

1 Fertility and Public Policy: An Introduction

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1.1 Motivation for This Book

Only a few decades ago, overpopulation of the earth was seen to be an imminent threat. Nowadays, growth of the world population still continues but at a much lower pace than had been predicted earlier. It is now expected to almost come to a halt until 2050 (see the 2008 revision of the United Nations Population Division's forecast, "medium variant"). Starting from 2045, the number of people aged 60 and over may, for the first time in history, exceed the number of children and youths aged less than 15. From then onward, the world population may well start shrinking as it already does in a few highly developed countries.

The primary explanation for this population swing is the fertility decline that has taken place in a number of developed countries. A reduction of birth rates started, in a first wave, in the early period of industrialization, but led to less-than-replacement rates of fertility only after a second, rapid reduction in the 1970s. Today, within a relatively short period of time more and more developing countries are appearing to fall in with this trend.. With the number of births shrinking, the age composition of the world population may therefore continue to shift toward an ever-growing share of elderly people, that is, toward demographic aging.

Researchers have little to say about the ideal size of the population of a single country. And there may indeed be limits to an acceptable degree of population density in specific regions and to the maximum number of people the earth can sustain at a given state of economic development. Yet, the characteristic shift in the age composition that goes along with slower growth, or even a decline, in population size raises a number of issues that are of first-order significance for the societies affected. Beyond the obvious problems involved in financing

social protection schemes that exist throughout the developed world, there may be consequences for economic development and social cohesion that would be more damaging in any country. Whether and, if so, how an aging and shrinking labor force has unfavorable repercussions on labor productivity, hence on future trends of labor demand and per-capita income, is largely unknown. Even if such consequences can be mitigated, for instance, through an extension of the active period of life or through higher human-capital investment and life-long learning, it may still be useful to look closely at the precise patterns of, and the reasons for, the fertility decline.

The fertility decline in developed countries has in fact proceeded with substantial variation. Two relatively hard hit countries are Japan and Germany, both countries where the editors of this book reside. Interestingly politicians in these two countries have recently taken first steps toward moving the fertility decline to the head of their official agenda, and have avowed to halt, and even to reverse, the trend. All in all, there remains a lot of uncertainty about how precisely this should be done. In 2007 Japan installed a new Minister of State for Gender Equality and Social Affairs in charge of declining fertility. So far the state minister has put forth a charter on "Work-Life Balance," declaring that policies for balancing work and child-rearing are an "investment for the future." A ten-year plan (2008–2017) has been established that includes, first, raising labor force participation rates of mothers at six months after giving birth from a current 38 to 55 percent; second, increasing the proportion of men who take child-care leave right after their wives gave birth from a current 1.6 to 10 percent; and third, boosting husbands' time spent on housekeeping and child care from a current 60 to 150 minutes a day, for instance. Careful empirical studies are still necessary to determine what policy measures will attain these goals and whether or not these arrangements will induce a higher fertility rate.

In the same year of 2007, the German Ministry of Families, Elderly People, Women and Youths and the German Ministry of Finance started an initiative that aims at a round of formal evaluations of all existing instruments of family policy using up-to-date methods. Preparatory work and exploratory studies have taken a while, but the project entered an acute phase in 2009 and that will last until 2013 at least. In the field of economic policy, evaluations based on micro-level data and quasi-experimental settings have so far been applied to labor market policies and a number of tax rules only. Applying them to the field of

family policy creates a number of new challenges. To be sure, fertility is not the only aspect that will be addressed in this exercise as a potential target variable for the policy instruments applied. Yet, it is on the list of relevant outcome measures, which it had never been until only a few years ago because anything resembling pronatalism was discredited in Germany for historical reasons. Now the German government approaches this issue in an official way and wants to encourage higher fertility, while attempting first to learn how this could be done most effectively.

Among economists and other social scientists, even among those who specialize on the analysis of family life and fertility decisions, the birth-rate issue is still controversial. There are researchers who would question the appropriateness of public interventions aiming at higher birth rates in the first place, or would at least show a shrug regarding the prospects of doing so successfully. There are others who point to distortions, namely some kind of institutional failure that might be reflected in ongoing changes in fertility behavior at an individual level and in the aggregate figures indicating the fertility decline. Some argue that these distortions are even generated, or at least exacerbated, through existing public interventions; others, argue that instruments of public policy could be used to increase fertility rates, at least to some extent, and advocate specific strategies in this area.

