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The graying of the median voter

Aging and the politics of the welfare state in OECD countries

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The graying of the median voter

Aging and the politics of the welfare state in OECD countries

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Abstract

Analyzing 30 OECD-countries in 1980-2005, this paper documents the association of an aging electorate with retirement spending. The first result is that an increase in the age of the median voter of one year is associated with an increase of 0.25 percentage points in retirement spending relative to GDP. The second result is that aging does not lead to higher benefits per retiree. Both results also hold for health care costs, which are frequently assumed to be positively associated with aging as well. Together, the results contradict the main prediction of median voter models that imply that an older median voter successfully pushes for higher individual benefits. If anything, a graying median voter is associated with less generous pensions. These results are reinforced when health care costs are considered with a time trend proxying for technological change. Absent a time trend, health care costs –both relative to GDP and per inhabitant– are positively influenced by the age of the median voter.

JEL classification: C23; H55; J18

Key words: aging; retirement; political economy

Nederlandse samenvatting (Dutch summary)

Deze studie onderzoekt de relatie tussen vergrijzing en pensioenuitgaven in 30 OECD-landen voor de periode 1980 en 2005. Ten eerste blijkt dat een toename van de leeftijd van de mediane kiezer met een jaar gerelateerd is aan een 0.25 procentpunt hogere pensioenuitgaven als deel van het BNP. Ten tweede laat de studie zien dat vergrijzing niet samengaat met hogere pensioenuitkeringen per gepensioneerde. Beide resultaten gaan ook op voor kosten voor de gezondheidszorg, waarvan ook vaak wordt verondersteld dat zij samengaan met vergrijzing. Samengenomen betekent dit dat geen steun wordt gevonden voor de voorspelling dat oudere kiezers in staat zijn pensioenuitgaven te verhogen, zoals verondersteld wordt in mediane kiezer modellen. In plaats daarvan gaat de vergrijzende kiezer samen met mindere genereuze pensioenen. Het toevoegen van een tijdtrend als controle voor de invloed van technologische verandering op gezondheidskosten is cruciaal: zonder deze trend zijn gezondheidszorguitgaven –zowel als deel van het BNP als per inwoner– wel positief gerelateerd aan de leeftijd van de mediane kiezer.

1. Introduction

Aging has called the sustainability of public finance into question (Castles [2004]). According to many this has become more pressing with deficits of most countries ballooning after nationalization of private bank debts. There are two different ways in which aging may positively influence retirement spending.

A first effect is there are more retirees on the receiving end of Social Security. As a result, aging leads to higher retirement benefits relative to GDP. The positive effect of aging on pension expenditures relative to GDP could only be counterbalanced by a (dramatic) decrease of benefits per retiree.

A second effect is the increased political clout of the elderly. Median voter models predict that an older median voter gives politicians an incentive to increase the generosity of pensions. This will not only lead to higher spending relative to GDP but relative to the number of retirees as well.

This paper assesses the empirical support for both these propositions using OECD data from 30 countries between 1980 and 2005. In this paper we evaluate the demographic impact on public spending on retirement relative to GDP and relative to the number of retirees. Additionally the association of aging and health care costs is considered. Frequently aging is assumed to be positively associated with health care costs as well. For all variables, only public spending is taken into account, disregarding savings via pension funds, insurance companies and banks. We are solely interested in the political pressure to increase pensions that may or may not arise from an older electorate. As governments can influence public spending directly, this measure of pension spending is considered more relevant. Demographic composition of the electorate is operationalized by the median age of the population, while robustness checks are carried out with the dependency ratio as the operationalization.

This paper finds empirical support for the proposition that aging leads to more public spending on retirement as a share of GDP. An increase of the median age of one year, leads to an increase in public spending as a share of GDP with 0.25 percentage points. We do not find support for the stronger claim. If anything, aging influences the generosity of individual benefits negatively, though not significantly. The impact of an older median voter on health care costs crucially depends on whether technological change –proxied with a time trend– is included in the regression equation. With a time trend, there is no significant relation. Absent such a trend, the effects correspond with the reasoning of the median voter model.

These findings are derived in a fixed effect model controlling for several economic and political covariates, including unemployment, GDP per capita, union density, interest rate and the composition of government. The results are robust to different operationalizations and model specifications, as documented below.

