Low Fertility and Contexts of State Concern in European and OECD Countries, 1976-2005

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Abstract: Policies thought to increase fertility have received increasing attention from scholars and policymakers in recent years. While many studies have sought to determine the effects of policy interventions on fertility levels, few have examined the extent to which national-level demographic, economic, and political characteristics predict state concern over low fertility or policy interventions intended to address low fertility. This paper describes the contexts in which state actors express concern over low fertility and undertake policy interventions to address it. First, logit models are used to compare the national-level population characteristics of states that express concern and with those of states that do not, and then compare states that enact policy measures with those that do not. Then, a discrete-time model describes the conditions under which states transition from reporting that their own populations' fertility levels are "satisfactory" to reporting that they are "too low," by examining the relationship between this transition and demographic, economic, and political covariates.

Introduction

By the turn of the twenty-first century, many wealthy nations had experienced below-replacement fertility rates for sustained periods of time. Between 1993 and 2006, total fertility rate (TFR) reached the replacement level of 2.1 in only one of the fifteen pre-enlargement European Union countries. In the most extreme cases – Italy, Greece, and Spain – TFR did not rise above 1.4 during this period (I.N.E.D. 2009). Recent decreases of fertility in Europe to very low levels have been accompanied by intensifying attention in academic and policy circles, as well as among the general public, to the causes of and potential remedies for low fertility (*e.g.*, Lutz and Skirbekk 2005; McDonald 2006; "Suffer the Little Children" 2009; Shorto 2008).

This pan-European climate of concern over below-replacement fertility has not, however, led to consensus on appropriate policy response to below-replacement fertility; both the amount of resources devoted to the issue and the forms of intervention vary widely across states. Although the number of European and other wealthy countries that report concern over low fertility, and enactment of policies to address it, has increased over the past few decades, the response has been by no means consistent. Scholars have noted inconsistencies in the relationship between fertility levels and state concern over low fertility: in 1989 France was "dissatisfied" with a TFR of over 1.8, while Austria, Portugal and Spain were "satisfied" with TFR below 1.5 (Gauthier 1996:130). A disconnect between concern and action has also been identified: one study reported that while seven of the countries in the study considered their national fertility levels too low in 1999, at that time six of them reported no policy intervention in this area (Stark and Kohler 2002:540).

Recent changes have occurred, however, as states have become increasingly willing to take action to address low fertility (McDonald 2006), perhaps due to the prolonged periods of lowest-low fertility that some countries are now experiencing. A variety of other factors might also be expected to affect state approaches to low fertility, including other population characteristics such as age structure and migration rates, as well as national wealth and political climate. It is also possible that social norms about the political acceptability of population policy have changed over time: demographers have long cited "pronounced public resistance to explicitly pro-natalist policies" as a deterrent to policy-makers (Lutz, O'Neill, and Scherbov 2003:1992; see also Demeny 1999 and McDonald 2006) – the use of pro-natalism by nationalist and racist political movements in twentieth-century Europe makes population policy a politically

sensitive topic. However, a number of transnational organizations including the Council of Europe, the Organization for Economic Cooperation and Development, and the European Union have addressed the issue of below-replacement fertility (Council of Europe 1994; Mahon 2006), and this institutional support for the discussion may have increased the extent to which public discussion of state concerns and policy interventions is accepted as legitimate.

These recent changes raise the following two questions: First, under what conditions do state actors become concerned about low fertility? Second, under what conditions do state actors enact policies to address low fertility? Answering these questions will provide a better understanding of how policymakers approach the problem of low fertility. More generally, by examining the conditions under which state actors have changed their views on population and population policy, we can better understand processes of social and political change. Investigating this question may also contribute to the larger debate on the relationship between population policy and population trends. Although most studies of fertility policies have examined the causal link from policy to fertility trends, using family policy as an independent variable that affects fertility outcomes, the relationship in the other direction has been largely ignored (but see Castles 2003). As Castles notes, scholars who try to assess causal influence in one direction would also benefit from considering relationships in the opposite direction; it will be difficult to understand how policy affects demographic trends without understanding how demographic trends affect policy.

