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Public-private political cleavage:

What happens after retirement?

Jørn Rattsø, Rune J. Sørensen

Abstract Political preferences of public employees differ from those of workers in the private sector. The former are more likely to vote for left-wing parties and orient themselves ideologically towards the left. This political cleavage can be understood as the result of occupational incentives, or alternatively, as ideological self-selection whereby individuals favoring government solutions seek employment in the public sector. We test the selection hypothesis by estimating the effects of public versus private occupational sector on political preferences before and after retirement. The data are from the Norwegian Election Surveys and cover nine national elections between 1977 and 2009. The research design addresses a series of cross-sectional data and the key challenge of endogenous retirement is handled with instrumental variables. Party choice, ideological orientation, and public spending preferences are shown to change following retirement, and former private and public employees converge. The results reject selection based on ‘hard-wired’ political preferences.

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1 Introduction

A large scholarly literature shows that the public and private sector employees diverge in political preferences and voting behavior. The public employee is more likely to vote for a party with a leftist platform, while her private sector counterpart tends to support right-leaning parties. They also differ on policy issues, particularly the proper amount of taxes and public spending. Though the existing literature on the ‘political cleavage’ is extensive (see overview of Tepe 2012), it has failed to answer an essential question: *Does occupational sector have a causal effect on political preferences?* Would we observe the same political differences in a hypothetical situation where we assigned employees randomly to jobs in government and the private sector? If yes, we should conclude that sectoral affiliation has a causal effect. Sectoral affiliation implies occupational incentives that affect voter preferences. If no, a plausible explanation is self-selection. Those with left-leaning preferences seek and get employment in the public sector, and those with rightist preferences go into the private sector. These are very different stories. The first implies that occupational sector determines political preferences; the latter implies that preferences determine where people work. In the current paper, we attempt to discriminate between these two propositions.

The obvious impediment to credible causal analyses is lack of quasi-experimental data, which really means random job assignments. We exploit a related natural experiment, namely forced retirement. When employees stop working, they also leave their occupational interests behind. If the occupational connection has a causal effect on political preferences, it should disappear after retirement. If employees are equipped with ‘hard-wired’ political preferences that induce them to take particular types of work, we should observe the same sectoral differences after retirement. We therefore test the selection hypothesis by comparing the political preferences of private and public employees before and after retirement.

We analyze data from the Norwegian Election Surveys conducted every fourth year in the 1977–2009 period. The survey data were collected close to the time of the parliamentary elections, and include information about the sectoral affiliation of current and past employees. The data allow us to compare voters in private and public employment past and present, and analyze whether retirement brings a shift in political preferences. We study respondents’ voting for left-wing versus right-wing parties and own placement on a left–right scale. The analysis also includes

preferences on an important political issue – the size of the public sector. The full dataset includes individual survey data for each election year and consequently offers a series of cross sections.

Pooled cross-section data represent serious methodological challenges related to selection and omitted variables. In particular it is important to take into account differences in political preferences owing to period effects and geography, and core individual characteristics such as education level, family situation, and gender. We therefore include a broad set of controls, including election-year fixed effects and municipality fixed effects. We aim at estimating a retirement effect, and cancel out life-cycle effects by controlling for age fixed effects measured in one-year intervals. In addition, the data allow us to single out spouses working in the private and public sectors, and we can estimate spousal effects.

The focus of the analysis is the potential change of political preferences following retirement. Differences in political preferences may reflect differences in the timing of retirement across time and place. We handle endogenous selection into retirement by an IV-approach wherein we exploit characteristics of the national pension schemes. People are obligated to stop working (in their current position) when they reach 70 years of age, and they can quit at an age of 67 with full pension. We also exploit an early retirement scheme that was introduced gradually.

The estimates confirm that public sector workers are less likely to vote for right-wing parties and more likely to locate themselves to the left on the left-right self-placement scale. Voters working in the public sector also want a larger public sector. Both public and private sector workers shift political preferences when they retire. Public sector workers switch from leftist to rightist political parties and they move to the right on the self-placement scale. Retirement also leads to changes in policy preferences: the retired public employee is less likely to prefer a large government sector. Public sector employees are different, but only until they retire.

In the following sections, we provide a brief review of the existing literature, outline the institutional details of Norwegian government, and describe the survey data used and the design

of the the analysis. The main results are presented in separate sections where we report the pooled cross-section analysis and the use of instrumental variables to handle selection into retirement.

2 A brief literature review

Three strands of empirical literature have addressed the differences between public and private sector employees: comparative politics, public administration, and public choice. Studies of voter behavior view the public-private split as a new political cleavage. The core proposition is that private sector employees lean towards the right, and public sector employees to the left. An eclectic theoretical perspective is used to explain the public-private cleavage, emphasizing factors such as the expansion of public welfare services and job opportunities, personal and institutional interests, socialization during education and at the workplace, and personal contacts with clients. The main thrust of this research is empirical analyses of population surveys. For example, Knutsen (2001; 2005) finds that public employees in several European countries are more likely to vote for socialist parties than employees in the private sector. In a pooled analysis of 18 countries Jensen et al. (2009) find that the self-reported ideological orientation of public employees leans more to the left, and they are more likely to vote for left-wing parties. Using survey data for 11 West European countries and disaggregating for different government activities, Tepe (2012) finds that the voting behavior and attitudes of government employees working in public health, education and services stand out. He argues that egalitarian motives are important in the recruitment of personnel to the public health and education sectors. The studies do a fine job in documenting the relevance of public-private cleavages, but cannot say much about the underlying causes of the observed empirical patterns.¹

