Support for Franchise Extension for Children:

Evidence on Japanese Attitude to Demeny Voting

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1. Introduction

Along with many Western Democracies, Japan has experienced below replacement fertility (Feyrer, Sacerdote and Stern 2008). Cross-country comparisons show that low fertility is correlated to low levels of Government support for children ((D'Addio and d'Ercole 2005; Feyrer, Sacerdote and Stern 2008) with particularly strong effects on child support policies. In a comparison of pro-family transfers across 22 countries[1], for the 1989 – 99 decade, Japan's rate over this period was found to be the second to lowest (Aoki and Vaithianathan 2010).

Paul Demeny argued that allowing parents to cast proxy votes on behalf of their children would encourage Governments to favour pro-natalist policies (Demeny 1986). This voting system (which has come to be referred to as *Demeny voting*) has been advanced as a potential option for Japan (Aoki and Vaithianathan 2010; Sanderson and Scherbov 2007).

In Japan where the voting age is 20, such a scheme would be expected to have important ramifications.   Sanderson and Scherbov calculate that if Demeny voting were allowed in Japan, the percentage of voters who were at pension age by 2050 would drop from 46.4% to 39.8%. Moreover, if the voting reform successfully increased pension age to reflect the younger median voter, then with Demeny voting and a lifting of pension age the size of the pensioner voting-bloc in Japan would fall to 28.9% by 2050.

These authors advocate Demeny voting in the spirit of voluntary franchise extensions (Lizzeri and Persico 2004). Lizzeria and Persico have argued that more peaceful and voluntary extension of suffrage such as in the case of nineteenth

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[1] The "pro family transfer" is defines as the average additional disposable income (after taxes and cash transfers) of a one-earner-two-parent-two-child family as compared to the disposable income of a childless single earner (expressed as a percentage of the disposable income of the childless single earner.)

century Britain cannot be explained as a response to a threat of violence[2] (Lizzeri and Persico 2004). Instead, voluntary extension of franchise is instrumentalist in nature because it allows political parties to better internalize the voting benefit of providing public goods. Their theory suggests that the elites weigh up their own loss of franchise against the policies that are likely to be more favoured if franchise is extended. If they favour the sort of policies that would be advanced by franchise extension, then they might be willing to sacrifice their own loss of political power in exchange for policies that they like.

While these theories have drawn on historical evidence about franchise extension, there is no direct evidence on voters' attitude to franchise extension, or whether the elites (in this case those with no children) are willing to extend franchise in order to advance a policy platform that they favour.

The objective of this paper is to directly test whether this "trade-off" exists by analyzing a sample of Japanese voters who were asked about their attitude to *Demeny Voting*.

The present paper uses a survey on voter attitude to Demeny voting to explore the motivation of voters to support or oppose an extension of franchise.

The first question is whether people whose franchise is going to be curtailed as a result of franchise extension are more likely to be oppositional. Demeny Voting is a fairly mild form of franchise extension in that there are no new voters. Instead voters with children will receive extra votes equal to the number of children.   One could hypothesize that attitudes of voters to such a subtle rebalancing of voting power would depend on ideology rather than their own voting power.

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[2] An alternative argument   is that the extension of franchise occurs because the elites fear a violent over-throw by the disenfranchised {Conley, 2001 #22, Acemoglu and Robinson 2000}. In Acemoglu and Robinson, the disenfranchised poor can be placated with temporary redistributions. However, because the franchised cannot commit to this redistribution in the long term, under some circumstance it will not be sufficient to prevent revolution. Since revolution destroys capital, the elites may prefer to extend franchise than to run the real risk of revolution.

Attempting to disentangle the effect of ideology and voting power on support for a franchise extension is confounded by the fact that there are unobserved characteristics that might differ between people who have children and those who do not.

We implement a regression discontinuity design to isolate the causal effect of the ineligibility for a proxy vote on the opposition to Demeny voting.   We find that the size of the effect is surprisingly large – that the loss in voting power doubles the opposition to Demeny voting (from 30% to 60% opposition).

The next question we address is whether respondents who favour pro-child policies (child care and education) are more likely to support franchise extension even if their own voting power is diminished by Demeny voting. We find that those voters whose voting power will be reduced by Demeny voting, but who identify policies that are favoured by Demeny voting are more likely to support Demeny Voting. This suggests that minority elite voters whose policy priorities might not be served by the current regime, might favour an extension of sufferage.

