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Explaining Europeans' preferences for pension provision

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ABSTRACT

This paper analyses which factors are most important for explaining why people in fifteen European countries prefer either public, occupational or private pension provision. We make a distinction between personal characteristics such as age, gender and occupation, nationality and the actual, current kind of pension provision that respondents have. Using a large European survey, we find that although all three types of variables are important, the current pension provision and nation-specific effects have a much stronger effect than personal characteristics.

1. Introduction

Pension reforms are high on the political agenda nowadays. Especially in European countries, the ageing of the population jeopardizes the sustainability of current pension schemes. Although most economists agree that reforms are needed, in practice the speed at which reforms are implemented is very slow. An important reason for this is that pension reforms are politically very sensitive. Politicians are strongly driven by public opinion, which may be against reforms, even if society is better off with these reforms. Of course, the opinions of citizens can only play a role in the implementation of a particular pension system if the country is a democracy. Wang and Davis (2003), therefore, take measures of economic and political freedom into consideration as a possible explanatory factor for the existence of pay-as-you-go (payg), mixed and fully funded pension schemes in 52 countries all over the world. Indeed, they find these freedom variables to be of important influence. However, they do not analyze opinions of citizens and do not include personal characteristics. Also Brooks and Manza (2007) find evidence that in many countries the preferences of citizens had a profound impact on welfare state policies over the last decades. Understanding the determinants of the voters' preferences is therefore important in modern democracies, especially if these democracies, like in the European Union, intend to coordinate their policies more and have to reach a common agreement.

Theoretical studies on the political-economy of welfare state programs typically assume that individuals' support for a particular transfer program is mainly determined by self-interest (see e.g. Galasso and Profeta (2002) for a survey). Factors such as income and age then play an important role. Older people, for instance, will more strongly support unfunded payg-pensions since these involve a transfer from the younger, working generation to the elderly, retired generation. As a result, this will influence the opinions of citizens on different aspects of the pension system. Recently, several empirical studies have analyzed these opinions. Boeri et al. (2002) used a survey carried out in Germany and Italy about the sustainability of the pension systems in these countries

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Table 1
Descriptive statistics

	Non-retired		Retired	
Variable	Mean	St.dev.	Mean	St.dev.
Public scheme most preferred	0.56	0.50	0.60	0.49
Occupational scheme most preferred	0.24	0.43	0.24	0.43
Private scheme most preferred	0.07	0.25	0.04	0.19
Don't know	0.13	0.34	0.12	0.32
Female	0.53	0.50	0.48	0.50
Married	0.49	0.50	0.53	0.50
<15 years education	0.20	0.40	0.55	0.50
15–20 years education	0.41	0.49	0.28	0.45
>20 yrs education	0.26	0.44	0.17	0.38
20–25 years old	0.20	0.40	0.00	0.05
25–35 years old	0.23	0.42	0.01	0.08
35–45 years old	0.23	0.42	0.02	0.14
45–55 years old	0.20	0.40	0.05	0.21
55–65 years old	0.10	0.30	0.24	0.43
>65 years old	0.04	0.20	0.69	0.46
Self-employed	0.10	0.30		
Managers	0.11	0.31		
Other white collar	0.13	0.33		
Manual workers	0.29	0.45		
Homemakers	0.15	0.35		
Unemployed	0.09	0.28		
Students	0.13	0.34		
Main source pension income public	0.58	0.49	0.76	0.42
Main source pension income occupational (s1occ)	0.12	0.33	0.01	0.09
Main source of pension income private (s1priv)	0.12	0.33	0.04	0.20
Second main source pension income public	0.11	0.32	0.12	0.33
Second main source pension income occupational (s2occ)	0.12	0.32	0.10	0.30
Second main source pension income private (s2priv)	0.30	0.46	0.44	0.50
Belgium	0.06	0.24	0.07	0.25
Denmark	0.06	0.24	0.07	0.26
West Germany	0.06	0.24	0.07	0.25
Greece	0.06	0.24	0.08	0.27
Italy	0.06	0.24	0.07	0.26
Spain	0.07	0.25	0.05	0.21
France	0.06	0.24	0.06	0.24
Ireland	0.07	0.26	0.03	0.17
N.-Ireland	0.02	0.13	0.02	0.15
Netherlands	0.07	0.25	0.04	0.20
Portugal	0.07	0.25	0.05	0.22
Great Britain	0.06	0.24	0.08	0.26
East Germany	0.06	0.23	0.09	0.28
Finland	0.06	0.24	0.07	0.25
Sweden	0.06	0.24	0.07	0.26
Austria	0.06	0.24	0.06	0.24
Luxembourg	0.04	0.20	0.03	0.16
# Obs.	12,211		3,732	

and possible reforms. Among other things, they find that most individuals prefer the status quo. Age, education and more general, the economic interests also appear significant determinants of people's opinions on policy options. This contrasts the results found by Lynch and Myrskylä (forthcoming), who analyze data from two surveys in 11 European countries to see if, among people aged 45 and older, opposition to retrenchments of the public pension program depends on how much people benefit from this program. Their main result is that elderly Europeans who benefit most from the pension system are no more likely to oppose lower levels of public pensions than those who benefit less. Self-interest therefore appears not to be the determining factor for the support of pension reform. A similar result was reported by Hamil-Luker (2001), who especially focuses on age as a possible strong differentiator of public opinion on federal government spending for older adults in the United States, but finds no significant effect.

