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## Downward Social Mobility and Fertility Decline in Russia

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**Abstract:** This study assesses whether downward social mobility (DSM) contributed to the recent fertility decline in Russia. Event history analysis estimates suggest that DSM suppressed second birth risks; however, this impact was stronger for men under the Soviet regime and remained similar for women before and after transition began. Decomposing the impact of DSM by its timing shows that experiencing DSM after the first child was born, but not before, had a consistently negative influence on second births across both time periods. Only for women and after market reform does experiencing DSM before becoming a parent influence fertility decisions. DSM is a specific pathway through which the economic transition and crisis impacted fertility and the results demonstrate how increasing inequality and job instability influence fertility behavior.

## I. Introduction

During the tumultuous transition from communism in Russia, the two-child family—which had been a well-established tradition (Zakharov and Ivanova 1996)—became a norm of the past. Russia’s total fertility rate (TFR) had hovered at two children per woman for two decades before market reforms began (See Figure 1), which is argued to be largely due to pronatalist policies introduced in the 1980s<sup>1</sup>. Although the initial TFR decline may simply have been a reaction to the end of these policies (Zakharov and Ivanova 1996), fertility continued to decline beyond the scope of this explanation (Philipov and Jasilioniene 2007).

Figure 1. Russia’s total fertility rate about here

A debate continues over how the fertility decline in Russia, and other post-communist countries, can be best explained. Contradictory findings on the role that economic conditions played in the fertility decline have emerged; macro-data analyses of multiple post-communist countries (UNECE 2000; Cornia and Panicià 1998; Kohler and Kohler 2002; Billingsley 2009) have found support for the economic crisis thesis, yet micro-data analyses yield evidence to the contrary in Russia (Kharkova and Andreev 2000; Kohler and Kohler 2002; Kohlman and Zuev 2001).

This paper proposes a mechanism that is new but intimately linked to the debate over the contribution of economic conditions to the fertility decline: downward social mobility (DSM). DSM is not linked to fertility behavior in mainstream fertility literature; however, given that economic conditions deteriorated in relation to previously stable economic terrain while inequality grew, class became more salient and amplified the importance of one’s location in the class system and social mobility. In the Soviet Union, where wage dispersion was low before the transition, class may have mattered little as a determinant of fertility from an economic perspective. With wage dispersion, the differences between classes should have become more significant, and the difference in respective

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<sup>1</sup> In 1981, the 26<sup>th</sup> Congress of the Communist Party established a set of policies intended to increase the fertility rate. Zakharov (2008, p. 922) lists the most important of these as 1) extension of maternity leave, 2) two new types of child allowances, 3) changes in housing policies to benefit families with children, and 4) special privileges and subsidies for mothers of many children.

rewards larger. Downward social mobility, therefore, likely implied lower living standards for a population that was unaccustomed to such risk. The rich literature on status attainment and social mobility may then be particularly relevant in this context of increasing variation in returns to class.

Past research on the fertility decline in Russia has been limited in its capacity to analyze explanatory factors that change over time, describe the personal context in which decision-making took place, as well as cover both the pre and post-transition periods. With the supplementary Employment and Education Survey (EES) to the Russian Generations and Gender Survey (GGS), we have detailed fertility histories for men and women in Russia along with their retrospective employment and education histories. These data now allow the possibility of linking changes in childbearing to Russians' career and educational trajectories.

The demographic shift that is of the utmost importance to the fertility decline in Russia is the decreasing number of parents who decide to have a second child. Research has shown this to be the most pronounced change in fertility behavior in Russia during the transition from communism. Not only does Sobotka (2003) find a reduction in the incidence of second births throughout the transition and a slight postponement of first births only in the most recent years, but Philipov and Jasilioniene (2007) also corroborate this finding using life table methods. They show no evidence of increasing voluntary childlessness in Russia. Smoothed first birth hazard rates for the 1990-1994 and 1999-2003 time periods in Russia show that although first birth timing used to be more homogenous, there has been no overall increase beyond 10% childlessness in Russia. From a cohort rather than a period perspective, these authors again show no radical change in first birth behavior among the youngest Russian cohorts. They conclude that the falling TFR is due to a decline in second births. Hence, this study restricts its focus to the second birth event.

Using event history techniques, I systematically analyze the conditions under which a second birth occurred in Russia and the impact of downward social mobility. Three specific questions guide this study: 1) Is DSM an important experience to the decision to have a second child? This question will indicate whether a link between DSM and fertility is empirically justified. 2) Did the importance of downward social mobility to the decision to have a second child increase after the transition from communism? Given that DSM should have become more consequential after the transition from

communism began, this question indicates whether the increased importance of DSM contributed to the fertility decline. 3) Did downward social mobility impact the second birth decision consistently, regardless of whether it happened before or after the first child was born? This question aims to clarify the nature of the relationship between DSM and fertility, by allowing us to explore the duration of its impact, as well as potential issues of selectivity and endogeneity.

The next section outlines the theories and literature that structure the analysis and addresses important issues that could confound this research agenda. Next, the data are introduced and the operationalization of important indicators discussed. The fourth section details the models and results, while the final section discusses the findings and conclusions.

## **II. Theoretical Framework**

The main debate in mainstream literature on fertility behavior revolves around explanations that prioritize either the impact of income or changing values. To generalize, the economic explanation of fertility assumes fertility behavior takes place according to a calculation of the price or costs—direct or indirect—associated with having a child. Hotz et al. (1997) summarize the economic explanations as all building on Becker's (1960) neoclassical framework, which considers how time allocation, household production, and human capital investment contribute to fertility decisions. On the other hand, the ideational explanation is based on the Second Demographic Transition theory (Van de Kaa 1987), which links several demographic changes, including the decline to a fertility level that is below the population replacement level, to changes in values. These ideational changes are argued to accompany post-materialism, individualization and increased urbanization.

