

**The changing relationship between female parental leave and childbearing in post-Soviet Ukraine**

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The transition from a state-administered to labor market economy in post-socialist countries has brought about changes not only to economic and social structures, but to reproductive decision-making. This study investigates how post-socialist transformations influenced reproductive decisions in Ukraine, where fertility has declined to one of the lowest levels in the world. In particular, the study compares the relationship between second birth rates and men and women's employment at three points during the transition period. Contrary to predictions based on explanations of economic uncertainty, men's unemployment has no effect on second birth rates. Women's fertility does not vary by occupational status, or over time. The relationship between staying on parental leave and childbearing, however, does change over time. The effects of parental leave on second birth rates became positive and more pronounced over the time period, indicating that women who stay at home with their first child in the post-Soviet period are more likely to have a second child. These results could indicate: 1) a weakening of Soviet work requirements, allowing more family-oriented women to stay at home and have second children, 2) an increase in the difficulty of combining mother and worker roles, or 3) an increase in the costs of returning to the labor market for women who want to have a second child. As a result, the Soviet Union may not be moving directly towards the Second Demographic Transition, but instead may be experiencing multiple trends simultaneously.

The transition from a state-administered to labor market economy in post-socialist countries has brought about changes not only to economic and social structures, but to reproductive decision-making. This study investigates how post-socialist transformations influenced reproductive decisions in Ukraine, where fertility has declined to one of the lowest levels in the world (Derzhkomstat 2002). Using the Ukrainian Longitudinal Monitoring Survey, the study compares the relationship between second birth rates and men and women's employment and occupation throughout the transition period. Such an analysis allows for the testing of two main explanations of lowest-low fertility: economic uncertainty caused by economic crisis (Steshenko 2000, Kohler et al 2002, Macura 2004, Kurylo 2001) and the changing career orientation of women, one component of "Second Demographic Transition" theory (Lesthaeghe and Surkyn 2002, Zakharov and Ivanova 1996). While these explanations have often been discussed with regard to declining fertility in the former Soviet Union (Kharkova and Andreev 2000, Kohler and Kohler 2002, Zakharov and Ivanova 1996, Macura 2004, Philipov 2002, Steshenko 2001, Kurylo 2001), they have rarely been tested with individual-level data that allows for a comparison between pre- and post-Soviet periods.

The paper also focuses on the changing nature of female labor participation and parental leave throughout the period. With the dissolution of the Soviet Union, the relationship between work, gender, and family changed dramatically. First, work requirements mandated by the state weakened, allowing more family-oriented women to stay at home to raise their children. Second, the disappearance of Soviet ideology allowed other norms and values to come to the fore, leading to greater diversity in family forms. Third, the economic crisis changed the opportunity costs of having more children for

women remaining in the workforce, but also led some women to realize the costs of remaining in the labor force were too high, especially if they wanted to have more children. By analyzing the relationship between parental leave and fertility, this study provides an alternative explanation to the economic uncertainty-Second Demographic Transition debate.

The study analyzes fertility processes using the first round of the Ukrainian Longitudinal Monitoring Survey (ULMS) conducted in 2003. The focus is on the transition from first to second births, a rare event in this setting; unlike in Western Europe where very low fertility is a product of delays in childbearing (Kohler et al 2001), most of the decline to very low fertility in Ukraine is a result of the postponement or elimination of second births (Perelli-Harris 2005). Noting the important difference in employment behavior between spouses, I separate the analyses by gender, allowing for more precise testing of the respondent's economic behavior on his or her own childbearing. Each model analyzes the influence of economic activity at three points in time: December of 1986, December of 1991, and December of 1997. These points are well-suited to capture changes in effects before and during the transition to a market economy.

### **The Setting**

Post-Soviet Ukraine is a case study of a society which experienced massive social change in a relatively short time period. The transition from a communist to capitalist economic system, along with the associated processes of democratization and changing institutions, has required massive adjustment. The economic and political restructuring has taken its toll on this region, physically (Shkolnikov et al 1998, Gavrilova et al 2001,

Gilmore et al 2002) and resulted in elevated levels of distress (Kohn et al 2002). While some may argue that the change has led to positive outcomes, such as greater political freedom and free-market opportunities, and also that the impact has not been uniform throughout the region, social and economic change has had a primarily *negative* impact, at least in the short-term, on individuals in Ukraine.