In this paper, we will focus on the question what determines the opinions of individuals regarding the way pensions are financed, which is one of the most important aspects of a pension scheme and reform proposals. Broadly speaking, two dimensions can be distinguished: the degree of funding (payg versus funded schemes) and the level at which pensions are organized (collectively or privately). Public pension schemes are mostly payg-financed and collectively arranged, private schemes are completely funded and rely on the individual's responsibility, whereas occupational schemes are collectively arranged and can be either payg-financed or funded. The previously mentioned studies mainly focus on the status quo and self-interest in explaining the opinions on particular kinds of pension scheme. We will also investigate this, but additionally pay special attention to the effect of nationality. We distinguish between three groups of potential determinants of people's preferences about how pensions should

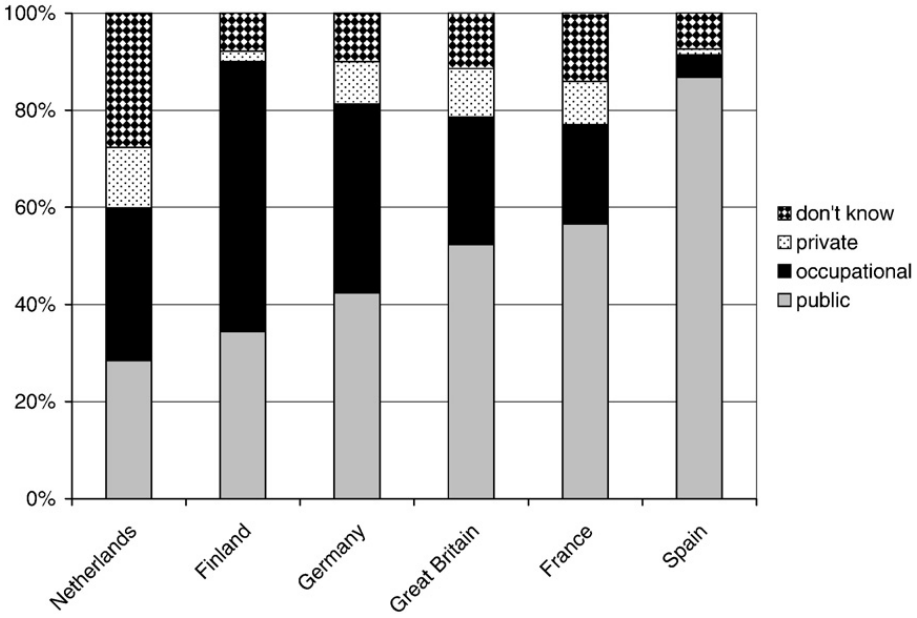

Fig. 1. Opinions on how pensions should mainly be provided.

mainly be provided, assuming that someone's stated opinion reflects his or her own preference.[1] First, personal characteristics such as age, gender, marital status, and education. These characteristics are connected with the individual's personal financial benefit, and thus would explain what kind of pension provision a rational, utility maximizing person would want. Second, the individual's current (or currently expected) main source of retirement income, and third, the effect of national identity. We find that the personal characteristics hardly play a role in explaining what shapes the individual preference for a particular type of pension scheme. Instead, the other two determinants do explain much of the variation in stated preferences. This suggests that people actually like what they are used to or familiar with, even if this does not bring them the highest financial gain. Furthermore, nation-specific effects appear to be very important, which can be related to different cultures and traditions. The rest of the paper is organized as follows. In Section 2, we will discuss theoretical considerations of these (possible) explanatory variables in more detail. Section 3 describes the data and model specification, after which in Section 4 the empirical results are discussed. Section 5 concludes.

2. Why different preferences?

There may be several reasons why people would have a strong preference for either a public, occupational or private pension scheme. The first reason refers to one's own pecuniary benefits. In public pension schemes, benefits are financed collectively through taxes and/or contributions and are usually not, or to a small extent, related to someone's work history. In some countries these consist of universal flat-rate benefits and are subject to a means test, while contributions typically depend to a large extent on income. Income redistribution therefore plays an important role in this type of pension scheme. Occupational schemes are also arranged collectively, but restricted to employees who usually participate in a pension fund; they often involve defined benefits related to contributions made throughout the working life and some measure of individual earnings from work. With this type of pension scheme, switching jobs can have negative repercussions for the pension benefits when previously built up pension rights are difficult to transfer. Furthermore, for married/registered couples they usually offer insurance against one of the spouses passing away, and thus also provide an insurance against the longevity risk for the spouse. Private pension arrangements are typically individual, defined contribution plans with much freedom of choice and individual responsibility, contributions being paid out of someone's net wage.

Assuming that people are rational utility maximizing agents, every person will display the strongest preference for the system that brings him or her the highest financial benefit. Personal characteristics such as gender, marital status, age, education and occupation will then be important explanatory variables.

A difference between attitudes of men and women, and between married and unmarried people may arise because pension rights are being built up differently in the three systems. Being married could, for instance, increase the preference for an occupational pension scheme because if one dies, the pension rights (partly) fall to the spouse, which is usually not so in case of a public pension scheme. Furthermore, fiscal reasons can also explain why these variables would influence the preference for a particular pension scheme. Being unmarried may increase the preference for a private scheme because the person is used to (and maybe even prefers to) arrange things for himself. Also the fact that married people are more likely to have children can play a role, as this involves substantial child rearing costs leaving less money to spend on private pension arrangements, thus decreasing the preference for this type of arrangement. As for gender, European women live about 6 years longer on average than men,[2] so in a

[1] Throughout the paper we use the words opinion and preference interchangeably.
[2] United Nations (2007).

