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GREY POWER AND PUBLIC BUDGETS: FAMILY ALTRUISM HELPS CHILDREN, BUT NOT ELDERLY

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

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Abstract

The literature on generational conflict has been occupied with the negative effect for educational spending of increased share of elderly. 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 must take into account the political strength of age groups, but also whether middle-aged have children or elderly parents in the community. We investigate the existence of family altruism using both survey data and demographic and local government budget data in Norway for 1992-2004. Family altruism has an impact on local government spending on primary education, but does not affect spending on old-age care. The old must take care of their own interests themselves.

Keywords: Generational conflict, family altruism, elderly and educational spending, intergenerational linkages, local government services; JEL codes H72, H75, I12, I22

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1. Introduction

The greying of society has become a catchphrase for the demographic transformation of Western societies: The share of elderly in the population is increasing. The elderly demand better old-age care and more health care services and represent a pressure for higher public sector spending in these areas. 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 (1997) and Ladd and Murray (2001). The negative effect of the growing share of elderly for the spending in education is confirmed in European studies including Borge and Rattsø (1995) for Norway, Borge and Rattsø (2007) for Denmark, and Grob and Wolter (2005) and Cattaneo and Wolter (2008) for Switzerland.

We extend this literature to take into account altruism within the family using unique data about family relations within 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. We take into account whether middle-aged have children or elderly parents in the community. While it is true that elderly account for a larger share of the voting population, number of parents and grandparents per child has increased as well.[1] This could imply more voting power per child. At the same time, people care for their elderly parents in need for nursing services. This could induce higher levels of public spending demand for old-related services among middle-aged persons.

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 services among age groups. The politics of altruism within the family has been investigated by Stromberg (1998) 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 when old raise the benefit share the relative spending of old-age services goes up. While

[1] In Norway, 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.

Stromberg corrects benefit shares based on national age distributions, we observe family links in each local government.

We do not restrict the empirical specification to a specific political economy model, but motivate our approach in a swing voter framework. The basic framework includes 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 clients like the elderly. Our extension takes into account that an age group can take into account the service demands of family members in other age groups (children and parents).

In the Norwegian setting we are able to analyze the age composition of voters and public services to 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 want more spending for child care and schools while the old want more spending for care for the elderly. The desired allocation of local government funds reflects generational conflict. 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 for 1992-2004. The estimates indicate that altruism is important to understand the relationship between age groups and educational spending. Parents help defend spending in schools, while the cost disadvantage of large cohorts tend 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.

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. 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 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).

Model assumptions

The economy consists of three groups, children (C), middle-aged people (M), and elderly persons (E). Local government provides two types of services, i.e. primary

education for children and old-age care for elderly. Middle-aged persons 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 for 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:

(1) $p_E C_E N_E + p_C C_C N_C = R$ Government's budget constraint

Optimum allocation with an altruistic social planner

The social planner (P) maximizes the social welfare function

(2) $U_P = N_C V(C_C) + N_E W(C_E)$ Welfare function

subject to the budget constraint (1).

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

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 welfare optimum (5) is a normative benchmark. Changes in the age composition of local authorities should have no impact on resource allocation.

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 extent to which a middle-aged person values the welfare of his children, and $\varepsilon \geq 0$ measures the degree of altruism towards his parents. The utility functions for the middle-aged can we written:

(3) $U_M = n_i^C \gamma V(C_C) + n_i^E \varepsilon W(C_E)$ Utility of middle-aged citizen (M)

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 may therefore be written:

(4) $U_E = m_j^C \lambda V(C_C) + W(C_E)$ Utility of elderly citizen (E)

Inserting the budget constraint in (1) and (2) yields reduced form utility functions for middle-aged and elderly, that is

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

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

Maximizing (5) and (6) with respect to C_E yields the optimum conditions.