Ukraine gained independence in 1991, but the ensuing economic turmoil left the population struggling for a decent standard of living. Indicator after indicator shows how Ukrainians suffered during the early transition from communism to capitalism. Between 1991 and 1998, Ukraine failed to experience a single year of economic growth; the country's percent change in GDP was consistently negative. As a result, the GDP per capita declined by 60% and unemployment rates rose to at least 12%. Poverty deepened, with 45.2% living on less than one dollar a day (UNDP Ukraine 2002: 14-37). In nine years, the population of Ukraine declined by 4.2 million, from a high of 52 million in 1991 to 47.0 million in 2004 (Derzhkomstat 2005). Life expectancy declined from 70.5 years in 1990 to 67.9 in 2000 (UNDP 2003). Wage inequality increased substantially from 1986-2003, especially for women (Ganguli and Terrell 2005). Since the new millennium, the economic situation has improved in Ukraine, although it is yet to be determined how much this has trickled down to the individual. In 2000 the economic growth rate in Ukraine increased to 5.8%, one of the fastest rates in the world. The Ukrainian data in this study covers the beginning of the economic upturn; some of the findings may show the influence of economic recovery on behavior.

The demographic situation in Ukraine has been bleak, resulting in depopulation. The population decline has been primarily due to fewer births; the TFR dropped from

1.77 in 1991 to 1.1 in 1999 (Derzhkomstat 2001). Even with this decline, however, Ukraine has not experienced the delays in childbearing common in Southern and Central Europe. First birth childbearing continued to occur at younger ages and was nearly universal; only after 1997 is postponement evident (Perelli-Harris 2005). Other family formation behavior has remained conservative, although it is rapidly changing. Marriage is usually linked with childbearing, and non-marital childbearing is relatively low, although in Ukraine it has increased by 90% since independence (from 11.9% to 19.9% Derzhkomstat 2002). These statistics show that some trends in family formation have changed dramatically since the break up of the Soviet Union, although whether these changes are due to underlying ideational shifts or temporary responses to economic crisis is yet to be determined.

## **Theoretical Framework**

### **Economic Uncertainty**

Some researchers argue that couples in lowest-low fertility countries have limited their childbearing due to the economic uncertainty caused by economic crisis or depression (Kohler et al 2002, Macura 2004). According to these arguments, macro-level economic instability leads to individual-level financial uncertainty, delaying union formation and childbearing in early adulthood in favor of continued residence in the parental household and the pursuit of higher education and job stability. Economic uncertainty could also lead to the delay or elimination of higher-parity births, as parents realize they can not afford more children (Philipov 2002, Perelli-Harris 2005a). The hypotheses predicting the negative association between labor market crises and fertility

emerge from micro-economic fertility theory. Economic or “demand” theories of fertility posit a cost-benefit framework of analysis, in which parents maximize utility by balancing decisions about consumption with income and resources (Becker 1991, Easterlin and Crimmins 1985). In such a model, children are considered one of the tradeoffs; they use up psychological, financial, and time resources that parents would otherwise spend elsewhere. According to this perspective, in times of labor market crisis when individuals experience involuntary job loss or face the prospect of job loss, the strains on income or potential income should lead couples to forego or delay childbearing. Some evidence supports the hypothesis that unemployment leads to delays in childbearing for both men (Tölke and Diewald 2003) and women (Meron and Widmer 2002), but other evidence from Russia has found either neutral effects (Perelli-Harris 2005) or the inverse to be true (Kohler and Kohler 2002).

In this paper, I operationalize economic uncertainty by analyzing the effects of men’s unemployment on their own fertility. I define unemployment not only as non-participation in the labor market, but as actively seeking a job. While women’s unemployment also indicates economic uncertainty, conservative gender roles in Ukraine pressure women to be responsible for home and childcare rather than take on the primary breadwinner role (Dudwick et al 2002). Therefore, it is much more likely that families with one young child would rely on fathers for support rather than mothers.