Table 2
Regression results (marginal effects at the mean) for *non-retired individuals*

Dependent variable: probability of answering *public pensions* as the most preferred option								
	Mlogit, no source		Mlogit, with source		Mprobit, no source		Mprobit, with source	
	Marg.effect	*p*-value	Marg.effect	*p*-value	Marg.effect	*p*-value	Marg.effect	*p*-value
Female	0.012	0.273	0.009	0.439	0.011	0.280	0.008	0.522
Married	−0.025*	0.021	−0.023*	0.044	−0.027*	0.014	−0.024*	0.039
<15 years education	0.054*	0.030	0.040	0.116	0.060*	0.011	0.044	0.142
15–20 years education	0.046*	0.015	0.036	0.067	0.049**	0.009	0.037	0.075
(base:>20 years education)								
20–25 years old	−0.045*	0.036	−0.034	0.070	−0.043**	0.010	−0.033	0.061
25–35 years old	0.001	0.975	0.018	0.245	0.002	0.868	0.018	0.217
35–45 years old	0.032	0.054	0.043**	0.009	0.033	0.056	0.043*	0.031
45–55 years old	0.019	0.192	0.023	0.085	0.019	0.148	0.022	0.127
(base:>55 years old and not retired)								
Managers	−0.044	0.157	−0.044	0.121	−0.016	0.617	−0.028	0.278
Other white collar	−0.015	0.542	−0.020	0.375	0.017	0.489	−0.002	0.939
Manual workers	0.037	0.078	0.021	0.260	0.059**	0.007	0.033	0.116
Homemakers	0.035	0.125	0.017	0.450	0.056*	0.015	0.027	0.162
Unemployed	0.053	0.070	0.033	0.144	0.077**	0.008	0.045	0.114
Students	−0.042	0.136	−0.057	0.067	−0.019	0.497	−0.044	0.114
(base: self-employed)								
s1occ			−0.235**	0.000			−0.238**	0.000
s1priv			−0.180**	0.000			−0.188**	0.000
s2occ			0.022	0.162			0.019	0.185
s2priv			0.024	0.146			0.020	0.259
(base: all retirement income but occupational and private pensions)								
Belgium	0.061**	0.000	0.063**	0.000	0.073**	0.000	0.073**	0.002
Denmark	−0.190**	0.000	−0.093**	0.000	−0.154**	0.000	−0.063*	0.020
West Germany	−0.211**	0.000	−0.198**	0.000	−0.185**	0.000	−0.173**	0.000
Greece	0.212**	0.000	0.209**	0.000	0.224**	0.000	0.218**	0.000
Italy	−0.003	0.427	0.002	0.641	−0.005	0.145	0.000	0.981
Spain	0.294**	0.000	0.292**	0.000	0.307**	0.000	0.307**	0.000
France	−0.032**	0.000	−0.032**	0.000	−0.021**	0.000	−0.022**	0.002
Ireland	−0.074**	0.000	−0.015	0.051	−0.049**	0.000	0.005	0.852
N.-Ireland	−0.113**	0.000	−0.002	0.862	−0.078**	0.000	0.023	0.408
Netherlands	−0.318**	0.000	−0.294**	0.000	−0.302**	0.000	−0.277**	0.000
Portugal	0.039**	0.000	0.040**	0.000	0.056**	0.000	0.053*	0.028
Great Britain	−0.105**	0.000	−0.004	0.714	−0.088**	0.000	0.007	0.559
East Germany	−0.116**	0.000	−0.107**	0.000	−0.093**	0.000	−0.085**	0.000
Finland	−0.297**	0.000	−0.128**	0.000	−0.252**	0.000	−0.102**	0.005
Sweden	0.052**	0.000	0.055**	0.000	0.072**	0.000	0.074**	0.002
Austria	−0.036**	0.000	−0.032**	0.000	−0.023**	0.000	−0.019	0.186
(base: Luxembourg)								
# Obs.	12,211		12,211		12,211		12,211	
Pseudo R^2	0.0938			0.1205				

*significantly different from zero at the 5% level; **significantly different from zero at the 1% level.

public system, they will receive benefits for a longer time without paying a higher contribution. A public system therefore involves redistribution from men to women, which can be a reason why women would have a stronger preference for public pensions. The preference for an occupational scheme is likely to be less strong among women because relatively fewer women have paid jobs compared to men, and do more part-time work than men,[3] implying that it is more difficult for women to build up sufficient pension rights.

The impact of age is particularly interesting because of the assumptions made in many political-economy models following the seminal article by Browning (1975), that young people prefer a smaller share of their pension income to be payg (and thus a larger part to be funded) than older people, since for the young, the return to investing on the capital market is higher than the indirect return of a payg-scheme. The opposite holds for the middle-aged and especially the retired, who favour a much larger unfunded component because they have already paid contributions to the system and want to receive benefits in return; in a funded scheme these previous payg-contributions have no value. While the question in the dataset that we use does not specifically differentiate between funded and payg-pension schemes, we know nevertheless that in Europe public pensions are generally payg, and private pensions are by definition funded. Occupational pensions can be both, but usually have a substantial funded component.

In a private and occupational scheme, the benefit one will receive usually depends on the amount previously contributed. This is not, or to a much smaller extent, true for a public pension scheme, although contributions are related to one's income. So the extent to which there is redistribution from high income to low income people is different. Because the level of education is

[3] The average labour force participation rate for men in the EU-15 countries was 78.3 percent in 2001, for women this number was 60.1 percent (OECD, 2001). 5.6 percent of employed men in the EU-15 had a part-time job, for women this number is 30 percent (OECD, 2001).