Literature Review

Thus far, neither evidence of recent changes in state approaches to low fertility, nor interest in low fertility and policy have produced many attempts to understand under what conditions state actors become willing to address low fertility. There are many studies that examine factors affecting cross-national variation in social benefit provision, including family benefits, and analyze the relationship between social context and policy development (*e.g.* Wennemo 1992). However, this study differs from the social welfare literature in two important ways: First, by focusing on official reports of the state's views on fertility, this analysis addresses only policies that are *intended* to influence population and fertility, that are enacted in response to population issues. Family policy, in contrast, can serve many goals, and may not result from pro-natalist aims, or even intentions to affect fertility. Second, time trends in policy change are a key part of the analysis conducted here, as well as the relationship between covariates and

outcomes, in contrast to many (but of course not all) studies of social policy that make cross-sectional comparisons.

In order to address the gap in current knowledge about low fertility and policy when policy is the outcome of interest, this paper attempts to answer the two questions introduced above: Under what conditions do state actors become concerned about low fertility? Under what conditions do state actors use policy interventions to address low fertility? The first of these questions draws on the social problems literature for the idea that material phenomena are not "problems" due solely to their inherent nature – rather, they become problems through a social process by which certain phenomena *achieve* the status of social problem, as they compete for the attention of actors with limited resources (Hilgartner and Bosk 1988). This question also engages the contention of the agenda-setting literature that before multiple actors can pursue their interests in the public arena of pluralist democracy, the issues relevant to their interests must be recognized in the public arena as legitimate sites of contestation; thus one of the most crucial steps in the political process is getting issues on the public agenda (Bachrach and Baratz 1962). A study of state responses to low fertility must begin, therefore, by examining how low fertility becomes a matter of state concern.

The second question asks under what conditions states enact policy interventions to address low fertility, as opposed to simply recognizing low fertility as a problem. There are multiple factors that may account for the observed disjuncture between state concern and state action: public attention is a limited resource, but funding may be still more limited; an issue may be the subject of social concern, but not be considered a legitimate site for state intervention; or the concerned parties may not know of an effective course of action. Comparing the contexts in which state concern is expressed and in which state intervention occurs will move us closer to an understanding of what kinds of processes might account for this disjuncture.

In order to explore the relationship between demographic, social and political factors and state concern and policy about low fertility, this study conducts a quantitative analysis of the relationship between a variety of covariates, representing demographic, economic and political contexts, and three outcomes of interest: the expression of concern over low fertility by state actors, their transition from no concern to concern, and reports by state actors that there is a policy in place to address fertility levels. The analysis also addresses timing, determining the extent to which increasing state attention and action are correlated with changes in population

characteristics, and the extent to which time trends in state approaches to low fertility are independent of such changes.

This goal of this study is detailed description of relationships between outcomes of interest and covariates, rather than a causal account of the effects of covariates on outcomes. Since so little is known about the combinations of conditions under which state concern over low fertility is articulated, description is an important step that must precede causal analysis. The empirical strategy is based on exploration, rather than hypothesis-testing. The analysis uses the complete population of countries of interest, rather than a random sample of a larger population, so inferences cannot be drawn to a wider population. This approach should prove a start to better understanding the processes by which the official positions of European states on the fertility levels of their populations changed over the course of the end of the twentieth century, even in the absence of a causal account.

Data and Methods

One of the aims of this project is to disentangle the relationships between state concern and multiple country-level characteristics. The covariates of interest represent the demographic, economic, and political contexts in which state actors operate. State actors may act as demographers would hope: they may use trends in demographic indicators as signals of important shifts in population, and respond directly to those trends. In this case, we would expect lower TFR[1] to be a strong predictor state concern and interventions. They may also be concerned about other demographic processes, including migration. While higher levels of in-migration may decrease concern about low fertility by increasing the size of the working population, thus mitigating some of the negative effects of fertility decline, on the other hand, more immigration might inspire concerns about the native-born population being "crowded out," culturally as well as demographically. The age structure of the population is another demographic variable relevant to this issue: concern about population aging due to fertility decline, which may make it difficult to maintain social welfare systems, is a frequently-discussed topic in European policy debates. In this case, a higher old-age dependency ratio (the ratio of retirement-age people to working-age people) would be expected to increase state concern and intervention. Controlling for age structure in a multivariate model would also allow the effects of immigration on age structure to