Two earlier articles investigated the relationship between aging and retirement spending. Breyer and Craig [1997] use OECD-data for the period 1960-1990 with 10-year intervals and find that benefits as a fraction of GDP are positively and significantly related to the median voter age. Depending on the specification, an increase of one year of the latter increases spending relative to GDP by 0.4-0.6 percentage points. The median age is positively but not significantly related to benefits per pensioner. Tepe and Vanhuysse [2010] reach the same conclusions based on 18 countries between 1980 and 2000 using eight-year intervals, while operationalizing aging with the dependency ratio instead of the age of the median voter.

Our contribution is twofold. First, we incorporate more recent data, consider more countries and new regressors. We also use more observations (a minimum of 109 whereas Breyer and Craig and Tepe and Vanhuysse have a maximum of 76 and 54 observations respectively). This more elaborated and updated approach confirms their findings, thereby strengthening these earlier conclusions. The second and novel contribution is that we also consider health care costs. Health care costs are often argued to be related to aging as well.

The rest of the paper is organized as follows. The next section discusses the political-economic literature on Social Security and in particular the predicted effect of aging on contributions and benefits. The third section discusses the data and the model. The fourth section shows the results whereas the fifth section carries out several robustness analyses.

2. Theoretical background and related literature

There is a well-developed and substantial literature on the political economy of Social Security, see Galasso [2002] for an overview. A dominant view in the literature holds that both contributions and benefits will increase due to aging. An older median voter will successfully push for higher benefits.

Browning [1975] is an early contribution highlighting the potential importance of the median voter's age. He proposes that democracies have an intrinsic tendency to 'overspend' on Social Security. The main argument is that the median voter does not internalize all costs but has all benefits still to come. An older median voter thus increases retirement spending.

Browning considers a three-period overlapping generation model in which voting over social security takes place once. Government fully commits to the voted upon pension policy forever after. Voters differ in age which in turn determines their different preferences over pension spending. A retiree in the third period of life wants to maximize benefits, as (s)he does not pay contributions anymore but does receive benefits. In contrast, a young voter in the first period of life has both benefits and contributions ahead and prefers the contribution that equates (marginal) costs and (marginal) benefits. The median voter is middle-aged (and in the second period of life and working) and likewise still has all the benefits to come but has already paid some contributions. Considering the contribution's sunk costs, the median voter will not internalize all costs and prefer higher spending than the young voter. The young voter is the only one who internalizes all costs and benefits and thus prefers the efficient amount of retirement contributions. The median and middle-aged voter is decisive and overspending results. The older the median voter is, the larger retirement spending.

This voting failure occurs because younger voters anticipate getting older while older voters know they will never be young again. In the literature, demographics is the driving force for pension spending. The political effect of aging dwarfs the counteracting economic effect that aging decreases the implicit return of a Pay-As-You-Go-arrangement which makes PAYG less attractive. The return is lower because the ratio between retirees and the number of workers supporting them decreases.

Several authors have further developed this basic argument; see Persson and Tabellini [2000], Townley [1981] and Galasso [2006]. Calibrating a median voter model, the latter predicts that Spain will increase its spending on Social Security from 21.3% of wages to 45.5% and the UK from 14.5% to 33.2%.

The median voter model is important if not dominant in the political-literature. There are however several other approaches which sometimes lead to different predictions about the effect of aging. One alternative is discussed by Breyer and Stolte [2001]. They postulate that (near) retired generations form a majority, holding all political power. This does not lead to contributions of 100% because young generations can respond to taxation by adjusting labor supply. The older generations effectively maximize a Laffer curve that gives total tax revenues as a function of the tax rate. Breyer and Stolte predict that the 'burden' of aging is shared between retirees and working generation; aging leads to both higher contributions and lower individual benefits. The prediction of higher contributions but lower benefits also follows from probability voting models. In these models the incumbent party maximizes its political support by maximizing the sum of utility of different cohorts, weighing utility proportional to cohort-size, see Hollanders [2009]. Probability voting models postulate that larger cohorts have more influence but that minorities are not politically powerless. It also allows for the possibility that pension policies is not the only factor that voters consider in their voting decision.