Table 3
Regression results (marginal effects at the mean) for *non-retired individuals*

Dependent variable: probability of answering *occupational pensions* as the most preferred option								
	Mlogit, no source		Mlogit, with source		Mprobit, no source		Mprobit, with source	
	Marg.effect	*p*-value	Marg.effect	*p*-value	Marg.effect	*p*-value	Marg.effect	*p*-value
Female	−0.030**	0.009	−0.026*	0.024	−0.029*	0.012	−0.025	0.195
Married	0.044**	0.000	0.037**	0.000	0.044**	0.000	0.037	0.222
<15 years education	−0.043*	0.027	−0.026	0.194	−0.044*	0.018	−0.025	0.346
15–20 years education	−0.033**	0.008	−0.023	0.083	−0.033**	0.005	−0.022	0.270
(base:>20 years education)								
20–25 years old	−0.038*	0.049	−0.042*	0.028	−0.047**	0.000	−0.048	0.391
25–35 years old	−0.027	0.126	−0.038*	0.037	−0.033*	0.016	−0.043	0.343
35–45 years old	−0.037*	0.018	−0.046**	0.008	−0.042**	0.003	−0.050	0.305
45–55 years old	−0.015	0.327	−0.022	0.187	−0.018	0.233	−0.025	0.367
(base:>55 years old and not retired)								
Managers	0.093**	0.008	0.077*	0.013	0.067*	0.042	0.063	0.082
Other white collar	0.078**	0.003	0.070**	0.005	0.052*	0.027	0.056*	0.026
Manual workers	0.039	0.182	0.043	0.108	0.021	0.424	0.035	0.296
Homemakers	−0.008	0.767	0.013	0.634	−0.027	0.302	0.003	0.922
Unemployed	−0.017	0.581	0.009	0.710	−0.037	0.159	0.000	0.986
Students	0.024	0.515	0.046	0.219	−0.002	0.953	0.030	0.370
(base: self-employed)								
s1occ			0.278**	0.000			0.285	0.154
s1priv			0.111**	0.000			0.113**	0.003
s2occ			0.038*	0.016			0.042	0.287
s2priv			0.020	0.158			0.023	0.121
(base: all retirement income but occupational and private pensions)								
Belgium	−0.045**	0.000	−0.064**	0.000	−0.055**	0.000	−0.072	0.224
Denmark	0.301**	0.000	0.183**	0.000	0.274**	0.000	0.159**	0.000
West Germany	0.259**	0.000	0.229**	0.000	0.238**	0.000	0.205**	0.005
Greece	−0.078**	0.000	−0.083**	0.000	−0.089**	0.000	−0.090	0.164
Italy	−0.004	0.283	−0.019**	0.000	−0.005	0.166	−0.017	0.203
Spain	−0.169**	0.000	−0.177**	0.000	−0.172**	0.000	−0.182	0.144
France	0.049**	0.000	0.040**	0.000	0.043**	0.000	0.035	0.075
Ireland	0.101**	0.000	0.029**	0.000	0.078**	0.000	0.011	0.699
N.-Ireland	0.196**	0.000	0.064**	0.000	0.169**	0.000	0.042	0.227
Netherlands	0.208**	0.000	0.147**	0.000	0.190**	0.000	0.133	0.101
Portugal	0.001	0.924	−0.004	0.567	−0.016*	0.023	−0.017	0.627
Great Britain	0.135**	0.000	0.024*	0.011	0.121**	0.000	0.014	0.130
East Germany	0.174**	0.000	0.154**	0.000	0.160**	0.000	0.136**	0.010
Finland	0.421**	0.000	0.203**	0.000	0.380**	0.000	0.179**	0.000
Sweden	0.010**	0.007	−0.019**	0.004	−0.002	0.554	−0.034	0.425
Austria	0.059**	0.000	0.037**	0.000	0.050**	0.000	0.027**	0.000
(base: Luxembourg)								
# Obs.	12,211		12,211		12,211		12,211	
Pseudo R^2	0.0938			0.1205				

*significantly different from zero at the 5% level; **significantly different from zero at the 1% level.

strongly related to one's income, we consider education as a possible explanatory variable[4] and postulate that more educated people have a stronger preference for a private scheme. Another reason could be that more educated people understand the systems better, have a longer time horizon, and are more able to make financial planning decisions.

The last personal characteristic that we consider is the employment status. Unemployed people rely more on public support and may therefore also have a stronger preference for public pensions. Self-employed people, on the other hand, in general have a lot of individual responsibilities, which could also imply that they especially prefer a private pension scheme.

In reality, however, individuals do not completely resemble this prototype rational agent. Apart from the question whether people actually understand how the pension system works,[5] they may also be influenced by habits, norms, historical developments and culture in their own country, or even in the region where they live.[6] Especially in Europe, with its large diversity of cultures and languages, this nation-specific effect is likely to be present, and could also affect the public opinion on pension schemes. Furthermore, people's attitude towards policy and policy reform can also be driven by what they are used to, in this case the way their own retirement provision is currently arranged. Of course, this could reflect the fact that their current pension provision

[4] We do not use income because many people did not answer this question (in some countries almost half of the respondents); those who did answer were divided into quantiles, which differ a lot between countries, so that groups between countries are not comparable. This would make the estimated coefficients meaningless.

[5] Boeri et al. (2002) for instance show that only a minority understands how a payg-system operates.

