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Is there a Gender Gap in Preferences for Public Spending? Evidence from Germany

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Is there a Gender Gap in Preferences for Public Spending? Evidence from Germany

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Abstract

In several empirical contributions researchers have found a gender gap in preferences for public spending. This paper analyzes the persistence of these gender gaps when income differences between individuals are taken into consideration. Using survey data from the years 1996 and 2006 of German respondents, we show that gender gaps in preferences vanish when we control for individual income relative to the German median income. The larger this income ratio, the lower the preferences for social security (health care, retirement and unemployment) but the larger the preferences for education spending. Controlling for pseudo individual income (the actual available income if income is shared between all household members), gender gaps in health care and retirement reappear. This may reflect an insurance motive of women who fear to lose the benefits from sharing income within the household.

JEL-Classification: J16, H50, D70, D31

Keywords: gender preference gaps, public spending, governmental redistribution

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1 Introduction

Despite much research, the question whether there are gender differences in preferences for public spending remains poorly understood. Traditionally, economists explain preferences by income differences and diverging labor market opportunities. The standard economic approach to identify an individual's preference for tax-financed public spending and redistribution, respectively, is to determine the net pecuniary benefit from it. Therefore politico-economic models concentrate on the question how public spending affects the individual's net income. As an extension of the work of Hotelling (1929) and Downs (1957), Roberts (1977) as well as Meltzer and Richard (1981) show that, in case of majority voting, the person that earns the median income among the enfranchised citizens is the decisive voter. To maximize their utility, voters with a lower net income than the median income vote for higher taxes and therefore more redistribution. Voters who earn more than the median income favor lower taxes and less redistribution. Consequently, one would expect that women, who have on average been shown to have lower income than men, should prefer higher public spending. Not controlling for individual or household income might falsely attribute some of the effects to being female, instead of being poorer.

In several empirical contributions researchers have found a gender gap in preferences for government spending and redistribution, respectively. But to our knowledge, so far the effect of an individual's relative income position on his or her preferences for public spending has not been tested with exact income data. Abrams and Settle (1999), Lott and Kenny (1999), Aidt et al. (2006) and Aidt and Dallal (2008) use country-level data on the enfranchisement of women in the U.S. and Europe. They show that women prefer larger governments (in the sense of an increase in public spending) compared to men. However, this literature cannot convincingly contribute to the nature vs. nurture debate in social sciences as it does not control for individual income differences. Therefore, it cannot establish whether the gender gap originates from the enfranchisement of persons "being female" or persons who are on average poorer (besides being female).

There are other papers which at least indirectly control for income differences between men and women. Using survey data on twelve countries, Corneo and Grüner (2002) show that being female enhances the preference for governmental redistribution. However, they do not control for income, but use respondent's beliefs on how they think their individual income changes if the income distribution in general becomes more equal. Funk and Gathmann (2010) exploit surveys conducted after federal ballot votes in Switzerland to explore gender preference gaps for different spending categories. They find that women are more likely to support spending for

public health and redistributive policies but oppose military spending. Since they only observe income for a very limited number of survey participants, they use home ownership as a proxy for economic differences. With this, their estimated gender gaps remain statistically significant.¹ A different approach is chosen by Edlund and Pande (2002). Making use of U.S. survey data, they examine women's observed shift to the left, hence, to stronger preferences for larger redistribution after the 1980s. Especially for the middle-income group they find that an increase in the threat and the actual experience of divorce enhances women's taste for redistribution due to a lower expected income. Closest to our paper, Alesina and Guiliano (2009) use both, US survey data and data from the World Values Survey, to analyze the determinants of the general preferences for redistribution. They control for family income and family income at the age of 16. The income variable they use, however, is not the respondent's exact household income but the decile of a country's household income distribution a person belongs to. In line with theory they find that income is significantly negatively related with preferences for redistribution. However, they still find a gender gap in the sense that women are more in favor for redistribution than men even controlling for household income.

With this paper we aim at identifying whether preferences for various spending categories depend on gender by controlling for individual and household income as well as other socioeconomic variables, using the International Social Survey Programme (ISSP). The present paper differs from the existing empirical literature in several respects. First, we observe the respondent's exact income. We can relate this individual income to a country's median income, which enables us to determine an individual's position in the country's income distribution. Second, we also observe the respondent's household income as well as the number of household members among whom the household income is allocated. With this, we can calculate a value of the actual available individual income within the household (pseudo individual income) and also relate this to the median income. The third contribution of this paper is that we not only estimate the determinants of preferences for redistribution in general, but for six specific public spending categories, namely education, health care, retirement, unemployment, environment and defense. Contrary to some of the literature which only indirectly controls for individual income, we find that gender gaps in preferences vanish when the individual's income relative to the median income is taken into account. This income ratio, however, affects preferences for spending on social security (health care, retirement, unemployment) negatively but spending on education positively. The observed differences in preferences might thus be wrongly attributed to gender,

¹ In a robustness check they perform their estimation with observed household income for a small subset. Their results remain qualitatively the same.

while in fact they are mainly due to income differences between men and women.

This paper is structured as follows: Section 2 describes the data we use. In Section 3 we introduce our empirical strategy and present our estimation results. Section 4 concludes.

2 Data and descriptive statistics

The data is taken from the International Social Survey Programme (ISSP), which annually conducts cross-national surveys covering topics important for social science research in 49 countries since 1985. In this paper we use data of the 1996 and 2006 Role of Government Modules (III and IV). They mainly deal with attitudes toward government responsibilities and government spending, state intervention in the economy, civil liberties, political interest, trust and efficacy.² For reasons of data comparability, we only use data for one country, namely Germany.³ With this we are left with a total number of 5,113 respondents. To generate a more representative sample, the analyses are performed with the weight variable provided by the ISSP for East and West German participants.