In the field of public administration, the key hypothesis is occupational selection. The public sector attracts people with different types of job motivation than the private sector. Perry and Wise (1990, p. 370) suggest that peoples' desire to serve the public is an important occupational selection criterion: "The greater an individual's public service motivation, the more likely the individual will seek membership in a public organization". Subsequent studies have found some empirical support for this claim. Lewis and Frank (2002) analyze preferences for working in the

¹ In Norway, this sectoral division of party preferences has been shown to be important and is understood in the context of the welfare state (Bjørklund 1999, p. 293).

public and the private sectors. They find that job security is the most important ‘selling point’ for government employers, and that people who want to help others and be useful to society are more inclined to seek employment in the government sector. Similarly, Brewer (2003) compares the civic attitudes of public servants and other citizens and finds a greater level of civic participation among government workers. Vandenabeele (2008) presents data from a survey of final year master students, and these data suggest that public service motivation correlates positively with preferences for working in the government sector. Perry, Hondeghem, and Wise (2010) provide a comprehensive review of this literature.² Though these studies emphasize job selection, they do not explicitly claim that people seek a government job for political reasons, i.e. related to partisan preferences or ideological positions. These empirical analyses are based on correlating various survey items in a cross-sectional design, which makes it hard to make causal inferences.

Finally, the public choice school has painted a less favorable picture of the ‘bureaucrats’. The main proposition is that employees’ political preferences derive from their occupational interests. The ‘bureau-voting model’ assumes that public employees benefit from larger government (Downs 1967; Niskanen 1971). Public employees seek to improve their employment opportunities, salaries, and possibly on-the-job consumption. They will therefore vote for parties that are more likely to expand the public sector. Bush and Denzau (1977), Bennett and Orzechowski (1983), Blais et al. (1990; 1991) and Garand et al. (1991) supply early evidence in support of the different political behavior of public employees. The empirical studies of the bureau voter model have confirmed the differences in public preferences between the bureaucrats and their private-sector counterparts, but have not addressed the selection hypothesis. The recent literature has looked at other aspects of political behavior, and Rattsø and Sørensen (2004) show that public employees serve as swing voters in opposition to public sector reform.

3 Institutional background and data

² More recent studies find support for the hypothesis that a desire to serve the public is one reason why young people want a government job. For example, Cowley and Smith (2013) apply the world values survey and find that public sector workers frequently have higher intrinsic motivation compared to workers in the private sector. Dur and Zoutenbier (2013) employ a German, individual-level survey panel dataset. They observe that public sector employees are more altruistic than are employees in the private sector at the start of their careers, and the differences persist as long as they are working.

Norway is a parliamentary democracy based on proportional representation from 19 counties. Elections to the national parliament (the *Storting*) are held every four years. We use data from the Norwegian Election Surveys³ which comprise representative samples of the voting population (Otterbeck, Rose and Saglie 2010). The surveys analyzed here cover all national elections starting in 1977 and including 2009.⁴ The surveys ask comparable questions on party preferences, ideological positions, some political issues and a number of individual background variables.

We utilize identical questions on respondents' sectoral affiliations in current and previous jobs. The questionnaires start with a filter question⁵:

Which of the following describes your current situation? Employed; student; retiree; early retiree; disabled; home worker; conscript; other; prefer not to answer; don't know.

Other questions identified sector affiliation⁶:

For current employees: *Do you work in a firm you own yourself, a private business, voluntary organization or foundation, municipal government, county government or central government?*

For former employees: *Did you work in a firm you own yourself, a limited company, voluntary organization or foundation, municipal government, county government or central government?*

We compare working people with those who have retired permanently. All respondents working in their own firm or other private business (private employees) and all local, county or central government employees (public employees) have been included in the analyses. We have

³ The data used in the analysis are from the Norwegian Election Studies 1965–2009. Data are anonymized and sourced from Norwegian Social Data Services (NSD). The Norwegian Institute of Social Research (ISF) was responsible for the original study, and Statistics Norway (SSB) collected the data. Neither ISF, SSB, nor NSD are responsible for the analyses or interpretations presented here.

⁴ See <http://nsddata.nsd.uib.no/webview/index/no/Individdata/Valgundersoekelser.d.30/Valgundersoekelsene-tidsserie-2001-2009/fStudy/NSD1760-2>

⁵ In Norwegian: "Betrakter du deg hovedsakelig som 1) yrkesaktiv, 2) student eller skoleelev, 3) alderspensjonist, førtidspensjonist eller uførepensjonist, 4) hjemmearbeidende, 5) arbeidsledig, 6) vernepliktig, 7) annet, 8) vil ikke svare, 9) vet ikke."

⁶ In Norwegian: Hvis yrkesaktiv: "De følgende spørsmålene gjelder ditt hovedyrke. Er den virksomheten du arbeider i, et personlig eid firma, et aksjeselskap, en organisasjon, kommunal, fylkeskommunal eller statlig virksomhet?" Hvis tidligere yrkesaktiv: "Var den virksomheten du arbeidet i, et personlig eid firma, et aksjeselskap, en organisasjon, kommunal, fylkeskommunal eller statlig virksomhet?"

excluded employees of voluntary organizations and foundations and those outside the labor market – students, conscripts and people who for other reasons have never had a job or were unemployed temporarily at the time of the survey. Retirees are defined as people who have been employed and are recipients of old-age pensions, early retirement benefits or disability pensions. The dataset includes about 14,000 respondents, and documentation is given in Table 1. Among the respondents about 45 % of the currently employed work in the public sector, while the remaining 55% are in the private sector.