[1] The problems with TFR as a measure of fertility level are well known. However, for most of the period under study, it was commonly used by demographers and policy-makers alike, so it is the most likely candidate for a demographic indicator to which state actors would respond.

be distinguished from immigration's other effects on the social climate, leading to the expectation that higher levels of net migration would be associated with more state concern about low fertility.. Economic context is also expected to be related to state approaches to fertility, as a state in economic decline might be more concerned about fertility decline than a state with a thriving economy. Political outlook is also expected to be important: in most European countries, right-leaning and nationalist parties are more often heard stating concerns about low fertility than are left-leaning parties. However, the former Soviet bloc countries, with their very different political and economic trajectories, may still operate through different processes than Western European countries.

These covariates of interest have been operationalized for this study as follows: TFR was used in the analysis with lags of one year and three years; models with a one-year lag had generally better fit and are presented in the results section. A log transformation of the lagged TFR measure was used to reduce skewness. TFR data are from the Institut National d'Études Demographiques (I.N.E.D. 2009); later years are supplemented with data from Eurostat (Eurostat 2010). Migration is measured with net migration rate, as a percentage of the total population, from U.N. *World Population Prospects: 2008 Revisions* (U.N. 2008). This measure is available as a five-year average at five-year intervals, and thus is lagged in the analysis: for example, the migration rate used as a predictor of an observation in 1978 would be the average from 1970-1975. Age structure is represented with the old-age dependency ratio, defined as the number of people aged 65 and over per 100 people aged 15-64 in the population; this measure is provided at 5-year intervals and is also lagged, so that the ratio used as a predictor of an observation in 1978 would be the ratio from 1975. This measure is also from the U.N. *World Population Prospects.* Economic context is measured with real gross domestic product per capita, in Euros and adjusted for inflation, obtained from Penn World Table (Heston et al. 2006); as the distribution of this variable was found to be skewed, the log GDP per capita was used in the analysis. Two measures of the political climate are used: percent of the cabinet composed of members of right-leaning parties, and percent from left-leaning parties.[2] These variables are taken from the Comparative Political Dataset 1960-2007 (Armingeon et al. 2009) and the Comparative Political Dataset III 1990-2008 (Armingeon et al. 2010). A dummy variable was constructed for former Soviet bloc countries, referred to throughout as "Eastern Europe" – all other countries are referred to as

[2] Centrist parties are counted separately, so the left and right party percentages are not redundant.

"non-Eastern-Europe," as this group includes Japan, the United States, and other non-European countries).

Finally, the possibility of time trends in the outcomes of interest must be accounted for; time trends that are independent of other contextual covariates may indicate some overarching institutional or social process that has changed the climate of reception for population policy during the period under study. In order to examine this possibility, four different specifications of timing variables are used in the analyses. First, a linear variable for the year of the observation is included. A second specification adds a quadratic term, the square of the year. A third replaces the linear variable for year with three dummies for cohorts of approximately equal length: 1976-85, 1986-95, and 1996-2005 (these cohorts contain four, five, and five observations, respectively). Finally, a fourth creates four cohorts instead of three, by breaking the final cohort (with the highest levels of concern and intervention) into two five-year cohorts, in order to try to identify more recent trends in the outcomes.

The outcomes of interest, state views on fertility and policy related to fertility, are taken from the United Nations (U.N.) *World Population Policies* publications and their predecessors, the *National Population Policies* publications (UN 1987-2007). The U.N. has administered a survey on population policy to governments worldwide, with 14 waves between 1976 and 2005. Data were collected two-year intervals except in the 1980s, when they were collected every three years. The countries included in the analysis are 40 of those characterized by the U.N. as "more-developed" countries, excluding only Bosnia and Herzegovina, Croatia, and Serbia (for missing data) and the very smallest countries, including the Holy See (the appendix contains a full list of countries used). Of these, 32 countries were observed beginning in 1976. The remaining eight countries (all from the Soviet bloc) did not exist as separate entities until later in the period: three of them came under observation in 1991, and the remaining five in 1993. Respondents were asked whether they considered the fertility level in their countries "too low," "satisfactory," or "too high." Figure 1 presents the number of countries responding "too low" over time, along with the total number of countries in the analysis over time. Respondents were also asked whether their country's policy on population was "no intervention," "maintain," "raise," or "lower." Figure 2 shows the number of countries replying "maintain" or "raise" (none of these respondents replied "lower" during this time period), along with the total number of respondents over time.