In the survey, the respondents were asked to state their opinion on the following statement: ‘Listed below are areas of government spending. Please show whether you would like to see more or less government spending in each area. Remember that if you say “much more”, it might require a tax increase to pay for it.’ The respondents could choose from five items: “Spend much less” (1), “Spend less” (2), “Spend the same as now” (3), “Spend more” (4) and “Spend much more” (5). Respondents who could not or would not answer the question were coded missing. The data set contains, among others, indicators of the respondent’s opinion about six main public spending areas: education, health care, retirement, unemployment, environment and defense that we use as our dependent variable. Table 1 reports the frequencies of the various answers per area for male and female respondents in our sample. More than 80% of both, male and female respondents, answer that they want to spend the same, more or much more on the spending categories education, health care, retirement, unemployment and environment whereas more than 60% want to spend less or much less on defense.

The number of observations, mean spending preferences and standard errors, distinguished by the respondent’s gender, are displayed in Table 2. In our sample, female respondents have significantly

² For a more detailed documentation, see <http://www.gesis.org/issp/issp-modules-profiles/role-of-government/>.

³ We restrict our sample to only one country, namely Germany, since income data has been surveyed quite differently in the different countries, for example, as income per month or year, before or after tax. German respondents report (net) earnings per month after taxes and social insurance contributions.

higher average preferences for spending on health care, retirement and unemployment.

Table 1: Responses to question: ‘Please show whether you would like to see more or less government spending in each area.’ (in percent).

	Spend much less		Spend less		Spend the same		Spend more		Spend much more	
	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male
Education	0.43	0.85	3.73	4.45	34.88	31.69	36.49	39.27	24.47	23.74
Health	0.33	0.65	4.26	7.16	32.28	37.13	39.90	36.84	23.23	18.22
Retirement	0.50	0.73	3.32	5.49	43.96	48.78	35.85	32.50	16.37	12.51
Unemployment	2.47	2.55	12.97	15.74	49.38	50.76	24.64	22.40	10.54	8.55
Environment	0.91	1.07	6.40	6.96	40.51	40.22	32.95	32.89	19.24	18.86
Defense	27.74	26.00	33.52	39.61	29.10	25.85	7.33	6.34	2.30	2.22

Note: Results are performed with survey weights.
Source: ISSP (1996, 2006).

Table 2: Descriptive statistics for respondents’ spending preferences

	Female			Male			Adj. Wald test
	Obs.	Proportion	lin. Std. Err.	Obs.	Proportion	lin. Std. Err.	
Education	2512	3.808	0.018	2429	3.806	0.019	0.923
Health	2537	3.814	0.018	2454	3.648	0.018	0.000
Retirement	2516	3.643	0.017	2431	3.506	0.017	0.000
Unemployment	2505	3.278	0.018	2423	3.187	0.019	0.001
Environment	2514	3.632	0.019	2441	3.615	0.019	0.524
Defense	2449	2.229	0.021	2426	2.191	0.020	0.198

Note: Results and test performed with survey weights. 1: “Spend much less”, 2: “Spend less”, 3: “Spend the same as now”, 4: “Spend more”, 5: “Spend much more”.
Source: ISSP (1996, 2006).

According to Meltzer and Richard’s (1981) median voter framework, a voter’s preference for public spending is guided by the position of the individual income relative to the population’s median income. In the ISSP survey respondents are asked to report their own as well as their household income. Here, we want to relate individual income to the German median income. For this purpose we have to make the income data in 1996 (reported in *Deutsche Mark*) and the income data in 2006 (reported in *Euro*) comparable. As the German median income, provided by Eurostat, in 1996 is measured in *ECU* (European currency unit, 1ECU = 1Euro), we only need to convert the income data in the survey in 1996 to Euro by the official rate of exchange 1 Euro = 1.95583 DM.⁴ For a single household the German median income net per month was 1210.3ECU in 1996 and 1303.8€ in 2006.

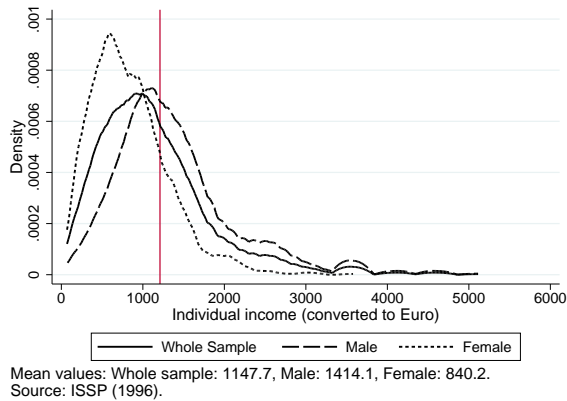
Figure 1 shows the distribution of the individual income for men (longdashed line), women

⁴ Additionally accounting for inflation would lead to the same ratio between individual income and the German median income as we would adjust both, the numerator and the denominator.