In the post-communist context, the specific events that coincided with the dramatic declines in fertility indicate a potential need for context-appropriate explanations. Using micro-level data, there have been attempts to characterize the transition experience in other post-communist countries in terms of social anomie (Philipov, Spéder and Billari 2006), social capital (Bühler and Philipov 2005; Philipov, Spéder and Billari 2006), and uncertainty (Bhaumik and Nugent 2002; Kreyenfeld 2005). In the case of Russia, Bühler (2004) found a positive relationship between extra sources of income or sustenance and second births. Perelli-Harris (2006) also found a positive relationship between informal

work, subjective well-being and second/higher order births. Besides these attempts, which capture important aspects of managing economic transition and crisis, Kharkova and Andreev (2000), Kohlman and Zuev (2001), and Kohler and Kohler (2002) have attempted to address the straightforward impact of transition or crisis on fertility and did not find evidence of such a relationship. Using an alternative research design, Billingsley (2009) did find evidence that both unemployment and increased direct costs of childbearing deterred parents from having a second child.

This study contributes to this debate by proposing a unique operationalization—DSM—of how the economic transition and crisis could have impacted fertility behavior. In this section, I discuss the link between social mobility and fertility as well as the mechanisms that may be at work in this relationship. First, I refer to early sociological and demographic research; then I further develop this relationship in light of Easterlin's (1976) economic perspective of fertility behavior.

## **II.1 Social Mobility**

In recent research, the relationship between social mobility and fertility has largely been unexplored. However, there are historical precedents for the hypothesis that social mobility may in fact be important to fertility decisions. Arsene Dumont (1849-1902) was one of the first to write about a relationship between mobility and fertility, in which he coined the term “social capillarity” and explained declining fertility by an increased desire for upward mobility that was brought about by the development of capitalism and democracy in France (Bejin, 1989). A formalized relationship between social mobility and fertility can be traced back to research from the mid 20<sup>th</sup> century, but its place within academia extended hardly more than 30 years. Berent (1952) appears to be one of the first researchers to empirically test the relation between social mobility and fertility. The following decades saw a flurry of activity over the question, but the results are not discussed here due to inconsistency in measurement, models and results that would need retesting now that more sophisticated methods and diagnostics have been developed. However, the theoretical frameworks on which these analyses were based deserve attention. Bean and Swicegood (1979) discuss four ways in which social mobility might

impact fertility: First, a *social disintegrative effect*<sup>2</sup> may arise when mobility disrupts family and social ties and creates a desire to compensate for the loss or, alternatively, lowers fertility by increasing strain and stress. The second mechanism is *status enhancement*,<sup>3</sup> in which families seek to maximize their resources—by limiting fertility—to obtain higher mobility, maintain their current status or avoid downward mobility. A third possible pathway is through a *relative economic effect* in which a downward turn in economic status will induce fertility avoidance and vice versa. The final pathway is deemed *selectivity*, in which couples choose to have children according to their mobility trends.

The social disintegrative effect could have a positive or negative impact on fertility, rendering it impossible to disaffirm without information on mediating factors. Moreover, this explanation is better addressed through research linking social capital to mobility experiences. In regards to selectivity, couples either select themselves into having a certain family size based on their mobility expectations or select themselves into career paths based on family size expectations, which could lead to class mobility. Hakim's (2000) preference theory, for example, would suggest that “home-centered women” would be unlikely to pursue status enhancement, via career choices, over family formation. Certain issues of selectivity will be considered at greater length in this analysis, but one form of selectivity essentially mirrors the mechanism of status enhancement if we take that to mean couples will always prefer to have the highest status that they can reach. Indeed, a fundamental drive in mobility decisions is avoiding downward mobility (Breen & Goldthorpe, 1997). As such, it can be assumed that couples will have considered the impact of another child on their social status.

This assumption provides us with some reason to believe that non-mobile couples may reflect the childbearing behavior of their origin class, or of their parents. This is likely why we see some consistency within classes, since the family size that worked for one's parents should be considered an acceptable family size for maintaining that status. The socialization explanation described by Stevens (1981) corroborates the status quo relationship between non-mobile couples and fertility. She terms the socialization explanation the “null hypothesis” in which we might expect individuals to make fertility decisions simply on the basis of the behavior associated with either the origin or the destination class.

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<sup>2</sup> Stevens (1981) splits this category of explanations into two: stress effects and isolation effects.

<sup>3</sup> This mechanism mirrors that proposed by Dumont (Bejin, 1989).

Kasarda and Billy (1985) take this point further, by discussing the need to separate the effect of mobility as a process from the additive effects of origin and destination statuses.

These assumptions all can be considered implicit within the relative economic explanation as well. In this hypothesis, couples continue to have children only if they perceive their economic situation as acceptable. They are also expected to avoid a lower status or try to achieve a previous status through limiting family size. One element of the status enhancement or social capillarity hypothesis that differs from the relative income explanation and complicates matters is that we have no way of knowing to what heights an individual aspires. The relative economic perspective grounds us in the assumption that aspirations are somewhat related to the point of origin.

## **II.2 Easterlin's hypothesis**

Perhaps the most popular rendition of the relative economic explanation was proposed by Richard Easterlin (1976) as he attempted to explain the baby boom and bust trends in the US. He claimed that the size of one's generation had a pervasive impact on early adulthood conditions, especially income. In other words, the relative size of a cohort impacted relative levels of income. Moreover, if the income level is not sufficient for young adults to live according to the aspirations that were developed in the parental home, fertility would decline. The conditions he listed as occurring when a cohort is larger than previous cohorts are the following: adversely affected fortunes of young workers through lower earnings, unemployment, and lower upward occupational mobility; hesitation to marry; delayed childbearing; increased female labor force participation; increased divorce and marital strain; relatively high psychological distress among young adults; and an unfavorable economic context, including stagflation (1987, p. 4).

Easterlin's aspirations/resource conflict is generally considered in a long-term framework, as it was theorized in relation to the effect of generations' differing cohort sizes on labor markets. However, the transition from communism rapidly brought about conditions that were in stark contrast to the immediate past and previous generations without a long-term shift in cohort size. The economic conditions listed above are widely known to have developed during Russia's transition from communism. So although relative cohort size is not key to this discussion, Easterlin's hypothesis of the



aspirations/resource conflict remains useful, as conditions during the transition from communism were ripe for generating a similar conflict. Despite relatively low aspirations that may have developed during the Soviet era, the economic transition brought about decreases in economic well-being, which were manifested through increasing poverty rates and decreased consumption (World Bank 2000; Klugman et al. 2002). In particular, real total consumption expenditure in Russia (See Figure 2) dramatically fell during the transition and did not reach 1989 consumption levels again until 2003 (UNECE 2004).