The analysis covers the party choice defined by the left-wing and right-wing party blocs, the ideological position of the respondents on the left–right scale, and the preferences on a controversial political issue – the size of the public sector. In each of the surveys, respondents were asked for which party they voted in the relevant election. We concentrate on the right-wing party bloc including the Conservative Party and the Progress Party. We have investigated broader definitions of the non-socialist parties, but the estimates are not much affected and the conclusions hold. As Table 1 shows, about 24% of public and 42% of private employees vote for right-wing parties. This is the public-private cleavage in the raw data of nine elections. We are interested in the impact of retirement for the party choice. 24% of public retirees and 29% of public retirees vote right-wing. The main change with retirement materializes for the private employees in the raw data.

As documented in Table 1, individual characteristics across sectors and workers/retirees differ: The share of women is much higher in government, and public employees and retirees are much more likely to have higher education qualifications. Overall, 48% of the respondents are women, and they represent 59% of public employees and 37% of the private. About 70% of the employed are married or have a cohabitant, and the spouses are overrepresented in the public sector. Among public employees, 40% have higher education, as against only 22% in the private sector. As expected, current employees are better educated than retirees from the same sector.

Table 1 about here

The ideological orientation of the respondents has been measured by the left–right self-placement question:

In political discussions people frequently talk about ‘the left’ and ‘the right.’ Below is a scale where 0 represents those who are at the far left and 10 represents those who are at the far right. Where would you position yourself on such a scale?

As shown in Table 1, respondents affiliated to the public sector have scores well below the midpoint (5) on the left–right index, positioning themselves to the left. Private sector employees are more likely to select right-wing scores, i.e., above 5. The index scores are 4.81 for public and 5.54 for private. After retirement both groups place themselves in the middle (index value 4.93-4.95).

We have included data from responses to a question in the election studies about preferences for the size of the public sector. Respondents were asked to say whether they agreed or disagreed with the following statement:

It is more important to expand public services than to reduce taxation.

Responses were coded as follows: ‘full agreement’ as 1, ‘partial agreement’ as 0.75, ‘partial disagreement’ as 0.25 and ‘full disagreement’ as 0.

Preferences for a larger public sector are also reported in Table 1. Public sector employees are more strongly in favor of governmental expansion than private employees, with average index scores of 0.74 versus 0.62 respectively. After retirement the gap narrows significantly; 0.69 when the respondent has retired from the private sector, and 0.73 when he/she has retired from public sector employment.

The raw data presented above show a distinct public-private cleavage that disappears with retirement. To investigate more broadly the change in political preferences with retirement we have also studied political interest. Political preferences may have changed because retirees are generally less interested in politics. The Election Surveys include a question about political interest:

To what extent do you take an interest in political issues? Are you very interested, somewhat interested, or, do you have little interest?

The responses were coded: ‘Very politically interested’ as 1; ‘Somewhat interested’ as 0.5; and ‘Little interest’ as 0. Table 1 shows that the public sector employees are slightly more interested in politics than private sector workers; the index values are 0.54 and 0.52 respectively. The numbers indicate no reduction in political interest after retirement. Both groups report stronger political interest after retirement with scores of 0.59 versus 0.55, still in favor of those coming from the public sector.

Figure 1 about here

In Figure 1, we display how political preferences vary with respondents’ ages. We calculated average scores for public and private sector retirees and employees across the nine survey datasets. In the first chart (upper left), we observe significant differences in right-wing voting up to the age of 60, but no differences thereafter. This is a preliminary indication that the public-private cleavage in party voting disappears when employees’ working careers are over. The next chart (upper right) displays a similar pattern for ideological orientation (measured by the left-right index). After the age of 60, the public sector employees move towards the right, private sector employees towards the left. Old age appears to bring about ideological convergence. The third chart in Figure 1 (lower left) displays comparable curves for policy preferences (preferences for a larger public sector). The final chart (lower right) suggests that senior citizens are as interested in political issues as younger people, possibly even more so. The observed convergence among elderly people does not seem to be related to lack of political interest.

4 Design of the analysis

The benchmark econometric model is designed to estimate the impact of retirement on political preferences of public and private sector workers. The estimated model includes the effect of occupational sector, the impact of retirement, and the interaction of occupational sector and retirement. The OLS specification of the model can be written like this:

$$Y_{jt} = \alpha_0 + \omega PublicSector_{jt} + \theta_P Retiree_{jt} + \theta_G Retiree_{jt} \cdot PublicSector_{jt} + \gamma_1 Gender_{jt} + \gamma_2 Partner_{jt} + \gamma_3 SecondaryEducation_{jt} + \gamma_4 HigherEducation_{jt} + \sum_k \alpha^k Age_{jt}^k + \beta_t + \varepsilon_{jt}$$

Here Y_{jt} measures the political preferences of voter j in election year t . Three alternative responses are investigated: the reported party choice in the election (right-wing party bloc = 1),

ideological stance as measured by the left–right positioning (index scale from 0 to 10), and preferences for public spending (=1). We also analyze political interest (index scale from 0 to 1). The variable *PublicSector* indicates whether the voter works or has worked in the private (=0) or public sector. *Retiree* measures whether she/he is employed (=0) or retired (=1).

