



Volume 26, No. 2, Pages 155–292 June 2010 ISSN 0176-2680

European Journal of POLITICAL ECONOMY

Editors:
JAKOB DE HAAN
ARYE L. HILLMAN
HEINRICH W. URSPRUNG

Editorial Advisors:
PETER BERNHOLZ
JAMES BUCHANAN

Editorial Board:
TOKE AIDT
SASCHA O. BECKER
MICHAEL BEENSTOCK
TIMOTHY BESLEY
KEN G. BINMORE
FRIEDRICH BREYER
KANG CHEN
ROGER CONGLETON
RICHARD DISNEY
PETER EGGER
SYLVESTER C.W. EUFFINGER
URS FISCHBACHER
VINCENTO GALASSO
MICHELLE GARFINKEL
GENE GROSSMAN
HANS-PETER GRÜNER
SANJEEV GUPTA
JOEL GUTTMAN
TOSHIHIRO IHORI
MURAT IYIGUN
ANDREW LEIGH
NGO VAN LONG
WOLFGANG MAYER
PIERRE-GUILLAUME MEON
BRANKO MILANOVIC
JOHN MORGAN
DENNIS MUELLER
BILIN NEYAPTI
HANNU NURMI
MARTIN PALDAM
PANU POUTVAARA
MARTA REYNAL-QUEROL
DENNIS J. SNOWER
KONSTANTIN SONIN
JAN-EGBERT STURM
GEORGE TRIDIMAS
JEAN-ROBERT TYRAN
ROLAND VAUBEL
KARL WÄRNERYD

CONTENTS

B. Neyapti, Fiscal decentralization and deficits: International evidence	155
T. van de Klundert, On the determinants of institutional design	167
T.N. Tideman and F. Plassmann, Pricing externalities	176
F. Sobbrío and P. Navarra, Electoral participation and communicative voting in Europe	185
D. Coates, J.C. Heckelman and B. Wilson, The political economy of investment: Sclerotic effects from interest groups	208
J. Rattsø and R.J. Sørensen, Grey power and public budgets: Family altruism helps children, but not the elderly	222
A. Montén and M. Thum, Ageing municipalities, gerontocracy and fiscal competition	235
C. Bodea, The political economy of fixed exchange rate regimes: The experience of post-communist countries	248
B. Geys, F. Heinemann and A. Kalb, Voter involvement, fiscal autonomy and public sector efficiency: Evidence from German municipalities	265
M. Elinder, Local economies and general elections: The influence of municipal and regional economic conditions on voting in Sweden 1985–2002	279

This article appeared in a journal published by Elsevier. The attached copy is furnished to the author for internal non-commercial research and education use, including for instruction at the authors institution and sharing with colleagues.

Other uses, including reproduction and distribution, or selling or licensing copies, or posting to personal, institutional or third party websites are prohibited.

In most cases authors are permitted to post their version of the article (e.g. in Word or Tex form) to their personal website or institutional repository. Authors requiring further information regarding Elsevier's archiving and manuscript policies are encouraged to visit:

<http://www.elsevier.com/copyright>

Contents lists available at [ScienceDirect](http://www.sciencedirect.com)

European Journal of Political Economy

journal homepage: www.elsevier.com/locate/ejpe

Grey power and public budgets: Family altruism helps children, but not the elderly

Jørn Rattsø^{a,*}, Rune J. Sørensen^b

^a Department of Economics, Norwegian University of Science and Technology (NTNU), N-7491 Trondheim, Norway

^b Norwegian School of Management (BI), N-0484 Oslo, Norway

ARTICLE INFO

Article history:

Received 3 March 2009

Received in revised form 10 November 2009

Accepted 19 November 2009

Available online 26 November 2009

JEL classification:

H72

H75

I12

I22

Keywords:

Generational conflict

Family altruism

Elderly and educational spending

Intergenerational linkages

Local government services

ABSTRACT

The literature on intergenerational conflict and public budgets has shown that the demands of the elderly may crowd out educational spending. We extend this literature to take into account altruism within the family where individuals care about the welfare of family members. The conflicting claims to the public budget will reflect the political strength of age groups, but may also be influenced by whether middle-aged have children or elderly parents in the community. We investigate the role of family altruism using both survey data and demographic and local government budget data in Norway from 1992 to 2004. Family altruism matters for local government spending on primary education, but does not affect spending on old-age care and health services. The old must take care of their own interests themselves.

© 2009 Elsevier B.V. All rights reserved.

1. Introduction

The greying of society has become a catchphrase for the demographic transformation of Western countries: the share of elderly in the population is increasing. The elderly demand old-age care and health care services and they are expected to influence public budgets. The spending demands of the elderly can crowd out educational spending. Several studies of US states analyze the negative correlation between the share of elderly and educational spending, notably [Poterba \(1997, 1998\)](#), [Fernandez and Rogerson \(2001\)](#) and [Ladd and Murray \(2001\)](#). The negative effect of the growing share of elderly for the public spending on education is confirmed in European studies including [Borge and Rattsø \(1995\)](#) for Norway, [Borge and Rattsø \(2007\)](#) for Denmark, and [Grob and Wolter \(2007\)](#) and [Cattaneo and Wolter \(2009\)](#) for Switzerland. More broadly [Sans and Velazquez \(2007\)](#) show the importance of ageing for welfare spending in the OECD area.

We extend this literature to take into account altruism within the family using unique data about family relations within the local governments in Norway. Altruism within the family means that individuals care about the welfare of family members. The conflicting claims to the public budget cannot be seen as a competition between age groups alone. Middle-aged can have children or elderly parents in the community. Middle-aged that care for their elderly parents can induce higher levels of public spending demand for old-related services among middle-aged persons. While it is true that elderly account for a larger share of the voting

* Corresponding author. Department of Economics, Norwegian University of Science and Technology, Dragvoll Campus, N-7491 Trondheim, Norway. Tel.: +47 73591934/1940; fax: +47 73596954.

E-mail address: jorn.rattso@svt.ntnu.no (J. Rattsø).

population, the number of parents and grandparents per child has increased as well.¹ This could lead to more voting power per child and imply that family altruism works in favor of educational spending.

Altruism within the family has primarily been investigated related to transfers between individuals, as discussed recently by McGerry (2000, NBER). We relate altruism to the political priority of public services among different age groups. Cattaneo and Wolter (2009) have information about whether the respondents have children and whether the children are at school-age. They find that the willingness to raise expenditures on education is positively affected by having children, but that this does not have a sizeable impact on the age effect of the preference for spending on education. The politics of altruism within the family has been investigated by Strömberg (2006) in an analysis of local government spending in Sweden. He shows that the benefit share of the median voter correcting for family age composition influences the spending pattern, and that an increase in the old-age service benefit share of the median voter raises the relative spending of old-age services. Strömberg corrects benefit shares based on national age distributions, while we observe family links in each local government. Compared to Cattaneo and Walter we also have information about parents and address a broader set of public services.

We do not restrict the empirical analysis to a specific political economy model, but motivate our approach in a swing voter framework. The starting point is a demand model of local public services with generational conflict and disadvantage of being part of a large cohort (user group). The generational conflict follows from different demand for local services among different age groups. The cost effect of a large cohort shows up in the budget constraint, the costs are high when a fixed service level is offered to many users like the elderly. Our family altruism extension takes into account that an age group can include the service demands of family members in other age groups (children and parents). The political system determines the aggregation of preferences. The swing voter model captures both the size of the voting groups, their homogeneity, and their willingness to change party. The elderly may lose out if they are heterogenous and hard to move. The theoretical model below clarifies the factors affecting the political decision making.