For the first analysis, a logit model was used to examine the relationship between the covariates discussed above and two outcomes of interest: first, a state actor identifying its population's fertility level as "too low," and second, a state actor reporting policy to "maintain," "increase," or "lower" the fertility level (as opposed to reporting "no intervention"; respondents in the analysis almost never selected the option "lower"). I divided responses in this way in order to capture, in the first case, state concern about low fertility, and, in the second case, any policy intervention in the area of population, regardless of the kind. All 40 of the countries were included in this analysis; 32 of them were observed at all 14 time points, beginning in 1976. The other countries were observed at either seven or eight time points each. Of the resulting 521 observations, TFR was unavailable for 6 of them, giving a total of 515 observations. Certain models may have fewer observations due to further data limitations.

The second analysis is a discrete-time model of the transition of a state's view of its own fertility situation from "satisfactory" to "too low." Each country that views fertility as "satisfactory" is at risk for making this transition. Entrance into the at-risk group occurs either when the survey is first conducted in 1976 (if the first response is "satisfactory"), or at the time of the first response of "satisfactory." While it is possible for a country to enter the risk set multiple times, this only occurred twice in the data; second transitions are not included, and a single-event approach is used in analysis. Countries that never identified fertility as "satisfactory" were excluded, leaving 34 countries, 24 of which experience the transition of interest.

Analysis

In the first analysis, a set of logit models describes the association between covariates and the first outcome, state actors' characterization of fertility as "too low." One set of models pooled all countries, and another modeled Eastern Europe and other countries separately. Each of these models was estimated first using all observations, then using just the subset of observations for which TFR is below replacement. This allows us to answer two questions: 1) what are the characteristics of countries that are concerned about low fertility and enact policies to address it? and 2) *of countries with below-replacement fertility*, what are the characteristics of those that express concern and intervene? A second set of logit models used a similar strategy for the second outcome, state actors reporting a policy on fertility. Pooled models and separate models for subsets of the population were run, similar to those used for analysis of the first outcome. For

both outcomes, standard errors were inflated to correct for observations clustered by country, using the standard package in Stata.

The second analysis uses a discrete-time event history model to examine the association between the same set of covariates and an event - the transition from viewing fertility as "satisfactory" to viewing it as "too low." Again, a logit model is used with multiple specifications of time variables. Because of the very low number of observations in this analysis (24 transitions were observed), correction for clustering was not possible. For all analyses, since the data represent a population of observations, not a sample, significance levels produced by the analysis should be interpreted as indicators of model uncertainty, not sampling uncertainty.

Results: Overview

Tables 1, 2, and 3 provide descriptive statistics in the form of group means for all covariates used in the models, by outcome variable status. Variables with differences in group means that are found to be significant using a two-tailed t-test are starred. These bivariate relationships show that while some of the expected relationships hold for state concern (states that think fertility is too low have significantly lower TFRs and higher old-age dependency ratios than those that do not), some do not hold. Furthermore, some of the expected relationships of covariates with intervention are reversed: states with policy interventions have significantly higher TFRs and lower GDP per capita than those with no intervention. Another notable feature is the much higher representation of Eastern European states among states that think fertility is to low, that have state intervention, and that transition to concern.

Results: State concern

Table 4 reports the odds ratios produced by a logit model of the first outcome of interest, the state considering fertility "too low," using all covariates *except* for time trend and political variables. The addition of a linear term for year of observation, of linear and quadratic terms for year, and of 3 and then 4 cohorts, did not affect the significance levels of any of the predictor variables, nor was the magnitude of the coefficients or the pseudo R^2 much affected by these changes. The first two columns, which have a pooled analysis of all countries, seem to fit fairly well, with all predictors except GDP having statistical significance. The TFR coefficient indicates that a one-unit increase in log TFR reduces the predicted odds of reporting that fertility is too low by more than 99% when the other variables in the model are controlled for (this is a large increase in TFR, however – if TFR=1.5, a one-unit increase in log TFR corresponds to an

increase in TFR of more than 2.5). An increase of one retirement-age person per 100 working people in the population is associated with a 19% increase in the odds of reporting "too low," while a one-percentage-point increase in the net migration rate is associated with a 16% increase in the odds of the same outcome, all else held equal. Although it is not statistically significant, the coefficient for GDP tells us that, in these data, a one-unit increase in log per capita GDP (a rather large increase) is associated with a 21% reduction in the odds of reporting "too low," all else held equal. The magnitude of this effect is relatively small compared to that of the demographic variables.