The purpose of this volume is to bring together different perspectives and experiences gathered in different countries, on the issue of declining birth rates. The contributions collected in this volume therefore consider one or more of the following ways of dealing with this issue:

- Normative role of public policy with regard to issues affecting the family, market, and state in general, with specific attention to policy interventions in parental fertility choices, the well-being of children, and the role of women in partnerships, family, society, and labor market.
- Theoretical views on the responsibilities of marriage partners in child rearing, with implications for public policy measures where assessments of the fertility effects of existing policy measures suggest inadequacies.
- Empirical research based on original analyses or surveys of existing studies that test the effectiveness of specific policy instruments in influencing fertility and the relative merits of different approaches that could be undertaken in a single country or a comparative study.

- Institutional designs and implementations of policies that appear to be capable of stabilizing or even increasing fertility rates where this approach is thought to be appropriate.

1.2 Overview of the Book

The book opens with general discussions of the scope of public interventions and their appropriateness in shaping fertility decisions. A series of contributions follow that consider fertility patterns and the design and effects of related policies in a number of countries that have taken unique directions, in particular, Japan, South Korea, China, Sweden, and France. In between these country-specific assessments, there are theoretical analyses of parental fertility choices and overviews of a broad variety of child-related policy instruments applied in a large number of OECD and EU countries.

In chapter 2, Martin Werding takes the usual explanations for the continued fertility decline in developed countries that are implicit in the microeconomic theory of the family and discusses the appropriateness of public interventions. His discussion includes the quantity-quality interaction involved in parental fertility decisions when income increases, time-allocation models with rising opportunity costs of domestic child care when (female) wages go up, models of intra-household bargaining in which fertility choices affect bargaining positions of the partners involved, and models with intertemporal choices in which fiscal externalities of child-rearing activities arise from intergenerational intervention. Werding shows that the reduction in average fertility may indeed reflect rational adaptations of (potential) parents to changes in their economic environment. Nonetheless, there may be some justifications for government action to better frame decisions taken at the micro level, and definitely take corrective measures. Werding's discussion also allows for conclusions as to which broad categories of policy instruments might be needed in each of these cases for public intervention.

In chapter 3, Warren Sanderson also looks at more fundamental issues, concentrating mainly on macro-level assessment from a demographer's point of view. He argues that the population shrinkage caused by the "lowest low" fertility in wealthy countries, and not triggered by wars, famine, disease, or massive outmigration, is a very peculiar phenomenon, and he strongly warns against two types of premature conclusions. The first would be that because fertility is low now, it must

remain low forever if policies remain unchanged. The second would be that no new policies are needed because automatic adjustments will inevitably raise fertility back to a replacement level sooner or later. Against this background, Sanderson critically reviews a number of arguments in favor of a policy that actively targets fertility, based on population size, population growth, fertility levels, and the economic and political consequences of aging. He illustrates what might happen in the absence of new, fertility-increasing policies but also points to the limited quantitative effects that are likely to arise from such policies. He emphasizes the urgent need for developing a better data infrastructure, starting with a definition of the appropriate framework for analyzing fertility trends by which to implement the dynamic evaluations of existing policies that are being formed on a mere trial-and-error basis.

Incomplete and lacking data are indeed a serious obstacle to any in-depth research on fertility even in a number of highly developed countries. In chapter 4, Seiritsu Ogura and Tamotsu Kadoda address this issue using Japan as a typical example. In Japan the aggregate fertility data are only available at the level of prefectures (provinces), not at the level of municipalities. As there appears to be substantial heterogeneity within prefectures, this is clearly a drawback for empirical work on the determinants of declining fertility in this country. Therefore Ogura and Kadoda construct a weighted fertility rate (WFR) index using census data, which can serve as a good proxy for total fertility rates (TFR) at the municipal level. Then they apply standard specifications of empirical models that have been widely used to account for changes in TFR, using the WFR index as a dependent variable instead. The estimation results show that weaker preferences for children are gradually becoming less important after the year 2000, while the continuing decline in fertility experienced between 2000 and 2005 has mainly come from changes in the labor market, including increased female labor force participation and increased uncertainty of employment for younger males. Compared to existing studies, the richer data, the more direct treatment of regional heterogeneity, and the better quality of census data seem to have produced more precise estimation results.