[6] See Groezen et al. (2006), who also take the influence of the region where an individual lives into account.

Table 4
Regression results (marginal effects at the mean) for *non-retired individuals*

Dependent variable: probability of answering *private* pensions as the most preferred option								
	Mlogit, no source		Mlogit, with source		Mprobit, no source		Mprobit, with source	
	Marg.effect	*p*-value	Marg.effect	*p*-value	Marg.effect	*p*-value	Marg.effect	*p*-value
Female	−0.012*	0.026	−0.009	0.074	−0.015*	0.015	−0.011	0.634
Married	0.008	0.074	0.007	0.124	0.009	0.094	0.007	0.798
<15 years education	−0.033**	0.000	−0.025**	0.000	−0.038**	0.000	−0.028	0.414
15–20 years education	−0.017*	0.027	−0.012	0.086	−0.020*	0.021	−0.015	0.480
(base:>20 years education)								
20–25 years old	0.027*	0.021	0.018	0.067	0.033**	0.000	0.024	0.612
25–35 years old	0.023*	0.019	0.012	0.145	0.028**	0.005	0.017	0.638
35–45 years old	0.019**	0.003	0.012*	0.046	0.025**	0.001	0.017	0.676
45–55 years old	0.007	0.268	0.004	0.547	0.009	0.219	0.006	0.741
(base:>55 years old and not retired)								
Managers	−0.031**	0.000	−0.021**	0.000	−0.039**	0.000	−0.026	0.096
Other white collar	−0.041**	0.000	−0.031**	0.000	−0.051**	0.000	−0.037**	0.008
Manual workers	−0.049**	0.000	−0.033**	0.000	−0.057**	0.000	−0.039**	0.001
Homemakers	−0.039**	0.000	−0.025**	0.001	−0.045**	0.000	−0.028	0.189
Unemployed	−0.044**	0.000	−0.031**	0.000	−0.053**	0.000	−0.036	0.338
Students	−0.041**	0.000	−0.025**	0.000	−0.050**	0.000	−0.034*	0.011
(base: self-employed)								
s1occ			0.016	0.086			0.015	0.937
s1priv			0.100**	0.000			0.108	0.088
s2occ			0.013	0.117			0.014	0.689
s2priv			0.024**	0.000			0.026	0.248
(base: all retirement income but occupational and private pensions)								
Belgium	−0.035**	0.000	−0.036**	0.000	−0.042**	0.000	−0.040	0.626
Denmark	−0.027**	0.000	−0.034**	0.000	−0.037**	0.000	−0.041**	0.001
West Germany	−0.008**	0.000	−0.022**	0.000	−0.019**	0.000	−0.030	0.548
Greece	−0.037**	0.000	−0.034**	0.000	−0.040**	0.000	−0.036	0.682
Italy	−0.001	0.493	−0.006**	0.001	0.000	0.969	−0.005	0.699
Spain	−0.057**	0.000	−0.056**	0.000	−0.065**	0.000	−0.061	0.724
France	−0.007**	0.000	−0.011**	0.000	−0.013**	0.000	−0.015	0.189
Ireland	−0.030**	0.000	−0.037**	0.000	−0.039**	0.000	−0.043	0.430
N.-Ireland	−0.030**	0.000	−0.037**	0.000	−0.040**	0.000	−0.043	0.486
Netherlands	0.013**	0.000	−0.005**	0.002	0.005	0.066	−0.012	0.872
Portugal	−0.039**	0.000	−0.037**	0.000	−0.045**	0.000	−0.040	0.496
Great Britain	0.004	0.102	−0.014**	0.000	−0.001	0.394	−0.018**	0.000
East Germany	−0.007**	0.005	−0.019**	0.000	−0.018**	0.000	−0.027	0.418
Finland	−0.052**	0.000	−0.049**	0.000	−0.059**	0.000	−0.054	0.480
Sweden	−0.029**	0.000	−0.035**	0.000	−0.037**	0.000	−0.040	0.544
Austria	−0.012**	0.000	−0.022**	0.000	−0.020**	0.000	−0.027*	0.021
(base: Luxembourg)								
# Obs.	12,211		12,211		12,211		12,211	
Pseudo R^2	0.0938			0.1205				

*significantly different from zero at the 5% level; **significantly different from zero at the 1% level.

actually gives them the highest financial benefit. However, many people cannot freely choose the kind of pension scheme to participate in, as most are automatically participating in a collective scheme. It is therefore more likely that if present, such a 'status quo effect' would reflect some form of conservatism and dislike of changes (possibly because of distrust), or ignorance of existing arrangements and possible alternatives. If these effects are strong, they may dominate the effects of personal characteristics and lead people to prefer something that do not bring them the highest financial benefit.

3. Data and model specification

Our data are taken from the EU's regular surveys about the opinion of citizens with regard to political, social and economic issues, which are published in the series *Eurobarometer*. We exploit a special survey (*Eurobarometer* 56.1) focusing on pension policy and pension reform. It was carried out in September and October 2001 in the 15 Member States of the European Union, resulting in a data set with nearly 16,000 observations. The question we will focus on is the following:

3.1. How do you think pensions should be provided?

- Mainly by state or public pension schemes, financed from taxes and contributions;
- Mainly by occupational schemes, financed from employers' and their employees' contributions;
- Mainly by private arrangements between individuals and insurance companies, banks, etc.;
- Don't know.

