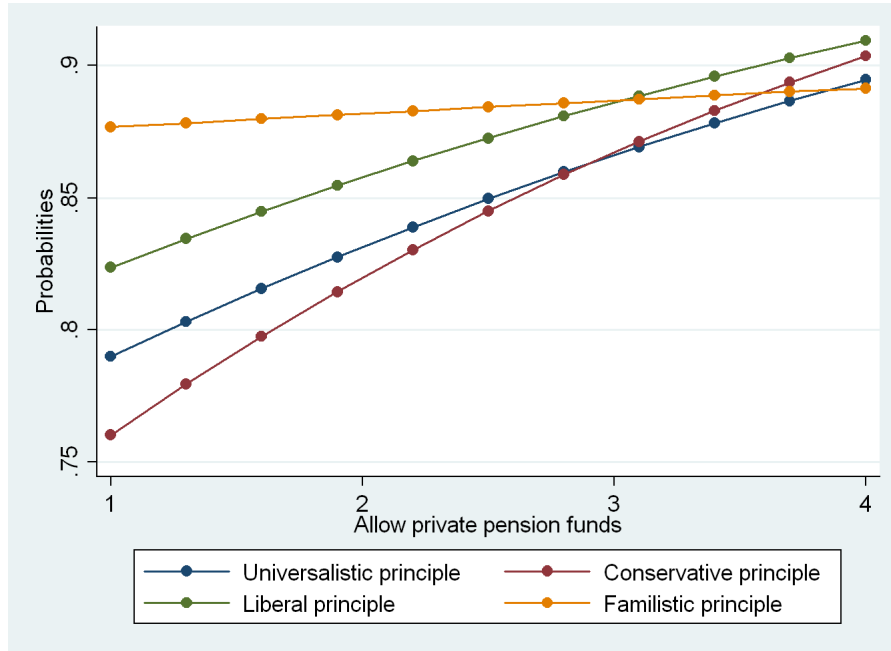**Figure 2:** Support for raising retirement age

Notes: Simulated probabilities from ordered logit models in Table 5. Support for raising the age of retirement ("strongly agree" and "slightly agree").
Source: Eurobarometer 56.1.

solidarity have a positive effect. Somewhat paradoxical from a redistributive point of view, this result may perhaps be explained in terms of framing (Jacoby, 2000). Individuals may value more highly a measure that is expressed in positive terms, as in the case of expanding the possibility of choice. This is what would lead to high acceptance of the measure, which has already been shown in the descriptive analysis of the variables.

Finally, Figure 4 charts the random effects by country (Empirical Bayes Estimates). These random effects have been calculated for each of the dependent variables from the multilevel analysis estimations shown in Table 6. The random effects of the country capture the variation in response not explained by the individual variables and attributable to the effect of the country, such that they can be interpreted in the same way as the fixed effect in the ordinal logit models in Table 5. Once we have controlled for the effect of the individual variables, we can see that the random effects by country do not follow a clearly defined pattern. The greatest resistance to raising

**Figure 3:** Support for allowing private pension funds

Notes: Simulated probabilities from ordered logit models in Table 5. Support for allowing private pension funds ("strongly agree" and "slightly agree").
Source: Eurobarometer 56.1.

contributions occurs in Portugal, Finland and Belgium, while the greatest acceptance of this reform is in the Netherlands and the United Kingdom. Regarding delay in the retirement age, the greatest resistance occurs in Sweden and Greece, whereas the greatest acceptance occurs in Ireland and Portugal. As to enabling contribution to private pension funds, the greatest resistance is concentrated in Sweden, Spain and Portugal, while the most receptive countries are Denmark, Ireland and the United Kingdom.

From all of this emerges a relatively coherent pattern: the countries that tend to oppose delaying the retirement age tend to oppose introducing contributions to private funds. They are also more favorably disposed to an increase in contributions. This is the case in Spain, the United Kingdom and the Netherlands. Conversely, countries more inclined to oppose the raise in contributions tend to favor increasing the retirement age (as in the case of Portugal) and even private pension plans (as in the case of Ireland). At the same time, however, there are countries that oppose both raising the