In chapter 5, Reiko Aoki and Yoko Konishi make a fresh theoretical contribution to the economics of the family. The work is motivated by the positive correlation between total fertility rates and female labor force participation reported in cross-sectional data for the OECD countries since the early 2000s. Even when less time is devoted to child rearing, constant or increased numbers of children can be raised by

utilizing more goods-intensive, and less labor-intensive, child-rearing methods. On the other hand, there is a trade-off between child-rearing and goods consumption, particularly with regard to high-quality goods, since the marginal utility from consuming these goods can be greater than the marginal utility from having an additional child. A regression using Japanese regional cross-sectional (47 prefectures) and time-series (1970–2005) data shows a negative correlation between fertility and female labor force participation once consumption is explicitly adjusted for quality, just as the model predicts. Aoki and Konishi extend their approach to a general equilibrium model with vertical quality differentiation of consumption goods and with heterogeneous labor to demonstrate how low fertility may persist. They find that product quality and the supply of skilled labor adjust simultaneously, never bringing about the changes in labor productivity that would be necessary to reverse declining fertility.

In chapter 6, Yoonyoung Cho evaluates the overall effects of a child-care subsidy, called basic subsidy program (BSP), in South Korea. When the total fertility rate in this country declined as low as 1.08 in 2005, several pronatalist programs were urgently enlarged or newly introduced. One such program is the BSP for families with infants who are looked after in private day-care centers. The program mainly aims to improve the quality and the accessibility of child care and to encourage mothers' labor supply by providing lump-sum subsidies per child to private day-care institutions. Cho isolates the overall effects of this subsidy within a quasi-experimental environment in which she was able to compare families with infants (0–2 years) and families with toddlers (3–5 years) that use either private care centers or other types of child-care facilities, with a special subsidy being paid only for infants in private care centers. Her findings show that the subsidies have some positive effects on the quality of child care at the subsidized facilities. However, the increase in per child inputs is far less than the per child subsidy, which implies low effectiveness of the program. On the household side, the subsidy is found to have only a small impact on maternal labor supply as well as on child-care costs. It is still too early to assess its impact on fertility directly.

In chapter 7, Xizhe Peng adds a number of observations on current demographic trends in the world's most populated country. Over the second half of the last century, China has undergone a very rapid fertility transition. Its total fertility rate declined from around 6.0 in the 1960s to a below-replacement level in the 1990s and has remained at

such a low level since then. The Chinese fertility transition is characterized not only by its rapid decline, but also by strong government intervention and by a considerable degree of regional variation. Peng traces in careful detail the implementation of what is known as China's "one-child policy," and the socioeconomic determinants of fertility outcomes across regions. He further gives thought to the socioeconomic impact of the fertility transition, notably the consequences in terms of an aging population and abnormal gender proportions in the young generation. Since, as he argues, China may be the first major country to grow old before it grows rich, dealing with the aging problem will become one of the most challenging policy issues facing the Chinese society in the future. Nevertheless, he expects current population policies to continue, though with a stronger emphasis on voluntary participation and individuals' rights, and the reproductive behavior of young Chinese, especially of those in urban regions, to shift further toward that prevailing in Japan and many European countries.