In the interpretation of the model we focus on party choice. Consistent with existing evidence, we expect to observe political polarization in the working population, that is, relatively less right-wing voting among the public employees, $\omega < 0$. When political preferences are ‘hard-wired’ and persistent, the case of occupational sector selection effect, we expect no effect from retirement, that is $\theta_P = \theta_G = 0$. If the selection effect is rejected, we expect retirement to cause convergence in political preferences: both groups shift toward the center when the retired private sector employees shift to the left ($\theta_P < 0$), and those in the public sector shift to the right ($\theta_P + \theta_G > 0$). Full convergence implies that $\omega + \theta_G = 0$. Such shifts in political preferences are not consistent with selection based on the permanent characteristics of the individuals involved. The analyses of left–right positioning and preferences regarding the size of the public sector can be interpreted equivalently.

The robustness of the linear OLS model has been investigated by a logistic model formulation (available from the authors). The results regarding the retirement effects are qualitatively consistent with the OLS model.

An econometric challenge using pooled cross-section data is that the individuals surveyed differ across elections. Political preferences may differ between generations, and preferences can also shift between elections. Moreover, public sector service demand is likely to change over the life cycle. As they age, people become less interested in services that benefit young people and families and more interested in health and welfare services for the elderly. Folke, Fiva and Sørensen (2012) show that a shift from a leftist to a rightist local council will be accompanied by a budgetary reallocation away from child care services to services for senior citizens. Rattsø and Sørensen (2010) show how a shift toward a more elderly population affects the composition of municipal services. Both studies rely on Norwegian data and imply that aging is likely to result in more support for right-wing parties.

We therefore control for age fixed effects using one-year intervals for respondent age. The age effects are represented by α^k , where the k indicates each of the one-year intervals. For each respondent there is an arithmetical relationship between birth year, election survey year, and age. Survey year is captured by the election year fixed effect (β_t), and age taps the life-cycle effects. Since birth year = (election year - age), this means that we implicitly control for generational effects. We do not investigate further the life-cycle and generational effects on political preferences here.⁷

The shifting set of individuals addressed in the Election Surveys necessitates other control variables to account for heterogeneities with respect to occupational sector and retirement. Women in advanced industrialized countries, including Norway, increasingly are more likely to support left-wing/socialist parties than men (see, for example, Inglehart and Norris 2000, p. 453; Norrander and Wilcox 2008). One explanation points to the sharp increase in women's labor market participation rates with a disproportionately large number of these women working in an expanding public sector (c.f. Table 1).⁸ The new cohorts of women may have selected themselves into types of education and occupations that are consistent with their intrinsic preferences (selection); or, alternatively, women may simply vote for leftist parties because these parties serve their personal interests (incentives). Lott and Kenny (1999) show a political leftward shift in the United States following the advent of female suffrage in the early 20th century. We therefore include respondents' gender in the regression model.

Family interests may also influence political behavior. The typical woman works in the public sector, and may be married to a man who works in the private sector. Alternatively, both may work in either the private or public sector (c.f. Table 1). Suppose political preferences are influenced by the occupational background of the spouse. In the case of assortative mating, we see some families pursuing their common private sector interests, while others want to further their public sector interests. When couples work in different sectors, the interests of the family

⁷ The intercept α_0 represents a female retiree who formerly worked in the public sector. She has compulsory education only and no spouse; and it represents the preferences of the oldest group observed in the last election (2009).

⁸ This 'political gender gap,' it has been suggested, is also explained by higher divorce rates, leading to a reduction in women's relative incomes (Edlund and Pande 2002).

may dampen political polarization. In all models we include the occupational sector of the spouse.

Education levels are higher among public sector employees (particularly those working for the central government) than private sector workers (c.f. Table 1). Education may affect people's political views and ideological preferences. One might also consider education to be a choice variable. Some prefer to work for the public good as civil servants, and pursue higher qualifications to achieve this goal. Others want to make money, and finish schooling at an earlier age. Young people have more education than elderly people in all sectors and, as a consequence, current retirees will have lower schooling qualifications than people in the workforce. When we compare current employees and retirees, this factor could explain the observed differences in political preferences.

5 Pooled cross-section analysis of nine Election Surveys

We start out with a pooled cross-section analysis of how occupational sector and retirement affect voting for the right-wing party bloc. The estimates are shown in Table 2. The dependent variable is reported voting for the right-wing party bloc in the surveys. The first model shows a simple OLS including only occupational sector effect, retirement effects and their interaction, with no control variables, but with election-year fixed effects. The simple model is extended to include birth-year fixed effects, spousal occupations and individual controls for married/cohabitating couples, gender, and education in model II. The full model III includes municipal fixed effects. The tables report statistical significance at the 1%, 5% or 10% level of the estimated coefficients. The complete estimates for the covariates are reported in Appendix Table A.

Public sector employees are about 15 percentage points less likely to vote for the right-wing bloc than private sector employees in our preferred model III. The strength of the sectoral cleavage is consistent across models, but the retirement effect is sensitive to the inclusion of controls. The estimates for the individual characteristics (Appendix Table A) confirm the left-wing bias of women and the right-wing bias of highly educated individuals, which is well documented in the literature.

The retirement effect, which is analyzed separately for private and public sector retirees, is large. Private sector retirement induces a statistically significant shift to the left, and the vote share for

right-wing parties falls by about four percentage points in model III. Public sector retirees show a larger shift to the right, about seven percentage points (the difference between the interaction effect of retirement and public sector and the separate private sector retirement effect). We report an F test for the public sector retirement effect, $\theta_p + \theta_G = 0$. As reported in Table 2 the hypothesis of no public sector retirement effect clearly is rejected when controls are included. Both retired groups converge around the national average when retiring, the traces of their sectoral affiliations being almost completely eliminated.

The effect of public sector employment for spouses is statistically significant too. Having a spouse in the public sector affects one's political preferences. The effect of a public sector affiliated spouse is to strengthen the public-private cleavage. Interestingly, having a spouse reduces the public-private cleavage. There is a stronger sectoral difference between single individuals than for couples.