During the transition to a market economy unemployment increased dramatically (partially because employment was required for all adults under the Soviet Union) (Connor 2000). Changes in the composition of the unemployed population led to wider variation in experience, attitudes, and preferences. Under the Soviet Union,

unemployment was associated with lower human capital: rural residence, poverty, lower education, and larger family size. As unemployment became more widespread, more of the population desiring high “quality” children would have been included, changing the calculus of decision-making and limiting fertility. Rather than the effects of unemployment on fertility being associated with lower human capital (as in developing countries) and resulting in more children, unemployment would have reduced the means to support children, according to explanations of economic uncertainty and cost-benefit models of fertility. Therefore, the economic uncertainty hypothesis would predict that the effects of unemployment on fertility limitation or delay will be the greatest as the economic crisis deepens.

### **The Second Demographic Transition and Changing Career Orientation**

The changing relationship between occupational status and fertility is one of the main components of “Second Demographic Transition” (SDT) theory, which argues that changes in family structures, including decreases in fertility, later ages at first marriage and birth, and increases in cohabitation and nonmarital childbearing occur concomitantly with a reorientation towards autonomy, secularization, and self-interest (Surkyn and Lesthaeghe 2004). According to the SDT, individuals, in particular women, reprioritize career and self-actualization over family and childbearing, fundamentally altering the nature of the family. Although the dataset used in this study does not include measures of values and beliefs, it does allow for an analysis of the relationship between occupational status and reproductive decision-making, which could indirectly provide evidence that priorities and preferences have changed for certain women.



The hypothesis that career-oriented women limit their fertility is based on 1) role-incompatibility, 2) greater opportunity costs, and 3) preferences for career over children. Role incompatibility refers to the inability to combine mother and worker roles in a modern economy in which the home and workplace are separated (Rindfuss and Brewster 1996). For many women, incompatibility is mitigated by childcare provided by someone other than the mother. Women with higher prestige jobs, however, may work longer hours, beyond those provided by daycare facilities. These women may feel constrained in their ability to take maternity leave or care for sick children. Given the time constraints, women with higher prestige jobs may feel they can not devote enough quality time to more than one child. Underlying the notion of incompatibility is the concept of competing opportunity costs; as women's employment opportunities bring in greater benefits, the costs of childbearing increase (Becker 1991). Women with higher status occupations would benefit more financially from limiting childbearing than their counterparts with lower status occupations. However, regardless of the calculations of costs, these women may have set preferences for occupational prestige rather than childrearing.

Because of the rapidly changing environment in Ukraine during the transition to a labor-market economy, I expect that the effects of occupational status on fertility will shift over time. For example: 1) conditions in Soviet Ukraine encouraged earlier and higher fertility, 2) previously generous maternal benefits declined and the number of subsidized childcare facilities decreased 3) more opportunities in the new labor market altered opportunity costs, 4) shifts in attitudes and values changed preferences for children in favor of career status. In the Soviet Union individuals had little economic

incentive to pursue more prestigious careers due to the relatively flat income structure. With privatization and the restructuring of the economy, post-Soviet Ukrainians were able to seek out new business opportunities that would result in higher incomes. Although women were still often restricted from the highest rungs of the career ladder (Sperling 2000), some could pursue career opportunities and reap the financial benefits. These new business opportunities, sometimes with international corporations or other privatized enterprises, changed the opportunity costs of childbearing. Also, as contacts with the West increased, Ukrainian women were exposed to new ideas and values. Western-style media and advertising, which proliferated during the transition period, allowed Ukrainian women to see European and American lifestyles. Some Ukrainian women may have felt the urge to pursue these new lifestyles, including prestigious careers.

Proponents of the Second Demographic Transition argue that changes in family structure started occurring in Russia (and presumably Ukraine) in the early 1990s (Zakharov and Ivanova 1996). If this is the case, I would expect changes in the relationship between occupation and fertility to also change during this period. This hypothesis predicts that during the Soviet period, career-oriented women would have been more likely to have children at the same time as their counterparts. After Ukraine gained Independence, women in higher occupational categories would have postponed or eliminated higher parity childbearing in order to pursue their careers.