In chapter 8, Jonathan Bradshaw and Shalhevet Attar-Schwartz turn to the relationship between fertility and social policy at an international level. Using data from the European Social Survey, they provide a comparative analysis of the relationship between fertility and social policies, including overall spending on families with children, levels of comprehensive child-benefit packages, intermediate outcomes of policies meant to reconcile work and family life, and subsidizations of child-care costs. Theoretical discussions basically indicate that social policies could influence fertility. However, Bradshaw and Attar-Schwartz point out that fertility is a very complex phenomenon that has been changing rapidly, while the way fertility is conventionally measured and the indicators of social policy that are available are very crude. Also, discerning whether there is cause and effect, or determining the direction of the relationship between policy and fertility, is fraught with error and almost impossible to learn from simple bivariate analyses. Therefore, they argue, the evidence that social policy has a direct effect on fertility is pretty thin. For instance, there appears to be quite a strong relationship between fertility and female labor force participation, but this is in fact more likely to be a function of the emancipation of women than the result of specific policies to reconcile work and family life. The authors conclude that some policies clearly affect fertility in small ways and point to examples in Sweden and France that are covered in more detail in other contributions collected in this book. But they caution that governments should not expect to be able to

turn round subreplacement fertility levels at their discretion. In fact, they say, it might be freedom from policy that matters—human capital and personal control of life may provide the required security for child-rearing—not policy.

In Europe where most countries exhibit low or “lowest low” fertility, the experience of Sweden and its Nordic neighbors has become of increasing interest to policy makers and social scientists concerned with the causes and consequences of the fertility decline. In fact Nordic fertility can nowadays be labeled as “highest low”: the fertility of Sweden and its neighbors is clearly below the replacement level of 2.1 children per woman but still high compared to many other developed countries. Fertility in Sweden has fluctuated during recent decades, but as in the other Nordic countries with a similar welfare-state regime, it has stayed well above the European average. In chapter 9, Gunnar Andersson provides insights into the recent childbearing developments in Sweden and discusses the role of family policies in shaping childbearing behavior. He finds institutional factors to be far more decisive than cultural ones in this regard and demonstrates some specific impacts of family policies on childbearing dynamics in his country. Yet he points out that Swedish family policies have never aimed directly at encouraging child births. Rather, their main goal has been to support women’s labor force participation and to promote gender equality, so any fertility-stimulating impact needs to be seen as a side effect of these policies. Andersson also shows that the reconciliation of family and working life for women in Sweden is supported by the design of the country’s taxation, social-security, and parental-leave systems, and by easy access to high-quality subsidized child care.

The French case challenges some of the hypotheses suggested to explain the current low fertility rates observed in European countries probably even more than the Swedish case does. The total fertility rate in France has been rising over the last ten years and reached 1.98 in 2006, the highest level since the early 1980s. By European standards, this high level of fertility makes France a genuine outlier, despite many similar trends in the transition to adulthood, partnerships, attitudes to birth control, or the economic situation, the latter being characterized by low growth rates and an increase in poverty levels. In chapter 10, Olivier Thévenon argues that the fertility level in France can be explained by its long-standing family policy, which has evolved considerably since the 1980s to accommodate the growing participation of women in the labor force. This policy encompasses a wide range of in-

struments, geared to different actors and aimed at different objectives. Despite some ambiguities, as Thévenon states, family policy seems to have generated very positive attitudes toward two- or three-child families, and to have reduced the propensity to remain childless. A key aspect appears to be the favorable context created for reconciling work and family life by means of a fairly comprehensive, and continuous, support throughout the family life course. This may also explain why the decision to have children or to be in employment is less based on socioeconomic status than in most other countries. In any case, he stresses that the entire set of complementary instruments—financial support to large families, parental leave schemes, and the provision of child care—creates a secure climate for childbearing decisions.

In chapter 11, the last contribution collected in this volume, Alessandro Cigno considers the role of policy instruments that by their sheer size are potentially important for explaining the fertility decline but are rarely included in standard analyses of the consequences of public policies for fertility, as they seem to belong to a different field of state intervention. The topic he raises is intervention in the intergenerational distribution through public pay-as-you-go pension schemes that exist in virtually all developed countries. Against the background of rigorous theoretical analyses, Cigno argues that the *laissez-faire* fertility rate—namely the rate obtained in the absence of any kind of state intervention—is likely to be inefficiently high. He then demonstrates that public pensions reduce fertility, but that it may not be desirable to use them as a tool to bring fertility to its efficient level. He suggests a second-best solution that could be implemented using a public pension system made up of two parallel schemes, one allowing individuals to qualify for a pension by working and paying monetary contributions, the other allowing them to do so by having children and investing in the children's human capital. As a means to address the ongoing decline on birth rates, removing existing disincentives that discourage childbearing could in fact be more promising than attempting to design new programs that are meant to actively simulate fertility.