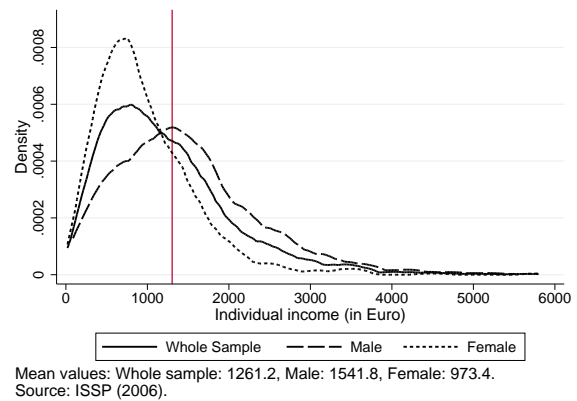
(shortdashed line) and the whole sample (solid line) in 1996 (panel (a)) and 2006 (panel (b)).⁵

Figure 1: Distribution of individual income by gender (1996, 2006)

(a) Income distribution 1996



(b) Income distribution 2006



Values to the left of the red vertical line (German median income) are below the German median, values to the right are above the median. The income distributions of men and women in our sample are (as usual) skewed to the right, that is, the mean income lies above the median income. Women in our sample are on average poorer than men. Their income distribution lies to the left of the men’s income distribution and is much steeper. Hence, there is a larger proportion of women with a comparably low income compared to men.

As additional control variables we use respondent’s age, employment status, highest educational degree, marital status, whether there are children in the household and whether the respondent lives in a city or rural area. Tables 3 displays the number of observation, the proportions and the standard errors for each group, distinguished by gender.

⁵ Note that we do not use survey weights in Figure 1.

Table 3: Descriptive statistics of control variables

	Female			Male			Adj. Wald test
	Obs.	Proportion	lin. Std. Err.	Obs.	Proportion	lin. Std. Err.	
Age	2607			2506			
Age <30		19.04	0.81		21.52	0.86	0.035
Age 30-39		18.86	0.80		21.16	0.85	0.048
Age 40-49		17.28	0.77		18.22	0.80	0.399
Age 50-59		17.72	0.77		18.35	0.80	0.568
Age 60-69		15.27	0.73		13.10	0.70	0.032
Age >70		11.83	0.65		7.64	0.55	0.000
Employment	2505			2395			
Unemployed		28.45	0.95		9.66	0.61	0.000
Retired		24.92	0.89		22.19	0.88	0.029
Part time		16.28	0.78		1.51	0.26	0.000
Full time		30.35	0.95		66.64	1.00	0.000
Education	2595			2499			
Below Secondary		3.09	0.36		2.37	0.32	0.139
Secondary		78.20	0.85		72.75	0.93	0.000
Higher Secondary		10.99	0.64		14.54	0.74	0.000
University		7.72	0.55		10.33	0.63	0.002
Marital status	2606			2505			
Never married		31.89	0.95		30.14	0.95	0.195
Divorced or Separated		7.89	0.54		4.20	0.41	0.000
Married		60.23	1.00		65.65	0.99	0.000
Children in household	2586			2492			
No children		68.41	0.95		67.56	0.97	0.530
Children		31.59	0.95		32.44	0.97	0.530
Location	2357			2224			
Rural		27.74	0.95		28.26	0.98	0.701
City		72.26	0.95		71.74	0.98	0.701

Note: Results performed with survey weights.
Source: ISSP (1996, 2006).

3 Estimation strategy and results

3.1 Estimation strategy

As our dependent variable – the preference for different public spending items – has five answer categories and has a meaningful sequential order, where “Spend much more” is indeed ‘higher’ than “Spend much less”, we use the following ordered logit model for our empirical estimation:

$$y^* = \beta_0 + \beta_1 \text{gender} + \beta_2 \frac{\text{individual income}}{\text{median income}} + \beta_3 \text{controls} + u, \quad (1)$$

where the observed ordered response y is a function of the latent, unobserved variable y^* . “gender” is our main explanatory dummy variable, “ $\frac{\text{individual income}}{\text{median income}}$ ” is the respondent’s income relative

to the German median income and “controls” is a vector of control variables that we describe in Table 3. u is the error term which is assumed to be independent and logistically distributed. We include state dummies to account for the fact that Germany consists of 16 federal states with different characteristics as well as year dummies for the two surveys in 1996 and 2006.

In our analysis we will proceed as follows: We first estimate the model with gender as the only independent variable. This very parsimonious specification will give a first hint where gender gaps in spending preferences may exist. In a second step we will include the individual income relative to the German median income. With this, we can analyze whether gender gaps persist conditional on observable differences such as income, age, employment status, children in the household, marital status and whether the respondent lives in a city or not. In each case, we then predict the probabilities for every outcome on the basis of the estimated coefficients for the case that the independent variables are at their sample means. For the interpretation of the marginal effects, we consider marginal variations of the continuous variables and zero to one changes of the dummy variables.

3.2 Gender gaps without controlling for other observable differences

To begin with, let us focus on possible gender gaps without controlling for any other observable differences. Estimation results are displayed in Table A1. Table 4 presents the corresponding marginal effects where, for easier interpretation, we only display the results for category (4) “Spend more”. For the three spending items health care, retirement and unemployment we can observe significant gender differences in preferences. For instance, women have a 3.4 percentage point higher probability of supporting more public spending on health care. Also, women are significantly more likely to have preferences for higher spending on retirement (4.1 percentage points) and unemployment (2.7 percentage points) than male respondents.

Table 4: Marginal effects – controlling for gender

	Education	Health care	Retirement	Unemployment	Environment	Defense
Female dummy	-0.004 (0.007)	0.034*** (0.006)	0.041*** (0.007)	0.027*** (0.008)	0.002 (0.003)	0.004 (0.003)
State Dummies	YES	YES	YES	YES	YES	YES
Year Dummies	YES	YES	YES	YES	YES	YES
Observations	4941	4991	4947	4928	4955	4875

Standard errors in parentheses; *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

3.3 Individual income

In a next step, we include our control variables and explicitly follow the theoretical framework by Meltzer and Richard (1981) as we control for a respondent's individual income relative to the German median income. The results of the ordered logit estimations with individual income are displayed in Table A2 in the Appendix. Table 5, again, reports marginal effects for category (4) "Spend more". As we are predominantly interested in gender differences, we only comment on some of the estimated marginal effects of the control variables.