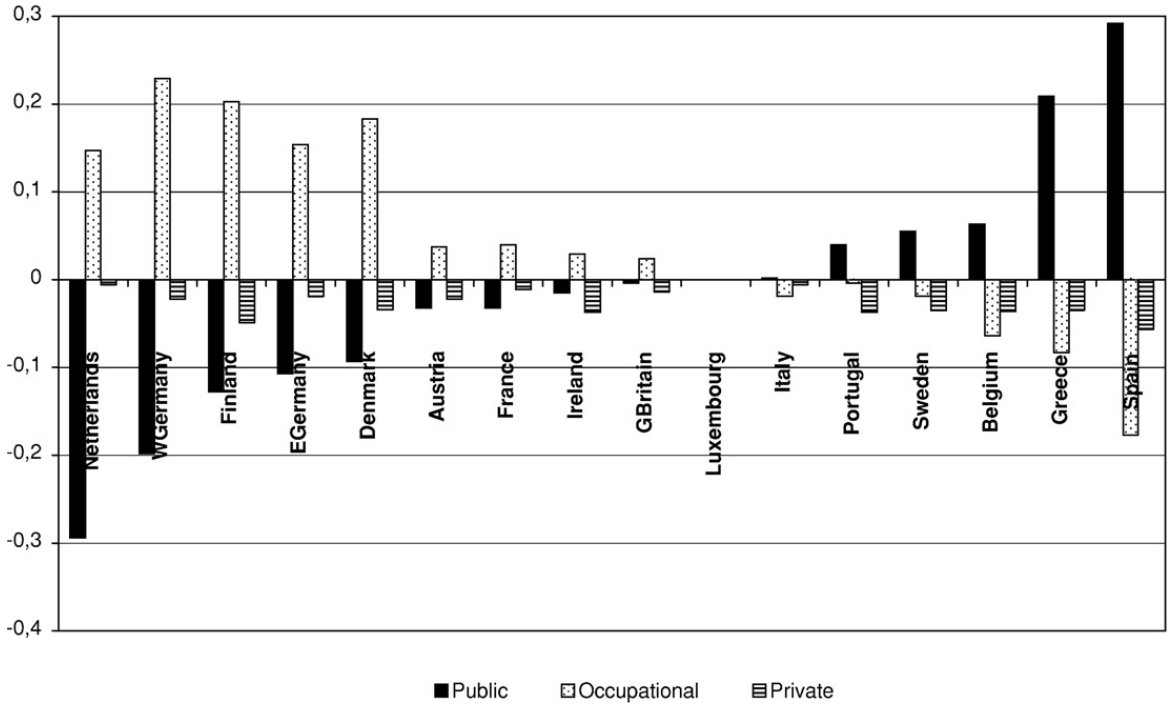

Fig. 2. Nation effects (after correcting for source of pension income).

Table 1 presents the descriptive statistics of the responses given to this question and the personal characteristics for both non-retired and retired individuals in the sample.

Every country has about 6% of the respondents, half of them are women and about half of them are married. Most of the non-retired have had 15 to 20 years of education, whereas more than half of the retired had less than 15 years of education. Almost one third of the retired are younger than 65 years old. As for the preferences about the type of pension arrangement, the majority of the respondents prefer public pensions, followed by occupational pension schemes. Compared to the non-retired, slightly more of those who are retired prefer public pension provision. However, as can be seen in Fig. 1, the differences between the countries are striking. While more than 80% of the Spanish respondents think that pension provision should be public, individuals in other countries like Germany, The Netherlands and especially Finland have a relatively strong preference for occupational schemes. If countries had the same distribution of personal characteristics like age, occupation and gender, we could conclude from these descriptive statistics that the different preferences are purely determined by nationality or reflect the status quo. However, when we have a closer look at the distribution of these characteristics (see Groezen et al., 2006), we see that the respondents in the various countries do in fact differ with respect to their level of education, occupation, marital status, and to some extent, their age. We therefore cannot rely on these descriptive statistics, but rather have to run a regression that includes these variables.

Formally, each individual is given the choice between the four alternatives indexed $j=1$–4. If the utility level that individual i attaches to choice j is given by $U_{i,j}$ (which can depend on more factors than only financial ones), the alternative chosen will be the one for which the individual experiences the highest level of utility. In addition, we assume that $U_{i,j}=\mu_{i,j}+\varepsilon_{i,j}$, where $\mu_{i,j}$ is a function of observed characteristics and some unknown parameters. We can then write the probability that the choice by individual i (y_i) is alternative j as $P(y_i=j)=P(\mu_{i,j}+\varepsilon_{i,j}>\mu_{i,k}+\varepsilon_{i,k})$, where $k=1$–4, $k\neq j$. Assuming that all error terms $\varepsilon_{i,j}$ are independent from each other, we can evaluate the impact of explanatory variables on the probability that each of the four possible answers is given by running a multinomial logit regression. Since it is difficult to interpret the coefficients of such a regression directly, we calculate the marginal effects at the mean. Because all variables are dummy variables, this marginal effect gives the

Table 5
F-tests on joint significance after multinomial logit (prob.> χ^2) for *non-retired individuals*

	Public-occupational		Public–private		Occupational-private	
	Without source of pension income	With source of pension income	Without source of pension income	With source of pension income	Without source of pension income	With source of pension income
Education level	0.0315	0.0209	0.0000	0.0000	0.0017	0.0243
Age	0.1619	0.0119	0.0273	0.2464	0.0000	0.0178
Occupation	0.0212	0.0000	0.0000	0.0000	0.0000	0.0000
All personal characteristics	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
All nation dummies	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
All sources of pension income	–	0.0000	–	0.0000	–	0.0000