(7) $$\frac{V'_{C_C}}{W'_{C_E}} = \frac{n_i^E / N_E}{n_i^C / N_C} \frac{p_C}{p_E} \frac{\varepsilon}{\gamma}$$ Optimum allocation for a middle-aged voter (M)

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

If $V(C_C) = \frac{1}{1-\pi}\kappa_C C_C^{1-\pi}, \pi > 0, \kappa_C > 0$ and $V(C_E) = \frac{1}{1-\pi}\kappa_E C_E^{1-\pi}, \pi > 0, \kappa_E > 0$, we may rewrite the conditions:

(9) $$\left[\frac{C_E}{C_C}\right]^{\pi} = \frac{\kappa_E}{\kappa_C}\frac{n_i^E / N_E}{n_i^C / N_C}\frac{p_C}{p_E}\frac{\varepsilon}{\gamma}$$ Optimum allocation for the middle-aged voter

(10) $$\left[\frac{C_E}{C_C}\right]^{\pi} = \frac{\kappa_E}{\kappa_C}\frac{1 / N_E}{m_j^C / N_C}\frac{p_C}{p_E}\frac{1}{\lambda}$$ Optimum allocation for elderly voter

An elderly citizen j will prefer a higher allocation to elderly than a middle-aged citizen i living in the same municipality if $\frac{1}{m_j^C}\frac{1}{\lambda} > \frac{n_i^E}{n_i^C}\frac{\varepsilon}{\gamma}$. 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), ε is small (not much altruism towards parents when there), $n_i^C = 1$ (middle aged has children in community), and γ is large (middle aged care much about children welfare).

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 $X_{E,j}$ be 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_{Mi} and X_{Ej} for these voters:

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

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

Cumulative distribution functions for $X_{M,i}$ and $X_{E,j}$ are described by $\Phi_M(X_{Mi})$ and $\Phi_E(X_{Ej})$. For a given set of policy offers, a fraction $\Phi_M(X_{Mi})$ of middle-aged citizens support party L, and a fraction $\Phi_E(X_{Ej})$ of elderly citizens vote for party L. All citizens are assumed to cast their votes. The corresponding cut-point densities are written $\Phi'_M = \partial\Phi_M(X_{Mi}) \big/ \partial X_{Mi}$ 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 **L**eft party (L), and S_R the corresponding share of the **R**ight party (R). In a system of proportional representation, we may write the share of seats going to the L-party:

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

(14) $$S_L = \alpha \cdot \Phi_M(X_{Mi}) + (1-\alpha) \cdot \Phi_E(X_{Ej}) = \alpha \cdot \Phi_M(U_M(C_E^L) - U_M(C_E^R)) + (1-\alpha) \cdot \Phi_E(U_E(C_E^L) - U_E(C_E^R))$$

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 (5) and (6) into (14), and derive the first-order conditions:

(15) $$\frac{\partial S_L}{\partial C_E^L} = \alpha\, \Phi_M^{'}(n_i^E \varepsilon W_{C_E}^{'} - \frac{p_E N_E}{p_C N_C} n_i^C \gamma V_{C_c}^{'}) + (1-\alpha)\Phi_E^{'}(W_{C_E}^{'} - \frac{p_E N_E}{p_C N_C} m_j^C \lambda V_{C_C}^{'}) = 0$$

This yields the swing-voter equilibrium:

(16) $$\frac{V_{C_C}^{'}}{W_{C_E}^{'}} = \frac{p_C N_C}{p_E N_E} \frac{\alpha\, \Phi_M^{'} n_i^E \varepsilon + (1-\alpha)\Phi_E^{'}}{\alpha\, \Phi_M^{'} n_i^C \gamma + (1-\alpha)\Phi_E^{'} m_j^C \lambda}$$

In equilibrium, party R yields an identical policy offers. 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.