Table 2 about here

The estimates for left–right ideological positioning are consistent with the results for party choice and show that public sector occupation is associated with a left-ward orientation compared to private sector affiliations. Model I in Table 3 reports the basic OLS model including sector, retirement, and interaction effects. The size of the estimated public-private cleavage, about 0.7 on the 0–10 scale, is very similar to the raw data difference. We have shown in Table 1 a public sector position of 4.8 versus a private sector position of 5.4. The cleavage effect is steady in extended formulations with model II including individual characteristics and election year and individual age fixed effects and model III including municipal fixed effects. The key coefficients are statistically significant at 1% level.

We clearly can reject the hypothesis that the left–right positioning is independent of retirement. And consistent with the party choice analysis, the pensioners converge relative to their former colleagues. The negative coefficient on private sector retirees implies a statistically significant movement away from the right (of about 0.4 in model III). The interaction coefficient indicates a shift to the right of public sector retirees (about 0.2 in model III). The effects of individual characteristics (Appendix Table A) are consistent with the party choice results above – women are more left-leaning and the highly educated more right-leaning. The F-test reported at the

bottom of the table shows that the rejection of no retirement effect is marginal (about 10% level of significance).

Table 3 about here

The third measure of political preferences captures the desired expansion of the public sector. The basic model I in Table 4 shows that the public employees clearly want to expand the public sector more than do private sector employees. The sectoral effect is about 12% and fairly close to the raw data difference shown in Table 1 where 74% of public sector affiliated employees want a larger public sector compared to 62% in the private sector. Retirement has a statistically significant effect for the policy preferences of private employees only in model I. The desired public sector size shifts down for public sector retirees (by about 6-7 %). Retirement has no statistical significant effect for those from the private sector. The individual controls (Appendix Table A) show that women want a larger public sector than do men, and respondents with secondary and higher education want a smaller public sector.

Table 4 about here

The analysis above has distinguished between public and private employees only. We have studied a separation between local government employees and central government employees (available from the authors). The results show that the retirement effects are statistically significant only in the local government sector. Obviously the number of observations is smaller in each of the public sector groups, and there are more employees in the local than in the central government sector.

It can be argued that the shift in political preferences following retirement is the result of a general reduction of political interest among old people. This is investigated in an analysis of political interest and the results are shown in Appendix Table B. The simple separation of sector and retirement effects in model I indicates that political interest is somewhat higher among public sector employees and private sector retirees, and there is no tendency for retirees in general to have lesser political interests. The individual characteristics controlled for in model II show that women have less interest than men, while the more educated have more interest. In the full model III including municipal fixed effects the main difference that stands out is the higher political interest among public sector employees.

6 Instrument variable analysis of retirement

We develop the analysis of retirement in an instrument variable specification. The identifying assumption is that the timing of retirement is exogenous with respect to political preferences. A core assumption in the cross-sectional approach is that retirement is not subject to choice. Since employees decide when they want to retire, the timing of retirement might depend on political preferences. If public sector employees are frustrated with the public sector and decide to shift into retirement early, the OLS estimates of the retirement effect may overstate the change in preferences. Reverse causality could explain the apparent convergence that we have estimated in the OLS regressions. We therefore use characteristics of the pension schemes to construct instrumental variables for retirement, and use 2SLS to estimate the retirement effect. Hernaes et al. (2013) suggested this kind of instrumenting in an analysis of retirement and mortality.

We exploit the fact that the National Insurance program entitles all employees to receive retirement pension when they have worked and lived in Norway for a sufficiently long period,⁹ and when they reach a particular age.

- *The retirement age* in Norway is 67 years for most employees. Starting in 1973, all employees are entitled to a retirement pension the month after they reach the age of 67. We define a dummy variable equal to 0 if the respondent is/was working in the public or private sectors, and is less than 67 years of age. If the respondent is 67 years or more, the dummy variable is set equal to 1.
- The general *age limit* is 70 years of age. The employer can insist that the employee stop working when he/she reaches the age limit. We therefore define a dummy variable defined by this age. In the private sector, employers can practice an age limit of 67 years, but only if all employees in the firm are included. Some occupations have a lower age limit than 70 or 67 years of age.¹⁰

⁹ Everyone who has lived in Norway for at least 40 years after the age of 16 is entitled to a retirement pension from 67 years of age. With no taxable income, the pension will be at a minimum level. New rules for retirement pensions were introduced from January 2011. These rules do not impinge on the current analysis.

¹⁰ In the public sector, some occupations have lower age limits. The major groups are nurses/auxiliary nurses (65 years of age), police and firemen (62 years of age) and military personnel (60 years of age). The Election Surveys have a detailed coding of occupation. The first-stage results regression results rely on retirement age limits and age limits of 67 and 70 years only. These results were not sensitive to including the occupation-specific age limits.

- An *early retirement* scheme was introduced in 1989. The scheme comprises employees in companies that participate in a collective bargaining agreement between the main trade unions and the employers' organizations. Government pays a significant share of the pension costs, both directly by financing the pensions and indirectly by charging lower tax rates on retirees. About 40% of employees in the private sector¹¹ and all employees in the public sector could retire from the age of 66. The early retirement age was subsequently reduced in 1990 to 65; in 1994 to 64; in 1997 to 63; and from 1998 to 62. We define the instrumental variable by year of introduction and qualifying age.

The data about retirement are spelled out in Figure 2. The first figure shows the retirement pattern in private and public sectors by age, and they are quite similar. The introduction of an early retirement scheme has changed the retirement pattern over time, however, as shown in the second figure.