Although this analysis takes causal ordering into account – occupational prestige is measured before the birth - it is difficult to disentangle future reciprocal causality; it could be that women who are not able to have more children, for example because of marital difficulties or problems with infertility, are more likely to focus on their careers.

If these women were in another situation they may choose childbearing over career advancement. Without attitudinal questions regarding career orientation, it will be impossible to know if women limited the number of children because they wanted to have a prestigious career or if their inability to have more children led to higher career attainment. Another difficulty is that career prestige is often acquired later in life, after the reproductive ages. Yet my goal in this paper is to measure the changes in the effects of career orientation on fertility over time. As long as intervening mechanisms such as the ability to have children has not changed over time, disentangling these effects is not as important.

### **The relationship between parental leave and childbearing**

An alternative explanation to the economic uncertainty – SDT debate is that the relationship between women’s participation in the labor force and fertility in the former Soviet Union has changed. Either the ability to combine mother and worker roles or the desire to combine these roles has changed, resulting in greater disparities in the childbearing behavior of working and non-working women. The conflict between women’s employment and fertility has long been of concern to sociologists and demographers (Bianchi et al 2005, Brewster and Rindfuss 2000). Combining work outside the home and childrearing is inherently difficult; only under rare conditions can both be done simultaneously. In order to participate in the labor force, childrearing (and hence childbearing) must be curtailed, or some alternative means of childrearing must be found.

Macro-level studies have shown that the association between female labor force participation and fertility in OECD countries has recently reversed; now countries with higher FLFP have higher fertility (Ahn and Mira 2002, Rindfuss et al 2003). One of the predominant explanations for such a reversal is country-specific family policies that mediate the conflict between work and childrearing (Rindfuss and Brewster 2000, Rindfuss et al 2003). Also, cultural-specific norms and expectations for mothers to stay at home with their children differ by time and place. This study outlines how setting-specific policies, norms, and economic conditions changed over time, thus changing the relationship between work and childbearing in Ukraine.

In the following section, I present three explanations for the diverging trends in childbearing among working and non-working women. First, the dissolution of the Soviet Union weakened work requirements; women who wanted to stay at home to raise children could now do so. Second, rapid social change led to an increasing diversity of norms regarding work and childbearing, allowing underlying beliefs about gender roles to become expressed in more conservative behavior, such as remaining on parental leave and having second children. Third, the deterioration of economic conditions changed the opportunity costs of childbearing. After Ukraine gained Independence, working women were less likely to disrupt employment with pregnancy and childrearing out of fear of dismissal from their job. The decline in childcare facilities exacerbated this condition, making it even more difficult to combine worker and mother roles. Finally, women who wanted more children may have found the opportunity costs of returning to work too high. If available jobs were incompatible with childrearing, women may have decided to stay on maternity leave, even compressing the birth interval to fulfill fertility intentions.

*Changing pressure to participate in the labor force.* Ukrainians have never truly experienced a period devoted exclusively to the breadwinner model, in which men are the main providers and women are responsible for childcare and the home. The breadwinner family system emerged in the United States and Western Europe after World War II (Rindfuss et al 2003), but did not have an opportunity to evolve in Ukraine. Instead, Ukrainians went directly from serfdom to dual-income households; in the early 1930s, the Soviet state rapidly transformed an agricultural society into an industrialized workforce, in which all citizens, including women, were strongly encouraged to participate. State-sponsored maternity leave and childcare facilities allowed women to combine work and childbearing, leading to female labor force participation rates that were nearly the same as men (Gerber and Mayorova 2006). Nonetheless, true equality in the labor market or the home never materialized (Brainerd 2000, Kon 1995). State policies excluded women from night shifts and hazardous labor (Dudwick et al 2002) and women primarily held jobs in semi-skilled professional or low-skilled jobs (Brainerd 2000). Women were expected to work outside of the home, but they were also expected to do the majority of childrearing and domestic chores, often called the Soviet “double burden” (Brainerd 2000, Dudwick et al 2002). Therefore, despite extensive female labor force participation, conservative gender roles and norms were maintained.