All of the coefficients are dwarfed, however, by the massive coefficient for Eastern European status. This probably indicates that there are differences between the geographic regions that are not adequately accounted for in these models. Separate models for the two regions allow us to see if their differences result in different associations, which they do, although there are similarities. While the association with TFR persists in all models, we see that age structure has a much higher coefficient in Eastern Europe than in other countries, while migration has a lower coefficient. These differences may indicate that age structure is more important to population concerns in Eastern Europe, while migration matters more in other countries.

Results from another set of models, which include political and time trend variables, are presented in Table 5. Because the political measure was only available for nine Eastern European countries (and for several of those, only data from after 1990 was available), a pooled model and a separate model for non-Eastern-European observations were estimated, but Eastern European observations were not analyzed separately. The percent of the cabinet members from left-leaning parties is used as a covariate; measures for right-leaning members and for both variables together were not significant in similar models and did not improve model fit. We see in Table 5 that TFR is again significantly associated with considering fertility too low, even among the subset of observations with below-replacement fertility. This indicates that the relationship is not merely driven by an absence of concern in countries with above-replacement fertility, but persists at below-replacement levels. In addition, both the old-age dependency ratio and the net migration rate are significant predictors in all models. We note that an increase in the influence of left-leaning parties in the government is associated with a *decrease* in the odds of reporting that fertility is too low, controlling for the other covariates (as expected). In addition, the introduction

of the new variables has reduced the size of the coefficient for Eastern Europe, indicating that it was indeed standing in for other differences not controlled for in the model, although it is still impressive.

The results from these models suggest that demographic indicators are strongly associated with state actors' concern about low fertility. Political context is also relevant, although that relationship is not as strong. Differences between Eastern Europe and the other countries that are not accounted for by the other covariates are the most striking feature of the results. They may indicate the existence of cultural or institutional differences that are difficult to capture in quantitative analysis.

Results: State intervention

The next part of this analysis examines the relationship between the same independent variables and a different outcome: a state reporting that it has a policy to influence fertility levels by raising, maintaining, or lowering them. A logit model is used, as in the previous analysis. Results in Table 6 show that many of the characteristics that were associated with state concern cannot be shown to be associated with state intervention. Although some predictors are significant, these results indicate extremely poor model fit. Results for non-Eastern-Europe are not presented because no predictors were significant, and the pseudo-R^2 is only 0.04 and 0.05 for the two models of non-Eastern-European observations. Additional models adding a quadratic term for year, and then replacing the variable for year with three and then four cohorts, produce similarly poor results. Including political variables in the model does not improve model fit. These results seem to indicate that although demographic indicators may have inspired concern in state actors over the past few decades, they have not inspired them to action with any regularity.

Results: Transition from no state concern to state concern

The second analysis is a discrete-time event history analysis of the transition from lack of concern over low fertility to concern (from viewing fertility as "satisfactory" to viewing it as "too low"). Results, presented in Table 7, show that even covariates that had a strong association with state concern in the first analysis are only weakly associated with the transition to concern for specific states, although this may be partly due to the very small number of transitions – only 24. TFR has the largest association with transition, followed by Eastern European status. While the main fertility indicator, TFR, has proven to be strongly associated with state concern and

action, even when controlling for many other related covariates, it alone does not begin to account for the variation observed in state interventions in fertility policy. The other covariate most consistently and strongly associated with intervention, Eastern European status, is very likely a proxy for a whole array of characteristics that are not otherwise accounted for by these models.