Figure 2 about here

The first-stage regressions include two response variables, retirement and the interaction between retirement and public sector employment. The occupational sector is assumed to be exogenous when we study transitions from work to retirement. As instrumental variables, we use the dummy variables defined above (retirement age, age limit, early retirement), and these also have been interacted with the public sector employment indicator. This yields six instrumental variables. A fourth-degree age polynomial captures that an increasing share of the workforce drops out with increasing age, many as permanent recipients of disability pensions. Instrument relevance and over-identification are tested. The model also includes controls for respondents' gender, education level and whether the respondent is married or has a cohabitant. The first stage estimates have been reported in Appendix Table C.

Individual characteristics clearly influence the timing of retirement. Women retire earlier, while highly educated and married/cohabitating couples retire later. The early retirement scheme and the regular retirement age have a major impact on the timing of retirement. The early retirement program has somewhat greater impact in the public sector. The first stage estimates for the

¹¹The Election Surveys do not include information that allows us to identify whether the private-sector respondents worked in a company that were part of the early retirement program.

interaction term (Retirement x Public sector occupation) are quite similar. The retirement schemes of particular relevance for the public sector now have statistically significant effects. In this case, we observe that the impact of the instruments is contingent on public sector occupation. The standard F-test of instrument relevance is statistically significant at comfortable levels for both response variables.

The second stage regressions are reported in Table 5, and they confirm the shift in political preferences with retirement. The first column shows that private sector retirement reduces right-wing party bloc voting by ten percentage points (not significant), while retirement for the government sector increases right-wing bloc voting by eight percentage points (the difference between the interaction effect and the private retirement effect). The chi-square test for over-identifying restrictions is reported and the hypothesis of exogenous instruments cannot be rejected (this is true for all models in Table 5 at the 10% level, except for political interest).

The second column displays results for left-right positions. Retirement from the private sector induces a shift to the left of 0.2 points (not significant), while retirement from the public sector causes a rightward shift of 0.5 points. In the third column, we observe that retirement from the private sector causes a drop of about 0.08 points on the index measuring preferences for expanding the public sector (not significant). The estimated interaction suggests no retirement effect among the public employees given the equal size of the coefficients. The final column suggests that retirement may have a positive impact on political interest, but the estimates are rather imprecise. There is no indication that retirees exhibit significantly less political interest.

The OLS and IV-estimates are quite similar, particularly for the private sector employees. The public sector shifts are larger with instrumentation, especially for party choice. The downward bias of the OLS estimates compared to the IV-estimates implies that private sector employees who choose retirement are more likely to hold onto their previous political opinions. Those who retire as a consequence of pension plan regulations shift more to the right. The IV-estimates strengthen the case for shifts in party choice and left-right placement with retirement.

Table 5 about here

7 Concluding remarks

Norwegian survey data across nine elections show that private and public employees have different political preferences. Public employees are less likely to vote for right-wing political parties. They take left-wing ideological positions, while private sector employees position themselves more to the right. Public employees want to expand the public sector more than their private sector counterparts.

Our contribution is to investigate whether the public-private cleavage continues into retirement. The Norwegian Election Surveys register the employment sector of retirees before retirement and allow for a comparison of political preferences by occupational sector while employed and in retirement. Since the samples vary over time, we face methodological issues of heterogeneity, omitted variables, and shifts in the political setting over time. The research design addresses a series of cross-sectional data and the key challenge of endogenous retirement is handled with instrumental variables.

We find that the differences in political preferences disappear after working age and confirm an occupational sector effect when employed. We conclude that political preferences are temporary and related to occupational sector. The result means that possible selection into the public sector is not based on permanent individual convictions. When public employees stop working, they are more likely to vote for right-wing parties. The reverse occurs when private sector employees retire: they switch toward the left-wing parties. When people retire from work in either sector, they adopt new policy positions and abandon previous ideological and partisan preferences. Sector-induced polarization disappears after retirement. The importance of the public-private cleavage has been increasing with the rise of the public sector. Based on our results we expect that the recent wave of the elderly will reduce this political conflict line since retirees from the two sectors converge.

It should be noticed that a similar analysis can be undertaken using pre-employment data – whether political preferences change after entering an occupational sector. Future research must address this, since we do not have data to study the beginning of the working career of the youth.

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Appendix Table A. OLS estimates with complete estimates for covariates, c. f. Tables 2–5

VARIABLES	(1) Right-wing voting	(2) L-R index	(3) Public spending
Occupation in public sector (=1)	-0.150*** (0.015)	-0.595*** (0.066)	0.090*** (0.009)
Retiree(=1)	-0.042* (0.017)	-0.385*** (0.104)	0.026 (0.015)
Retiree(=1)*Public occupation (=1)	0.117*** (0.028)	0.565*** (0.151)	-0.064** (0.020)
Married/cohabitant (=1)	0.021 (0.013)	0.314*** (0.053)	-0.020 (0.010)
Spouse occupation (Public sector=1)	-0.068*** (0.013)	-0.282*** (0.054)	0.053*** (0.011)
Secondary education (=1)	0.117*** (0.017)	0.417*** (0.070)	-0.034* (0.016)
Higher education (=1)	0.128*** (0.024)	0.357*** (0.088)	-0.061** (0.022)
Gender (Women =1)	-0.067*** (0.010)	-0.336*** (0.054)	0.071*** (0.011)
Observations	7,830	8,832	7,785
R-squared	0.080	0.061	0.077
Number of municipalities	277	289	283
Election year FE	YES	YES	YES
Control variables	YES	YES	YES
Municipality FE	YES	YES	YES
Birth year FE	YES	YES	YES

Robust standard errors in parentheses

*** p<0.001, ** p<0.01, * p<0.05

Appendix Table B. The impact of retirement on political interest.