Figure 2. Real total consumption expenditure in Russia, 1989-2003 [about here](#)

Relative income measures, divorced from relative cohort size, have often been used in research on Easterlin's hypothesis. Macunovich (1998) provides an exhaustive survey of research on the Easterlin hypothesis, including 185 published articles and books. She discusses the variations in operationalization of the Easterlin hypothesis as well as success rates and the relationships between the measures and success rates. Relying on this exposé to navigate the pitfalls of other research, three issues arise: one is directly related to Easterlin's hypothesis, while the other two arise in conjunction with the post-communist context. The first to consider is how to operationalize relative income in a way that does not assume young adults' income to be equal to the parents', but rather as a function of parents' income. We would not expect the income of young adults to be as high as their parents' who were in a later stage of career tenure during the young adults' adolescence, nor does Easterlin argue that young adults expect the same income when beginning their career and family. But we do expect it to be related, perhaps "with a distribution of young people around some mean probably located below the mean parental income" (Macunovich, 1998, p. 102). In this study, this issue is somewhat mitigated by the lack of income data in the first place and the substitution of occupational class as a proxy for long-term income *potential* rather than absolute income.

Another issue revolves around two peripheral aspects of research on Easterlin's hypothesis: gender and endogeneity. At the time of Easterlin's proposal, the male breadwinner model dominated household specialization in the United States. For this reason, men's earnings were typically analyzed.

Whether women joined the labor force or not—an important decision made alongside fertility intentions—was considered endogenous to the hypothesis since he argued that women would join the labor force to ease the household’s aspirations/resource conflict. However, the Soviet Union put great emphasis on employing women, as well as provided assistance to women to balance paid and unpaid labor. Therefore, the “default” status of women in this context should not be non-participation in the labor market, neither for young adults beginning their family around the time of transition from communism, nor for their mothers. For this reason, women’s potential earnings are very important to consider, and women’s participation in the labor market is not considered endogenous to the relative income story.

The final issue involves the role of consumption. When Easterlin (1976) wrote about an aspirations/resource conflict, he referred to young adults not being able to continue consumption patterns that were developed while the young adults lived with their parents. As mentioned, young adults are not expected to consume exactly as they were able to within the parental home, but rather to a related degree or style. However, the entire idea of consumption patterns is complicated if applied to the post-communist case. Luxuries and extras were attached to the workplace during the Soviet era (Fajth, 1999) and were not necessarily a matter of preference. However, we can expect that the limited range of benefits were appreciated and that having lived with these benefits cultured tastes accordingly. There are also complications in the early transition period in which prices skyrocketed and goods became scarce with the restructuring of the economy and loss of production. Furthermore, the new “market” economy that eventually developed increasingly offered consumption possibilities that were previously nonexistent. These three stages may seem to over-ride any consistency in consumption profiles inherited by adult children.

That said, there are three reasons the Easterlin hypothesis may prove useful even in this context. First, regardless of the changing nature of consumption during the transition from communism, a real and significant drop in consumption expenditure did occur throughout the entire 1990s (See Figure 2: UNECE, 2004). Second, even though resources and aspirations were characterized in terms of consumption by Easterlin, there is no reason that the same argument should not hold for living standards in general, despite how living standards are achieved—via direct

occupational rewards or preferences played out in a market full of choices via earnings. Finally, this issue would be particularly problematic if I were to compare Russians with citizens of a country that did not experience a transition from communism; however, given that all individuals' experiences studied here are related—in terms of a history of communism, transition, inflation, and new consumption opportunities—the changing meaning of consumption is neutralized. The analytical method used in this analysis presents findings as they are directly related to other members of this population.

Easterlin spoke of relative income in relation to family of origin; however, relative income may also be measured in relation to one's own history. The latter relationship is likely to be more important as young adults become older, i.e., in relation to second or higher order births. These alternative experiences have been developed in social mobility literature and termed intergenerational mobility—between two generations—and intragenerational mobility—within one generation. Both types of mobility are considered here since the longevity of a possible impact from changes in economic status is unclear; it is intuitive that at some point in adults' lives, they will adapt to their own consumption capacity and living standards.<sup>4</sup> An individual could experience an aspirations/resource conflict if he/she once held a position in the highest class—including politicians, professors, and top level managers of large businesses—and experienced a shift to a lower class, even if that class is not the lowest. In this sense, we may assume the individual experienced a loss in resources, which may conflict with aspirations previously developed. But we cannot necessarily assume that all people who stayed in the same strata did not also experience an aspirations/resource conflict because of the dramatic loss in wages due to inflation and widespread wage arrears; aspirations/resource conflicts may be hidden in cases where people remained in the same job or occupational status. The bias introduced by this missing information should have the effect of minimizing the size or significance of findings and, therefore, the results should only be stronger with better measures. For this reason as well, I do not argue that upward social mobility should lead to increased fertility in this context, as in the Easterlin tradition.

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<sup>4</sup> This is likely why Easterlin was critical of research that studied the second generation well into their adult lives, rather than at the beginning (Macunovich 1998).

The operationalization of relative income changes, or social mobility, here relies on occupational class. Real income, instead of potential, might be more informative, but it is also problematic as previously discussed. Information on income and its components over the time period in question are anyhow unavailable. Two studies provide the foundation on which occupational class mobility in Soviet and post-Soviet contexts can be studied and both relied on an operationalization of the Erikson-Goldthorpe occupational class schema. Marshall, Sydorenko and Roberts (1995) analyzed whether greater social mobility described life under the Soviet regime in comparison to social mobility trends in Britain. Despite the claims of many Soviet scientists, they determined that social mobility did not differ greatly in the Soviet Union from Britain, although the occupational distribution was unique. Their findings in regards to the extent of vertical mobility were that equal opportunities did not exist among the social classes and that the origin class did matter to the destination class in the Soviet Union, although slightly less for women. These findings imply that the mobility literature geared toward capitalist countries may be useful as a reference for the Soviet case as well.