Another stream of literature understands PAYG arrangements as an intergenerational game where elections take place each period, not once; see Conesa and Krueger [1999], Cooley and Soares [1999], Cooley and Soares [1996]. The repetition of elections leads to multiple equilibria. Generations only contribute to retirees if this results in future generations contributing to them. Each generation takes into account the behavior of previous generations in a reaction function. This reaction function gives the current contribution as a function of contributions of previous generations and may be seen as a social contract between generations (Sjoblom [1985], Boldrin and Rustichini [2000]). Positive transfers can be supported by the threat of future generations withholding future contributions in case current working generations do not contribute to current retirees. The default option of each generation is to contribute nothing when working, consequently receiving nothing when retired. Any transfer scheme that outperforms this default option can result as a subgame perfect equilibrium. A 'bad' equilibrium without contributions and without benefits is also possible. If no working generation contributes to older generations it is an optimal reaction to do likewise, in turn making the zero contributions of the others an optimal response. In this approach, the effect of aging is not clear a priori as multiple equilibria are possible. However, if an effect is predicted, generally the median voter reasoning applies. That is, as the median voter gets older, retirement increases.

Another view is given by Boldrin and Rustichini [2000] who propose that aging leads to the break-down of social security altogether. Aging makes PAYG less and less attractive and at one point working generations stop contributing to social security. Key in their two-period OLG-model is that this moment of break-down is uncertain because future demographic developments are uncertain. Each generation has the choice to continue social security, facing ex ante a positive probability but not certainty the next generation will do the same. The last contributing generation will lose ex post, as older generations are not compensated. In this approach aging leads to a certain breakdown of social security at an uncertain moment.

3. Data and econometric model

Data are retrieved from publicly available sources at the OECD, the Worldbank and the Comparative Political Data Set.1 Table 1 provides descriptive statistics.

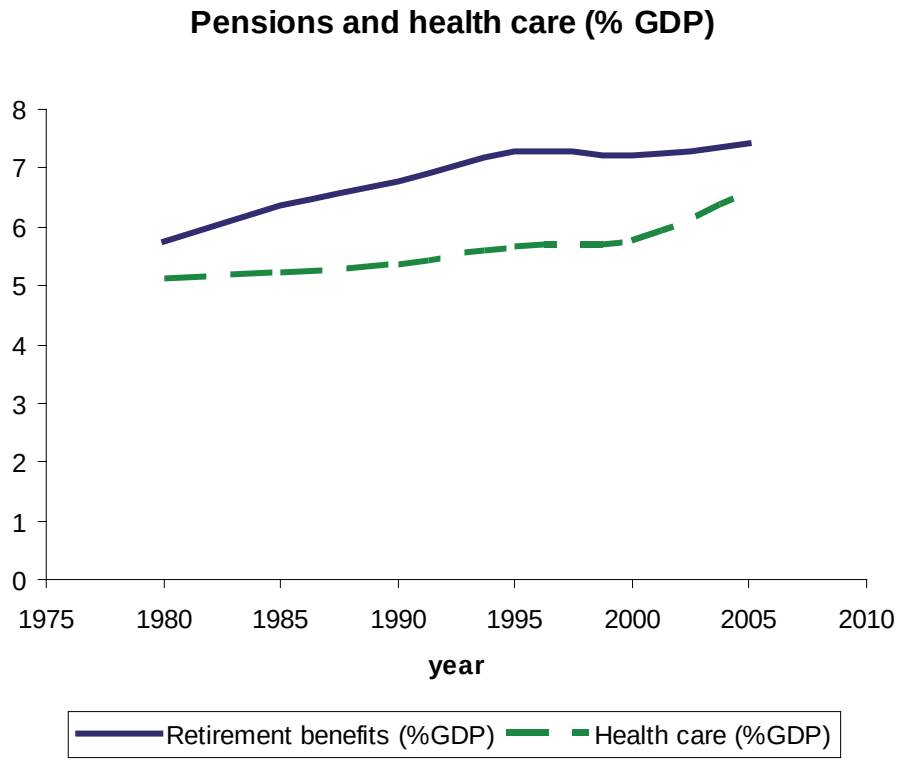
Table 1

	n	Mean	Standard deviation	Minimum	Maximum
Retirement spending / GDP	162	6.23	2.74	0.1	12.60
Benefit / retiree	162	10020.84	4808.92	312.20	26221.99
Health / GDP	135	5.57	1.07	3.13	8.24
Health / inhabitant	135	1350.38	536.06	308.57	4186.19
Median age	180	34.20	4.89	17.43	43.10
Dependency	180	21.81	5.38	7.58	32.55
Unemployment	162	6.72	3.78	0.18	18.76
GDP per capita	170	21310.02	8401.05	4865.44	59888.22
Union density	121	39.99	20.62	8.01	86.62
Interest rate	125	8.72	4.45	1.35	29.03
Government ideology	129	2.48	1.55	1	5
Minority government	171	0.16	0.37	0	1
Single party government	171	0.29	0.46	0	1