The paper is structured as follows. In Section 2, we outline the survey methodology and the sampling frame. In Section 3 we outline the major results and in Section 4 we conclude with a discussion of the limitations, implications and future research.

2. Data

The data was obtained from a survey of voter attitudes conducted by a private survey company.   The sample of respondent are drawn from a list of survey participants maintained by the company (they currently have over 1 million listed participants).

The survey was conducted on December 27 and 28, 2011. The respondents were screened by a question based on whether they had any children, and then a further question regarding the age of their child (at least one child aged less than 20 years old).   The sample size is was chosen to obtain a balanced number of respondents across the three groups:

1. Have at least one child 19 years old or younger : 1027 respondents
2. Have children all 20 years old or older   515 respondents
3. No children   514 respondents

The questionnaire was in Japanese, and an English translation of the relevant questions is contained in the Appendix. The sample is not representative of the population and is overall younger than the Japanese population (see Appendix, Table **4**).

Respondents were told that a Demeny Voting system allowed each child a vote and allowed parents to vote on behalf of the child. They were then asked how such a system should be implemented with the following responses available: (1) father votes (2) mother votes, (3) parents decide on who votes, (4) each parent has half a vote, (5) other and (6) opposed to the system. For purposes of this study, we collapsed the responses into two categories: supporting Demeny Voting (responses 1 to 5) and opposing (6).

Respondents were also asked which policy they thought were most important and second most important for Japan from a list of 11 options (see Appendix for the full list of policy areas). For purposes of this paper, we label a respondent as favouring *pro-child* policies if they identify education and child support as one of the two most important policies.

	Family Status			Total
	At least one child aged below 20 years	No children	All children are older than 19 years	
Age	41.68 (.22)	37.82 (.46)	60.19 (.32)	45.36 (.26)
Oppose Demeny Voting	0.32 (.01)	0.56 (.02)	0.68 (.02)	0.47 (.01)
Education or child support identified as a policy priority	0.45 (.02)	0.15 (.02)	0.12 (.01)	0.29 (.01)
Education identified as a policy priority	0.17 (.01)	0.08 (.01)	0.09 (.01)	0.13 (.01)
Child-support identified as a policy	0.32 (.01)	0.07 (.01)	0.03 (.01)	0.19 (.01)

priority				
Number of Respondents	1027	515	514	2060

Table 1: Mean and standard errors of main variables used in the study

Methodology

The approach we take exploits the fact that there is a discontinuity in the effect of DV depending on the age of the youngest child. A respondent whose youngest child has not achieved their 20th birthday receives 1 extra vote under DV, whereas a respondent whose youngest child is 20 receives no extra vote (and indeed, has his or her voting power diluted). This provides us with the opportunity to take a regression discontinuity approach and helps isolate a "casual" effect on opposition to franchise extension of voter's own enfranchisement.

To test whether age 20 is the only break in this data series we apply a procedure corresponding to the QLR (Quandt likelihood ratio) test in Time Series which is considered a reliable way to test for an unknown structural break.

The excepted value of Oppose (O) will depend on Minimum Age of the children and will allow for a break at age T:

$$E(Oppose) = \beta_0 + \beta_1 MinimumAge + \beta_2 AgeDummyT \qquad (1)$$

Where $AgeDummyT = 1$ if $MinimumAge \geq T$, 0 otherwise.

If the break date T is known, then the problem of testing the null hypothesis of no break (that is, $\beta_2 = 0$) against the alternative of a nonzero break ($\beta_2 \neq 0$) is equivalent to testing the hypothesis that the coefficient β_2 is zero in the regression version of (1),

This test can be computed using a conventional t-statistic by ordinary least squares; calling this t(T), the hypothesis of no break is rejected at the 5% significance level if $|t(T)| > 1.96$.

In practice, T is typically unknown so the test in the preceding paragraph cannot be implemented. However, the t-statistic can be computed for all possible values of T in some range. If the largest value of the absolute t-statistic exceeds some critical value, then the hypothesis of no break can be rejected. The difficulty

with this method is that the critical value is not 1.96. The distribution has, however, been calculated by Andrews (Andrews (1993)). We therefore employ this critical value for all possible age breaks.

The second hypothesis we test in this paper is whether respondents who favour pro-child policies are less likely to oppose DV. To test this we separate out those respondents who are not eligible for an extra vote under DV and call them Non-Demeny Eligible (NDE) respondents. These are respondents who lose electoral power as a result of DV. Demeny eligible (DE) are those respondents who have at least one child under 20.

$$Opp = \beta_0 + \beta_1 DE + \beta_2 Prochild + \beta_3 DE.Prochild + \beta_3 MinAge + u \qquad (1)$$

where *Opp* is equal to 1 if the respondent opposes DV. The term *Prochild* is equal to 1 if the respondent identifies education and child rearing as either a top or second to top priority. *MinAge* is the age of the youngest child.