VARIABLES	(1) Political interest	(2) Political interest	(3) Political interest
Occupation in public sector (=1)	0.036*** (0.005)	0.028*** (0.006)	0.031*** (0.007)
Retiree(=1)	0.033*** (0.009)	0.017 (0.012)	0.026 (0.016)
Retiree(=1)*Public occupation (=1)	0.006 (0.014)	-0.010 (0.015)	-0.017 (0.019)
Spouse occupation (Public sector=1)		0.007 (0.006)	0.005 (0.007)
Observations	11,703	9,613	8,963
R-squared	0.075	0.140	0.135
Election year FE	YES	YES	YES
Control variables	NO	YES	YES
Municipality FE	NO	NO	YES
Birth year FE	NO	YES	YES
Number of municipalities	291	291	291

Robust standard errors in parentheses

*** p<0.001, ** p<0.01, * p<0.05

Appendix Table C. First-stage regression results, c. f. Table 5

VARIABLES	(1) Retiree (=1)	(2) Retiree(=1)*Public sector (=1)
Early retirement (=1)	0.164*** (0.026)	-0.068*** (0.007)
Regular retirement > 67 years (=1)	0.343*** (0.043)	-0.094*** (0.011)
Maximum retirement > 70 years (=1)	0.003 (0.036)	-0.051*** (0.010)
Early retirement (=1)*Public occupation(=1)	0.027 (0.043)	0.345*** (0.035)
Regular retirement > 67 years (=1)*Public occupation(=1)	0.010 (0.053)	0.568*** (0.034)
Maximum retirement > 70 years (=1)*Public occupation(=1)	0.022 (0.048)	0.110*** (0.028)
Observations	9,289	9,289
R-squared	0.602	0.665
Number of municipalities	293	293
Control variables	YES	YES
Election year FE	YES	YES
Municipality FE	YES	YES
F > test	73.16	1210
Prob > F	0.000	0.000

Robust standard errors in parentheses

*** p<0.001, ** p<0.01, * p<0.05

F-test for excluded instruments.

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Table 1. Descriptive statistics

	Private employees	Public employees	Private retirees	Public retirees	All
	Mean	Mean	Mean	Mean	Mean
Occupation in public sector (=1)	0	1	0	1	0.446
Retiree(=1)	0	0	1	1	0.176
Right-wing voting (=1)	0.415	0.237	0.291	0.244	0.321
Left-right scale	5.536	4.814	4.932	4.948	5.147
Public spending (=1)	0.620	0.737	0.694	0.726	0.673
Political interest	0.518	0.541	0.545	0.585	0.525
Age (years)	39.5	41.9	65.3	67.5	44.6
Gender (Women=1)	0.353	0.593	0.369	0.519	0.482
Marital status (Married/ cohabitant=1)	0.729	0.773	0.642	0.679	0.697
Secondary education (=1)	0.448	0.319	0.310	0.320	0.372
Higher education (=1)	0.224	0.396	0.071	0.215	0.233
Spouse occupation (Public occupation=1)	0.240	0.361	0.202	0.304	0.248
Number of respondents (N)	(4567–5596)	(3679–4470)	(850–1094)	(698–912)	(13952– 18082)

Notes. The survey questions and related response categories are documented in the main text. Spouse occupation has been coded as 0 if the respondent has no partner or he/she works/has worked in the private sector, and as 1 if the respondent has a partner and works in the public sector.

Table 2. The impact on retirement of right-wing party choice.
Voter support for the Conservative Party and the Progress Party

VARIABLES	(1) Right-wing voting	(2) Right-wing voting	(3) Right-wing voting
Occupation in public sector (=1)	-0.172*** (0.010)	-0.171*** (0.012)	-0.150*** (0.015)
Retiree(=1)	-0.124*** (0.017)	-0.047* (0.022)	-0.042* (0.017)
Retiree(=1)*Public occupation (=1)	0.123*** (0.023)	0.123*** (0.026)	0.117*** (0.028)
Spouse occupation (Public sector=1)		-0.078*** (0.012)	-0.068*** (0.013)
Observations	10,204	8,356	7,830
R-squared	0.048	0.088	0.080
Election year FE	YES	YES	YES
Control variables	NO	YES	YES
Municipality FE	NO	NO	YES
Birth year FE	NO	YES	YES
F > test	0.000543	11.37	8.529
Prob > F	0.981	0.000751	0.00378
Number of municipalities	277	277	277

Robust standard errors in parentheses

*** p<0.001, ** p<0.01, * p<0.05

Notes. The model includes the following covariates: gender, whether respondent has a spouse, education level measured as primary school, secondary school or university degree. Birth year FE effects are measured as one-year fixed effects. The F-test indicates whether the sum of Retiree (=1) and Retiree (=1) *Public occupation (=1) equals zero. The test indicates whether public employees have a significant shift in their party preferences.

Table 3. The impact on retirement of ideological positions.
Effect on left-right self-placement index.