Discussion

This analysis indicates that the demographic, economic and political indicators used as covariates in this study are far better predictors of state concern than of state action. State concern is very strongly associated with TFR, even when the analysis is limited to observations experiencing below-replacement fertility. Higher levels of net migration and higher dependency ratios are also associated with state concern, controlling for other covariates used in this analysis. Despite recent increases in the number of states reporting concern over low fertility, no time trend could be identified independent of other covariates in the model, although multiple specifications of time were used. The absence of a time trend, and the strong association with demographic variables, may indicate that increasing state concern over low fertility results mainly from concrete challenges of declining fertility, rather than a consensus that is shared by a community regardless of individual members' positions. State concern is not beyond politics, however: greater representation of left-leaning parties is associated with less concern over low fertility, all else held equal.

State *intervention* in fertility matters, however, as opposed to state *concern*, is not strongly associated with most of the covariates used in this analysis. In fact, outside of Eastern Europe, state intervention has practically no association with any of them; even TFR fails as a predicter of intervention. The one consistent association is found in models pooling all countries, in which Eastern European status is extraordinarily strongly connected with state intervention. This may indicate that the analysis might be improved by inclusion of better measures for historical, institutional and cultural factors that may affect state actors' decisions to act on concerns over low fertility.

The movement of state actors from being satisfied with fertility levels to being concerned that they are too low is also very difficult to predict with these covariates, although those difficulties may be due to the small number of transitions that occur in these data. Here again,

there is a very strong association with Eastern European status, although there is also still a strong association with TFR.

Future directions

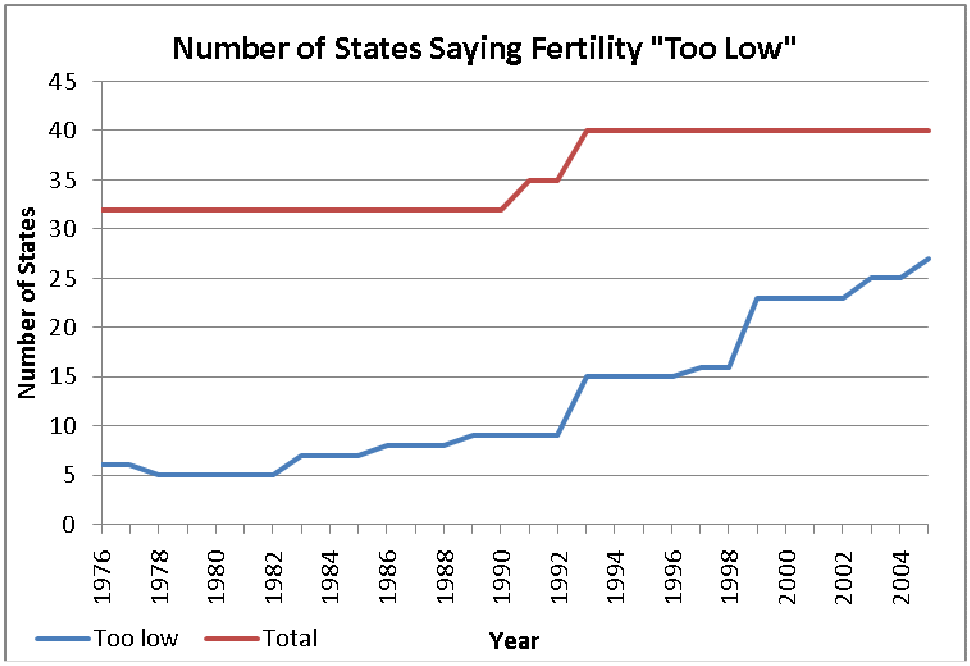
Two major extensions of this project are possible, leading in very different directions. One approach is to conduct an analysis using policy enactment by these states throughout the post-World War II period as the outcome of interest. This approach would have two advantages, the first methodological, the second conceptual. First, the policy enactment outcome and the longer time period would provide a greater number of observations, as most of these countries have enacted several such policies. Yearly observation of the outcome of interest would also allow modeling as a continuous, rather than discrete-time, process of repeated events, allowing choice from a greater variety of modeling strategies that are better suited to investigating the effects of time on the outcome. Second, policy enactment would provide a different kind of measure of state concern, one that would perhaps be more meaningful. It is possible that one reason state intervention is so weakly related to the covariates in this analysis is that having population policies and talking about them in public are still distinct processes; population policy may still be politically sensitive enough that responses to the U.N survey are more informative about ideological commitments than practice. For example, Sweden, often cited as an example of a country with an array of policies that encourage childbearing, reported "no intervention" on every U.N. survey. Of course, using policy enactment as an outcome reopens a serious difficulty that this project was designed to avoid – deciding which policies should be classified as intended to influence fertility. Such a classification might be possible, albeit labor-intensive, with research on legislative debates and press coverage prior to enactment.