Let us, first, focus on the female dummy. With Meltzer and Richard's (1981) median voter framework in mind, we would expect the gender gaps to be smaller or even to vanish when we control for an individual's income relative to the German median income, given that there are income differences between men and women. Table 5 shows that indeed all gender gaps vanish. This implies that if gender was the only characteristic that distinguished women from men, there would be no differences in preferences for larger spending on education, health care, retirement, unemployment, environment and defense. The coefficients of our income variable, however, significantly determine preferences for education, health care, retirement and unemployment spending. From this result we conclude the following: Income seems to be a crucial determinant of an individual's preference for public spending. Not controlling for these income differences can lead to biased results. Gender gaps so far found in the literature may in fact be a result of differences in income and not in gender.

Preferences for higher spending on health care, retirement and unemployment are significantly negatively driven by a respondent's income relative to the German median income. This result is in line with the theoretical, utility-maximizing arguments, that is, the lower the net income relative to the median income the larger the preference for more public spending. Only the results for education are to some extent puzzling as the sign of the income coefficient is positive. Contradictory to theory, we find that the larger the individual income relative to the median income, the more likely a respondent's answer will be "Spend more". Also, it is likely that education funding does not affect the respondent's education directly, since most of them already finished school or university. For an appropriate interpretation, we should, first, keep in mind that spending on education is not an (income-dependent) contribution by which one acquires the entitlement to benefits, as it is true e.g. for unemployment, health care or retirement. Education is financed by income taxes, hence, the more tax revenue the larger the potentially available money for education. Second, the German education system is predominantly publicly financed. Alesina and Guliano (2009) argue that the rich may favor public spending on education since they

assume an increase in education to lead to an increase in positive externalities and in aggregate productivity. Thus, if there is a comparatively large fraction of poor people among the population that cannot afford education (e.g. tertiary education), the rich may be more likely to increase tax-financed education. Additionally, Germany has no deep-rooted private education system like some other countries. Therefore, people with high income can only to some extent choose not to consume the publicly provided education and instead pay for (extra, higher quality) education in the private sector. Although people with a higher position on the income scale may favor less redistributive spending in general, it may be that they, nevertheless, have a strong preference for high-quality education. But in Germany, the only way to enjoy high-quality education is to increase public funding.

Table 5: Marginal effects – controlling for individual income

	Education	Health care	Retirement	Unemployment	Environment	Defense
Female dummy	-0.003 (0.005)	0.010 (0.007)	0.006 (0.011)	-0.018 (0.012)	0.011 (0.009)	0.002 (0.004)
Ratio individual income to median income	0.012** (0.005)	-0.028*** (0.007)	-0.048*** (0.010)	-0.065*** (0.011)	0.010 (0.008)	-0.006 (0.003)
Age						
Age 30-39 vs. <30	-0.042** (0.019)	-0.001 (0.002)	-0.001 (0.012)	0.010 (0.017)	0.006*** (0.002)	-0.010* (0.006)
Age 40-49 vs. <30	-0.006 (0.018)	-0.001 (0.002)	-0.009 (0.014)	0.037** (0.016)	0.005** (0.002)	-0.010 (0.006)
Age 50-59 vs. <30	0.004 (0.019)	-0.003 (0.004)	-0.004 (0.014)	0.046*** (0.015)	-0.004 (0.007)	0.011 (0.009)
Age 60-69 vs. <30	-0.013 (0.027)	-0.003 (0.006)	-0.003 (0.019)	0.018 (0.024)	-0.006 (0.010)	0.021 (0.013)
Age >70 vs. <30	-0.060* (0.032)	-0.009 (0.010)	0.006 (0.017)	0.039* (0.023)	-0.008 (0.012)	0.039** (0.016)
Employment						
Full time vs. unemployed	-0.027 (0.019)	-0.008** (0.004)	-0.020 (0.013)	-0.073*** (0.019)	-0.004 (0.006)	-0.008 (0.006)
Part time vs. unemployed	0.028 (0.019)	-0.006 (0.007)	0.003 (0.014)	-0.061** (0.024)	-0.018 (0.012)	-0.010 (0.007)
Retired vs. unemployed	0.006 (0.022)	-0.000 (0.001)	0.020** (0.010)	-0.032 (0.024)	-0.013 (0.011)	-0.012 (0.008)
Education						
University vs. below secondary	0.068*** (0.008)	-0.061 (0.042)	-0.157*** (0.053)	-0.071 (0.057)	-0.014 (0.030)	-0.012 (0.015)
Higher Secondary vs. below secondary	0.031 (0.038)	-0.063 (0.041)	-0.129** (0.054)	-0.083 (0.056)	0.006 (0.005)	-0.016 (0.014)
Secondary vs. below secondary	-0.015 (0.045)	-0.009* (0.005)	-0.043 (0.034)	-0.062 (0.051)	0.004 (0.011)	0.001 (0.017)
Individual data						
Married vs. never married	-0.025* (0.013)	-0.000 (0.000)	-0.013 (0.010)	-0.026** (0.013)	0.003 (0.004)	0.006 (0.005)
Divorced or separated vs. never married	0.009 (0.020)	-0.007 (0.007)	0.017* (0.009)	0.003 (0.020)	0.001 (0.006)	-0.000 (0.008)
Children vs. not	0.038*** (0.011)	-0.000 (0.000)	0.003 (0.009)	0.010 (0.013)	-0.009 (0.006)	0.008 (0.006)
Living in city vs. not	0.010 (0.011)	-0.000 (0.000)	0.010 (0.007)	-0.000 (0.012)	0.001 (0.004)	-0.006 (0.004)
State Dummies	YES	YES	YES	YES	YES	YES
Year Dummies	YES	YES	YES	YES	YES	YES
Observations	3257	3289	3259	3239	3259	3216

Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1.