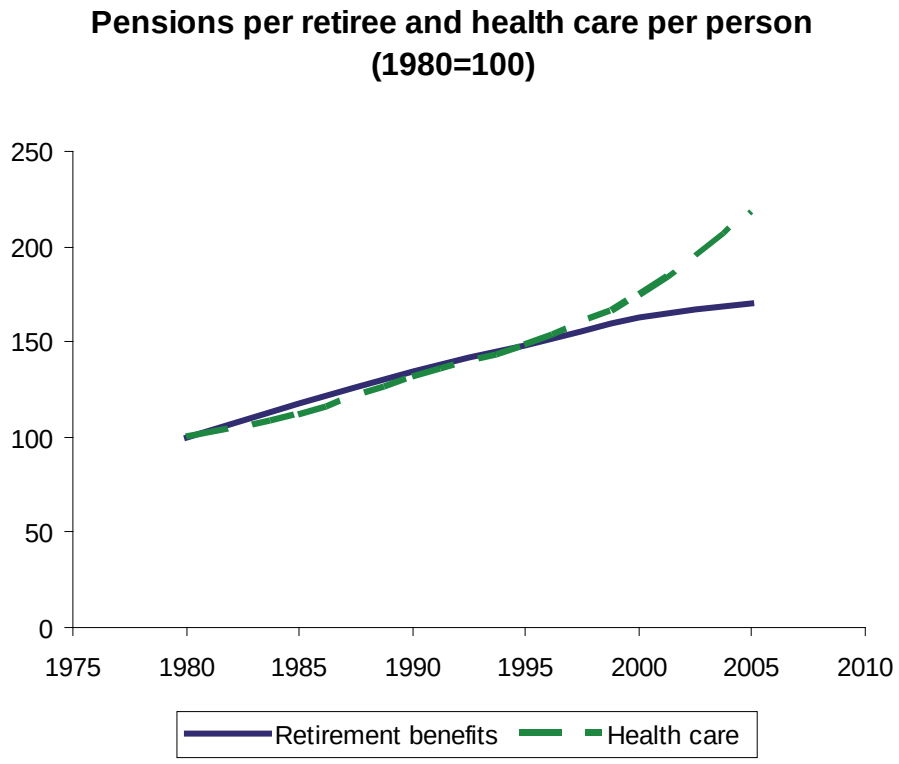
For the median age of the electorate the median age of the whole population is used, as reported by the Worldbank. This does not coincide with the median age of the electorate that is the crucial factor in many theoretical models. We hold that this limitation of the data is not restrictive as both median ages are driven by the same two factors, namely fertility rates and mortality rates. A second consideration is that the age of the median voter of the electorate does not coincide with the median age of actual voters in any case, as not everybody votes (and older voters tend to do so more).

In total four different dependent variables are considered. The first measure of retirement spending is total spending on retirements relative to GDP. This ranges between 0.1% and 12.1%. The following graph gives the average retirement spending relative to GDP for 21 countries for which this figure is available in each year. The graph also gives health care spending as a share of GDP for the same countries.

1 www.oecd.org, www.worldbank.nl and Armingeon, Engler, Potolidis, Gerber and P. Leimgruber [2010]



A second measure is benefits per retiree. This figure is derived by dividing total spending by the number of people older than 64. This is an approximation as it does not take differences in the retirement-age into account. The exact number of retirees in countries is unavailable. The number of people over 64 is the best approximation available but it is a data limitation all the same. This indicator is also used in other investigations of the effects of aging. The next graph provides the development of individual benefits for 21 countries for which these numbers are available each year; 1980 is the baseline year, indexed 100. It also gives the development of health care costs per inhabitant.



The third variable is healthcare costs relative to GDP, while the fourth dependent variable is health care costs per inhabitant. Healthcare costs per retiree are not separately available and are thus not considered. This need not be problematic as higher health care costs benefit all voters simultaneously and cannot be targeted at a specific group. If retirees successfully plea for higher healthcare spending, this will primarily affect healthcare costs per inhabitant. This contrasts with retirement spending where retirees benefit immediately, whereas younger workers benefit later in life, if at all.

