Analyzing Fertility Trends in Russia, 1985-2001, Using Individual Fertility Histories

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Russia has experienced a sharp decline in fertility since the early 1980s. Although the country's total fertility rate (TFR) hovered around replacement (2.1 births per woman) from the late 1960s through the early 1980s, it fell dramatically in the late 1980s and early 1990s, crossing the threshold of "lowest low" fertility (1.3) in 1996 and bottoming out at 1.17 in 1999 before moderately increasing thereafter (Table 1). The parallel trend of surging mortality rates, especially among adult males, has led a fairly dramatic shrinking of Russia's population, which fell by 3 million from 1992 to 2000 despite substantial net in-migration. A second important fertility trend in Russia is an increase in the proportion of non-marital births (Table 2). This trend also may have important consequences, since in Russia children from non-intact families face disadvantages in educational and socio-economic attainment.

The extreme and sustained character of Russia's fertility decline begs for explanation, both for theoretical and policy purposes. Various explanations for Russia's fertility decline have been proposed (Hollander 1997; DaVanzo and Grammich 2001; Zakharov 2001; Anderson 2002; Kohler and Kohler 2002; Heleniak 2005). In broad outline, we might distinguish economic, socio-cultural, and policy explanations:

1. Russia experienced a severe economic crisis accompanying the collapse of the Soviet Union and the introduction of radical market reforms in 1992, with steep inflation, negative growth and surging unemployment, and widespread structural dislocations. This may have reduced fertility by producing uncertainty about the future and increasing the costs of child-rearing. Some evidence suggests that economic shocks lead to short-term fertility decline in other national contexts, and Russia's crisis during the 1990s was especially severe and persistent: stable growth did not resume until 1999.

2. Five years before the actual collapse of the USSR and the implementation of radical economic reforms, the Soviet government's *glasnost'* policy drastically reduced the degree of censorship, effectively exposing Russians to norms and values predominant in developed societies outside the Soviet bloc. Exposure via international media and cultural products to individualistic "Western" norms could have brought the "second demographic transition" (Van de Kaa 1987; Lesthaege 1995) to Russia, which would include declining fertility and increased non-marital childbearing, along with declining marriage and increasing extra-marital sex, divorce, and cohabitation.

3. The Soviet government introduced pro-natalist policies in the early 1980s. These could have inspired an acceleration of births in the first half of that decade, leading to corresponding (and artifactual) decline in fertility rates later in the decade and a further decline when those policies no longer held sway following the Soviet collapse.

Despite the obvious interest these explanations hold for broader theories of fertility trends and for policymakers concerned about the economic and national security consequences

of Russia's population decline, there have been few attempts (see esp. Kohler and Kohler 2002) to empirically test them. One reason is that researchers have generally had only aggregate data or cross-sectional data on fertility available, and these forms of data have inherent limitations.

The growth of non-marital childbearing has been observed, but appears not to have been systematically analyzed at all. Clearly, non-marital childbearing could also testify to the normative shift postulated by the "second demographic transition" perspective. However, it is not clear whether the increase results from a compositional change in the population (decline of marriage), from a change in social norms regarding non-marital fertility, or some combination of the two.

We analyze Russia's fertility decline and the growth of non-marital childbearing from 1985-2001 using a new and unique data set. The Survey on Stratification and Migration Dynamics in Russia was conducted on a multistage, stratified probability sample of 7176 Russian adults in three waves from September 2001 - January 2002. The second author designed special batteries of questions for the survey that elicit the respondent's entire fertility, marital, work, and residential histories from December 1984 through the month of the survey. We have extensively cleaned the histories and transformed the observation file into a spell file. We also merged annual data on regional economic characteristics from official sources with the spell file, using the migration histories to identify the region where the respondent lived at any point in time. We capitalize on the unusual richness of these data by estimating event history models of individual-level births – both first births and any births – that incorporate time-varying measures of individual and contextual factors that potentially influence fertility. We restrict the analyses to person-months consisting of female respondents aged 15-49. 3666 respondents enter the observation window at some point.

Our empirical analyses address the following questions:

1. What are the trends in the raw (gross) and adjusted (net of covariates) rates of individual fertility for Russian women aged 15 to 49 from 1985-2001?

2. How do marital status, prior fertility, age, education, employment status, locality characteristics, and regional characteristics (labor market conditions, ethnic composition) affect fertility in contemporary Russia?