The term β_2 is the direct effect of favouring child policies on willingness to oppose DV. We interpret the coefficient β_3 as a difference-in-differences estimate of the effect of being in favour of *pro-child* vs. being against pro-child policies (*N prochild*) on willingness to support DV. This formulation utilizes DE as the treatment group and NDE as the control group.

To see this, we can decompose β_3 as follows:

$$\hat{\beta}_3 = \left(\overline{Opp}_{DE,Prochild} - \overline{Opp}_{DE,NProchild}\right) - \left(\overline{Opp}_{NDE,Prochild} - \overline{Opp}_{NDE,NProchild}\right)$$

The first part on the right-hand side represents the effect of favouring pro-child policies on the DE group; while the second part is the effect of favouring pro-child on the NDE group.

Results

Figure 1 plots the opposition to DV by age of the youngest child (and a polynomial fitted to the data). The data has been plotted with a break at age 20 which corresponds to the point at which the respondent receives an extra vote as a result of the DV. While only illustrative, the figure suggests that the opposition to

DV is lower for people who receive an extra vote. Moreover, this opposition appears to increases discretely at 20 – suggesting that respondent do consider their own voting status when responding to the question.
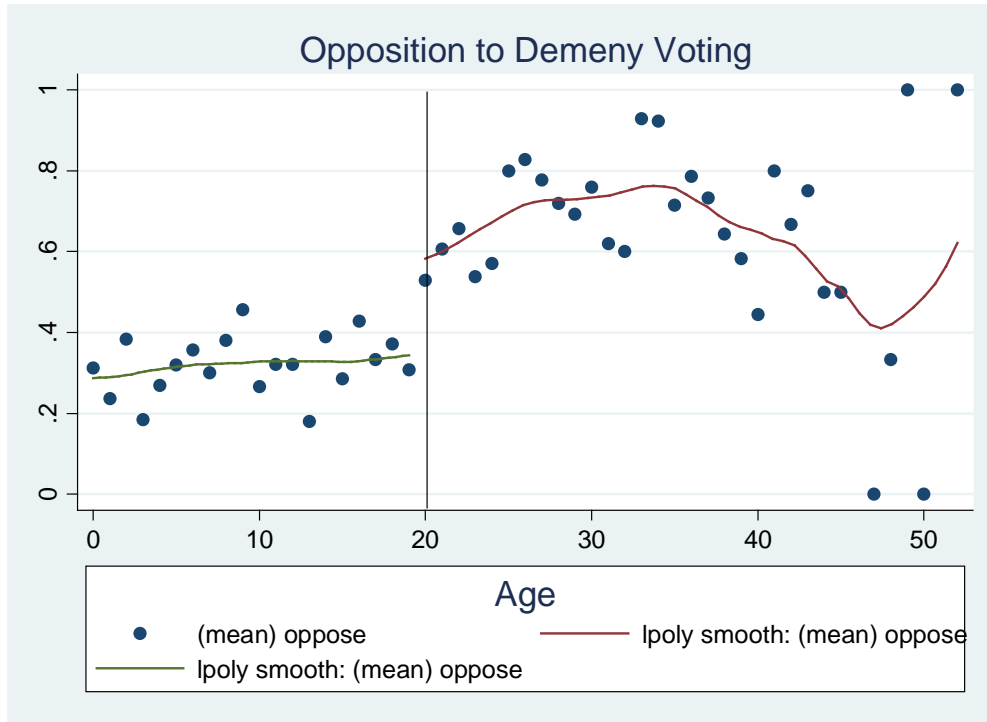
Figure 1: Opposition to Demeny Voting and age of youngest child

To test whether the apparently discrete jump at age 20 shown in Figure 1 is significant, we estimate breaks at ages 19 to 24. Table 1 provides the five highest t-stats with the corresponding ages. We find that the highest t-statistic that rejects the null corresponds indeed to the Age of 20.