Gerber and Hout (2004) pursued a similar strategy in studying social mobility during the 1990s in Russia. The authors confirm the findings of Marshall et al. (1995), by demonstrating the existence of social inheritance under Soviet rule. Even so, their analysis of the years following the transition from communism demonstrates that rates of social mobility greatly diminished; hence, the delineation between classes grew and the possibility to move out of one's class of birth lessened. Moreover, when class shifts did occur, they were more likely to be downward than upward. Finally, they found that those workers who experienced the most upward mobility under the Soviet regime were the workers who were often displaced when the transition began and found new jobs that were closer to their class origins than previous jobs.

### **III. Data and the Operationalization of Indicators**

GGs data are part of a larger Generations and Gender Program designed as “a system of national Generations and Gender Surveys (GGs) and contextual databases, which aims at improving the knowledge base for policy-making in UNECE countries. The GGs is a panel survey of a nationally representative sample of 18-79 year-old resident population in each participating country with at least

three panel waves and an interval of three years between each wave” (UNECE 2006). The response rate was particularly low in the urban areas of St. Petersburg and Moscow (around 15%), but was 57% in all other areas (Independent Institute for Social Policy 2004).<sup>5</sup> The Employment and Education Survey (EES) includes a GGS sub-sample of 18-55 year old men and women and covers all employment and educational activity over the life of the respondent, starting from January of the year he or she turned 17. The response rate for this survey was 86%.<sup>6</sup> An important limitation of working with EES retrospective histories is that we cannot assess whether social mobility has occurred at the household level; data on household characteristics is only available in the GGS for the year 2004.

The remaining part of this section details the operationalization of key indicators: education, occupational class, intergenerational DSM, and intragenerational DSM.

### **III.1 Education**

Education is discussed according to three levels here: low, middle and high. Respondents with a “low” education level did not complete secondary school, even if they attended a vocational or “factory and work” college.<sup>7</sup> Those who did complete secondary education are included in the “middle” category, as well as respondents who completed a vocational or technical college after completing secondary education. All respondents who completed secondary special education, which includes technical, medical, musical, pedagogical or arts training, are classified as having a middle education regardless of whether they completed secondary school or not. The “high” educational level includes those respondents who completed university education at the undergraduate or postgraduate level. Important to note when analyzing respondents over time, is that Russians sometimes leave education between levels to join the labor market and subsequently return (Cheidvasser & Benítez-Silva 2007).

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<sup>5</sup> The models all include a dummy variable that indicates whether the survey took place in St. Petersburg or Moscow to absorb any bias introduced by this low response rate. In no case was the St. Petersburg/Moscow dummy variable statistically significant. I also excluded all respondents from Moscow and St.Petersburg from a few models and the results remained robust.

<sup>6</sup> For information about the technical aspects of this survey and its sample, see: Independent Institute for Social Policy (2005): Education and Employment Survey on Russia - Technical Report, Moscow.

<sup>7</sup> A significant difference between Russians who have completed secondary school and those who have not has been observed in previous research on Russia, particularly in relation to research on health and mortality differentials by education (Shkolnikov, Leon, Adamets and Andreev 1998; Shkolnikov, Andreev, Jasilionis, Leinsalu, Antonova and McKee 2006). Many thanks to Evgueni Andreev for his observations and guidance on educational differences in Russia.

### III.2 Occupational Class

I rely on nominal class categories for this analysis rather than prestige measures (e.g., Treiman, 1977) or socioeconomic indexes (Ganzeboom, De Graaf, & Treiman, 1992), thus adhering to the convention in studying occupational class in Russia. I use a variant of the Erikson-Goldthorpe occupational class schema: the European Socioeconomic Classification (SeC), which closely follows the Erikson-Goldthorpe-Portocarero (EGP) Schema. The conceptual basis of this schema relies on employment relations, or whether a person is an employer, employee, self-employed or supervisor. GGS educational information complies with the International Standard Classification of Occupations (ISCO88) classification, which can be transferred into the SeC schema using Harrison and Rose's (2006) process. ISCO88 uses as its conceptual basis not just employment relations, but also skill level as a means for differentiating classes (Ganzeboom & Treiman, 1996). Unfortunately, the raw occupational data in EES does not correspond to the usual questions used in constructing a SeC schema, nor is it coded according to the ISCO88. Therefore, I adhered as closely as possible to the coding principles of SeC in classifying the occupational class of respondents.

The SeC schema is a ten category model that typically collapses into six, five and three class models. Although the three class model would be more robust to possible peculiarities of the Russian class structure, the two lowest classes were not collapsed into one category due to how bottom-heavy the occupational structure was; therefore, instead of combining unskilled manual workers with low-grade white-collar workers and skilled manual workers, the former is kept in a separate class. This decision equalized the distribution of respondents within the classes to a greater degree. Table 1 details the SeC categories that have been created according to the parent's occupational class in the GGS and the respondents' occupational class in the EES.<sup>8</sup>

Table 1. European Socioeconomic Classification (SeC) coding of occupational classes according to GGS and EES categories about here

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<sup>8</sup> Because it was not possible to apply an internationally used coding system to the EES occupational classification, I detail how the EES responses were coded in Table A in the Appendix.

Whether or not this class structure is relevant when talking about social mobility depends on the rewards of belonging to a class; it follows that the greater the reward for being in a class, the narrower the passage ways in and out of a class and the greater the aspirations/resource conflict when moving into a lower class. One way of estimating whether there are meaningful differences between the classes in terms of rewards is to compare average income levels (See Table 2). The average incomes in 2004 of the classes demonstrate a positive gradient. The mean income in the lowest class was around 50,000 rubles, which increased to 60,000 in SeC 2, 72,000 in SeC3, and 76,000 in SeC4. The largest standard deviation in income by class was observed for SeC3. Heterogeneity of income in this class may explain for an imperfect gradient when we look at median incomes. In any case, this brief exploration into the income characteristics of a 4 class schema indicates a meaningful change in resources if mobility occurs.<sup>9</sup>

Table 2. Income distribution in 2004 by the 4 SeC classes about here

When respondents are not assigned an occupational class, they are either unemployed or not participating in the labor force. Unemployment was coded as such only when the respondent indicated they were actually unemployed, rather than using unemployment as a default category for short periods not clearly designated. Rather, these unclassified moments, as well as times when individuals reported being in the military, in education, out of education for three months or less before finding employment, or “housewives”, are coded as times of “no labor force participation” (NLFP).