In the Norwegian setting we are able to analyze the age composition of voters and public services to both old and young simultaneously. Local governments provide the relevant services directly related to specific age groups of the population. First we study the importance of family altruism for the desired priority of local services using survey data. The interviews ask a sample of the population about their priority of spending to child care, schools, and care for the elderly. The desired spending is clearly related to the age of the respondent, the young wants more spending for child care and schools while the old wants more spending for care for the elderly. The desired allocation of local government funds reflects generational conflict. At the same time inhabitants in all age groups have high priority of care for the elderly, and the elderly can be said to enjoy general altruism by all of the population. Family altruism is shown to be important for child care and schools, but not for old-age care.

The actual importance of family altruism is tested using demographic and local government budget data from 1992 to 2004. The estimates indicate that altruism is important to understand the relationship between age groups and educational spending. Parents help defend spending in schools, but at the same time the cost disadvantage of being part of a large cohort seems to reduce educational spending per pupil in child care and primary education. Both micro- and macro-data suggest that allocations for old-age care are not affected by family altruism. The elderly voters must rely on their own political influence to secure their care services when the wave of the elderly comes.

The survey analysis shows that the majority of the respondents are willing to pay higher taxes to finance services, but the elderly are less willing to pay higher taxes than younger voters. The willingness to finance a generous welfare state may be particularly high in wealthy Norway. In general intergenerational solidarity and family altruism are expected to be affected by the political system of decision making. The strong decentralization of spending responsibilities and the small size of the municipalities in Norway (average about 10,000 inhabitants) may encourage family altruism compared to more centralized systems.

Theoretical motivation is developed in Section 2, a swing-voter model that allows for altruism between generations. Empirical research design is outlined in Section 3. Section 4 presents the results regarding desired allocation and family altruism. The econometric analysis of actual allocation is presented in Section 5. Concluding remarks are offered in Section 6.

2. A politico-economic model of age-related policy-making

The standard median-voter model based on self-interested voters can hardly explain the generational conflict over public services. Competing political parties adjust policies to the preferences of the median voter, and the large middle-income and middle-aged generations are expected to include the median. A more advanced approach assumes models of overlapping generations where political parties offer citizens a policy package comprising taxes on the young and middle-aged cohorts, which are used to finance pensions for the elderly (Browning, 1975; for review, see Breyer, 1994; Persson and Tabellini, 2000). Yet it is hard to believe that governments can make credible commitments for generations to come, particularly for public services that have much weaker legal protection than pensions. It seems more realistic to assume that current policies have modest bearing on future policies, and that today's young and middle-aged will have to fight their own political battle once they retire.

We make two basic assumptions in our outline of a model to understand the politics of demographics and public services. First, we open up for the possibility that voters are altruistic within the family. They cast their vote with consideration for their own children and grandchildren as well as for elderly parents (Strömberg, 2006). Second, we employ a probabilistic voting model

¹ In Norway, the number of persons per family has decreased from 2.54 in 1960 to 2.19 in 2006 (Statistics Norway). Most of the reduction is due to fewer children in each family.

rather than a median-voter model. Swing-voter models suggest that relatively small groups of voters can be attractive prey for competing political parties (Lindbeck and Weibull, 1987; Dixit and Londregan, 1996).

2.1. Model assumptions

The economy consists of three groups, children (C), middle-aged (M), and elderly (E). Local government provides two types of services, i.e. primary education for children and old-age care for elderly. Middle-aged do not consume public services. Each child consumes an amount of C_C of schooling, and each elderly consume C_E of old-age care services. The utility function of children is $V(C_C)$ and the utility function of elderly is $W(C_E)$.

Total population of the (local) government is $N = N_C + N_M + N_E$, and the unit costs of providing services for children and elderly are p_E and p_C respectively. With an exogenous amount of local government revenue R (which is a good description of Norwegian local governments), government's budget constraint becomes:

$$p_E C_E N_E + p_C C_C N_C = R \quad \text{Government's budget constraint} \quad (1)$$

2.2. Optimal allocation with a social planner

The social planner (P) maximizes the social welfare function

$$U_P = N_C V(C_C) + N_E W(C_E) \quad \text{Welfare function} \quad (2)$$

subject to the budget constraint (1).

$$\frac{V'_{C_C}}{W'_{C_E}} = \frac{p_C}{p_E} \quad \text{Planning optimum} \quad (3)$$

A higher share of elderly increases the costs of providing services for the elderly, which is exactly counteracted, as number of elderly and children are weights in the welfare function. The planning optimum (3) is a normative benchmark. Changes in the age composition of the municipalities should have no impact on resource allocation according to this condition.

2.3. The preferred allocations of a middle-aged versus an elderly citizen

We are interested in comparing the desired allocations of middle-aged and elderly citizens. Consider the situation of a middle-aged citizen i with altruistic preferences. He may or may not have children that consume education services, here represented by the binary variable $n_i^C = 0, 1$. He may have parents who live in the municipality and consume old-age care services measured by the binary variable $n_i^E = 0, 1$. Let $\gamma \geq 0$ measure the relative degree of altruism of a middle-aged person towards own children compared to degree of altruism towards his parents. The utility functions for the middle-aged can we written:

$$U_M = n_i^C \gamma V(C_C) + n_i^E W(C_E) \quad \text{Utility of middle – aged citizen (M)}. \quad (4)$$

Similarly, suppose an elderly voter j may have grandchildren in the municipality, binary variable $m_j^C = 0, 1$, and let the degree of altruism towards the grandchildren be measured by the parameter $\lambda \geq 0$. The utility of elderly now can be written:

$$U_E = m_j^C \lambda V(C_C) + W(C_E) \quad \text{Utility of elderly citizen (E)}. \quad (5)$$

Inserting the budget constraint in (4) and (5) yields reduced form utility functions for middle-aged and elderly, that is

$$U_M(C_E) = n_i^C \gamma V\left(\frac{R - p_E C_E N_E}{p_C N_C}\right) + n_i^E W(C_E) \quad (6)$$

$$U_E(C_E) = m_j^C \lambda V\left(\frac{R - p_E C_E N_E}{p_C N_C}\right) + W(C_E). \quad (7)$$

Maximizing Eqs. (6) and (7) with respect to C_E yields the optimum conditions.

$$\frac{V'_{C_C}}{W'_{C_E}} = \frac{\frac{n_i^E}{N_E} p_C}{\frac{n_i^C}{N_C} p_E \gamma} \quad \text{Optimum allocation for a middle – aged voter (M)} \quad (8)$$

$$\frac{V'_{C_C}}{W'_{C_E}} = \frac{1/N_E \cdot p_C \cdot 1}{m_j^c / N_C \cdot p_E \cdot \lambda} \quad \text{Optimum allocation for an elderly voter (E)} \quad (9)$$

To reach closed-form solutions we assume the following functional forms, $V(C_C) = \frac{1}{1-\pi} \kappa_C C_C^{1-\pi}$, $\pi > 0$, $\kappa_C > 0$ and $V(C_E) = \frac{1}{1-\pi} \kappa_E C_E^{1-\pi}$, $\pi > 0$, $\kappa_E > 0$, and in this case we may rewrite the conditions:

$$\left[\frac{C_E}{C_C} \right]^\pi = \frac{\kappa_E \cdot n_i^E / N_E \cdot p_C \cdot 1}{\kappa_C \cdot n_i^C / N_C \cdot p_E \cdot \gamma} \quad \text{Optimum allocation for a middle – aged voter} \quad (10)$$

$$\left[\frac{C_E}{C_C} \right]^\pi = \frac{\kappa_E \cdot 1 / N_E \cdot p_C \cdot 1}{\kappa_C \cdot m_j^c / N_C \cdot p_E \cdot \lambda} \quad \text{Optimum allocation for an elderly voter.} \quad (11)$$

An elderly citizen j will prefer a higher allocation to elderly than a middle-aged citizen i living in the same municipality if $\frac{1}{m_j^c \lambda} > \frac{n_i^E}{n_i^C \gamma}$. This is likely when $m_j^c = 0$ (no grandchildren in community), λ is small (not much altruism towards grandchildren when there), $n_i^E = 0$ (middle-aged has no parents in community), $n_i^C = 1$ (middle-aged has children in community), and γ is large (middle-aged care much about children welfare, but not much about parents).