A completely different approach to further study of this problem would involve more in-depth analysis of the historical, institutional and cultural processes by which state views and public opinion are formed and shaped over time, perhaps better achieved through a qualitative approach than a quantitative one. In order to understand what is different about Eastern Europe, for example, it may be necessary to abandon the approach of accounting for variance in the entire population, and focus more closely on certain cases. It might be possible, however, to preserve the broader scope of this project while incorporating measures of institutional and historical factors, rather than pursuing a research strategy that would limit comparison to a few cases.

Conclusions

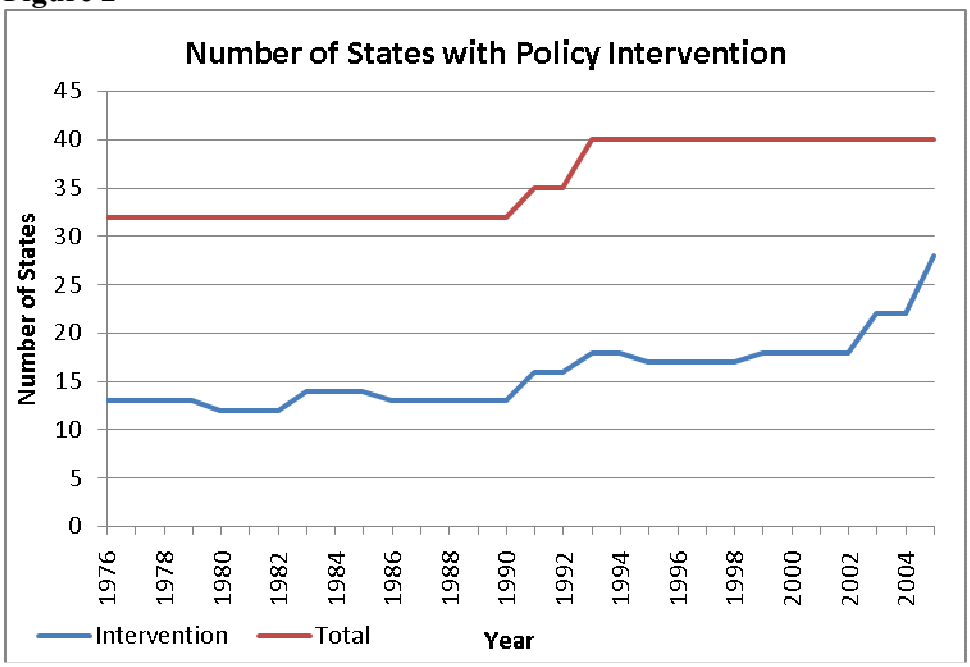
This study has shown that state *concern* over low fertility in European and other wealthy countries from 1976 through 2005 was strongly associated with a number of demographic indicators. Both immigration and aging populations were associated with greater probability of state concern, while outside of Eastern Europe, there was a political element: left-leaning parties are in power were associated with less state concern, all else held equal. Surprisingly, no time trend independent of other covariates was found for state concern; apparently recent increases in its expression are associated with changes in the covariates themselves. Associations between state *intervention* and demographic, economic and political variables were much weaker than those of state concern, and essentially no association was found outside of Eastern Europe. By far the strongest association with all outcomes, however, was membership in the former Soviet bloc, a result that indicates that difficult-to-quantify political, historical, and cultural factors may account for much variation in state concern and intervention.