### **III.3 Intergenerational and Intragenerational Social Mobility**

Respondents experience *intergenerational* DSM (interDSM) when their occupational class is lower than their parents' at age 15. DSM is only possible if the respondent is participating in the labor force and not unemployed.

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<sup>9</sup> However, this support must be accepted with caution, as GGS offers information for the year 2004 and EES offers information from multiple time points.

Respondents experience *intragenerational* DSM (intraDSM) when their occupational class is lower than the one associated with their previous job. In contrast to interDSM, intraDSM can also occur if the respondent left education and was not able to find a suitable job. General guidelines for determining over-education were taken from Elias and Birch (1994), Ortiz (2007), and Solga and Konietzka (1999) and are displayed in Appendix B.

#### **IV. Methods**

Using GGS and EES data, I analyze second birth events for two separate samples: men and women. The dependent variable of the second birth event is binary: 0=no second birth, 1=second birth. 4926 respondents are included in this analysis, since they had at least one child by the time of the interview. Of these respondents, 2666 went on to have a second child. The respondents are censored eight months before their second birth, to account for a gestation period, or at the time of the interview, if they had not had a second child.<sup>10</sup> A great many of these second births occurred before 1991, leaving only 336 second births to women and 143 to men after the transition began. A piecewise constant event history model is estimated to achieve the relative risks of a second birth, which allows the baseline hazard to vary according to pre-determined time segments since we would expect the hazard rate to differ over time.

An important issue to consider is that people in the lowest class or educational level have no opportunity for downward social mobility. Moreover, these individuals are the ones who traditionally have higher fertility. Therefore, I include controls for origin points, which should absorb this form of bias. Moreover, I also checked the robustness of my results by excluding those respondents in the lowest occupational class or with the lowest educational level and found that the relative risks that are important to my hypotheses did not change, nor did they lose their level of significance.

Even though the window of observation begins at the moment the first child is born, the time period preceding the first birth may also offer important information. For example, an individual may have received university education, been unable to find a suitable job in the labor market, decided to

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<sup>10</sup> Since EES data only record histories from January of the year in which the respondent turns 17, all information recorded in the months before the respondent turns 17 are censored. This entailed excluding 118 men and women. Seventeen more respondents were excluded because they did not know the year of their first birth.



have a first child anyway, but not a second because of a conflict between aspirations and resources. Therefore, DSM occurrences before the first birth are kept in the model.

#### **IV.1 Time-constant covariates**

*St. Petersburg and Moscow dummy:* Because the response rate was so low in these two cities (15%), a dummy for where the survey took place is introduced into the model to capture any bias this may cause. 8% of this sample was surveyed in St. Petersburg or Moscow.

*Siblings:* The number of siblings is included as a series of dummy variables: only child (14%), 1 sibling (39%), 2 siblings (21%), 3 + siblings (24%), and unknown/missing (2%).

*Birth residence:* This variable captures the impact of being born in an urban or rural environment. Regional centers, other cities and urban-type communities are considered “urban” (54%) and the countryside is “rural” (42%). Missing answers constitute 5%.

*Age at first birth:* This variable is continuous and is how many years old the respondent was when he/she became a parent. Although current age is not entered into the model, some summary statistics of the sample’s age distribution are the following: Despite sample selection on already having one child, the sample is still quite young with 40% of spells<sup>11</sup> occurring in the 17-21 age group. This is not surprising, given that very little postponement has occurred for first births. 26% of the spells occur in the 22-26 age group, 15% in the 27-31 age group, 9% in the 32-36 age group, and 10% in the 37+ age group.

#### **IV.2 Time-varying covariates**

*Period:* A dummy variable indicates whether the spell occurs before or after the political and economic regime change in 1991. 1991 is chosen as the year for distinguishing between two periods because this is the year that the Soviet Union was dismantled.<sup>12</sup>

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<sup>11</sup> Because the number of spells is generated by the number of changes within categories of time-varying covariates, the interpretation of the number of spells in a given state is not informative in a straightforward way; the number of spells could be inflated by changes within other unrelated categories.

<sup>12</sup> One may argue that other years may be more appropriate as a cut-off point. For example, Blanchard (1997) takes 1990 as the year the economic regime changed in Russia because this is the year during which industrial production decreased. However, the decrease was modest in this year compared to the decrease in 1991. 1992

*Union status:* Respondents are classified as being either single or in a co-residing union (69%), including marriage.

*Time since first birth:* Respondents pass through categories of time: 0-1 years, 1-2, 2-3, 3-4, 4-5 and 5 years or more since the first child was born.

*Educational status and level:* Respondents' are classified as being in education (21%) or being out of education, which then takes three possibilities: low (12%), middle (52%), and high education (15%).

*Labor force status and occupational class:* Respondents are unemployed (1.5%), SeC1 (manual workers) (5%), SeC2 (low-grade workers) (16%), SeC3 (intermediate employees) (9%), SeC4 (salarial) (7%), and NLFP (62%). NLFP includes women and men still in education or the military, as well as those who are not in the labor force for other reasons such as caring for a child.

*Ever experienced interDSM:* Spells are coded according to whether the respondent has ever experienced interDSM. Respondents are coded as never having experienced interDSM until interDSM occurs, then forever after as having experienced interDSM. InterDSM is counted if it occurred before the first birth and, thus, before the respondent was at risk for a second birth. If DSM occurs after the first birth, ever interDSM is updated to account for that new status instead.

*Ever experienced intraDSM:* Spells are coded according to whether the respondent has ever experienced intraDSM in the same manner as "interDSM", described above.

Table 3 presents incidence rates of both forms of DSM, according to the total number of women and men rather than spells. We see remarkably similar rates for men and women. Slightly more men, relative to the total number of men, experienced interDSM, but men and women experienced virtually the same rate of intraDSM occurrence. Moreover, there were 109 episodes of DSM that were second or third incidences.