In many studies, age has shown to be an important determinant of preferences for public spending (e.g. Poterba 1998; Harris et al. 2001; Sørensen 2013). Assuming that individuals are led by self-interests, young people should favor spending on e.g. education whereas the elderly should have larger preferences for spending on health care and retirement. Here, we especially find interesting age-effects for preferences for unemployment spending, which are strongest for people aged 50 to 59 years. The closer a respondent is to the pensionable age the more likely he or she prefers larger public spending on unemployment benefits. We interpret this as a possible reaction to age dependent changes in employment probabilities. The likelihood of employment decreases with a decreasing distance to retirement and increasing age (Hairault et al. 2010).

Being full-time employed compared to being unemployed significantly decreases the probability to have preferences for more public spending on unemployment benefits. As only employed people pay income-dependent contributions to the German public unemployment insurance, people who work do not make use out of these payments. Not surprisingly, people who are retired have a significantly higher probability to have stronger preferences for higher pension payments since they are directly affected.

Also, an individual's educational degree strongly influences preferences for public spending. Having a university degree compared to having less than secondary education decreases the probability to be in favor for more spending on retirement by around 16 percentage points. Probably, a university degree goes along with comparably high wages and therefore larger probabilities for personal pension schemes and private saving possibilities, respectively. On the contrary, having a university degree increases the probability of being in favor of more spending on education compared to people who have less than secondary education. Again, we argue that highly educated individuals anticipate that an increase in education to lead to an increase in positive externalities and an increase in aggregate productivity. Not surprisingly, people that have children are strongly significantly more in favor for higher spending on education, since education spending directly affects their children.

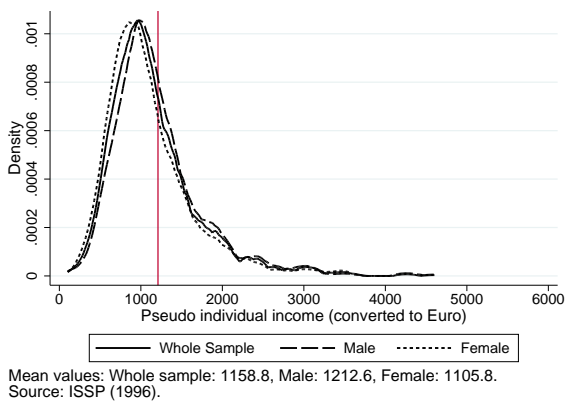
Edlund and Pande (2002) show, that (the threat of) divorce leads to larger preferences for redistribution of women due to lower expected income. We include dummy variables for being married, being divorced or living separated as well as never being married and obtain similar results, however, independent of gender, as being divorced significantly increases the probability of supporting larger retirement payments.

3.4 Pseudo individual income

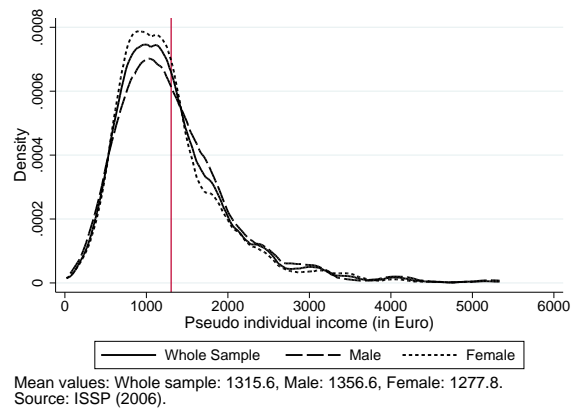
There are good reasons to assume that preferences for public spending not only depend on the individual income but also on the overall disposable household income. Assuming that household members share their income e.g. with their partner and their children, the respondent’s actual available income is likely to differ from the individual income. The OECD provides EU normed weights by which we calculate the equivalized incomes of persons living in households of different sizes, which we call pseudo individual incomes. These weights are allocated as follows: 1.0 for the family’s main income recipient, 0.5 for every further person older than 14 years and 0.3 for every child younger than 14 years.⁶ We use these weights to translate an individual’s household income into a comparable pseudo individual income by dividing the household income by the household specific sum of weights. Take e.g. a male respondent who in 2006 has a monthly net income of 1800€ and lives in a household with his wife (who earns 700€ net) and two children. On an individual level the man has 1.38 times the median income (1800 divided by 1303.80, the German median income in 2006). As the household income is 2500€ and the sum of weights for a household with two adults and two children is 2.1, the male respondent has a “pseudo” individual income of 1190,48€ which is only 0.91 times the median income. With Meltzer and Richard’s (1981) median voter framework in mind, the male respondent may individually prefer lower taxes and less public spending. But by sharing his income with his family, he may favor higher taxes. Figure 2 displays the distribution of the household dependent pseudo individual incomes by gender.

Figure 2: Distribution of pseudo individual income by gender (1996, 2006)

(a) Pseudo income distribution 1996



(b) Pseudo income distribution 2006



⁶ As we have no precise information on how old the respondent’s children are, we assume them to be younger than 14 years.

Living in a household on average strongly improves female respondent's income situation. In our sample 80.2% of the female respondents live in a household with at least one other person. From those, 54.1% have a higher pseudo individual income than individual income. Hence, living in a household improves their income situation. Only 27.1% have a lower pseudo individual income. The opposite holds for male respondents. 48.2% of male respondents who live in a household with at least one other person obtain a lower pseudo individual income compared to their actual individual income whereas only 33.3% can improve their income situation within the household. Hence, whereas male respondents in our sample on average seem to share their income with poorer partners (and children without income), female respondents on average share their income with richer partners. With this, the male and female income distributions become – as expected – more equal such that gender differences in income are much smaller. As these income differences were so far a driving determinant of differences in public spending preferences, gender gaps may reappear when incomes are more equal.