Table 6
Regression results (multinomial logit, marginal effects at the mean) for *retired individuals*

	Public pension		Occupational pension		Private pension	
	Marg.effect	*p*-value	Marg.effect	*p*-value	Marg.effect	*p*-value
Female	−0.006	0.759	−0.035	0.079	−0.016**	0.001
Married	0.005	0.829	0.046**	0.001	0.006	0.254
<15 years education	0.059	0.065	−0.118**	0.000	−0.011*	0.045
15–20 years education	0.016	0.670	−0.054*	0.028	−0.009	0.096
(base:>20 years education)						
s1occ	−0.059	0.392	−0.052	0.486	0.016	0.418
s1priv	0.027	0.597	−0.067*	0.021	−0.010	0.149
s2occ	0.007	0.778	−0.004	0.854	0.007	0.376
s2priv	0.053**	0.008	−0.034*	0.046	−0.014**	0.008
(base: all retirement income but occupational and private pensions)						
Belgium	−0.002	0.791	0.015*	0.041	−0.024**	0.000
Denmark	−0.205**	0.000	0.282**	0.000	−0.015**	0.000
West Germany	−0.364**	0.000	0.447**	0.000	−0.020**	0.000
Greece	0.084**	0.000	0.001	0.914	−0.017**	0.000
Italy	−0.125**	0.000	0.149**	0.000	−0.020**	0.000
Spain	0.246**	0.000	−0.168**	0.000	−0.029**	0.000
France	−0.258**	0.000	0.304**	0.000	−0.020**	0.000
Ireland	−0.156**	0.000	0.224**	0.000	−0.028**	0.000
N.-Ireland	−0.093**	0.000	0.177**	0.000	−0.024**	0.000
Netherlands	−0.340**	0.000	0.357**	0.000	−0.013**	0.000
Portugal	−0.123**	0.000	0.125**	0.000	−0.020**	0.000
Great Britain	−0.244**	0.000	0.311**	0.000	−0.024**	0.000
East Germany	−0.238**	0.000	0.350**	0.000	−0.032**	0.000
Finland	−0.491**	0.000	0.599**	0.000	−0.033**	0.000
Sweden	−0.194	0.194	0.124**	0.000	−0.021**	0.000
Austria	−0.096**	0.000	0.142**	0.000	−0.023**	0.000
(base: Luxembourg)						
# Obs.	3732					
Pseudo R^2	0.1027					

*significantly different from zero at the 5% level; **significantly different from zero at the 1% level.

change of the probability that a certain answer is given if the dummy variable changes from 0 to 1. So for every category, the effects are relative to the base category, which can be set arbitrarily.

In the remainder of this paper, we will focus on individuals who are not retired.[7] The personal characteristics that are included are gender, marital status (married or not), age (in 5 categories, where those non-retired aged 55 and older is the base category), education (approximated by the years of education, divided into 3 classes and those with more than 20 years of education as the base category), and occupation (with self-employed as the base group). Furthermore, nation dummies are included that capture the nationality-specific effects. If present, some of these nationality effects can be explained by the currently existing pension system in a particular country. In a separate regression, we correct for such a 'nation status quo'-effect by using the answers that non-pensioners gave to the question what will probably be their main source and second main source of income after retirement. From these answers we created four additional dummy variables: if the (expected) main source of pension income is an optional private pension scheme, through an employer, the variable 's1occ' takes the value 1. If this is the second main source of retirement income, 's2occ' takes the value 1. Likewise, the variables 's1priv' and 's2priv' refer to a personal private pension scheme and long term savings plan (life insurance etc.), returns from savings or other assets, returns from real estate, which are all different forms of a private pension arrangement. The base category here is therefore compulsory state or public pensions and all other possible forms of income after retirement (e.g. social welfare, income support).

4. Empirical findings

4.1. Non-retired individuals

The results are shown in Tables 2–4 for each type of pension provision separately. The first column gives the results of the multinomial logit regression without including the main source of pension income. It appears that the preferences for a particular type of pension scheme do not depend a lot on personal characteristics. Being a female, for instance, only has a significantly negative effect on the probability that an occupational scheme is preferred (see Table 3): compared to men, women have a 3% point lower probability of answering that pensions should mainly be provided by an occupational scheme (*ceteris paribus*).

[7] Results for the retired will shortly be discussed at the end of Section 4.

The opposite holds for being married, where married people have a 4% point higher probability to prefer occupational pensions.[8] This could be explained by the fact that occupational schemes typically have spousal protections which act as a collective insurance against the risk of becoming a widow(er). Those who have enjoyed relatively few years of education have a significantly higher probability of preferring a public pension scheme, and not preferring an occupational or private pension scheme. This can be so because education is highly correlated with being employed, and therefore with participating in an occupational pension scheme. Furthermore, these results confirm the conjecture that private pension arrangements are less likely to be preferred by lower educated people as these involve rather complicated financial planning decisions. Age effects are not very strong, except for those between 35 and 45 who have a stronger preference for private pensions compared to those older than 55. Remarkably, age effects are not present for public pensions.[9] Being a manager or other white collar worker implies a stronger preference for occupational pensions, whereas the self-employed have a significantly stronger preference for a private pension scheme compared to the other occupations.