2.4. The swing-voter equilibrium

The swing-voter model assumes that citizens support the party that offers the highest level of individual welfare. Voter welfare increases with levels of consumption and closeness to parties' ideological position. Political parties have fixed ideological positions, and party ideology has no bearing on the use of policy instruments. The mix of public services to children versus elderly is used to maximize voter support.

The polity consists of two political parties, Left (L) and Right (R). Following the notation of [Persson and Tabellini \(2000\)](#), let $X_{M,i}$ and $X_{E,j}$ measure the particular individual specific parameters that capture voters propensity to support party L. A middle-aged voter i will vote for the Left party if $U_M(C_E^L) - U_M(C_E^R) > X_{M,i}$.² Similarly, an elderly voter j will vote for the Left party if $U_E(C_E^L) - U_E(C_E^R) > X_{E,j}$. For each set of policy offers, one particular voter in each of the two groups (middle-aged and elderly) is indifferent between the two political parties. We define cut-off values $X_{M,i}^*$ and $X_{E,j}^*$ for these voters:

$$U_M(C_E^L) - U_M(C_E^R) = X_{M,i}^* \quad (12)$$

$$U_E(C_E^L) - U_E(C_E^R) = X_{E,j}^* \quad (13)$$

Cumulative distribution functions for the individual specific parameters $X_{M,i}^*$ and $X_{E,j}^*$ are described by $\Phi_M(X_{M,i}^*)$ and $\Phi_E(X_{E,j}^*)$. For a given set of policy offers, a fraction $\Phi_M(X_{M,i}^*)$ of middle-aged citizens support party L, and a fraction $\Phi_E(X_{E,j}^*)$ of elderly citizens vote for party L. All citizens are assumed to cast their votes. The corresponding cut-point densities are written $\Phi'_M = \partial \Phi_M(X_{M,i}^*) / \partial X_{M,i}$ and similarly for Φ'_E . If the density (Φ'_M, Φ'_E) is low, voters are ideologically divided.

Since local governments consist of one election district, and local councils are elected by proportional representation, we assume that each party maximizes its vote share. Let the share of middle-aged voters be $\alpha = \frac{N_M}{N_M + N_E}$, and the share of elderly voters $1 - \alpha = \frac{N_E}{N_M + N_E}$.

Let S_L denote the total share of votes in favor of the Left party (L), and S_R the corresponding share of the Right party (R). In a system of proportional representation, we may write the share of seats going to the L-party:

$$S_L(C_E^L, C_E^R) = \alpha \cdot \Phi_M(X_{M,i}^*) + (1 - \alpha) \cdot \Phi_E(X_{E,j}^*) = \alpha \cdot \Phi_M(U_M(C_E^L) - U_M(C_E^R)) + (1 - \alpha) \cdot \Phi_E(U_E(C_E^L) - U_E(C_E^R)). \quad (14)$$

² The model assumes no abstentions. However, elderly citizens have considerably higher rates of voting participation than the young. For example, about 75% of people below 50 years report that they vote, while nearly 90% of those above 50 years say that they participated.

Party L maximizes its vote share using services to elderly as policy instrument (C_E^L), given the policy offer by party R (C_E^R). We insert Eqs. (5) and (6) into Eq. (14), and derive the first-order conditions:

$$\frac{\partial S_L}{\partial C_E^L} = \alpha \Phi'_M \left(n_i^E W_{C_E}^L - \frac{p_E N_E}{p_C N_C} n_i^C \gamma V_{C_C}^L \right) + (1-\alpha) \Phi'_E \left(W_{C_E}^L - \frac{p_E N_E}{p_C N_C} m_j^C \lambda V_{C_C}^L \right) = 0. \quad (15)$$

This yields the swing-voter equilibrium:

$$\frac{V_{C_C}^L}{W_{C_E}^L} = \frac{p_C N_C}{p_E N_E} \frac{\alpha \Phi'_M n_i^E + (1-\alpha) \Phi'_E}{\alpha \Phi'_M n_i^C \gamma + (1-\alpha) \Phi'_E m_j^C \lambda}. \quad (16)$$

In equilibrium, party R yields an identical policy offer. An increase in per capita services to elderly leads to an increase in electoral support among elderly that are equal to the loss of support among middle-aged votes.

2.5. Interpretation of swing-voter equilibrium

This equilibrium outcome allows us to discuss the comparative static related to politico-economic factors: demographics, number of middle-aged and elderly voters, family structures and altruism, and ideological homogeneity of the two voter groups.

- Costs and demographics:* The first ratio in (16) captures the costs of demographic structures. More elderly relative to children lowers the ratio $\frac{N_C}{N_E}$, which leads to a lower level of old-age care relative to education services due to the relative cost effect between age groups. The shift could be due to more children, and since children do not vote, the ratio of children to elderly ($\frac{N_C}{N_E}$) may increase without shifting the number elderly voters relative to middle-aged voters.
- Numerical voting strength:* A larger elderly population obviously means a higher share of elderly voters. A decrease in the ratio $\frac{N_C}{N_E}$ may reflect an increase in the share of elderly $1-\alpha = \frac{N_E}{N_M + N_E}$ voters, which in turn makes the elderly more attractive political prey. If middle-aged voters only cater for their children and elderly vote selfishly (see below), political clout reduces to $(1-\alpha) \Phi'_E$. The cost effect of a larger elderly population can be cancelled out by the greater political weight of elderly voters.
- Family altruism:* Altruism affects the swing-voter equilibrium, depending on number of middle-aged voters who have elderly parents, number of middle-aged voters with own children, and number of elderly voters who are grandparents. To see how this works, suppose elderly voters are ideologically heterogeneous, so that parties' policy offers have no effect on their voting behavior: $\Phi'_E = 0$. Now the political component reduces to $\frac{n_i^E}{n_i^C \gamma}$. The political parties compete for votes among the middle-aged only. This is Strömberg's (2006) median-voter equilibrium. Altruism towards elderly versus children influences resource allocation. If $\frac{n_i^E}{N_E} = \frac{n_i^C}{N_C}$, demographics falls out the equilibrium condition. If $\frac{n_i^E}{N_E} > \frac{n_i^C}{N_C}$, the allocation is biased in favor of the elderly, and vice versa.
- Swing voting:* It requires a relatively large shift in public policy to “swing” an extreme left-wing voter to support a right-wing party, and vice versa. Vote-maximizing parties are therefore likely to lean policies in favor of ideologically homogenous voter groups that are “cheap to buy”. From a life-cycle perspective, it has been argued that elderly voters are more homogenous than middle-aged since ideological cleavages on the labour market are less relevant. From a generational perspective, we should expect elderly to be more ideologically divided than young people. Many elderly grew up in a polarized political environment in the 1930s and 1940s. This has made a lasting ideological impression on this generation. Survey data support this conjecture: Elderly people are more ideologically polarized than young people. For example, ideological dispersion can be measured by the standard deviation of the left–right self-placement scale. In Norway, the standard deviation is highest for people aged 67 years or more, lower for people aged 50–66 years, and lowest for the younger cohorts. Moreover, younger voters have lower party identification than elderly people, and they are more likely than elderly citizens to shift party between elections. Data from the World Value Survey and the Comparative Study of Election Systems show such differences in relative party identification and ideological dispersion of young and old voters in Norway.³ In terms of the swing-voter model, it appears to be cheaper to swing a young than an elderly voter.⁴

To simplify the interpretation, suppose that elderly care for themselves while middle-aged voters only care for their children. This could be due to mobility from rural to urban districts. Grandparents continue live in peripheral municipalities, while their middle-aged children and their grandchildren have moved to more centrally located areas. Hence, elderly cast their vote out of concern for old-age care, while middle-aged voters cater for their children's education. The political component reduces to:

³ We provide further documentation on party identification and ideological dispersion on request.