1.3 Conclusions and Loose Ends

In the debates held at the conference, the participants agreed that justifying public intervention in fertility and parental fertility choices is a subtle issue, but that there are indeed plausible instances whereby some kind of public action in this field may be required. These instants

do not so much derive from visible consequences of the fertility decline, though they are often perceived to be unfavorable. The prominent examples are, of course, stagnation and even shrinkage of the population, whose adverse effects are the obviously real difficulties in financing social protection schemes or in hiring workers with appropriate skills. In many developed countries, stimulating fertility today will simply be too late in avoiding such trends, as they are going to materialize over the next two to three decades. Clearly, there are other means to deal with these issues in the near future, for example, more expansion of female labor force participation, extension of the effective retirement age, policy soliciting higher immigration, or initiatives toward better education for the young and life-long learning for people of working age at all stages of their careers. In the long run the problems just mentioned could probably be mitigated, or even resolved, by policies addressing the causes of the fertility decline, provided that they can be traced back to imperfections or inconsistencies in individual-level decisions and/or in the institutional framework relating to a broad array of relevant activities, such as couple formation, labor force participation, material consumption, the definition of one's economic and social status over the entire life cycle and, last but not least, childbearing, child care, and the education of one's children. Investigating the reasons for the decline in fertility more closely is thus an important and demanding task that is worth a considerable amount of additional efforts.

Given these fundamental considerations, the discussions in this volume reflect some uncertainty as to how the task of influencing fertility should be tackled, as well as some skepticism that this could be done successfully, even where intervention would be considered desirable. The major reason for the continued debates around these points, it appears, is a limitation of commonly accepted knowledge on relevant policy instruments. The difficulty in identifying the policy instruments that, intentionally or not, are currently affecting fertility behavior in one way or another, apart from the methodological problems involved in assessing their effects ranges from a profound lack of appropriate data that would be used for this purpose to taking into account fertility decisions of potential parents in their full complexity.

Across countries, family benefits or child-related benefits vary substantially in terms of the instruments employed or, at least, regarding many of their design features. Even within a given country, it can be really difficult to get a comprehensive picture of such benefits because of the enormous breadth of public activities that effectively differenti-

ate between those who have children and those who do not. By a narrow definition, instruments of public family policies may consist of a number of direct, monetary transfers that are mostly contingent on the number and age of children as well as on the income and marital status of parents, plus a number of child-related benefits in kind, mainly subsidized or free child care, primary and secondary schooling, and health services for dependent children. By a broader definition, one should also take into account that, in many countries, there are special rules for family households, parents or children in many other areas, such as income taxation, social protection systems, welfare benefits, housing benefits, and labor market regulation. Some of these systems, notably those providing pensions and health care, may influence fertility choices even if they do not provide any special, child-related allowances or benefits, simply because they interfere with private, intra-family systems of intergenerational transactions. Taking all this together, it is often very complicated to determine the total amount of child-related (net) benefits people are, or would be, entitled to receive with variable numbers of children, variable timing of births, variable household income, variations in their employment status, their civil status, and so forth. Existing measures of child benefits are thus often rough and incomplete indicators, and it is doubtful whether they can be meaningfully compared across countries.

When it comes to empirically evaluating the effects of these benefits, especially their potential impact on fertility, this is by far not the only limitation. Within a given country, the complex benefit packages just described usually show little time-series variation, which renders any assessment difficult. In addition, whenever there are larger changes in these packages, this may be an issue of endogeneity or even reverse causality—benefits are probably increased *because* fertility is low, or they are higher *where* it is low—which also obscures the identification of causal effects. Furthermore, if benefits do have an impact on fertility, their impacts would be subject to time lags of unknown length, with the way they unfold being effectively warped by responses to various other changes that occur over time or that become all the more difficult to disentangle a (causal) impact on fertility from pure timing effects in the sequence of births.