More striking results arise from the nation dummies, most of their coefficients are large and significantly different from zero.[10] The nation effects do not change if we include the main and second source of pension income in the regression (the second column of Tables 2–4). We do see, however, that the importance of education as an explanatory factor decreases. This may have to do with the fact that education, through its effect on current income, is sort of a proxy for the source of pension income. Furthermore, the first important source of pension income appears to have a large and significant effect on the kind of pension provision that people prefer. Those whose retirement income mainly consists of occupational pensions have a 24% point lower probability of saying that they prefer public pensions the most (*ceteris paribus*), and a 28% point higher probability of preferring occupational pensions. Having privately arranged pensions means a stronger preference for this kind of pension provision. The second main source of pension income is not very important. So people display a strong preference for what they are used to. Of course, this could also reflect that they have actually chosen the system that maximises their (own) utility, and therefore want to stick to it. But nearly everywhere, especially for public and occupational systems, people have no real choice to participate. Furthermore, leaving these source variables out of the regression hardly changes the effects of the other variables.

The nation dummy effects are also depicted in Fig. 2, from which groups of countries with 'similarly minded individuals' can roughly be formed: people in the Netherlands, Germany, Finland and Denmark have rather similar nationality effects (after correcting for all other explanatory factors, including the current source of pension income), the same holds for Austria, France, Ireland and Great Britain, possibly also including Luxembourg and Italy. Portugal, Sweden and Belgium have about the same size of their nation effects, which also holds for Greece and Spain with very pronounced nation effects.

Table 5 gives the results of *F*-tests on the joint significance of several variables. It appears that the age variables do not jointly explain why people choose between public or occupational pensions as their most preferred option. However, when including the main sources of pension income in the regression, the age variables are jointly significant. The reverse holds for the choice between public and private pension provision: including the source of pension income makes the age variables jointly insignificant. Apart from this, all other personal variables are jointly significant, which also holds for the nation effects and the sources of pension income. So all three types of variables contribute to the explanation why people prefer some type of pension provision, be it to a different extent.

4.2. Retired individuals

Table 6 shows the results for retired individuals, where the age and occupation variables are not included, and the question what the main source of income (with the same answer categories as before) is used. The difference with the group of non-retired is small: personal characteristics hardly matter, nation effects do. For the retired, a lower level of education implies a significantly lower preference for an occupational pension scheme. Furthermore, retired women have a lower preference for private pension than retired men, which is not so for the non-retired. Remarkably, the main source of pension income is not very important for the preferences of retired people.

4.3. Correlated error terms

One of the assumptions underlying the multinomial logit analysis is that the error terms are independent of each other. This implies independence of irrelevant alternatives, meaning that the probability ratio of any two alternatives is determined irrespective of what the other possible choices are. However, one could imagine that individuals who like occupational pensions a lot, also favour private pensions because they view both as two types of a funded pension scheme rather than the public, payg-scheme. An indication for this could be that having private pensions as the main source of retirement income has a positive effect on preferring not only a private, but also an occupational pension scheme. In that case, a simulation-based multinomial probit model must be used. The results of this regression (for the non-retired) can be read in the last two columns of Tables 2–4, again for

[8] Running the regression for men and women separately shows that the effect of being married on the preference for occupational pensions is only significant for women (results are available upon request).

[9] Running the regression for men and women separately shows that for men, age effects are only present for occupational pensions (a lower age implies a weaker preference for such pensions), while for women age effects are only significant for private pensions (women in the middle age categories have a stronger preference for private pensions compared to women older than 55).

[10] Taking another country as the base does not change the overall significance of the nation dummies.

the cases without and with correcting for the most important sources of pension income. It appears that especially the preference for privately arranged and occupational pensions can hardly be explained any more by the variables that we consider. Indeed, we find that the error terms of the choices for occupational and private pension schemes are positively and significantly correlated. This could account for the fact that we find little influence of the personal characteristics for the choice of privately arranged pensions when sources of pension income are included. For public pensions, only the main source of pension income and some nation dummies are very significant. However, one has to be cautious here. Running the simulation-based multinomial probit regression necessarily makes the (possibly strong) assumption that the preferences for public and occupational pension schemes are not correlated at all.[11] Considering the fact that mostly, these are two examples of a collectively arranged pension scheme, as opposed to private schemes that are usually individual, this assumption may not be valid. This raises interesting questions for further research on this issue.

5. Conclusion

Implementing pension reforms is a hard and risky job for politicians: going against public opinion can result in a big loss of votes. It is therefore important to know what people actually want, but maybe more important is the question what determines their preferences. When trying to answer this question, one would be tempted to think that individuals prefer those policies that result in the highest financial benefit for them. However, this assumes that people are completely rational, perfectly informed and selfish. Our study has shown that, at least for the type of pension scheme that EU citizens prefer, it is not so much personal characteristics that play a role, which is in line with the results found by Lynch and Myrskylä (forthcoming), but rather nationality effects and the desire to keep things as they are. The latter effect may arise from the fact that if someone participates in a certain pension scheme, (s)he has already contributed to it in previous years and therefore does not want to switch to another system. It may also be caused by ignorance of the financial consequences of alternative pension schemes. This can have important policy implications. When trying to implement pension reforms, politicians should inform their citizens better about what each person individually would gain, even though they have already contributed to an existing pension scheme. As for the nationality effects, the different cultural backgrounds, history etc. of Europeans also play a significant role for what kind of pensions they want, like Esping-Andersen (1990) describes in his analysis of different types of welfare states. This makes it more difficult to get consensus in Europe about a coordination, or maybe even harmonisation of European pension systems.

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[11] For computational reasons we cannot make the assumption that public and occupational pension schemes are correlated.