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.

a) *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. 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 middle-aged voters.

b) *Numerical voting strength*: A larger elderly population obviously means a higher share of elderly *voters*. A decrease in the ration $\frac{N_C}{N_E}$ could therefore imply an increase in the share of elderly $1-\alpha = \frac{N_E}{N_M + N_E}$ voters, which in turn makes elderly more attractive political prey. If middle-aged voters only cater for their children and elderly vote selfishly (see below), political clout reduces to $\frac{(1-\alpha)\Phi_E^{'}}{\alpha\ \Phi_M^{'} n_i^C \gamma}$. The cost effect of a larger elderly population can be cancelled out by the greater increase political weight of elderly voters.

c) *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 $\frac{n_i^E \varepsilon}{n_i^C \gamma}$. 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.

d) *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 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 much more likely than elderly citizens to shift party between elections. In terms of the swing-voter model, it appears to be cheaper to swing a young than an elderly voter.[3]

To simplify interpretation, suppose elderly care for themselves while middle-aged voter 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: $\frac{1-\alpha}{\alpha}\frac{\Phi_E^{'}}{\Phi_M^{'}}\frac{1}{n_i^C\gamma}$. A higher share of elderly voters relative to middle-aged voters, when elderly are more ideologically homogenous than middle-aged voters, and less middle-aged altruism towards own children yields relatively more supply of old-age care.

3. Research design

The analysis addresses both desired allocation using interview data and actual allocation using local government data. Three interviews are made by Statistics Norway during 1993, 1996 and 2007. The interviews cover the use of local services

[3] 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 percent 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.

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 the local services.

The analysis of actual allocation covers 434 local governments (municipalities). 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 'client' group for child care is children aged 0-5 years and for primary and lower secondary education children aged 6-15 years.[4] 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 percent of people aged 80 years of 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 homes[5] (Statistics Norway 2005).

The size and development of spending per 'client' 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 client show strong growth during the period 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 client in primary school, old care and health care have developed in tandem.

Table 1 about here

During the period under study the local governments have experienced quite different demographic transitions. Typically the share of young families has been strongly increasing in urban areas, while the share of elderly has been strongly increasing in

[4] Primary schooling was extended to 6-year olds in 1996.
[5] About 7-8 percent of those aged 80 years or more live in nursing homes.

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 during the period 1992-2004. 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 ($SPEND_{it}$) is net current spending per client in three local public services: child care, primary/lower secondary education, and care for the elderly (health care in community *i* in year *t*. The following benchmark empirical specification is applied for all three service sectors:

$$\log(SPEND_{it}) = \beta_1 \log(REV_{it}) + \beta_2 \log(POP_{it}) + \beta_3 \log(CH0-6_{it}) + \beta_4 \log(CH7-15_{it}) + \beta_5 \log(EL67-79_{it}) + \beta_6 \log(EL80+_{it}) + \beta_7 \log(PARENTS_{it}) + \beta_8 \log(CHILDREN0-6_{it}) + \beta_9 \log(CHILDREN7-15_{it}) + \beta_{10} \log(HIGHEREDU_{it}) + \alpha_t + \varepsilon_{it} \quad (1)$$

The explanatory variables are per capita revenue (regulated income taxes and grants) (REV_{it}), the share of children 0-6 years of age ($CH0-6_{it}$), 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 ($CHILDREN0-6_{it}$), 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 random effects and fixed effects models.

The main methodological challenge is the importance of mobility. If the client groups move from local governments with low spending per client to local governments with high spending per client, population shares and spending per client are jointly determined, and Tiebout-bias is a potential problem. The Tiebout-effect produces a positive correlation between the relative size of the client group and spending per client 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.[6]

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. It would 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

[6] 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.

Norway in 1993, 1996 and 2007.[7] Comparable surveys are done by Brunner and Balsdon (2004) and Duncombe et al. (2003).

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 percent stated that people in the household used child care, 23 percent reported that household members went to a primary school, and 3 percent responded that household members used old-age care. As to be expected, young people had household members consuming child care and schooling services, while elderly respondents were more likely to use services for the elderly. 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 percent of those children who live with one parent also live with a stepfather or stepmother as well (Statistics Norway 2007).