Table 1: Age-break coefficients and t-statistics

t-stats	6.12	5.97	5.42	5.00	4.58
Age	20	21	22	19	24

Moreover, AgeDummy[20] is also the age with the highest estimated effect for the Minimum Age dummy variable. Table 2 provides the regression for AgeDummy[20]:

Table 2: Regression of Opposition to Demeny Voting , RD

	Estimated coefficients
Minimum Age of Children	0.0031 (0 .0002)
AgeDummy[20]	0.300*** (0.0491)
Constant	0.292*** (0.0222)
Observations	1545

Note: Standard errors in parentheses. ***, ** and * denote significant at 1%, 5% and 10% respectively.

From these results we can estimate that the likelihood for opposing DV doubles (from 0.292 to 0.592) amongst those who lose voting power as a result of its introduction. This difference is significant at better than 0.1% significance level.

Pro-child Policies and Support for Demeny Voting

Table 3: Opposition to Demeny Voting and Pro-child Priorities

Constant	0.569
	(25.02)**
Demeny Eligible (β_1)	-0.301
	(6.07)**
Po-child Policy Priority (β_2)	-0.091
	(2.06)*
Minimum Age of Child if respondent is a Parent (β_4)	0.003
	(1.23)
Demeny Eligible & Pro-child Policy Priority (β_3)	0.040
	(0.76)
Observations	2060
R-squared	0.10

Note: Robust t-statistics in parentheses. * significant at 5% level; ** significant at 1% level

In Table 3 we report on the results of estimating equation 1. We find that β_2 is only marginally significant (at the 10% level) while β_3 is not statistically significant. This results provides some suggestive evidence that those policy priorities are correlated with support for DV. However, one cannot reject the possibility that this is due to an unobserved characteristic that means that people who are pro-child are also supporters of DV.

For example, those who have no children have slightly high levels of support for DV (44%) and pro-child policies (15%) compared to those whose children are older (support for DV 32% and pro-child policies 9%). This could be because the former respondents are planning to have children and therefore see some personal gain in supporting DV.

Discussion

Our paper provides direct survey evidence that that people have two reasons to support franchise extensions : (1) their own political power; and (2) the impact of franchise extension on their favoured policy. Using survey data and a quasi-experimental design, we found evidence for the former types of motivation and some (weaker) evidence for the latter motivation.

References

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Appendix

Table 4: Survey age and sex distribution and Japanese population estimates

	Survey data			Population Census (2011 estimates from Japan Stats, over 20 year)		
Age	Males	Females	Total	Males	Females	Total
20 − 24	2.49	3.75	3.11	6.4%	5.6%	6.0%
25 − 29	4.21	5.52	4.86	7.2%	6.4%	6.8%
30 − 34	8.62	10.06	9.33	8.1%	7.3%	7.7%
35 − 39	16.67	18.05	17.35	9.8%	8.8%	9.2%
40 - 44	14.94	19.43	17.15	9.2%	8.3%	8.7%
45 - 49	13.79	15.19	14.48	7.9%	7.3%	7.6%
50 - 54	11.4	9.76	10.59	7.6%	7.0%	7.3%

55 - 59	11.02	6.8	8.94	8.3%	7.8%	8.0%
60 - 64	9.87	6.31	8.11	10.4%	10.0%	10.2%
65 - 69	3.45	3.45	3.45	7.5%	7.6%	7.5%
70 - 74	2.2	1.08	1.65	6.6%	7.1%	6.9%
75 - 79	1.15	0.2	0.68	5.3%	6.4%	5.9%
80 - 84	0.19	0.39	0.29	3.5%	5.0%	4.3%
85 +	0	0	0	2.3%	5.4%	3.9%

Appendix 2: Questions

Preamble：This survey contains questions regarding delicate（political content）matters.　If you agree with the survey, please respond.　If you decide not to respond, please discontinue either by clicking on "stop responding" button or closing the browser. Responses of this survey will be processed statistically in a way that it will not be possible to identify individuals.　We appreciate your cooperation in the survey.

The following is an English translation of the questions that have been used for this study:

Q1. Please choose what you think is the Most Important, and the Second Most Important policy from the list below: Pension, Healthcare, Longterm care, Education, Science & technology, Child rearing support, Environment, Energy, Foreign affairs, Employment, Security (safety).

Q5. What is the age of your children? (First child, Second child…Fifth Child)

Q11: It is possible to give each child a vote and have parents (parent) vote on his/her behalf. This is called Demeny Voting System. Q11. How should Demeny Voting System be implemented ? (1)Father votes on behalf of child; (2) Mother votes on behalf of child ; (3)　Parents decide who votes; (4)　Each parent has half a vote ; (5) Other; (6) Opposed to the voting system