⁴ That young people have more political clout than elderly is also demonstrated in a survey questionnaire to local council members in Norway (2003). Elected politicians were asked whether their political party had attempted to gain electoral support among particular occupational groups, age groups or groups with different income levels. Nearly all representatives denied that their party targeted particular groups, *except* age groups. About 30% of the local council members stated that their party tried to gain more support from young voters. Like in marketing campaigns, it appears more profitable to target generous policies towards the young customer-voter.

$\frac{1-\alpha}{\alpha} \frac{\Phi_F}{\Phi_M} \frac{1}{n_T^\gamma}$. A higher share of elderly voters relative to middle-aged voters, when elderly are more ideologically homogenous than middle-aged voters, raises the supply of old-age care. Less middle-aged altruism towards own children also yields relatively more supply of old-age care.

Given this clarification of the factors and mechanisms at work, we turn to the data for answers.

3. Research design

The analysis addresses both the desired allocation of the inhabitants using interview data and the actual allocation of local governments using local government data. Three interviews were made by Statistics Norway during 1993, 1996 and 2007.⁵ The interviews cover the use of local services by each household and what services are desired. The surveys capture family altruism since the respondent must state what members of the household or in near family make use of local services.

The analysis of actual allocation covers all local governments (municipalities) in four years (1992, 1996, 2000 and 2004) covering four election periods. Child care, primary and lower secondary education, health care and care for the elderly are heavy items in their budgets. These services are publicly provided private goods directed towards specific subgroups of the population. The relevant user group for child care is children aged 0–5 years and for primary and lower secondary education children aged 6–15 years.⁶ Health care and care for the elderly cover a broader set of the population, but the share of the elderly 80 years and above represent the main target group. About 50% of people aged 80 years or more receive nursing services from their municipality. Most who receive services get assistance in their homes, while a modest share of the elderly live in nursing homes⁷ (Statistics Norway, 2005).

The size and development of spending per user for the four years are displayed in Table 1. To concentrate on the local political battle of economic priority we work with net current spending, gross spending with deductions for fees from the users and matching grants from the central government.

All three categories of spending per user show strong growth from 1992 to 2000 (in nominal terms), while increased fees and matching grants have held back growth in the last part of the period (2000–2004). In particular this has been a period of expansion of child care. Spending per user in primary school, old care and health care have developed in tandem.

During the period under study the local governments have experienced quite different demographic transitions. The differences allow for the analysis of the importance of age groups and altruism. Extensive migration influences both the age structure and the family relations within the municipality, i.e. when young families move out of municipalities where elderly parents live. Typically the share of young families has been strongly increasing in urban areas, while the share of elderly has been strongly increasing in the periphery. On average the share of elderly shows the most consistent pattern, an increase by nearly 20%, from an average share of 4.4% to 5.4%. The numbers are reported in Table 1.

Regulated income taxes and block grants represent more than 80% of total revenue on average. The rest is filled up by fees and regulated property taxes. All local governments use the maximum income tax rate and we treat the sum of regulated income taxes and block grants as local government revenue given from the central government. It should be noticed that the block grants are calculated based on objective criteria that measures the economic and demographic situation in the local government. The block grants are partly tax equalization based on tax bases and partly expenditure equalization based on need indicators.

The analysis is based on a balanced panel data set covering all Norwegian local governments in the years 1992, 19996, 2000 and 2004. The data are collected from local government accounts and population statistics. The econometric model is formulated to capture the role of demographic variables spelled out in section 2. The starting point is a demand model of local public services and the key demand variable is local government revenue supplied by the central government. Borge and Rattsø (1995) and Borge et al. (1995) discuss and apply the demand model. The dependent variable ($SPEND_{ijt}$) is net current spending per user in community i , service j , year t . The services include child care, primary/lower secondary education, and care for the elderly/health care. The following empirical specification is applied for the three service sectors (fixed effects versions):

$$\begin{aligned} \log(SPEND_{ijt}) = & \beta_1 \log(REV_{it}) + \beta_2 \log(POP_{it}) + \beta_3 \log(CHO-6_{it}) + \beta_4 \log(CH7-15_{it}) \\ & + \beta_5 \log(EL67-79_{it}) + \beta_6 \log(EL80+_{it}) + \beta_7 \log(PARENTS_{it}) + \beta_8 \log(CHILDRENO-6_{it}) \\ & + \beta_9 \log(CHILDREN7-15_{it}) + \beta_{10} \log(HIGHEREDU_{it}) + \alpha_t + \varepsilon_{it} \end{aligned}$$

The explanatory variables are per capita revenue (regulated income taxes and grants) (REV_{it}), the share of children 0–6 years of age ($CHO-6_{it}$), the share of children 7–15 years of age ($CH7-15_{it}$), the share of elderly 67–79 years of age ($EL67-79_{it}$), the share of the population 80 years and above ($EL80+_{it}$), the share of the population with parents in the community ($PARENTS_{it}$), the share of the population with children 0–6 years in the community ($CHILDRENO-6_{it}$), the share of the population with children 7–15 years in the community ($CHILDREN7-15_{it}$), and the share of the population with higher education ($HIGHEREDU_{it}$). A set of time dummies (α_t) capture time specific factors common to all local governments, and ε_{it} is an error term. All equations have been estimated with standard OLS, random effects and fixed effects models.

The main methodological challenge is the importance of mobility. If the user groups move from local governments with low spending per user to local governments with high spending per user, population shares and spending per user are jointly

⁵ We did not participate in the actual design of the survey instruments.

⁶ Primary schooling was extended to 6-year olds in 1996.

⁷ About 7–8% of those aged 80 years or more live in nursing homes. Old-age care data are missing for 2004 due to change in accounting systems.

Table 1

Local government data. Mean and standard deviation in parenthesis, economic data in 1.000 NOK current prices.