To the extent that family altruism is important, we would not expect to observe large differences in public spending priorities between different age-groups. For example,

[7] The three surveys have been conducted by Statistics Norway, which can provide further documentation for the datasets. Datasets are available through the Norwegian Social Science Data Services (NSD). The 1993 and 1996 surveys were called "Peoples relationship through local government", and the 2007 survey was part on the local election survey program.

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 were asked to state how they would like to allocate 1000 Kroner among different local government service responsibilities. 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 were 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 smaller spending increases for services like infrastructure and culture in 2007. People want to expand the 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.[8] Yet people aged less than 50 years of age want to increase spending for the elderly more that spending for child care or schooling.

Table 2 about here

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.) We asked whether the respondent would be willing to pay 1000 Kroner in higher taxes to finance better services in areas where the individual

[8]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.

believes the extra money are most needed. Most people say that they are willing to pay higher taxes: 60 percent in 1993, 64 percent in 1996 and 59 percent in 2007. However, elderly citizens are less willing to pay higher taxes than are 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.[9]

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 the desired spending to child care. The estimates (I) suggest that a respondent who rely on child care services 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 bigger 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).

[9] These results challenge the findings of Boeri, Börsch-Supan and Tabellini (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).

Table 3 about here

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 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. 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 client tends to be reduced when relative group size increases. When the share aged 0-6 years old goes up by 1 %, the spending per child in child care is reduced by about 0.5-1 % (dependent on model specification). When the share 7-15 year of age increases, the school spending per child in the age group is reduced by about 0,5-1 %. When the share above 80 years of age increases, both old-age care and health spending are reduced by about 0,7-0,8 %. The estimates of the full model assume a constant parent population. To compare elasticities with previous studies, we exclude share of population with clients 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 person in this age group by about 20 %. Note that in the school (and to some extent in the old-age), 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.

Table 4 about here

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 in 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 Walter (2005), 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, the impact of the size of one age group for the services of other age groups. 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.

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 estimation indicate that share of voters with school children increases the allocation for education services. For example, a one percent increase in share of voting population with school children produces an increase in school spending of 0,07-0,22 percent. More parents in the electorate increases the political clout of children. For old-age care, share of population with elderly parents have a much weaker and more unstable effect. The altruism-indicates 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 key variable of the demand model is local government revenue supplied by the central government. The revenue elasticties are shown in table 4. The OLS effects estimates are comparatively low for education, and higher for child care and old-age services. The fixed effects coefficients are broadly consistent with the desired allocations reported in table 2. For example: a one percent 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 percent.

5. 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 during the period 1992-2004. 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. 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 not threaten day-care centers or school spending. Actual spending allocations predict that the upcoming increase of elderly will dilute old-age care. Since the elderly population cannot count on political support of younger family members, the old must take care of their own interests themselves.

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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	19.011	24.333	29.878
	(5.592)	(5.301)	(6.817)	(7.576)
Net child care expenditures per person aged 0-6 years*)	14.364	24.517	30.965	44.929
	(6.792)	(10.008)	(11.817)	(13.437)
Net education expenditure per person aged 7-15 years**)	42.455	41.227	56.748	55.265
	(11.367)	(10.587)	(13.150)	(11.607)
Net old-age care expenditure per person aged 80- years	150.035	163.621	208.824	n.a.
	(55.569)	(57.390)	(64.479)	n.a.
Net health and social exp. per person aged 80- years	215.685	238.633	290.835	272.957
	(81.289)	(87.477)	(94.661)	(82.421)
Population	9734	10046	10295	10547
	(27074)	(28478)	(29563)	(30597)
Share 0-6 years*)	0.092	0.08	0.078	0,073
	(0,012)	(0,011)	(0,010)	(0,010)
Share 7-15 years**)	0,118	0,130	0.135	0,139
	(0,016)	(0,015)	(0,014)	(0,014)
Share 67-79 years	0,111	0.111	0.105	0,097
	(0,024)	(0,024)	(0,022)	(0,020)
Share 80- years	0,044	0.048	0,050	0.054
	(0,015)	(0,016)	(0,016)	(0,016)
Share with parents 80-years	0,015	0,040	0.048	0,060
	(0,007)	(0,019)	(0,018)	(0,016)
Share with children 0-6 years	0.164	0.167	0.165	0.155
	(0,026)	(0,025)	(0,024)	(0,024)
Share with children 7-15 years	0.195	0.196	0.195	0,248
	(0,030)	(0,027)	(0,024)	(0,024)
Share with higher education	0,113	0.133	0.153	0,167
	(0,040)	(0,044)	(0,049)	(0,051)
	(426)	(433)	(435)	(432)