With the collapse of the Soviet Union, opportunities and expectations changed. State authorities no longer explicitly encouraged women to participate in the labor force. Women could now take advantage of diminished work requirements to stay at home with their children. Withdrawing from full-time employment allowed women to focus on

domestic responsibilities and childrearing, thereby reducing the demands of the “double burden” (Dudwick et al 2002).

***Increasing diversity in values and norms.*** The enormous social and economic changes that occurred after the dissolution of the Soviet Union led to an increase in the diversity of values and norms as well as types of family structures. While some strata of the population are adopting the values and behaviors of the “Second Demographic Transition” - for example, more highly educated women are postponing the entry into motherhood (Perelli-Harris 2006) - others are exhibiting more traditional behavior, such as staying at home to raise their children. These behaviors may in fact reflect underlying attitudes about gender roles in Ukrainian society.

According to Ukrainian feminists and focus group discussions, feminism and gender relationships in the former Soviet Union differ from those in Western Europe. Ukrainian women have not glibly accepted Western feminism, which they see as man-hating and gender neutral, and instead express the desire to non-aggressively differentiate themselves from men (Zurzhenko 2001b). Many Ukrainians react negatively to the concept of Western and Soviet feminism, which they see as hardening and masculinizing women, as opposed to celebrating their emotional, delicate, and feminine nature (Wanner 1998: 112-118). Many Ukrainian women celebrate gender differences, as can be seen in dress and attitudes. Focus group respondents expressed and took pride in essentialist notions of female roles; they claimed that women are better able to take care of children or pay attention to the details of housecleaning. Both male and female respondents spoke of the husband’s responsibility to financially support his family, and the wife’s natural

concern for child care, cooking and cleaning, and other household duties (Perelli-Harris 2003). Therefore, the disappearance of Soviet work requirements, as well as official claims of equality may be allowing conservative gender norms to emerge as domestic behaviors, which are associated with having more than one child.

While staying at home to raise children may reflect conservative gender norms, it may also be a new form of status. Anecdotal evidence suggests that in some elite circles, it has become prestigious for wives not to have to work (Sperling 2000). Given the economic turmoil of the 1990s, households in which the wife can afford to stay at home are in the minority. Thus, staying on parental leave may be associated with higher incomes and the ability to afford more children.

### ***Changing opportunity costs***

In the post-Soviet period, the opportunity costs for having additional children for women who remain in the labor force increased. Labor market instability discouraged women from disrupting their work for a second child, especially if they feared losing their job while on maternity leave. Inadequate labor legislation and lax enforcement made women vulnerable to sex and age discrimination (Dudwick et al 2002). Husbands' job uncertainty led working women to avoid job disruptions to ensure household income stability.

On the other hand, some women might have found the opportunity costs of working too high. Because wages in Independent Ukraine declined, women may have calculated that it did not make sense for them to return to work. They may have found that the costs of working, including childcare, were higher than the returns. Women who

stayed on parental leave may have decided to speed up their childbearing and have a second child sooner in order to return to work more quickly.

### *Changes in family policies*

Declines in childcare facilities also made combining mother and worker roles more difficult. During the Soviet period, childcare centers were widespread and subsidized by the state. After 1990, state-subsidized childcare facilities declined by a third (UNDP Ukraine 2003). While some of the facilities closed due to declining birth rates, many were impacted by budget cuts and the transformation of the workplace from state-run to private. For example, daycare centers in rural areas were once operated by collective farms, but many of them closed due to restructuring and privatization (Nikolaenko 2006). As a result, couples in Independent Ukraine had higher childcare costs, which may have limited childbearing, especially for working women.

Changing family policies in Ukraine may also have had an impact on the uptake of parental leave. In the early 1980s, the Soviet state expanded maternity leave to 126 days at full pay, parental leave to eighteen months with around 20% of average pay, and unpaid leave from eighteen months to three years (Zakharov 2006). Benefits at this time were increased for families with three or more children (Zakharov 2006). In 1992, the Independent Ukrainian government legally expanded the benefits further to include a child-care allowance up to three years (Chemerys et al 2002). However, as parental leave policies became more generous on paper, budget deficits limited actual payments and enforcement. The amount of the allowance declined to about \$6 per month, conditional on having worked; women who never worked receive less than \$1 per month. Thus, it is difficult to know the exact impact of policies on additional childbearing. Women may



have been more likely to stay on parental leave because of the expanded duration, but given the miniscule amount of the payment, they would have needed an additional source of support and probably would not have decided to stay on parental leave because of the actual policy.