	1992	1996	2000	2004
Revenues (taxes plus block grants) per capita	17.593 (5.592)	19.011 (5.301)	24.333 (6.817)	29.878 (7.576)
Net child care expenditures per person aged 0–6 years ^a)	14.364 (6.792)	24.517 (10.008)	30.965 (11.817)	44.929 (13.437)
Net education expenditure per person aged 7–15 years ^b)	42.455 (11.367)	41.227 (10.587)	56.748 (13.150)	55.265 (11.607)
Net old-age care expenditure per person aged 80-years	150.035 (55.569)	163.621 (57.390)	208.824 (64.479)	n.a. n.a.
Net health and social exp. per person aged 80-years	215.685 (81.289)	238.633 (87.477)	290.835 (94.661)	272.957 (82.421)
Population	9734 (27,074)	10046 (28,478)	10295 (29,563)	10547 (30,597)
Share 0–6 years ^a)	0.092 (0.012)	0.08 (0.011)	0.078 (0.010)	0.073 (0.010)
Share 7–15 years ^b)	0.118 (0.016)	0.130 (0.015)	0.135 (0.014)	0.139 (0.014)
Share 67–79 years	0.111 (0.024)	0.111 (0.024)	0.105 (0.022)	0.097 (0.020)
Share 80-years	0.044 (0.015)	0.048 (0.016)	0.050 (0.016)	0.054 (0.016)
Share with parents 80-years	0.015 (0.007)	0.040 (0.019)	0.048 (0.018)	0.060 (0.016)
Share with children 0–6 years	0.164 (0.026)	0.167 (0.025)	0.165 (0.024)	0.155 (0.024)
Share with children 7–15 years	0.195 (0.030)	0.196 (0.027)	0.195 (0.024)	0.248 (0.024)
Share with higher education	0.113 (0.040)	0.133 (0.044)	0.153 (0.049)	0.167 (0.051)
N	(426)	(433)	(435)	(432)

n.a.: Data not available.

^a 0–6 years for 1992, 0–5 years for 1996, 2000 and 2004.^b 7–15 years for 1992, 6–15 years for 1996, 2000 and 2004.

determined, and Tiebout-bias is a potential problem. The Tiebout-effect produces a positive correlation between the relative size of the user group and spending per user in their own sector, and the true direct effect is likely to be underestimated (in absolute value) when the simultaneity problem is not taken into account. The potential Tiebout-bias is handled by use of instruments. We follow Borge and Rattsø (2007), Harris et al. (2001) and Ladd and Murray (2001), and use historical measures of the age composition as instruments. We apply data for the age distribution across local governments in 1980 and 1991 to instrument for age shares.⁸

4. Spending preferences of young, middle-aged and elderly citizens

It has been argued that old age and retirement in itself makes elderly more “single-minded” as they only care about own interests in redistributive politics (Profeta, 2002; Mulligan and Sala-i-Martin, 2003). This is obviously an empirical issue and will depend on the person’s family situation and degrees of altruism towards own children, grandchildren and elderly parents. We use data from three surveys to throw light on desired services by different age groups, and the interviews are made by Statistics Norway in 1993, 1996 and 2007.⁹ Comparable surveys are done by Brunner and Balsdon (2004), Duncombe et al. (2003), and Cattaneo and Wolter (2009).

The desired local services by age group are displayed in Table 2. The interviews cover the use of three local government services: child care for children 0–5 years of age, primary schooling for pupils aged 6–15 years of age, and care for the elderly. In the 1993 and 1996 surveys, respondents reported whether he/she or anyone in the *household* had used particular services during the last two years. In the 2007 survey, respondents answered a slightly different question. They stated whether he/she or anyone in *close family* had used particular services during the last two years. We have classified responses according to respondent’s own age.

In 1993 and 1996, about 13% state that persons in the household use child care, 23% report that household members go to a primary school, and 3% respond that household members use old-age care. As to be expected, young persons have household members consuming child care and schooling services, while elderly respondents are more likely to use services for the elderly.

⁸ For both years, instrument variables include population shares in the age groups 0–5 years, 5–15 years, 67–79 years, 80 years and more plus total population.

⁹ The three surveys have been conducted by Statistics Norway, which can provide further documentation of the datasets. Datasets are available through the Norwegian Social Science Data Services (NSD). The 1993 and 1996 surveys are called “Peoples relationship through local government”, and the 2007 survey is part of the local election survey program.

Table 2

Interview responses, use of service, desired service spending and tax level.

Source: Population surveys 1993 and 1996, local government election study 2007.

Year	Age groups	Use of local government services			Preferred expenditure increases for			Pay higher taxes?
		Child care	Schools	Old-age care	Child care	Schools	Old-age care	% yes
					NOK	NOK	NOK	
1993	–49 years	19.4%	32.5%	1.3%	73	165	196	69.0%
	50–66 years	1.5%	6.7%	5.0%	31	81	327	51.9%
	67-years	0.1%	1.3%	4.7%	20	51	362	30.3%
	All	12.8%	22.6%	2.6%	57	131	246	60.0%
	(N)	(2694)	(3820)	(3820)	(2808)	(2787)	(2785)	(3765)
1996	–49 years	19.0%	32.6%	1.5%	81	159	304	71.1%
	50–66 years	1.7%	6.8%	4.1%	35	80	500	60.0%
	67-years	1.5%	2.7%	7.4%	17	38	376	39.1%
	All	12.8%	22.9%	2.9%	62	125	428	64.4%
	(N)	(3833)	(3833)	(3833)	(2950)	(2949)	(2946)	(3802)
2007	–49 years	20.9%	42.2%	17.2%	164	254	329	61.7%
	50–66 years	22.6%	37.5%	28.2%	131	228	487	59.0%
	67-years	18.4%	30.7%	27.4%	138	228	593	42.2%
	All	20.7%	38.5%	18.5%	154	245	427	58.6%
	(N)	(3993)	(3993)	(3994)	(730)	(1016)	(1441)	(2562)

Use of local services. a) 1993 and 1996: 'Which of the following local government services have you or anyone in your household used during the last two years?' b) 2007: 'Have you or anyone in your close family used any of the following local and county government services during the last two years?'

Desired increase in spending (same question all three years): 'Assume that NOK 1000 of what each taxpayer pays in local government tax can be distributed according to the wish of each taxpayer. If you can decide, which of the local services below will you allocate money to. Please distribute the NOK 1000 to the services according to where they are most needed.'

Increased taxes (same question all three years): 'The amount local governments can allocate to different services depends to a large extent of tax revenue. Would you be willing to pay NOK 1000 more in tax to the local government to get a better service in the areas where this is most needed?'

The 2007 question includes 'close' family members residing outside the respondent's household. The resulting usage rates are higher in the 2007 survey, and age-group differences are much smaller than in the 1993 and 1996 surveys.

These data allow us to explore family altruism as a phenomenon limited to household members (usually children) or extending to close family outside the household (including elderly parents and/or children living with their divorced mother). Note that three of four children (–18 years of age) live with both parents. About 32% of those children who live with one parent also live with a stepfather or stepmother as well (Statistics Norway, 2005).

To the extent that family altruism is important, we do not expect to observe large differences in public spending priorities between different age groups. For example, Rhodebeck (1993) presents survey data pertaining to American voters preferences for health care spending and social security. She shows that the responses of elderly are not always consistent with their age-related interests.

The spending priorities of the respondents are presented in Table 2. Respondents are asked to state how they would like to allocate 1000 Kroner among different local government services. The survey question was identical in all years. The table displays the average allocation in Norwegian Kroner for three age-related local services, child care, schooling, and old-age care. (Respondents are allowed to allocate money for some other local government services, which includes infrastructure services.)

Care for the elderly ranks highest in all age groups, education spending is number two, and child care ranks lowest. Respondents prefer significant increases in the allocations for all three services, which imply that there is room for only smaller spending increases for public goods such as infrastructure and culture in 2007. The respondents want to expand the individual oriented welfare sector. Moreover, priority setting is related to respondent's own age. Young people want higher spending for child care and education, and elderly citizens want significantly higher spending on old-age care.¹⁰ Yet people aged less than 50 years of age want to increase spending for the elderly more than spending for child care or schooling.