The regressors can be grouped in economic and political control variables. Unemployment and the interest rate are economic control variables indicating the economic and financial circumstances of a country respectively. High unemployment arguably decreases the scope for social security while a high interest rate hinders debt-financing of retirement expenditure. The effect of GDP per capita is less straightforward. If pensions are indexed to GDP, GDP does not effect retirement spending relative to GDP. If this is not the case and benefits increase less than GDP, higher GDP is associated with lower retirement spending as a share of GDP. There may also be a behavioral effect. If leisure is a superior good, people prefer to spend relatively more on it when their income increases. As a result, retirement spending relative to GDP increases. Apart from this individual perspective, higher GDP may make it politically easier to redistribute, and this would lead to higher pensions as well.

Political factors other than the age of the median voter may be important as well. The first factor considered is union density, ranging from 8% to 86%. A strong union may successfully press for higher benefits for their (former) members. A government of left-wing signature may likewise lead to higher benefits. The ideological signature of the government is indicated by the proportion of the government that is made up of left-wing parties. There were 59 governments that were exclusively made up of right-wing parties whereas 26 governments were only occupied by left-wing parties. We further include dummy variables for two features of government composition. A first dummy indicates whether the government consists of a single party. Such a government may be either more effective in pushing through its own agenda or may shy away from policy changes as blame cannot be shared with other parties. A second dummy indicates whether the government is a minority government or not. A government without a majority in the parliament is arguably less effective in pushing through its own preferred policy.

The period 1980-2005 is chosen solely for practical considerations of data availability. A longer period would contribute to the testing possibilities of the data set. We do not consider one year intervals but five-year intervals instead. The reason is that pension reforms need time to be developed, discussed and implemented; consequently reforms are not implemented yearly. A five-year period is chosen as that covers a political cycle in which one (or more) reform can take place. There is also a more practical reason to dismiss one year intervals. In one year from the other, the median age hardly changes and estimation results would not be robust because of it.

The econometric model used is a panel data model with fixed effects, estimated with the within-estimator. Pooled regression leads to an inconsistent estimator whenever time-unvarying country-specific effects (like habit formation, geography, culture, path-dependent policies) are correlated with covariates. Exactly the same holds for the random effects estimator. If the crucial assumption that fixed effects are uncorrelated with all regressors does hold, the fixed-effect estimator used here is still unbiased and consistent, but less efficient than the random effects estimator. The base-line regression model is given by the following equation:

$$y_{i,t}=\alpha_i+\beta_1 Medianage_{i,t}+\beta_2 Unemployment_{i,t}+\beta_3 Interest\ rate_{i,t}+\beta_4 GDP\text{-}per\text{-}capita_{i,t}+\beta_5 governmentideology_{i,t}+\beta_6 Minority\ government_{i,t}+\beta_7 Single\text{-}party\text{-}government_{i,t}+\varepsilon_{i,t} \qquad i=1,2,..,30,\ t=1980,\ 1985,..,2005$$

Here $y_{i,t}$ is one of the dependent variables that were discussed: retirement spending relative to GDP and relative to the total number of retirees. For health care costs a time trend is added to proxy technological change that improves medical care but also increases medical spending.

In principle the data cover 30 countries over 6 periods, leading to potentially 180 observations. A considerable amount of observations are however missing, in particular from former Communist countries prior to 1990. The base-line model is estimated using 109 observations. This leads to an (unavoidable) loss in efficiency of the estimators. There is no reason to assume that the missing observations are correlated with the effect we are interested in, so we do not consider it likely that the estimators are biased.

4. Results

The median age of the population positively and significantly affects spending as a share of GDP, as table 2 indicates. An increase of one year is associated with an increase of 0.25 percentage point of GDP. With a t-statistic of 3.1, this estimation is (highly) significant. The R^2 equals 0.50; while this is reasonable high, not too much can be inferred from it. There is no statistical theory underlying R^2 and it increases when ever more variables are included, irrespective of their relevance.

The median age does not positively affect the size of benefits. Quite the opposite, it has a substantial negative effect. The associated t-statistic equals 1.8 and the estimation is thus not significant at a significance level of 0.05, though it is significant with a significance level of 0.1. The R^2 equals 0.78. This is again reasonably high but again not too much can be made of that. The regression shows no evidence for the claim of median voter models that an older median voter successfully presses for higher retirement spending.