Figure 4: Random effects by country
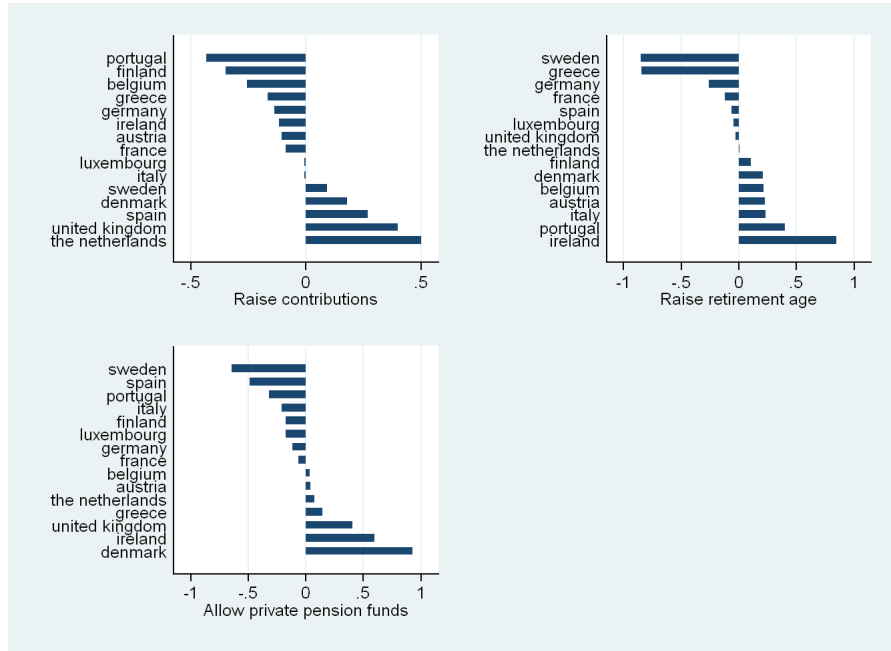
Notes: Notes: Empirical Bayes Estimates (BLUP) for country effects.
Source: Eurobarometer 56.1.

retirement age and introducing private retirement plans (as in the case of Sweden). This leads us to believe that the specific factors in each country have significant weight in determining individual attitudes. Finally, we find that the order of magnitude of the random effects by country does not follow a clearly defined pattern, which may be explained by the welfare regime to which each country belongs. Thus, we can conclude that, in contrast to the principles of solidarity on each individual level that are highly significant, the welfare regime on the aggregate level has a relatively limited explanatory power, leading us to refer to the compression of attitudes toward the reform of pension systems.

6 Conclusions

In most European countries, the reform of the pension system has been on the political agenda constantly for at least two decades, as a result of the demographic changes that threaten the viability of public provision systems.

Although there are many studies of the relation between the kind of welfare regime and preferences for different social policies, the topic of attitudes to reform of the pension system has hardly been treated in the literature. The central goal of this paper has been to provide an explanation of the attitudes to the different proposals for reform in the political agenda, using individual factors as explanatory variables. Specifically, we have proposed as a central hypothesis that attitudes to reform are determined, among other factors, by the principles of solidarity that inspire the different welfare regimes, even if these principles of solidarity have been measured at the individual level through variables contained in the Eurobarometer.

The empirical results show strong support for the idea that these principles have a significant influence on preferences on the individual level. Specifically, we have found that universalist and conservative principles operate in directions opposed to liberal and familistic ones on the individual level. The results indicate that individuals who ascribe to universalist principles (and also to conservative ones) are more in favor of raising contributions to maintain the level of pensions, while simultaneously opposing a delay in the retirement age. In the opposite direction, those who ascribe to liberal (or familistic) principles are more in favor of reducing contributions and raising the retirement age.

These results are consistent with the proposed hypotheses, although they leave open some important questions for the future. First, we should investigate the origin of these principles of solidarity on the individual level and attempt to determine whether they depend essentially on pecuniary factors or on ideological motivations learned through the socialization process. Second, we should ask how these principles of solidarity on the individual level are related to institutional variables on the aggregate level. It is possible that such individual principles are the product of different welfare regimes, as the institutional thesis would argue. It is also possible, however, that welfare policies are conditioned by the distribution of these principles throughout the population. Third, the fact that the influences of universalist and conservative principles operate in the same direction, just as liberal and familistic principles share the same sign of influence, poses the question of what relation could be established between these principles on the individual level. Last but not least, we must ask whether the effect of these principles can be translated to other areas of social policy and whether they exercise a consistent and coherent influence on preferences in these areas.

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