Increased spending towards the elderly to cover their pensions, health care and public nursing services will put a pressure on public budgets and may motivate increased taxes. Many elderly are quite wealthy, partly as a result of generous public pensions and partly due to significant increases in the value of their homes. (Norwegians usually own their housing.) The respondents are asked whether they would be willing to pay 1000 Kroner in higher taxes to finance better services in areas where extra money are most needed (as seen by the respondent). Most respondents say that they are willing to pay higher taxes: 60% in 1993, 64% in 1996 and 59% in 2007. However, elderly citizens are less willing to pay higher taxes than younger voters. Elderly voters believe that young voters should pay for better old-age care, while young voters accept higher taxes to finance better services.¹¹ In a similar

¹⁰ Data from the Norwegian Election Studies (i.e. parliamentary elections) allows another approach to measuring policy preferences. Respondents are asked to state one or two issues that are important for their party choice. In an analysis of the correlation of the responses and voters' age it has been shown that pensions, old-age care and health services are more important for elderly than young people.

¹¹ These results challenge the findings of Boeri et al. (2001). They employ survey data to study how voters in France, Germany, Italy and Spain assess the size of the welfare state. A massive majority supports the status quo. About two-thirds of those who want change would like to reduce taxes and spending, while one-third would like to increase the welfare state. Young people are less supportive of increasing the welfare state than middle-aged, while the elderly are more sympathetic to tax and spending increases (table 13).

study for Switzerland Cattaneo and Wolter (2009) find that elderly are less keen to pay more taxes in general and that even when this is taken into account the elderly still want to spend less on education.

To test family altruism, we display regression analyses with the desired public spending allocation as response variable (log scale), and respondent's age and family usage of the relevant services as explanatory variables. A similar regression has acceptance for higher local tax rates as response variable. We present two types of regressions; the first (I) estimates an overall effect of service usage, while the second (II) apply interaction terms to identify the impact of altruism in the household (1993, 1996) and in close family (2007). Demography, revenues and actual service provision differs between local authorities, so the desired allocation could be expected to be influenced by the community-specific factors. The regressions include local government fixed effects. The results are presented in Table 3.

Family altruism first and for all is important for child care. The family use of child care clearly increases their desired local government spending to child care. The estimates (I) suggest that a respondent who rely on child care wants to allocate about three times more resources to child care services relative to a respondent who does not use any of the three local government services. In model II, we explore the difference between household altruism and close family altruism. The positive interaction term suggests that household altruism raises desired spending levels considerably more than near family altruism. For school services, we observe a similar pattern. Respondents who rely on education services want larger increases in school spending than others (model I). We estimate an impact when close family members attend primary schools, and a significantly larger impact when household members use school services (model II).

The situation is different for old-age care. The respondents' age is obviously important: Those who are less than 50 years of age want about 1/5 of the spending level relative to those who are 67 years of age or more (model I). Whether household members or family members rely on nursing services have little bearing on respondents spending priorities. Both model I and II indicate usage of services have no significant impact on the desired allocation for old-age care. *Family altruism is important for the demand for child care and primary education services, but is negligible for old-age care.*

The age of the respondent is important for the demand of all services. This is true in particular for kindergartens, where a young person (under 50 years of age) prefers to allocate about four times as much money compared to an elderly person (more than 67 years of age). Respondents' age appears to play a similar role in the school and old-age care sectors.

The final regressions in Table 3 show that demography affects willingness to pay 1000 Kroner in additional taxation. The (logistic) regression corroborates the pattern in Table 1: Elderly are less willing than younger people to pay 1000 Kroner in higher

Table 3

Regression analysis of responses, desired increase in service spending and higher taxes. OLS and logistic regression, coefficients and *t*-values/chi-square in parenthesis, reference groups: Year 2007, 67+ years, respondent does not use service.

	Dependent variables:							
	Child care (log)		Schools (log)		Old-age care (log)		Pay higher taxes (=1)a	
	I	II	I	II	I	II	I	II
Year (1993)=1	−2.77*** (−26,8)	−2.91*** (18,6)	−2.10*** (20,2)	−3.01*** (−19,6)	−1.66*** (21,1)	−1.36*** (−12,8)	0.06 (3,55)	0.04 (0,82)
Year(1996)=1	−2.69*** (26,6)	−2.73*** (17,5)	2.01*** (20,1)	−2.88*** (18,9)	−0.79*** (10,1)	−0.48*** (4,65)	0.18*** (3,81)	0.17*** (18,5)
−49 years, (=1)	1.45*** (15,7)	1.43*** (15,5)	1.36*** (13,7)	1.28*** (12,9)	−1.60*** (13,2)	−1.03*** (12,7)	0.59 (233)	0.57*** (215)
50–66 years, (=1)	0.56*** (5,67)	0.55*** (5,63)	0.74*** (7,69)	0.69*** (6,47)	−0.28** (−3,26)	−0.27** (3,11)	0.23*** (25,2)	0.54*** (27,6)
Use of child care (=1)	1.12*** (14,2)	0.35** (2,02)	0.65*** (7,69)	0.19 (1,11)	−0.32*** (−4,47)	0.01 (0,08)	0.30*** (21,8)	0.38*** (27,6)
Use of schooling (=1)	−0.59*** (5,67)	−0.22 (−1,27)	1.01*** (13,9)	−0.08 (−0,49)	−0.23*** (3,75)	0.09 (0,71)	0.10 (3,19)	0.10 (2,99)
Use of old-age care (=1)	−0.12 (0,95)	−0.05 (−0,29)	−0.29* (−2,23)	−0.10 (−0,60)	0.03 (0,26)	−0.04 (−0,04)	0.08 (0,93)	−0.18 (2,46)
Year(1993)* use of child care (=1)		1.04*** (4,73)		0.42 (1,89)		−0.51** (−2,81)		0.20 (3,38)
Year(1996)* use of child care (=1)		0.92*** (4,43)		0.77*** (3,67)		−0.45** (2,65)		0.09 (0,90)
Year(1993)*use of schooling (=1)		−0.27 (1,35)		1.48*** (7,40)		−0.36* (2,35)		0.04 (0,32)
Year(1996)*use of schooling (=1)		−0.57** (−2,87)		1.17*** (5,98)		−0.45** (3,03)		−0.02 (0,08)
Year(1993)*use of old-age care (=1)		−0.02 (−0,07)		−0.04 (−0,10)		−0.11 (−0,37)		−0.41* (4,98)
Year(1996)*use of old-age care (=1)		−0.21 (−0,76)		−0.44 (−1,52)		0.23 (0,97)		0.01 (0,01)
Fixed effect for municipality	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-Square	0.28	0.29	0.26	0.27	0.20	0.20	0.09	0.13

* <0.05, ** <0.01, *** <0.001, N = 6213.

taxes to finance local public services. Own age appears to be more important than family or household members use of services. Elderly people think that younger generations shoulder most of tax-bill for improving old-age care.

5. Family altruism and actual local services

The relationship between family altruism and the actual allocation of local government spending is analyzed using local government data. We expect that family altruism will affect voting behavior and political decision making at least as much at the local level as at regional or national levels of government. Hence, it is of particular interest that we cannot find much support for family altruism towards the elderly using local government data below.

The understanding of the role of family altruism is clarified in the theoretical model of Section 2. The starting point is an understanding of the conflicting effects of costs and political clout. A higher share of elderly in the population raises the political clout of this age group, but also increases the costs of covering services to them. The political institutions influence the outcome of the conflicting claims of the age groups. The theory model shows that the elderly may have a disadvantage in a situation of swing voting, since the elderly are more 'expensive to buy'. They have stronger party identification. Family altruism may change the political equilibrium in any direction dependent on strength of altruism towards the children versus the elderly parents. Empirical analysis is necessary to sort out which factors are dominating.