We run our ordered logit model again, but include the respondent's pseudo individual income, assuming that income is shared between household members. Table A3 reports the estimation results, Table 6 displays the corresponding marginal effects for category (4) "Spend more".

We find that the female dummy affects spending preferences for health care and retirement in a significantly positive way. Considering their pseudo individual income female respondents are 2.3 and 2.8 percentage points, respectively, more likely to be in favor of an increase in health care and retirement spending.⁷ Empirically this result is not too surprising. As we have seen in Table 4, gender gaps are present if income differences are not considered. Using the pseudo individual income, the gender differences in income decrease considerably (see Figure 2). Another possible explanation for this result may be due to the fact that in this model many female respondents can – due to the higher income of other household members – dispose of more money than they individually have. Hence, the significantly higher preferences for health care and retirement of female respondents may reflect an insurance motive against the possibility to lose the additional income, if the household composition changes.

⁷ We additionally ran the regression for the sub sample of only those people living in a household with at least more than one other person (82.8% of all respondents) as only for this group the pseudo individual income can differ from the actual individual income. The results do not differ considerably from those in Table 6. Results can be provided upon request.

Table 6: Marginal effects – controlling for pseudo individual income

	Education	Health care	Retirement	Unemployment	Environment	Defense
Female dummy	-0.005 (0.005)	0.023*** (0.007)	0.028** (0.011)	0.001 (0.011)	0.008 (0.009)	0.004 (0.004)
Ratio pseudo individual income to median income	0.012** (0.005)	-0.030*** (0.008)	-0.054*** (0.014)	-0.080*** (0.014)	0.013 (0.008)	-0.006 (0.005)
Age						
Age 30-39 vs. <30	-0.039** (0.019)	-0.001 (0.002)	-0.012 (0.011)	-0.002 (0.015)	0.006*** (0.002)	-0.014** (0.006)
Age 40-49 vs. <30	-0.009 (0.018)	0.001 (0.001)	-0.024* (0.013)	0.018 (0.013)	0.006*** (0.002)	-0.014** (0.006)
Age 50-59 vs. <30	0.005 (0.018)	-0.001 (0.002)	-0.020 (0.014)	0.019 (0.013)	-0.000 (0.005)	0.004 (0.008)
Age 60-69 vs. <30	-0.016 (0.026)	-0.011 (0.010)	-0.035* (0.021)	-0.018 (0.022)	-0.010 (0.011)	0.018 (0.013)
Age >70 vs. <30	-0.066** (0.031)	-0.016 (0.013)	-0.020 (0.020)	-0.002 (0.022)	-0.010 (0.012)	0.039** (0.017)
Employment						
Full time vs. unemployed	-0.016 (0.016)	-0.005* (0.003)	-0.030*** (0.010)	-0.060*** (0.015)	0.001 (0.005)	-0.007 (0.006)
Part time vs. unemployed	0.017 (0.019)	-0.001 (0.003)	-0.001 (0.010)	-0.018 (0.019)	-0.006 (0.009)	-0.003 (0.008)
Retired vs. unemployed	0.020 (0.019)	-0.004 (0.005)	0.012*** (0.005)	-0.003 (0.017)	-0.009 (0.009)	-0.011 (0.008)
Education						
University vs. below secondary	0.070*** (0.016)	-0.051 (0.039)	-0.140*** (0.051)	-0.099* (0.054)	-0.014 (0.029)	-0.014 (0.017)
Higher Secondary vs. below secondary	0.018 (0.040)	-0.051 (0.037)	-0.105** (0.050)	-0.097* (0.052)	0.006 (0.006)	-0.017 (0.016)
Secondary vs. below secondary	-0.024 (0.041)	-0.004* (0.002)	-0.029 (0.024)	-0.082* (0.042)	0.006 (0.012)	0.001 (0.019)
Individual data						
Married vs. never married	-0.022* (0.013)	-0.000 (0.001)	-0.003 (0.007)	-0.016 (0.011)	0.003 (0.004)	0.007 (0.006)
Divorced or separated vs. never married	0.008 (0.021)	-0.013 (0.010)	0.011** (0.005)	0.001 (0.017)	0.000 (0.007)	0.000 (0.009)
Children vs. not	0.052*** (0.010)	0.001 (0.001)	-0.005 (0.008)	-0.012 (0.012)	-0.009 (0.006)	0.007 (0.006)
Living in city vs. not	0.016 (0.011)	0.000 (0.001)	0.007 (0.005)	-0.001 (0.010)	0.001 (0.004)	-0.006 (0.005)
State Dummies	YES	YES	YES	YES	YES	YES
Year Dummies	YES	YES	YES	YES	YES	YES
Observations	3325	3359	3328	3313	3331	3282

Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1.

4 Conclusion

Meltzer and Richard (1981) hypothesized in their work that preferences for redistribution, and therefore welfare spending, depend on an individual's income. With majority voting, individuals with a lower net income than the income of the median voter prefer higher taxes and therefore more redistribution, whereas people that earn more than the median income favor lower tax rates. Income is thus an important determinant.

Based on this framework, we argue that preference gaps for public spending are not correctly

explained when income differences are neglected. In particular, gender gaps found in the literature very likely do not originate from “being female” but are largely driven by the fact that women are on average poorer than men. This paper investigates whether gender gaps persist when we control for individual and household income relative to the median income. Using data on German respondents taken from the ISSP survey in the years 1996 and 2006, we find that gender gaps in preferences for education, health care, retirement, unemployment, environment and defense vanish when individual income differences between respondents are taken into account.