VARIABLES	(1) L-R index	(2) L-R index	(3) L-R index
Occupation in public sector (=1)	-0.684*** (0.043)	-0.661*** (0.050)	-0.595*** (0.066)
Retiree(=1)	-0.594*** (0.080)	-0.454*** (0.107)	-0.385*** (0.104)
Retiree(=1)*Public occupation (=1)	0.693*** (0.116)	0.636*** (0.130)	0.565*** (0.151)
Spouse occupation (Public sector=1)		-0.305*** (0.054)	-0.282*** (0.054)
Observations	11,454	9,450	8,832
R-squared	0.039	0.065	0.061
Election year FE	YES	YES	YES
Control variables	NO	YES	YES
Municipality FE	NO	NO	YES
Birth year FE	NO	YES	YES
F > test	1.391	2.761	2.619
Prob > F	0.238	0.0966	0.107
Number of municipalities	289	289	289

Robust standard errors in parentheses

*** p<0.001, ** p<0.01, * p<0.05

Notes. L-R Index: Left-right index. See Table 2 for additional documentation.

Table 4. The impact on retirement of public spending preferences

VARIABLES	(1) Public spending	(2) Public spending	(3) Public spending
Occupation in public sector (=1)	0.117*** (0.007)	0.095*** (0.008)	0.090*** (0.009)
Retiree(=1)	0.074*** (0.012)	0.024 (0.017)	0.026 (0.015)
Retiree(=1)*Public occupation (=1)	-0.087*** (0.018)	-0.069*** (0.020)	-0.064** (0.020)
Spouse occupation (Public sector=1)		0.057*** (0.009)	0.053*** (0.011)
Observations	9,634	8,427	7,785
R-squared	0.051	0.077	0.077
Election year FE	YES	YES	YES
Control variables	NO	YES	YES
Municipality FE	NO	NO	YES
Birth year FE	NO	YES	YES
F > test	0.969	6.547	4.557
Prob > F	0.325	0.0105	0.0336
Number of municipalities	283	283	283

Robust standard errors in parentheses

*** p<0.001, ** p<0.01, * p<0.05

Notes. See Table 2.

Table 5. The impact of occupation and retirement on party choice, ideological position, public spending preference and political interest.

IV-estimates

VARIABLES	(1) Right-wing voting	(2) L-R index	(3) Public spending	(4) Political interest
Retiree(=1)	0.106 (0.114)	-0.225 (0.390)	-0.082 (0.055)	0.053 (0.044)
Retiree(=1)*Public occupation (=1)	0.185*** (0.035)	0.779*** (0.202)	-0.083** (0.028)	-0.028 (0.023)
Occupation in public sector (=1)	-0.159*** (0.015)	- 0.633*** (0.068)	0.092*** (0.010)	0.032*** (0.007)
Spouse occupation (Public sector=1)	-0.067*** (0.014)	- 0.280*** (0.054)	0.051*** (0.011)	0.007 (0.007)
Observations	7,830	8,832	7,785	8,963
Number of municipalities	277	289	283	291
Control variables	YES	YES	YES	YES
Election year FE	YES	YES	YES	YES
Municipality FE	YES	YES	YES	YES
Chi-square test	6.341	2.739	10.52	0.286
Prob > Chi2	0.0118	0.0979	0.00118	0.593

Robust standard errors in parentheses

*** p<0.001, ** p<0.01, * p<0.05

Notes. The model includes the following controls in addition to the fixed effects: Respondent age as fourth degree polynomial, education, gender, spouse and spouse occupation. The first-stage estimates are presented in Appendix C.

Figure 1. Political attitudes and age

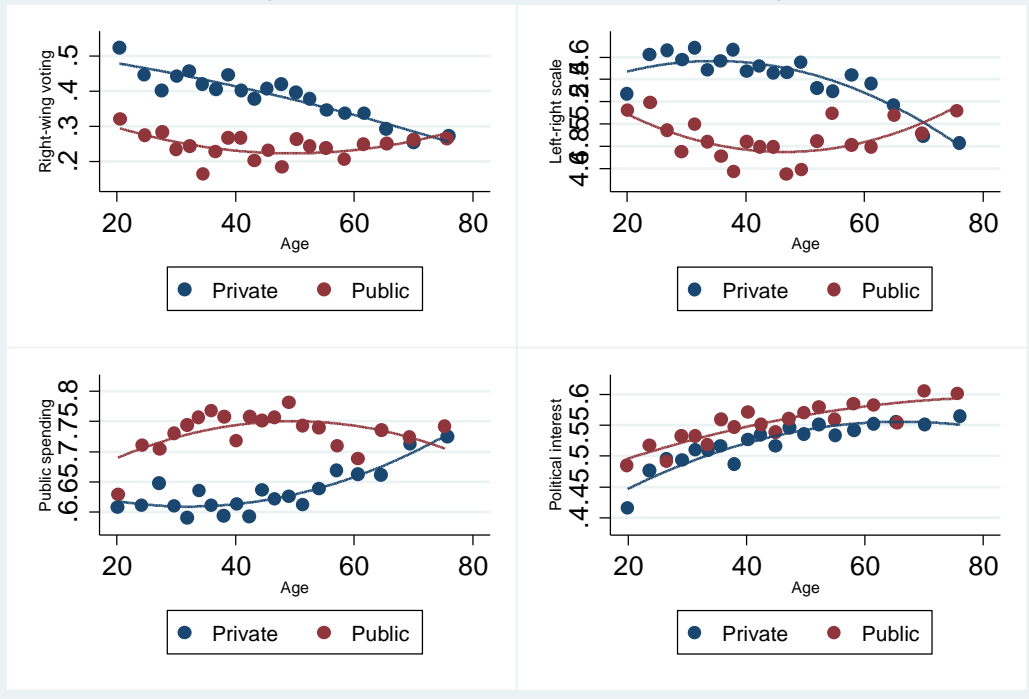


Figure 2. Retirement patterns in the private and public sector