Table 3. Summary of respondents who experienced DSM about here

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may also be considered an appropriate year due to price and trade liberalization (Fleisher, Sabirianova and Wang 2005). Still others might advocate for an earlier year that would capture *perestroika*, or restructuring, which began in 1985.

To observe how the impact of DSM changes between the two time periods and before and after the first child is born, multiple dummy variables are constructed that include detailed information about time period, whether DSM occurred and when DSM occurred. To control for origin states in the mobility process, parents' occupation is included in the interDSM model. Including educational level is one way of controlling for the origin point in the intraDSM model, as much of this form of DSM is due to over-education. Including the previous spell's occupational class cannot be entered into the model due to high autocorrelation.

## **V. Results**

Tables 4 and 5 present the impact of inter and intraDSM on second birth risks. First, addressing interDSM, results indicate that it mattered more to second birth risks for both men and women before the transition than afterward. During the pre-transition time period, its impact was limited to when it occurred after the first child was born, rather than both before and after becoming a parent. Moreover, the impact of interDSM was greater on men's decision to have a second child than women's in this time period.

In regards to the post-transition era, the impact on men's fertility remained, but lessened. Whereas second birth risks were reduced by 68% before 1991 when interDSM occurred for men, they were only reduced by 35% after 1991. But even after 1991, interDSM only affected men's fertility behavior if it occurred after they had become fathers. However, the impact of interDSM on women's second birth decisions did not greatly decrease after 1991: 47% lower risk in the pre-transition time period versus 44% afterward. In addition, after the transition the experience of interDSM became significant even when it happened before respondents became first-time mothers. Women were at exactly the same lower risk of second birth whether it happened before or after the first child: 44% lower.

Table 4. Second birth estimates from piecewise constant event history models: InterDSM, men and women about here

Table 5 presents results of the intraDSM model in which a similar pattern of results emerges. Full results of the model are displayed in Appendix C. The impact of intraDSM lessened over the two time periods for men (71% lower risk before 1991 versus 59% afterward) and the impact was restricted to occurrence after men became fathers. For women, the impact of intraDSM after women became mothers was slightly stronger before 1991 than after market reform began. However, after 1991 the effect of intraDSM was not limited to whether it occurred after the first child was born, but appeared important when it occurred beforehand as well. But the size of the impact was not identical; in contrast to the almost identical impact of interDSM before and after the first birth, experiencing intraDSM before the first birth lowered the risk of second birth by 35% whereas the risk declined by 55% if it occurred after the first child was born. These results indicate that the impact of DSM became more long-lasting after the transition.

Table 5. Second birth estimates from piecewise constant event history models: IntraDSM, men and women about here

## **VI. Discussion and Conclusions**

The results decisively demonstrate that downward mobility is a significant factor that exerts negative pressure on the likelihood of having a second child. Easterlin's (1976) hypothesis about the conflict between aspirations and resources appears to have merit in the Russian context. Interestingly, the magnitude of DSM impact over the time periods was virtually the same for both types of DSM for women, whereas it lessened over time for men.

Whether downward mobility occurs before or after the first birth matters greatly to whether DSM impacts second birth decisions for men and across the two time periods. Not all occurrences of DSM appeared to influence the decision to have a second child before 1991, whereas all occurrences do appear to influence women's decisions after 1991. This indicates that experiencing either form of DSM after the transition made first-time mothers relatively less likely to expand their family than before transition.

This finding may offer more insight into what DSM means in the context of fertility decisions, particularly in regards to issues of selectivity or endogeneity. DSM was expected to influence fertility decisions on the basis of relative income loss. However, it may have been that labor market and fertility choices were decisions that were made together; hence, there may be some selection into DSM. If an individual prioritized family formation over career decisions, we would likely see a positive or no impact of DSM since they would have a first (and second) child regardless. In no case does DSM appear to encourage having a second child. But results do indicate that it is not always a significant factor if it occurs before the first birth for men in either time period and for women only before market reform. Because results are similar for men and women before transition, and since the selectivity story is relevant to women more than men—since family preferences do not necessarily impact men’s career choices—it is likely that the impact of income loss due to downward mobility simply weakened by duration of DSM in the USSR and still does for men.

It may also be that experiencing DSM after the first child is born is intimately related to the fact that the respondents are now parents; in other words, there may be an endogenous relationship between the first birth and DSM. Perhaps difficulties in reconciling the demands of work and family led to DSM, either through the choice of the new parent or otherwise. In this case, a second child would be less likely, given that there is already evidence of difficulty in keeping up with one’s career and family responsibilities. But since this timing effect was particularly pronounced during the era when policies were still in place to assist dual-earner families, this mode of influence is suspect. And once again, this explanation is much less likely to be valid for men than women, given that reconciliation issues typically are experienced by women more than men.

Selectivity and endogeneity of DSM and fertility seem weak explanations at best. Since the influence of DSM in the post-transition era is similar or identical before and after the first birth for women, it is likely that experiencing DSM altered the desire to have a second birth because the cost of another child became too high, given the loss in income associated with DSM and because of the desire to re-achieve the previous class. However, these interpretations are tentative and indicate room for further research, specifically on how a differential impact of DSM on fertility might be best understood.

Another important finding worth consideration is that downward mobility did not necessarily suppress fertility more after transition than before. That DSM also suppressed fertility in men and women during the socialist era is a highly unexpected finding given the emphasis put on egalitarianism, redistribution of income and a ruling working class in Soviet rhetoric. Nevertheless, the results are robust to various re-specifications and therefore require consideration. Relative income loss becomes a less likely causal mechanism during the Soviet era given the compressed wage distribution. Rather, there may have been non-family related selectivity into downward mobility in the command economy, in contrast to the job losses and downgrading that occurred during economic restructuring. The impact of downward mobility may have been greater for men before the transition because these experiences were not associated with widely experienced systemic change. These incidences could have carried more social stigma during Soviet stability in contrast to the following period in which incidences may have been perceived as less related to one's own individual characteristics. However, this is only speculation, as a scarcity of research on the causes of downward mobility in the Soviet Union prohibits a thorough discussion of mechanisms involved.