As the analysis has shown, preferences for social security (health care, retirement and unemployment) are the larger the lower the ratio between individual income and the German median income. This result is in line with the theoretical argument that preferences for public spending are affected by utility (net income) maximizing considerations of individuals. Preferences for spending on education, however, are positively affected by this income ratio. Richer respondents may have larger preferences for increased spending on education as they expect a rise in positive externalities and in aggregate productivity for the whole economy.

Using a respondent’s pseudo individual income (the actual available income if income is shared between all household members), we show that income differences between male and female respondents become much smaller. Women on average seem to share their income with richer partners and vice versa for men. With this, we find significantly higher preferences of women for an increase in health care and retirement spending. We explain this gender gap by an insurance motive against the possibility to lose the additional income if the household situation changes.

5 Literature

- Abrams, B. A. and R. F. Settle (1999): Women's suffrage and the growth of the welfare state, *Public Choice* 100(3/4), 289–300.
- Aidt, T.S. and B. Dallal (2008): Female Voting Power: The Contribution of Women's Suffrage to the Growth of Social Spending in Western Europe (1869-1960), *Public Choice* 134(3-4), 391-417.
- Aidt, T.S., J. Duta and E. Loukoianova (2006): Democracy comes to Europe: Franchise Extension and Fiscal Outcomes 1830-1938, *European Economic Review* 50, 249-283.
- Alesina, A. and P. Giuliano (2009): Preferences for Redistribution, NBER Working Paper 14825.
- Corneo, G. and H. P. Grüner (2002): Individual preferences for political redistribution, *Journal of Public Economics* 83, 83–107.
- Downs, A. (1957): *An Economic Theory of Democracy*, New York: Harper & Row.
- Edlund, L. and R. Pande (2002): Why Have Women Become More Left-Wing? The Political Gender Gap and the Decline in Marriage, *Quarterly Journal of Economics* 117, 917-961.
- Funk, P. and C. Gathmann (2010): Gender Gaps in Policy Making: Evidence from Direct Democracy in Switzerland, mimeo.
- Hairault, J.-O., T. Sopraseuth and F. Langot (2010): Distance to Retirement and Older Workers' Employment: The Case for Delaying the Retirement Age, *Journal of the European Economic Association* 8(5), 1034-1076.
- Harris, A. R., W. N. Evans, R. M. Schwab (2001): Education spending in an aging America, *Journal of Public Economics* 81, 449–472.
- Holt, C. A. and S. K. Laury (2002): Risk aversion and incentive effects, *American Economic Review* 92(5), 1644–1655.
- Holt, C. A. and S. K. Laury (2005): Risk aversion and incentive effects : New data without order effects, *American Economic Review* 95(3), 902–904.
- Hotelling, H. (1929): Stability in Competition, *The Economic Journal* 39, 41-57.
- Lott, J. R. and L. W. Kenny (1999): Did women's suffrage change the size and scope of government?, *Journal of Political Economy* 107(6), 1163–1198.

- Meltzer, A.H. and S.F. Richard (1981): A Rational Theory of the Size of Government, *Journal of Political Economy* 89, 914-927.
- Poterba J. M. (1998): Demographic Change, Intergenerational Linkages, and Public Education, *The American Economic Review* 88(2), 315-320.
- Roberts, K. W. (1977): Voting over Income Tax Schedules, *Journal of Public Economics* 8, 329-340.
- Schubert, R., M. Brown, M. Gysler, and H. W. Brachinger (1999): Financial decision-making: Are women really more risk-averse?, *American Economic Review* 89(2), 381–385.
- Sørensen R. J. (2013): Does aging affect preferences for welfare spending? A study of peoples' spending preferences in 22 countries, 1985–2006, *European Journal of Political Economy* 29, 259–271.

Appendix A

Table A1: Parameter estimates – gender

Variable	Education	Health	Retirement	Unemployment	Environment	Defense
Female dummy	-0.031 (0.055)	0.339*** (0.055)	0.313*** (0.056)	0.193*** (0.056)	0.043 (0.055)	0.076 (0.055)
Constant	1.800*** (0.093)	1.705*** (0.090)	2.003*** (0.100)	2.501*** (0.103)	1.146*** (0.094)	3.963*** (0.134)
State dummies	Yes	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Observations	4941	4991	4947	4928	4955	4875

Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1.