n.a.: Data not available
*) 0-6 years for 1992, 0-5 years for 1996, 2000 and 2004
**) 7-15 years for 1992, 6-15 years for 1996, 2000 and 2004

Table 2 Interview responses, use of service, desired service spending and tax level

		Use of local government services			Preferred expenditure increases for			Pay higher taxes?
		Child care	Schools	Old-age	Child care	Schools	Old-age	
Year	Age groups				NOK	NOK	NOK	% yes
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)

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

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***	-2.91 ***	-2.10***	-3.01***	-1.66***	-1.36***	0.06	0.04
	(-26,8)	(18,6)	(20,2)	(-19,6)	(21.1)	(-12,8)	(3,55)	(0,82)
Year(1996)=1	-2.69***	-2.73 ***	2.01***	-2.88***	-0.79***	-0.48***	0.18***	0.17***
	(26,6)	(17,5)	(20,1)	(18,9)	(10,1)	(4,65)	(3,81)	(18,5)
- 49 years, (=1)	1.45***	1.43***	1.36***	1.28***	-1.60***	-1.03***	0.59	0.57***
	(15,7)	(15,5)	(13,7)	(12,9)	(13,2)	(12,7)	(233)	(215)
50-66 years, (=1)	0.56***	0.55***	0.74***	0.69***	-0.28**	-0.27**	0.23***	0.54***
	(5,67)	(5,63)	(7,69)	(6,47)	(-3,26)	(3,11)	(25,2)	(27,6)
Use of child care (=1)	1.12***	0.35**	0.65***	0.19	-0.32***	0.01	0.30***	0.38***
	(14,2)	(2,02)	(7,69)	(1,11)	(-4,47)	(0,08)	(21,8)	(27,6)
Use of schooling (=1)	-0.59***	-0.22	1.01***	-0.08	-0.23***	0.09	0.10	0.10
	(5,67)	(-1,27)	(13,9)	(-0,49)	(3,75)	(0,71)	(3,19)	(2,99)
Use of old-age care (=1)	-0.12	-0.05	-0.29*	-0.10	0.03	-0.04	0.08	-0.18
	(0,95)	(-0,29)	(-2,23)	(-0,60)	(0,26)	(-0,04)	(0,93)	(2,46)
Year(1993)* Use of child care (=1)		1.04***		0.42		-0.51**		0.20
		(4,73)		(1,89)		(-2,81)		(3,38)
Year(1996)* Use of child care (=1)		0.92***		0.77***		-0.45**		0.09
		(4,43)		(3,67)		(2,65)		(0,90)
Year(1993)*Use of schooling (=1)		-0.27		1.48***		-0.36*		0.04
		(1,35)		(7,40)		(2,35)		(0,32)
Year(1996)*Use of schooling (=1)		-0.57**		1.17***		-0.45**		-0.02
		(-2,87)		(5,98)		(3,03)		(0,08)
Year(1993)*Use of old-age care (=1)		-0.02		-0.04		-0.11		-0.41*
		(-0,07)		(-0,10)		(-0,37)		(4,98)
Year(1996)*Use of old-age care (=1)		-0.21		-0.44		0.23		0.01
		(-0,76)		(-1,52)		(0,97)		(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

Table 4 Regression analysis of local government data, actual spending
Estimated coefficients, T-values in paranthesis