3. Have the effects of marital status, age, education, employment, or regional characteristics changed following the collapse of the Soviet Union at the end of 1991?

We first identify parsimonious "unadjusted" models, testing alternative specifications of change over calendar time when no other covariates are included in order to demonstrate that our survey data represent known trends and to establish a baseline model of temporal change in fertility rates. Then we incorporate the other covariates in order to test their effects, and also incorporate the appropriate interaction terms to test for change over time in the effects of the marital status, age, etc. Finally, we once again identify the optimal

specification of change over time in fertility rates, this time net of the covariates we control for (i.e., the "adjusted" rates).

This approach permits us to assess the various explanations for Russia's fertility decline. For example, the economic explanation implies that individual-level and regional measures of economic well-being should affect fertility, that the decline in fertility should be sharpest following the onset of severe economic crisis in 1992, there should be a reversal of the decline following the improvement of the economy in 1999, and that the effects of economic well-being should increase over time. The socio-cultural explanation predicts an earlier onset of the fertility decline, strong and shifting effects of marital status, and a shift in the age schedule of fertility over time. The policy-based explanation predicts strong and perhaps diminishing effects of prior fertility. Moreover, by testing for changes in the effects of marital status on fertility and by running separate models for marital and non-marital fertility, we can gain unprecedented insight into the increase of non-marital childbearing. Overall, our preliminary results suggest that the covariates mitigate the baseline trend in fertility by roughly 40-50%. Accordingly, we can claim to have empirically identified key mechanisms behind Russia's dramatic fertility decline, which permits us to draw the appropriate theoretical and policy lessons.

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FIGURE 1: Total Fertility Rate by Year, Official Russian Data (Source: Goskomstat 2002)

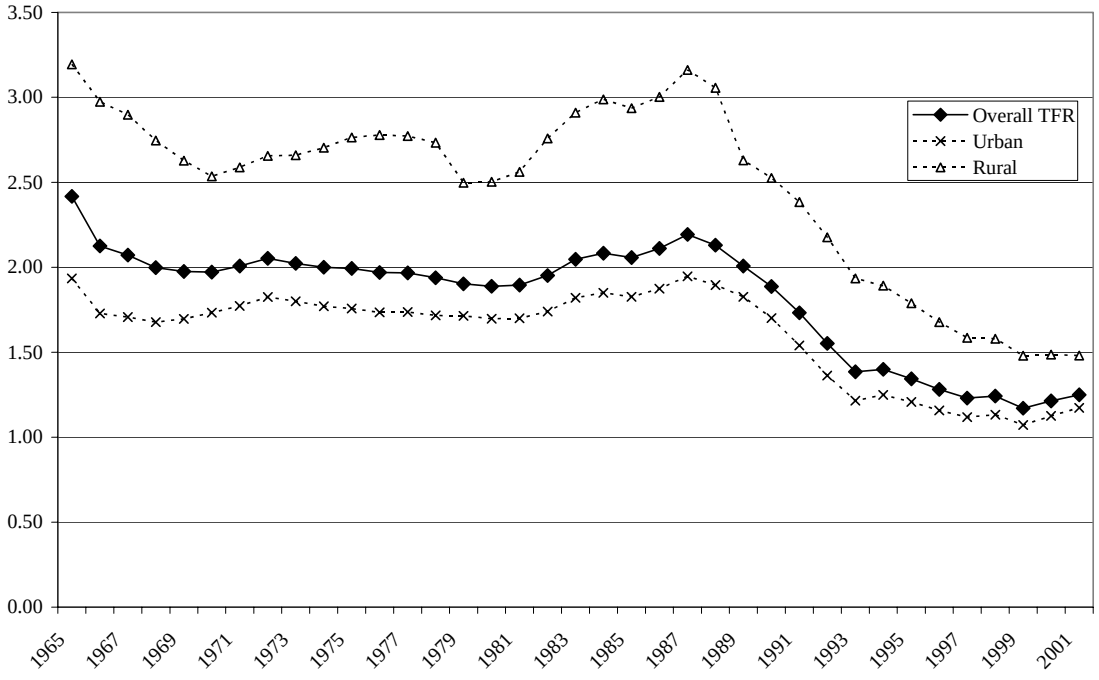

FIGURE 2: Percent non-marital births, Russia 1980-2001