Table 2

	(1)	(2)
VARIABLES	**Retirement spending/GDP**	**Benefits / retiree**
Median age	0.252***	-231.1*
	(0.0811)	(126.7)
Unemployment	0.153***	314.1***
	(0.0357)	(55.77)
GDP per capita	1.17e-05	0.575***
	(4.24e-05)	(0.0662)
Union density	0.0391**	45.71*
	(0.0161)	(25.21)
Government ideology	-0.0256	-84.45
	(0.0667)	(104.2)
Minority government	-0.672**	-760.5*
	(0.284)	(443.6)
Single government	0.306	424.5
	(0.295)	(461.0)
Interest rate	-0.0149	-43.31
	(0.0478)	(74.66)
Constant	-5.008*	2340
	(2.913)	(4549)
Observations	109	109
R-squared	0.499	0.778
Number of countries	21	21

The effect of other covariates varies. Both union density and unemployment are positively and significantly associated with higher retirement spending relative to GDP. The first effect is as expected, but the latter effect is at odds with the notion that higher employment enables higher spending by increasing the number of working people that shoulder the benefits. The effect is thus not explainable with the present analysis. The same holds for the positive effect on the size of benefits. A minority government spends less on retirement spending as a share of GDP whereas GDP per capita positively influences the size of retirement benefits.

Table 3 provides regressions with health care costs as the dependent variable. The effect of the median age on health care costs relative to GDP is positive yet insignificant. The effect on health care costs per inhabitant is likewise insignificant, whereas the sign of the coefficient is negative. In both regressions there is a positive and significant time trend in spending on health care. This time trend can be interpreted as a proxy for technological change. Quality-improving technological medical advances often lead to higher costs. These can in themselves not be attributed to aging. Were one to omit the time trend, the conclusions change substantially if not dramatically. In such a specification the median age is positively, substantially and significantly associated with health care costs. A crucial factor in the discussion on the influence of aging on health care spending is thus whether one views technology an autonomous determinant of health care costs and -if so- whether a time trend is a good proxy for it. From an econometric viewpoint, omitting a relevant variable is often considered worse than adding an irrelevant variable. In the first case all estimates are biased and inconsistent whereas the latter case leads to a loss of efficiency. The more general model here includes the time trend, leading to the conclusion that the median age is not associated with health care costs.

Table 3

VARIABLES	(11) Health/GDP	(12) Health/ inhabitant	(13) Health/GDP	(14) Health/ inhabitant
Median age	0.0196	-5.601	0.207***	44.36***
	(0.0852)	(21.49)	(0.0648)	(16.43)
Unemployment	-0.0796**	-18.63**	-0.0209	-2.990
	(0.0327)	(8.256)	(0.0285)	(7.233)
GDP per capita	-0.000104**	0.0333***	-7.87e-06	0.0590***
	(4.42e-05)	(0.0111)	(3.38e-05)	(0.00859)
Union density	-0.0174	-2.024	-0.0247*	-3.969
	(0.0124)	(3.133)	(0.0129)	(3.269)
Government ideology	-0.0534	-13.80	-0.0329	-8.363
	(0.0509)	(12.83)	(0.0532)	(13.51)
Minority government	-0.426*	-84.41	-0.458**	-93.16
	(0.215)	(54.23)	(0.227)	(57.52)
Single government	0.101	10.01	0.189	33.51
	(0.225)	(56.73)	(0.236)	(59.79)
Interest rate	0.0766**	16.40*	0.0350	5.331
	(0.0385)	(9.696)	(0.0382)	(9.681)
year_unit	0.591***	157.4***		
	(0.186)	(46.96)		
Constant	6.742**	484.8	-0.558	-1458**
	(3.185)	(803.0)	(2.325)	(590.0)
Observations	109	109	109	109
R-squared	0.507	0.889	0.444	0.873
Number of countries	21	21	21	21

5. Robustness checks

The models estimated so far rest on several assumptions and operationalizations for which there are sensible and defendable alternatives. Therefore this section considers several deviations from the model specification with the focus on retirement spending. The question is whether the main conclusions are robust to changes in the model set-up. First, the regressions are re-estimated using heteroskedasticity-robust estimations of the standard error. This leaves the estimated coefficients unchanged, but estimated standard errors slightly differ. The overall conclusions of significance of the variables do not change however.

Policy changes may need some time to respond to the political influence exercised by the median voter. First a government needs to be elected and installed and thereafter it takes usual a considerable time to design, implement and actually execute any reform the government wants to push through. For that reason a lagged value of the median voter is considered. As can be seen, the sign of the estimated effects remain the same but the effects are not significant anymore. An important reason is that using lagged values diminishes the number of observations that can be used; lagged values of the variables are not available for 1980. The number of observations decreases to 92, which may be too low to estimate nine parameters in a single model.