	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
Revenes per capita (log)	0.950 ***	-0,018	0.672 ***	0,417 ***	0,090 **	0.447 ***	0,798 ***	0,211 ***	0.778 ***	0,763 ***	0,117 ***	0.719 ***
	(17,4)	(-0,21)	(12,46)	(21,01)	(3,11)	(21,1)	(23,51)	(4,33)	(20,6)	(31,19)	(4,47)	(25,5)
Population (log)	-0,051 **	-0,301 *	-0.095 ***	-0,066 ***	0,434 ***	-0.062 ***	0,035 ***	-0,106	0.052 ***	0,028 ***	-0,072	0.031 ***
	(-3,61)	(-2,06)	(6,16)	(12,9)	(8,44)	(8,86)	(3,84)	(-1,14)	(4,79)	(4,41)	(-1,55)	(3,97)
Share 0-6 years (log)	-1,175 ***	-0,642 *	-0.437 ***	-0,055	-0,285 **	0.056	-0,010	-0,124	0.161 *	-0,189	0,026	0.118 **
	(-5,04)	(-2,82)	(5,18)	(-0,65)	(-3,55)	(-1,91)	(-0,09)	(-1,05)	(2,38)	(-1,81)	(0,36)	(2,69)
Share 7-15 years (log)	-0,776 **	-0,244	-0.398 **	-0,580 ***	-0,971 ***	-0.698 ***	-0,163	-0,052	0.082	-0,154	-0,005	-0.066
	(-3,30)	(-1,01)	(-3,15)	(-6,78)	(8,44)	(-13,65)	(-1,14)	(-0,45)	(0,81)	(-1,46)	(-0,06)	(-1,01)
Share 67-79 years (log)	-0,296 **	-0,286 *	-0.186 *	-0,096 **	-0,079 *	-0.005	0,166 **	0,077	-0.031	-0,014	0,032	-0.331 ***
	(-3,52)	(-2,69)	(-2,56)	(-3,15)	(-2,11)	('-0,20)	(3,15)	(1,31)	(-0,58)	(-0,38)	(0,96)	(8,72)
Share 80- years (log)	-0,048	0,002	-0.090	-0,022	-0,062	-0.091 *	-0,709 ***	-0,871 ***	-0.756 ***	-0,747 ***	-0,881 ***	-0.685 ***
	(-0,91)	(0,24)	(0,90)	(-1,16)	(-1,94)	(-2,16)	(21,13)	(-17,9)	(-12,51)	(-31,40)	(-29,92)	(-14,3)
Share with parents 80-years (log)	-0,048	-0,001	-0.044	0,074 ***	0,047 **	0.154 ***	0,025	-0,040 *	0.170 *	-0,005	-0,029 *	0.093 *
	(-1,83)	(-0,01)	(-0,52)	(6,99)	(3,55)	(3,97)	(1,48)	(-2,28)	(3,07)	(-0,41)	(-2,40)	(2,12)
Share with children 0-6 years (log)	0,716 **	-0,151	1.544 ***	0,028	(0,036)	0.097	-0,064	(0,042)	-0.341 **	0,166	-0,034	-0.052
	(3,01)	(-0,79)	(7,13)	(0,33)	(0,45)	(1,10)	(-0,43)	(0,32)	(2,70)	(1,56)	(--0,47)	(-0,47)
Share with children 7-15 years (log)	-0,218	-0,181	-1,842 ***	0,071	0,218 *	0.190 *	0,119	0,011	-0.282 *	-0,160	-0,147 *	-0.641 ***
	(0,92)	(-0,79)	(-8,41)	(0,83)	(2,68)	(2,19)	(0,43)	(0,11)	(2,01)	(-1,52)	(-2,00)	(-5,60)
Share with higher education (log)	0,313 ***	0,173	0.306 ***	-0,001	-0,120 *	0.022	-0,023	-0,203 *	-0.014	0,013	-0,194 ***	0.018
	(8,09)	(1,21)	(8,19)	(-0,02)	(-2,37)	(0,15)	(-0,99)	(-2,80)	(-0,52)	(0,77)	(4,24)	(0,93)
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