Figure 1



Source: *National Population Policies* and *World Population Policies*, U.N. 1987-2005

Figure 2



Source: *National Population Policies* and *World Population Policies*, U.N. 1987-2005

Table 1

	Group Means by Too-Low Status	
	Too low	*Not too low*
*Mean TFR****	1.48	1.90
*Old-Age Dependency Ratio****	20.58	18.38
Net Migration Rate (%)	0.69	0.71
GDP (present-day euros)	15,588	15,013
*Proportion Eastern European****	0.48	0.25
Percent left political party	32.26	21.97
N	191	316

Table 2

	Group Means by Intervention Status	
	Policy intervention	*No intervention*
Mean TFR	1.77	1.72
*Old-Age Dependency Ratio****	18.41	19.88
*Net Migration Rate****	-0.24	1.50
*GDP****	13,134	16,833
*Proportion Eastern European****	0.64	0.08
Percent left political party	36.12	32.25
N	232	275

Table 3

	Group Means by Transition Status	
	When transition occurs	*At risk of transition*
*Mean TFR****	1.54	1.91
Old-Age Dependency Ratio	19.13	18.01
Net Migration Rate	0.504	0.618
GDP	15,959	14,357
Proportion Eastern European	0.50	0.04
Percent left political party	21.97	32.26
N	24	301

Table 4

Logit Analysis of State Reporting Fertility is "Too Low," No Time or Political Variables
(Coefficients given as odds ratios; standard errors have been corrected for clustering of error)

	All countries		*Eastern Europe*		*Non-Eastern-Europe*	
Independent Variable	*All observations*	*Below-replacement*	*All*	*Below*	*All*	*Below*
ln(TFR), 1-year lag	0.0015***	0.0005***	0.0028**	0.0015***	0.0007**	0.0002**
Old-age dependency	1.189**	1.197**	1.548***	1.722***	1.156	1.166**
Net migration rate (%)	1.158**	1.173**	1.093	1.096	1.208**	1.251
ln(GDP)	0.790	1.015	0.283	0.266	0.986	1.191
Eastern Europe	11.610**	14.7264*	---	---	---	---
N	471	408	140	112	331	296

*** p < 0.01, ** p < 0.05, * p < 0.1

Table 5

Logit Analysis of State Reporting Fertility is "Too Low," Year and Political Variables Included
(Coefficients given as odds ratios; standard errors have been corrected for clustering of error)

	All countries		*Non-Eastern-Europe*	
Independent Variable	*All observations*	*Below-replacement*	*All*	*Below*
ln(TFR), 1-year lag	0.0009***	0.0003***	0.0008**	0.0002**
Old-age dependency	1.210**	1.210**	1.203*	1.202*
Net migration rate (%)	1.160**	1.185**	1.230**	1.268**
ln(GDP)	0.449	0.546	0.656	0.884
Eastern Europe	5.069	6.567	---	---
% Left political party	0.993**	0.995	0.992**	0.994
Year	1.039	1.038	1.017	1.011
N	400	367	326	293

*** p < 0.01, ** p < 0.05, * p < 0.1

Table 6

Logit Analysis of State Reporting Fertility Policy
(Coefficients given as odds ratios; standard errors have been corrected for clustering of error)

	All countries		*Eastern-Europe*	
Independent Variable	*All observations*	*Below-replacement*	*All*	*Below*
ln(TFR), 1-year lag	6.921	1.803	421.586	117.917
Old-age dependency	1.047	1.011	1.560**	1.644**
Net migration rate (%)	1.034	1.043	1.044	1.062
ln(GDP)	1.385	1.994	0.413	0.487
Eastern Europe	42.238***	48.078***	---	---
Year	1.009	0.998	1.150*	1.202
N	471	408	140	112

*** p < 0.01, ** p < 0.05, * p < 0.1

Table 7

Discrete-time analysis of transition from "satisfactory" fertility to "too low"
(Coefficients given as odds ratios; standard errors have been corrected for clustering of error)

Independent Variable	*All observations*
ln(TFR), 1-year lag	.0058***
Old-age dependency	1.063
Net migration rate (%)	1.06
ln(GDP)	1.128
Eastern Europe	6.752**
Year	1.065
N	291

*** p < 0.01, ** p < 0.05, * p < 0.1

Appendix

"More-Developed" Countries in Analysis	
Albania	Lithuania
Australia	Luxembourg
Austria	Malta
Belarus	Moldova
Belgium	Netherlands
Bulgaria	New Zealand
Canada	Norway
Czech Republic	Poland
Denmark	Portugal
Estonia	Romania
Finland	Russia
France	Slovakia
Germany	Slovenia
Greece	Spain
Hungary	Sweden
Iceland	Switzerland
Ireland	TFYR Macedonia
Italy	Ukraine
Japan	United Kingdom
Latvia	United States

Source: UN 2008

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