Thus far the median age of the population has been used as the operationalization of aging. The median age is the crucial factor in the political-economic literature. There are however other notions of aging in the broader pension literature, in particular the dependency ratio. This ratio gives the number of retirees for each 100 persons in working age (15-64 year). This figure is prominent in many discussions as it gives the proportion between the elderly and the working people "supporting" them. The conclusions for this alternative operationalization of aging do not differ substantially, as the tables indicate.

The baseline regression is estimated with 109 observations. When fewer regressors are used, more observations can be considered. When the omitted variables are relevant (as we expect a priori) this generally leads to biased estimates. The estimation results are thus invalid, but can be useful nonetheless as their standard errors are smaller due to the increased number of observations. Regressions with 155 observations but fewer covariates again lead to the same conclusions of earlier regressions. Including a time trend –like in the regression of health care expenditure– does affect the results (not shown here, but available upon request). The median age then has a negative and significant impact on the generosity of pensions and an insignificant though still positive effect on benefits per GDP.

Table 4

VARIABLES	(3) Retirement spending/GDP	(4) Benefits/retiree	(5) Retirement spending/GDP	(6) Benefits/retiree
Median age	0.252***	-231.1*		
	(0.0950)	(136.4)		
Unemployment	0.153***	314.1***	0.149***	247.8***
	(0.0338)	(68.88)	(0.0437)	(61.75)
GDP per capita	1.17e-05	0.575***	6.53e-05	0.500***
	(5.14e-05)	(0.101)	(4.64e-05)	(0.0656)
Union density	0.0391**	45.71	0.0353	53.00
	(0.0176)	(28.75)	(0.0236)	(33.36)
Government ideology	-0.0256	-84.45	-0.0189	19.63
	(0.0722)	(114.3)	(0.0772)	(109.2)
Minority government	-0.672**	-760.5*	-0.547*	-912.4**
	(0.300)	(400.9)	(0.322)	(454.5)
Single government	0.306	424.5	-0.146	185.4
	(0.369)	(632.7)	(0.373)	(527.3)
Interest rate	-0.0149	-43.31	-0.0674	-11.01
	(0.0506)	(82.02)	(0.0569)	(80.36)
Median age (lagged)			0.0242	-34.18
			(0.0248)	(35.03)
Constant	-5.008	2340	2.733	-3182
	(3.217)	(4233)	(2.009)	(2839)
Observations	109	109	92	92
R-squared	0.499	0.778	0.369	0.753
Number of countries	21	21	21	21

Table 4. (continued)

VARIABLES	(7) Retirement spending/GDP	(8) Benefits/retiree	(9) Retirement spending/GDP	(10) Benefits/retiree
Median age			0.317***	19.13
			(0.0512)	(83.15)
Unemployment	0.154***	286.0***	0.150***	244.0***
	(0.0296)	(54.68)	(0.0334)	(54.21)
GDP per capita	9.16e-05***	0.505***	-4.06e-05	0.414***
	(3.00e-05)	(0.0555)	(2.49e-05)	(0.0405)
Union density	0.0278**	56.93**		
	(0.0135)	(24.89)		
Government ideology	-0.0350	-100.2		
	(0.0574)	(106.0)		
Minority government	-0.403	-739.1		
	(0.250)	(461.3)		
Single government	0.277	469.5		
	(0.254)	(469.1)		
Interest rate	0.00296	-5.770		
	(0.0401)	(74.09)		
Dependency	0.217***	-31.13		
	(0.0341)	(62.95)		
Constant	-2.805*	-4087	-4.904***	-1277
	(1.516)	(2799)	(1.376)	(2236)
Observations	109	109	155	155
R-squared	0.628	0.769	0.440	0.709
Number of countries	21	21	30	30

6. Discussion and conclusion

This paper analyzes whether an older population and thus an older electorate lead to higher pension spending. Pension spending –as a share of GDP– is indeed positively associated with an increase both in the median age and in the dependency ratio. This is not surprising as more people are entitled to pension benefits (for which they contributed earlier in life).

The much stronger claim that a graying electorate successfully pushes for more pension benefits per retiree, predicted by many political-economic models, is not supported. This association is the main and often sole prediction of median voter models on Social Security. While such models have much analytical merit, these results nonetheless challenge the prominent if not exclusive role attributed to the median voter in explaining and predicting welfare state changes.

Including health care spending reinforces these two results when technological change is proxied with a time trend. Technological change is arguably an independent determinant of medical care costs by introducing quality-improving yet cost-increasing innovations. If one does not deem technological change a relevant factor –or a time trend not a convincing proxy–, health care spending is positively effected by the age of the median voter.