One clue at hand may be Gregory and Collier's (1988) finding of a positive relationship between education and unemployment in the S.U., which they believe is partially due to the high mismatch that sometimes occurred between candidates' qualifications, preferences and assigned jobs. Matthews (1986) also writes about the mismatch in the number of available jobs for the number of highly educated individuals and describes highly educated school-leavers as reluctant to take manual jobs, which contributed to unemployment in young adults. This earlier research indicates that taking a job in a lower occupational class for which one is educated was avoided, possibly due to job-related factors such as prestige, job benefits or the satisfaction of skill utilization. Further research might better address these explanations.

This paper is the first in decades to show that social status shifts matter for fertility decisions in general, and the first ever to show that it also mattered in the Soviet Union and post-Soviet Russia. As such, this study offers a new perspective for understanding fertility behavior in diverse contexts, including countries experiencing rapid economic and social change, along with increasing inequality. In sum, these findings offer new evidence for a specific pathway through which the economic

transition and crisis impacted fertility trends in the post-communist context. Moreover, they demonstrate how increasing income inequality and radical labor market restructuring may have implications for fertility behavior.

Finally, all results of these analyses require caution when generalizing to residents of St. Petersburg and Moscow, since the response rates in these cities were so low that characteristics of these respondents may not reflect the population as best they could. In addition, all results are relevant only to one parent's individual influence on the decision to have a second child since covariates could not be measured at the household level.

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## Tables

Table 1. European Socioeconomic Classification (SeC) coding of occupational classes according to GGS and EES categories

	<b>GGS: ISCO88 to SeC Parents' occupational classes</b>		<b>EES: Author's SeC classification Respondents' occupational classes</b>
4	Large and small employers (excluding agriculture) and high-grade professionals and managers	4	Significant leader, professional, autonomous employee, self-employed in industry or trade
3	Lower-grade professionals and managers, higher-grade technicians and supervisors, and intermediate occupations	3	Team leader, foreman, highly-qualified worker, employee with complex tasks and some autonomy
2	Self-employed in agriculture, lower supervisors, technicians, clerks and service employees	2	Qualified worker and employee performing simpler tasks
1	Routine occupations	1	Unqualified worker and agricultural employee

Table 2. Income distribution in 2004 by the 4 SeC classes

SeC	mean	med	25%	75%	St. Dev	highest	obs
4	76316	48000	30000	84000	217753	5671500	812
3	72025	37200	24000	65200	267295	5472500	1328
2	60189	42000	23880	72000	162316	4980000	2077
1	49850	26400	14400	54000	173194	4378000	1536

Author's calculations based on GGS data for respondents that also participated in the EES.

Table 3. Summary of respondents who experienced DSM

	<b>Interg. DSM</b>	<b>Intrag. DSM</b>
Total	1179	912
Men	24.7%	18.0%
Women	23.3%	18.6%

Note: Window of observation is 17th birthday to 2nd birth and sample includes only those women and men who have one child.

Table 4. Second birth estimates from piecewise constant event history models: InterDSM, men and women

<b>Intergenerational Mobility Model:</b>		
<b>Changing effect of ever having experienced downward intergenerational occupational mobility across pre &amp; post-transition periods</b>		
	Men	Women
Period 1: never had downward mobility	1	1
Period 1: DSM before first birth	1.01	1.06
Period 1: DSM after first birth	0.32 ***	0.53 ***
Period 2: never had downward mobility	1	1
Period 2: DSM before first birth	0.77	0.56 ***
Period 2: DSM after first birth	0.65 **	0.56 ***
# of subjects	1656	3218
Log Likelihood	-2013.98	-3867.60
Prob > chi2	0.0000	0.0000
LR chi2 (31)	544.77	1426.41

Note: model controls for time since first birth, age at first birth, whether respondent was surveyed in St. Pet. or Moscow, missing categories, siblings, urban/rural birth, union status, educational level, labor force status, occupational class, and parents' occupational status. Statistical significance: \* =10%, \*\* =5%, \*\*\* =1%.

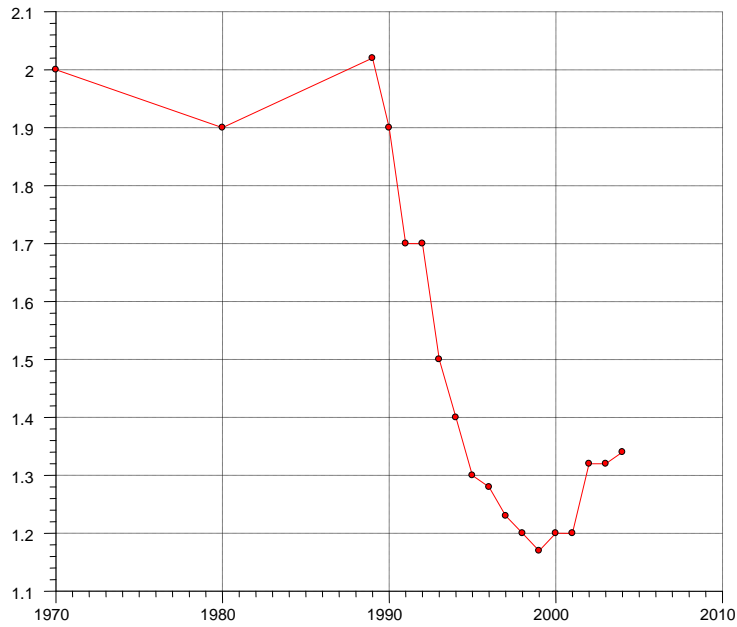
Table 5. Second birth estimates from piecewise constant event history models: IntraDSM, men and women

<b>Intragenerational Mobility Model:</b>		
<b>Changing effect of ever having experienced downward intragenerational occupational mobility across pre &amp; post-transition periods</b>		
	Men	Women
Period 1: never had downward mobility	1	1
Period 1: DSM before first birth	0.88	1.07
Period 1: DSM after first birth	0.29 ***	0.41 ***
Period 2: never had downward mobility	1	1
Period 2: DSM before first birth	0.86	0.65 **
Period 2: DSM after first birth	0.41 ***	0.45 ***
# of subjects	1651	3218
Log Likelihood	-1982.39	-3843.6
Prob > chi2	0.0000	0.0000
LR chi2 (31)	593.36	1476.51

Note: model controls for time since first birth, age at first birth, whether respondent was surveyed in St. Pet. or Moscow, missing categories, siblings, urban/rural birth, union status, educational level, labor force status and occupational class. Statistical significance: \* =10%, \*\* =5%, \*\*\* =1%.