Table A2: Parameter estimates – Individual income

Variable	Education	Health	Retirement	Unemployment	Environment	Defense
Female dummy	-0.053 (0.079)	0.099 (0.079)	0.044 (0.080)	-0.126 (0.082)	0.090 (0.078)	0.030 (0.079)
Ratio single income to median income	0.186*** (0.071)	-0.294*** (0.071)	-0.341*** (0.070)	-0.448*** (0.076)	0.084 (0.072)	-0.105 (0.065)
Age						
Age 30-39 vs. <30	-0.284** (0.126)	-0.121 (0.125)	-0.013 (0.133)	0.075 (0.132)	-0.247** (0.120)	-0.208 (0.128)
Age 40-49 vs. <30	-0.045 (0.129)	-0.093 (0.127)	-0.095 (0.138)	0.299** (0.137)	-0.362*** (0.126)	-0.194 (0.132)
Age 50-59 vs. <30	0.027 (0.142)	-0.177 (0.136)	-0.043 (0.147)	0.381*** (0.141)	-0.616*** (0.140)	0.184 (0.141)
Age 60-69 vs. <30	-0.094 (0.190)	-0.193 (0.183)	-0.029 (0.201)	0.137 (0.191)	-0.657*** (0.194)	0.337* (0.193)
Age >70 vs. <30	-0.402** (0.203)	-0.307 (0.196)	0.072 (0.212)	0.318 (0.202)	-0.679*** (0.203)	0.578*** (0.203)
Employment						
Full time vs. unemployed	-0.191 (0.133)	-0.295** (0.119)	-0.192 (0.127)	-0.505*** (0.136)	0.079 (0.122)	-0.154 (0.122)
Part time vs. unemployed	0.222 (0.166)	-0.256 (0.157)	0.033 (0.160)	-0.424** (0.167)	0.277* (0.152)	-0.203 (0.160)
Retired vs. unemployed	0.042 (0.163)	0.067 (0.162)	0.293* (0.170)	-0.228 (0.166)	0.210 (0.166)	-0.253 (0.163)
Education						
University vs. below secondary	0.882** (0.346)	-0.859** (0.359)	-1.123*** (0.353)	-0.497 (0.392)	0.227 (0.400)	-0.248 (0.333)
Higher Secondary vs. below secondary	0.250 (0.342)	-0.874** (0.356)	-0.945*** (0.354)	-0.580 (0.386)	-0.230 (0.391)	-0.338 (0.330)
Secondary vs. below secondary	-0.108 (0.324)	-0.319 (0.338)	-0.375 (0.333)	-0.432 (0.372)	-0.447 (0.378)	0.011 (0.314)
Individual data						
Married vs. never married	-0.173* (0.090)	-0.043 (0.092)	-0.129 (0.097)	-0.185** (0.091)	-0.091 (0.091)	0.108 (0.091)
Divorced or separated vs. never married	0.071 (0.153)	0.295** (0.148)	0.234 (0.152)	0.019 (0.152)	-0.030 (0.151)	-0.001 (0.148)
Children vs. not	0.317*** (0.101)	0.017 (0.097)	0.032 (0.102)	0.072 (0.099)	0.164* (0.095)	0.142 (0.096)
Living in city vs. not	0.074 (0.082)	0.032 (0.080)	0.126 (0.081)	-0.002 (0.087)	-0.012 (0.081)	-0.117 (0.079)
State Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3257	3289	3259	3239	3259	3216

Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1.

Table A3: Parameter estimates – Pseudo individual income

Variable	Education	Health	Retirement	Unemployment	Environment	Defense
Female dummy	-0.087 (0.077)	0.246*** (0.075)	0.199*** (0.077)	0.005 (0.078)	0.072 (0.076)	0.077 (0.077)
Pseudo individual income to median income	0.196*** (0.075)	-0.323*** (0.085)	-0.393*** (0.100)	-0.543*** (0.097)	0.110 (0.072)	-0.105 (0.086)
Age						
Age 30-39 vs. <30	-0.260** (0.121)	-0.220* (0.123)	-0.151 (0.128)	-0.016 (0.127)	-0.254** (0.121)	-0.268** (0.125)
Age 40-49 vs. <30	-0.064 (0.123)	-0.093 (0.124)	-0.274** (0.135)	0.177 (0.131)	-0.297** (0.126)	-0.259** (0.129)
Age 50-59 vs. <30	0.038 (0.134)	-0.196 (0.131)	-0.241* (0.143)	0.179 (0.134)	-0.566*** (0.136)	0.060 (0.135)
Age 60-69 vs. <30	-0.111 (0.175)	-0.450** (0.177)	-0.372* (0.190)	-0.150 (0.179)	-0.725*** (0.181)	0.268 (0.182)
Age >70 vs. <30	-0.428** (0.196)	-0.515*** (0.193)	-0.242 (0.207)	-0.019 (0.192)	-0.722*** (0.195)	0.534*** (0.200)
Employment						
Full time vs. unemployed	-0.109 (0.111)	-0.339*** (0.104)	-0.331*** (0.110)	-0.455*** (0.114)	-0.033 (0.106)	-0.119 (0.108)
Part time vs. unemployed	0.128 (0.151)	-0.211 (0.148)	-0.009 (0.148)	-0.147 (0.150)	0.117 (0.143)	-0.052 (0.148)
Retired vs. unemployed	0.154 (0.151)	0.145 (0.148)	0.302* (0.155)	-0.028 (0.150)	0.150 (0.148)	-0.212 (0.150)
Education						
University vs. below secondary	0.730** (0.316)	-0.868** (0.357)	-1.100*** (0.340)	-0.721* (0.369)	0.226 (0.376)	-0.274 (0.345)
Higher Secondary vs. below secondary	0.137 (0.310)	-0.876** (0.351)	-0.876** (0.340)	-0.703* (0.363)	-0.205 (0.367)	-0.324 (0.342)
Secondary vs. below secondary	-0.165 (0.291)	-0.308 (0.334)	-0.321 (0.318)	-0.607* (0.348)	-0.371 (0.353)	0.010 (0.327)
Individual data						
Married vs. never married	-0.150* (0.090)	0.024 (0.092)	-0.044 (0.097)	-0.131 (0.091)	-0.066 (0.092)	0.120 (0.092)
Divorced or separated vs. never married	0.062 (0.155)	0.308** (0.150)	0.243 (0.153)	0.013 (0.154)	-0.004 (0.154)	0.001 (0.152)
Children vs. not	0.447*** (0.099)	-0.094 (0.098)	-0.074 (0.103)	-0.100 (0.099)	0.157 (0.097)	0.106 (0.098)
Living in city vs. not	0.117 (0.081)	-0.009 (0.080)	0.117 (0.081)	-0.009 (0.086)	-0.023 (0.079)	-0.098 (0.079)
State Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3325	3359	3328	3313	3331	3282

Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1.