In such assessment it should also be taken into account that the goals child-related benefits are meant to serve are often unclear. In any case, influencing fertility may not be among these goals of fighting child poverty, improving the work-life balance of adult family members, or

promoting equal opportunities among children, goals that may be more prominent in shaping benefit packages. To do justice to current policies, one would have to look at further outcomes. A good example is offered by public provision or subsidization of child-care arrangements. Child-care subsidies can effectively increase (female) labor force participation, fertility, or child “quality”—the latter potentially at the expense of the number of children—in differing combinations and orderings. Furthermore, under efficiency aspects, that is, with an eye on costs and benefits, these and other benefits in kind are particularly puzzling, as they give rise to the question why the state does not rely on market-based provisions for the specific services covered, probably in combination with monetary transfers or alternative solutions such as ear-marked transfers or vouchers. To evaluate the efficiency of financial benefits that can broadly be shown to have some effectiveness in promoting fertility, an important further question is whether their impact makes up for the opportunity costs of fertility-increasing policies, compared to alternatives such as investing more in education or promoting migration. While none of these questions could be fully settled in the talks and discussions at the conference, they do turn up one by one for further thinking and closer scrutiny.

Sociologists and demographers who were present at the conference pointed to the roles of social norms and culture for actual fertility behavior. Economists tend to find these roles hard to deal with, despite the early contributions by Leibenstein or Easterlin. There are additional cautions against thinking about the links between public policy and fertility in terms of a simple input–output scheme. Several papers presented at the conference showed that visible changes in the dynamics of fertility rates are often related to changes in long-term prospects for the labor market situation and, more generally, the economic position of young people, starting from their opportunities to access the labor market to the risks involved in pursuing a life-long professional career.

Researchers often agree, as a convenient and unanimous conclusion, that better data and further research are needed on a particular issue they are all interested in. However, for fertility and the role of related public policies, this is an accurate statement regarding the current state of feasible work and established knowledge. Therefore the participants of the conference arrived at discussing the setup and the ingredients of an ideal data infrastructure that would be needed as a prerequisite for a fuller understanding of the determinants of fertility trends as well as for evaluations of all kinds of policy instruments applied in this area.

While in many countries, enormous progress could be made if fertility data were collected in a way that allows for fully disentangling age-specific, cohort-specific, and period-specific effects influencing those who have children, data collection should actually start much earlier in the life cycle of potential parents. Ideally research should be able to rely on large-scale, comprehensive micro-data panels constructed from national longitudinal surveys on employment and fertility, assembling information on individuals aged between 15 and 49 in three “layers”: (1) education (type and duration of programs, formal attainments) and labor force participation (timing of entry, hours worked, earnings, employer-based benefits, tenure based on formal rules or on habits and expectations linked to “regular” vs. “irregular” forms of employment); (2) household formation (living with one’s parents, as a single, having a partner, being in a cohabitation, married or divorced, including all transitions between these states, births by birth order and precise timing); and (3) impact of all these aspects on benefit entitlements (monetary transfers and benefits in kind in all areas mentioned above as a broad definition of instruments of family policies) and child-related labor market regulation (parental leaves and other protective rules for parents with child-care responsibilities). Whether, in some countries, this information could be gathered, or at least approximated, by combining or slightly expanding existing data or whether it would require setting up new databases should be considered with some care. In any case, all this would ideally have to be accomplished for different countries and parallel time periods in a comparable format.

The current state of knowledge that is reflected in the contributions to this book clearly falls short of reaping the fruits of a highly ambitious effort as that just described. Nevertheless, it consists of a complex and continuously growing body of theoretical analyses focusing on important aspects of fertility choices that sometimes also allow for conclusions regarding the way fertility could respond to various policy instruments. In terms of empirical policy evaluations, it also provides an ever-growing number of assessments of what seems to work, or not to work, in the specific context of single countries. Important examples are treated in this volume, in terms of original research or surveys of earlier work. All in all, research done thus far at least yields preliminary, and partly impressionist, views on instruments and design features for family policies and child-related benefits that appear to be promising in terms of “best-practice” rules and that could probably be transferred internationally.