The regression estimates are presented in Table 4. For each of the three services we present the results of three regressions: a standard OLS model, a fixed effects (FE) model which describes the time-series effects (in four-year intervals), and a 2SLS model where the age variables are instrumented due to mobility effects.

The first element studied is the disadvantage of being part of a large cohort. This is the cost effect of being many. The results clearly indicate that spending per user tends to be reduced when relative user group size increases. When the share aged 0–6 years old goes up by 1% point, the spending per child in child care is reduced by about 0.5–1% point (dependent on model specification). When the share 7–15 years of age increases by 1% point, the school spending per child in the age group is reduced by about 0.5–1% point. When the share above 80 years of age increases by 1% point, both old-age care and health spending are reduced by about 0.7–0.8% points.

The estimates of the full model assume a constant parent population. To compare elasticities with previous studies, we exclude share of population with users in the family for each spending component. The two elasticities for children 0–6 and 7–15 now are about -0.5 , while the elasticity for elderly above 80 is about -0.7 . The quantitative importance is quite large. In child care one standard deviation increase in age group 0–6 (like from average 9.2% to 10.4%) reduces the spending per child by about 6%. The equivalent effect for 7–15 year old (from 11.8% to 13.4%) reduces school spending per child by about 6%. Increased share of elderly by one standard deviation (from 4.4% to 5.9%) reduces spending for old-age care per user in this age group by about 20%. It follows that change in the size of age groups has consequences for spending per user for all age-related services and in particular for old-age care. Note that in the school sector (and to some extent for old-age care) the cross-sectional elasticities (OLS and 2SLS) are smaller than the time-series effect (FE). The long-term reduction due to a large age group is smaller than the short-term decrease due to an increase of the group.

The estimates for the disadvantage of being part of a large cohort are similar to other studies. Borge and Rattsø (2007) find elasticities in the order of -0.6 to -0.7 for Denmark. The estimated disadvantage is somewhat larger than shown by US (Harris et al., 2001; Ladd and Murray, 2001) and German (Kempkes, 2007) studies using local government data, but less than in Poterba's (1997) study of the US states. Also Grob and Wolter (2007), analyzing Swiss cantons, find that educational spending per student decreases when the number of students increases.

The second element of the analysis is generational conflict and political clout, the impact of one age group for the services of other age groups. Both the size of the age group and the willingness to change party affect the political influence. The results in Table 4 capture generational conflict in the Norwegian setting. The share of elderly 67–79 years has a significant negative effect on spending in child care (elasticity of about -0.2 to -0.3) and primary schooling (elasticity of about -0.05 to -0.1). A large share of elderly people crowds out spending for the young. These estimates are not sensitive to exclusion of the parents-variable in the regression. The cross elasticities in Table 4 are relatively low by international standards. We find no significant cross effects related to old-age care. More children do not crowd out spending for the elderly. The overall message is clear: *the politico-economic equilibrium is dominated by the cost effect, not by the numerical effect related to voting power.*

Studies of other countries have primarily addressed the effect of the elderly for schools. The many US studies focusing on generational conflict show large variation across studies. Poterba (1997) finds strong evidence of generational conflict using state level data. He estimates the elasticity of school spending with respect to the share of elderly to be -0.26 . Harris et al. (2001) estimate elasticities of up to -0.10 using school district data, while Ladd and Murray (2001) find no evidence of generational conflict using county level data. Borge and Rattsø (2007) find estimates in the range from -0.10 to -0.15 when elderly is measured as the share of the population 67 years and above. Our results regarding cross effects are somewhat lower than these studies. Obviously, the size effect is expected to be modified by the swing voting mechanism in different ways in different countries.

The third element is family altruism. Our data allow for an extension of the analysis compared to existing studies. The question here is whether it is of any importance that the voters have children and/or parents in the community. The regression models in Table 4 include indicators of family altruism as well. The OLS and 2SLS models suggest that share of voters with children 0–6 years have a positive effect on the allocation for child care services, but the fixed effects model indicates no effect. For school spending, OLS and 2SLS estimations indicate that share of voters with school children increases the allocation for education services. For

Table 4

Regression analysis of local government data, actual spending. Estimated coefficients, *t*-values in parentheses.

	Child care per 0–6 years (log)			Education per 7–15 years (log)			Old-age care per 80+ years (log)			Health/social c. per 80+ years (log)		
	OLS	FE	2SLS	OLS	FE	2SLS	OLS	FE	2SLS	OLS	FE	2SLS
Revenues per capita (log)	0.950*** (17.4)	-0.018 (-0.21)	0.672*** (12.46)	0.417*** (21.01)	0.090** (3.11)	0.447*** (21.1)	0.798*** (23.51)	0.211*** (4.33)	0.778*** (20.6)	0.763*** (31.19)	0.117*** (4.47)	0.719*** (25.5)
Population (log)	-0.051** (-3.61)	-0.301* (-2.06)	-0.095*** (6.16)	-0.066*** (12.9)	0.434*** (8.44)	-0.062*** (8.86)	0.035*** (3.84)	-0.106 (-1.14)	0.052*** (4.79)	0.028*** (4.41)	-0.072 (-1.55)	0.031*** (3.97)
Share 0–6 years (log)	-1.175*** (-5.04)	-0.642* (-2.82)	-0.437*** (5.18)	-0.055 (-0.65)	-0.285** (-3.55)	0.056 (-1.91)	-0.010 (-0.09)	-0.124 (-1.05)	0.161* (2.38)	-0.189 (-1.81)	0.026 (0.36)	0.118** (2.69)
Share 7–15 years (log)	-0.776** (-3.30)	-0.244 (-1.01)	-0.398** (-3.15)	-0.580*** (-6.78)	-0.971*** (8.44)	-0.698*** (-13.65)	-0.163 (-1.14)	-0.052 (-0.45)	0.082 (0.81)	-0.154 (-1.46)	-0.005 (-0.06)	0.066 (-1.01)
Share 67–79 years (log)	-0.296** (-3.52)	-0.286* (-2.69)	-0.186* (-2.56)	-0.096** (-3.15)	-0.079* (-2.11)	-0.005 (-0.20)	0.166** (3.15)	0.077 (1.31)	-0.031 (-0.58)	-0.014 (-0.38)	0.032 (0.96)	-0.331*** (8.72)
Share 80+ years (log)	-0.048 (-0.91)	0.002 (0.24)	-0.090 (0.90)	-0.022 (-1.16)	-0.062 (-1.94)	-0.091* (-2.16)	-0.709*** (21.13)	-0.871*** (-17.9)	-0.756*** (-12.51)	-0.747*** (-31.40)	-0.881*** (-29.92)	-0.685*** (-14.3)
Share with parents 80+ years (log)	-0.048 (-1.83)	-0.001 (-0.01)	-0.044 (-0.52)	0.074*** (6.99)	0.047** (3.55)	0.154*** (3.97)	0.025 (1.48)	-0.040* (-2.28)	0.170* (3.07)	-0.005 (-0.41)	-0.029* (-2.40)	0.093* (2.12)
Share with children 0–6 years (log)	0.716** (3.01)	-0.151 (-0.79)	1.544*** (7.13)	0.028 (0.33)	(0.036) (0.45)	0.097 (1.10)	-0.064 (-0.43)	(0.042) (0.32)	-0.341** (2.70)	0.166 (1.56)	-0.034 (-0.47)	-0.052 (-0.47)
Share with children 7–15 years (log)	-0.218 (-0.92)	-0.181 (-0.79)	-1.842*** (-8.41)	0.071 (0.83)	0.218* (2.68)	0.190* (2.19)	0.119 (0.43)	0.011 (0.11)	-0.282* (2.01)	-0.160 (-1.52)	-0.147* (-2.00)	-0.641*** (-5.60)
Share with higher education (log)	0.313*** (8.09)	0.173 (1.21)	0.306*** (8.19)	-0.001 (-0.02)	-0.120* (-2.37)	0.022 (0.15)	-0.023 (-0.99)	-0.203* (-2.80)	-0.014 (-0.52)	0.013 (0.77)	-0.194*** (4.24)	0.018 (0.93)
N	1726	1717	1704	1726	1717	1704	1294	1287	1278	1726	1717	1704
Fixed effects for years	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fixed effects for municipality	No	Yes	No	No	Yes	No	No	Yes	No	No	Yes	No
R-Square	0.62	0.75	0.660	0.81	0.93	0.800	0.67	0.94	0.62	0.75	0.95	0.70