Taken together, the median voter model does not adequately describe the development of pension benefits. Whether it correctly predicts health care costs, crucially depends on the importance one attaches to technological factors. At the very least this suggests that other factors –apparently offsetting the increased political clout of retirees– are important. The results suggest that the role of unions have a significant effect on political outcomes. Other potential important aspects include lobbying of insurance companies, altruism of older voters, political institutional features, party-government dynamics and the role of media and ideology. Ignoring these factors leads to an incomplete discussion about the sustainability of public finance.

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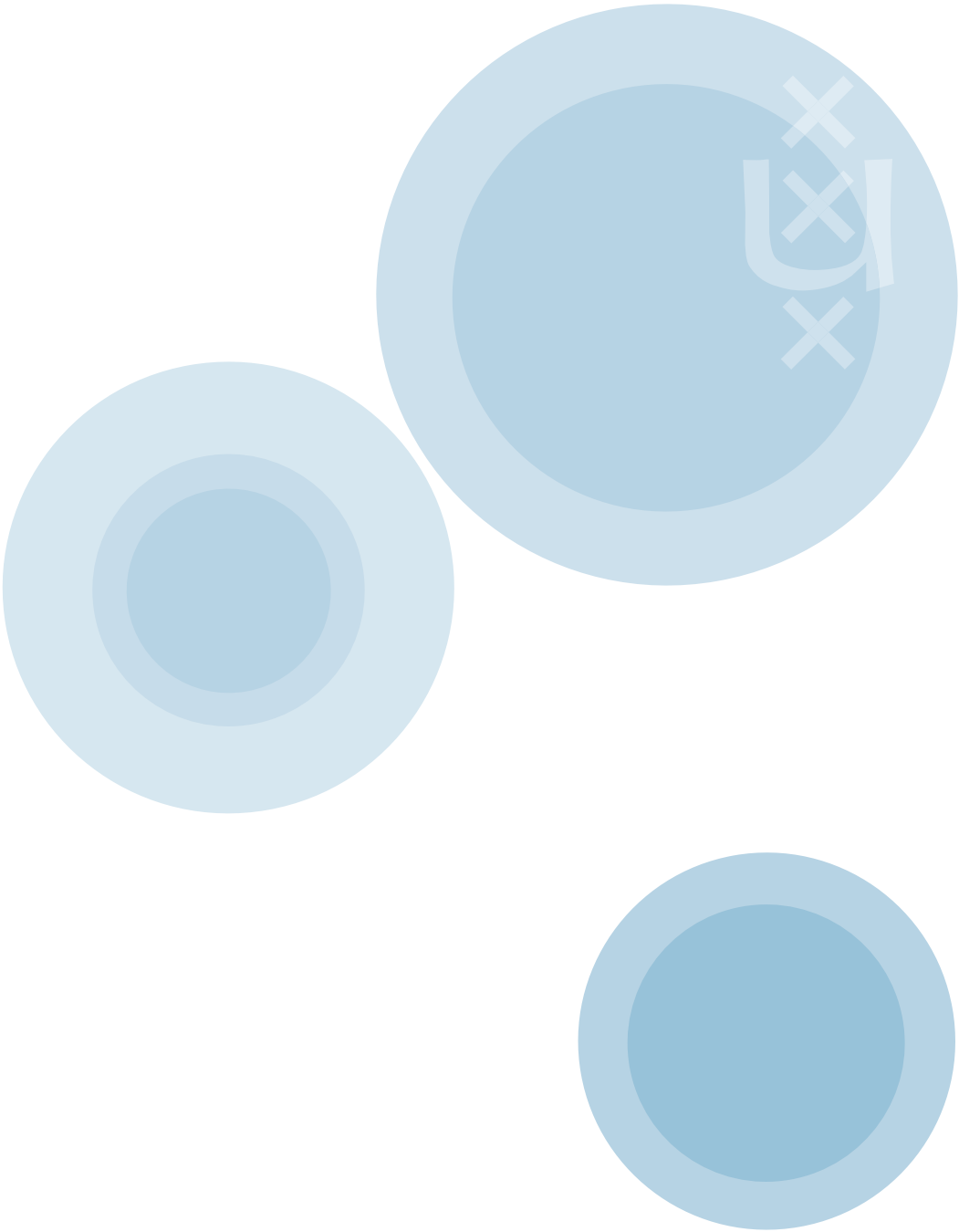

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