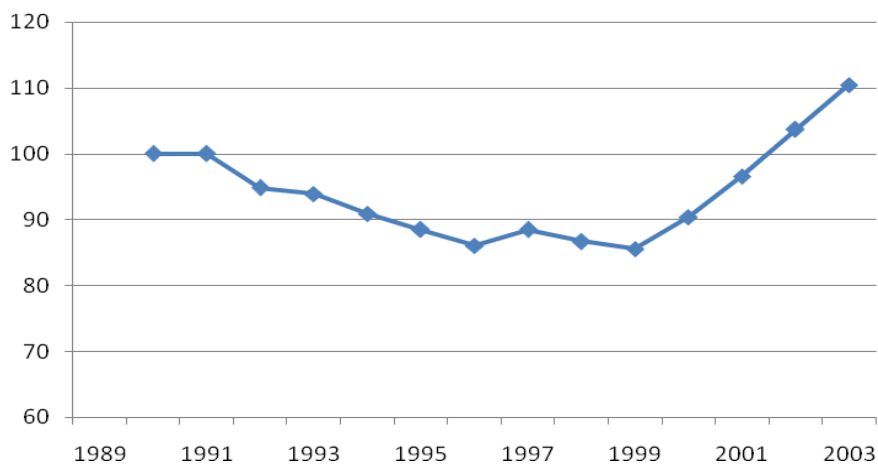
## Figures

Figure 1. Russia's Total Fertility Rate



Source: WHO's Health for All database

Figure 2. Real total consumption expenditure in Russia, 1989-2003



Source: UNECE 2004

## Appendix

A. Detailed description of the categories included in the respondents' occupational class coding (EES data)

SeC4=The Salariat

- a. Leader with significant managerial authority with the right to make important decisions
- b. Self-employed lawyer, doctor, notary, who has a private practice and hires own employees
- c. Self-employed, i.e., a person who has own business in industry, trade, or the service sector and hires own employees
- d. Employee who performs autonomously an important task or has a few subordinates
- e. Self-Employed: a person who has own business in industry, trade or service sector and does not hire own employees

SeC3=Intermediate Employee (high grade white and blue collar workers)

- f. Team leader
- g. Employee who performs more complex tasks, implying some autonomy
- h. Highly qualified workers
- i. Foreman

SeC2=Low-grade white and blue collar workers:

- j. employee who performs relatively simple tasks
- k. qualified workers

SeC1=Lower technical and routine occupations:

- l. unqualified workers
- m. agricultural employees



B. Over-education classification:

1. Low educational level corresponds to the lowest two SeC categories: unqualified worker and agricultural employee or qualified worker and employee performing simpler tasks.
2. Middle educational level corresponds to SeC 2 or 3: qualified worker, employee performing simpler tasks or team leader, foreman, highly-qualified worker, or employee with complex tasks and some autonomy.
3. High educational level corresponds to the highest SeC class: significant leader, professional, autonomous employee, self-employed in industry or trade.

C. Full model results for the intragenerational DSM model

<b>Transition to a second birth</b>						
Intragenerational DSM Model: Changing effect of ever having experienced intragenerational DSM across pre & post-transition periods						
	Men			Women		
	relative risk	sign. level	standard errors	relative risk	sign. level	standard errors
<b>Time since first birth</b>						
0-1 year	1			1		
1-2 years	1.82 ***		0.23	1.63 ***		0.15
2-3 years	1.88 ***		0.25	1.55 ***		0.15
3-4 years	1.85 ***		0.25	2.05 ***		0.19
4-5 years	1.88 ***		0.27	1.92 ***		0.20
5+ years	0.87		0.10	1.10		0.09
<b>Age at first birth</b>						
17-21	1			1		
21-24	0.81		0.11	0.80 ***		0.05
24-29	0.77 *		0.11	0.74 ***		0.06
30+	0.50 ***		0.09	0.31 ***		0.04
<b>St. Petersburg or Moscow survey</b>						
<b>Union status: married or cohabiting</b>	3.05 ***		0.46	3.30 ***		0.24
<b>Number of siblings</b>						
only child	0.98		0.11	0.87 *		0.07
1 sibling	1			1		
2 siblings	1.42 ***		0.13	1.23 ***		0.08
3+ siblings	1.73 ***		0.16	1.21 ***		0.07
<b>Born in urban place</b>						
	0.85 **		0.06	0.88 **		0.05
<b>Education status/level</b>						
in education	1.14		0.16	0.69 ***		0.09
low level	1			1		
middle level	1.22 **		0.11	0.86 **		0.06
high	1.29 **		0.16	0.98		0.10
<b>Labor force status</b>						
unemployed	0.76		0.27	0.52 **		0.14
SeC 1 (manual)	1			1		
SeC 2 (low-grade)	0.67 ***		0.10	0.68 ***		0.08
SeC 3 (intermediate)	0.68 **		0.12	0.71 ***		0.08
SeC 4 (salaried)	0.70 *		0.14	0.65 ***		0.09
not participating in labor force	0.64 ***		0.10	0.68 ***		0.08
<b>Ever Intragenerational DSM by time period</b>						
Period 1: never had DSM	1			1		
Period 1: experienced DSM before first birth	0.88		0.16	1.07		0.13
Period 1: experienced DSM after first birth	0.29 ***		0.06	0.41 ***		0.04
Period 2: never had DSM	1			1		
Period 2: experienced DSM before first birth	0.86		0.18	0.65 **		0.14
Period 2: experienced DSM after first birth	0.41 ***		0.09	0.45 ***		0.07
# of subjects	1651			3218		
Log Likelihood	-1982.39			-3843.6		
Prob > chi2	0.0000			0.0000		
LR chi2 (29)	593.36			1476.51		

Statistical significance: \* =10%, \*\* =5%, \*\*\* =1%