* <0.05, ** <0.01, *** <0.001.

example, a one percent increase in share of voting population with school children produces an increase in school spending of 0.07–0.22%. More parents in the electorate increases the political clout of children. For old-age care, share of population with elderly parents has a much weaker and more unstable effect. The altruism-indicators in Table 4 display a striking correspondence to the results presented in Table 2: *Family altruism is of importance for primary education and child care, but not for old-age care services.*

The main determinant of spending priority is local government revenue supplied by the central government. The revenue elasticities are shown in Table 4. The OLS estimates are relatively low for education, higher for child care and highest for old-age services. The fixed effects coefficients are broadly consistent with the desired allocations reported in Table 2. For example: a 1% increase in government revenue per capita yields no increase in child care spending, a marginal increase in education outlays, while it generates an increase in old-age care spending of about 0.2%.

6. Concluding remarks

We have expanded the evidence available regarding generational conflict and disadvantage being part of a large cohort and have allowed for altruism effects within the family using a unique new dataset. The econometric analysis is based on a data from survey questionnaires for the period 1993–2007, and panel data set for local governments in Norway in the years 1992, 1996, 2000 and 2004. We have focused on child care, primary education, care for the elderly, and health services. The empirical analyses have identified five major results:

1. People of all age groups want to allocate more resources to welfare services. Most voters want to allocate more resources to old-age care than to child care and school services. Even young or middle-aged voters want the higher spending increase to care for the elderly.
2. Elderly citizens cannot expect much political support from their family members. The young and middle-aged voters prioritize child care and schooling for their children, not services for elderly family members.
3. The political equilibrium shifts as the relative size of the age groups in the local population change. This implies that we can reject the notion of a benevolent social planner. Large cohorts receive lower per capita spending levels. This appears to be a robust short-term effect as well as stable, long-term phenomenon. In the long run, the estimates suggest that a large share of children decreases school spending comparatively more than a large share of elderly damage the services for the elderly. The wave of the elderly will lead to lower per capita spending on services for the elderly.
4. A larger share of elderly lowers the level of school spending and child care spending. Larger shares of children have no impact on the spending level for old-age care.
5. Consistent with survey the data analysis, when larger shares of the electorate have children, local governments allocate more resources to child care and schooling. Local governments allocate no additional appropriations to old-age care in response to larger shares of voters with elderly parents.

Overall, a greyer society will reduce old-age care according to our results. Since the elderly population cannot count on political support of younger family members, the old must take care of their own interests themselves.

Acknowledgements

The research is funded by the Norwegian Research Council. We appreciate comments from seminars in Trondheim and Oslo and from two referees of this journal.

References

- Boeri, T., Börsch-Supan, A., Tabellini, G., 2001. Welfare state reform. A survey of what Europeans want. *Economic Policy* 32, 9–50.
- Borge, L-E, Rattso, J., 1995. Demographic shift, relative costs and the allocation of local public consumption in Norway. *Regional Science and Urban Economics*, 25, 705–726. In: Rattso, J. (Ed.), *Fiscal Federalism and State-Local Finance: The Scandinavian Perspective*. Edward Elgar, Cheltenham.
- Borge, L-E, Rattso, J. 2007. Young and old competing for public welfare services, mimeo, Department of Economics, NTNU.
- Borge, L-E, Rattso, J., Sørensen, R., 1995. Local government service production: the politics of allocative sluggishness. *Public Choice* 82, 135–157. In: Rattso, J. (Ed.), *Fiscal Federalism and State-Local Finance: The Scandinavian Perspective*. Edward Elgar, Cheltenham.
- Breyer, F., 1994. The political economy of intergenerational redistribution. *European Journal of Political Economy* 10, 61–84.
- Brunner, E., Balsdon, E., 2004. Intergenerational conflict and the political economy of school spending. *Journal of Urban Economics* 56, 369–388.
- Browning, E.K., 1975. Why the social insurance budget is too large in a democracy. *Economic Inquiry* 13, 373–388.
- Cattaneo, M., Wolter, S., 2009. Are the elderly a threat to educational expenditures? *European Journal of Political Economy* 25 (2), 225–236.
- Dixit, A., Londregan, J., 1996. The determinants of success of special interests in redistributive politics. *Journal of Politics* 58, 1132–1155.
- Duncombe, W., Robbins, M., Stonecash, J., 2003. Measuring citizen preferences for public services using surveys: does a 'grey peril' threaten funding for public education? *Public Budgeting and Finance* 23 (1), 45–72.
- Fernandez, R., Rogerson, R., 2001. The determinants of public education expenditures: longer-run evidence from the states. *Journal of Education Finance* 21 (1), 567–584.
- Grob, U., Wolter, S., 2007. Demographic change and public education spending: a conflict between young and old? *Education Economics* 15 (3), 277–292.
- Harris, A.R., Evans, W.N., Schwab, R.M., 2001. Education spending in an aging America. *Journal of Public Economics* 81, 449–472.
- Kempkes, G., 2007. Rapid Demographic Changes and the Allocation of Public Education Resources: Evidence from East Germany, Manuscript. Department of Business Management and Economics, Dresden University of Technology.
- Ladd, H., Murray, S., 2001. Intergenerational conflict reconsidered: county demographic structure and the demand for public education. *Economics of Education Review* 20 (4), 343–357.
- Lindbeck, A., Weibull, J., 1987. Balanced-budget redistribution as the outcome of political competition. *Public Choice* 52, 273–297.

- McGerry, K., 2000. Testing parental altruism: implications of a dynamic model. NBER Working Paper 7593.
- Mulligan, C.B., Sala-i-Martin, X., 2003. Social security, retirement, and the single-mindedness of the electorate. NBER Working Paper 9691.
- Profeta, P., 2002. Retirement and social security in a probabilistic voting model. *International Tax and Public Finance* 9, 33–348.
- Persson, T., Tabellini, G., 2000. *Political Economics: Explaining Economic Policy*. The MIT-Press, Cambridge Mass.
- Poterba, J., 1997. Demographic structure and the political economy of public education. *Journal of Policy Analysis and Management* 16, 48–66.
- Poterba, J., 1998. Demographic change, intergenerational linkages and public education. *American Economic Review* 88 (2), 315–320.
- Rhodebeck, L., 1993. The politics of greed? Political preferences among the elderly. *Journal of Politics* 55 (2), 342–364.
- Sans, I., Velazquez, F., 2007. The role of ageing in the growth of government and social welfare spending in the OECD. *European Journal of Political Economy* 23 (4), 917–931.
- Statistics Norway (2005). *Befolkningsstatistikk* (Population statistics, in Norwegian.)
- Strömberg, D., 2006. *Demography, Voting, and Local Public Expenditures: Theory and evidence from Swedish municipalities*, mimeo. Institute of International Economic Studies, Stockholm.