### **Data and Methods**

The Ukrainian Longitudinal Monitoring Study is used to analyze the effects of economic uncertainty and career orientation on childbearing. Conducted in 2003, the ULMS is a nationally representative survey of the working age population of Ukraine. The primary purpose of the ULMS is to describe the population's economic activity by collecting retrospective work histories and information about work in the past week. The individual survey includes birth and marital histories, detailed questions about education and training, and some broad political and health questions. The ULMS also included a household survey, which includes a relationship roster of all household members and basic characteristics of the household. The ULMS conducted interviews with 8641 individuals in 4345 households. According to the research plan, all members of the household between the ages of 15 and 72 should have been interviewed; however, this was not the case for some households. Both spouses were interviewed in 2342 households.

Because of its focus on economic indicators, the ULMS is well-suited to analyze the effects of changing employment and activity on fertility behavior. The ULMS asked respondents to answer a battery of questions regarding their economic activity at multiple points in time: December of 1986 – the year of the Chernobyl disaster - December of

1991 – the year of Ukraine’s Independence from the Soviet Union - and December of 1997 – directly before the economic crisis of 1998. These dates represent significant events in Ukraine’s history and should improve recall. If respondents were employed during any or all of these times, they were asked to report occupation, starting and ending dates of employment at this workplace, and other employment information. Those who were not employed during any of these periods were asked to state an alternate activity, such as study, military service, maternity leave, other domestic activity, or unemployment; they were also asked questions about duration of non-employment and search for employment. The majority of the information gathered by the ULMS is concentrated in these work and non-employment histories.

The paper analyzes the effects of men’s employment and women’s activities in two separate sets of models. The dependent variable in each model is the rate of having a second birth. For both analyses, I use the three points in time (Dec. 1986, 1991, and 1997) to construct three first birth cohorts. Figure 1 shows a timeline representing the ordering of events. I restrict the sample to respondents who had a first birth in the 60 months preceding one of these time periods. Even though the interval between the dates may be longer, I restrict the exposure time to 60 months to create comparable models. I then use hazard analysis to model the effects of time-invariant covariates on the rate of second births which occurred over the next 54 months, after a lag of ten months. The lag ensures that the employment covariates were measured before the pregnancy started and that women did not report being on parental leave because of the second pregnancy.

**(Figure 1 about here)**

## MEASURES

**Cohort.** As described above, the research design uses three first birth cohorts to mark changes in behavior over the transition period. Cohort acts as a proxy for period level change and is intended to reflect the effects of overarching social change.

**Employment status.** Employment status was converted into dummy variables - 1 if employed, 0 if not employed. ULMS interviewers asked whether respondent were employed in each month and year of interest – December of 1986, 1991, and 1997 – and the starting and end dates of employment around these dates. Using these dates, I reconstructed work histories from 1986 through 2003. It was unfeasible, however, to use time-varying covariates in the analyses due to incomplete work histories and missing data between the measured dates (up to 16% of cases were missing in any given time period, compared to a maximum of 5% in the three cohort model). Therefore, I centered the analyses on the three dates as described above.<sup>1</sup> Table 1 shows the distribution of women’s employment status and other covariates by first birth cohort. Consistent with other reports of declining female labor force participation in Ukraine (Dudwick et al 2002), the ULMS data show that women’s participation in the labor force declines over time.

**(Table 1 about here)**

**Occupation.** ULMS interviewers asked respondents to identify their main occupation and up to two additional occupations held in December of 1986, 1991, and 1997. Open-ended responses were then recoded according to the ISCO-88 system of classification,

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<sup>1</sup> Analyses were also run on hazard models using time-varying covariates from the reconstructed work histories. Results were very similar, regardless of the missing data. However, in order to avoid item non-response bias, I report results from the three cohort models – those with the most complete data.

adjusted for Ukraine: 1) Legislators, senior officials and managers; 2) Professionals; 3) Technicians and associate professionals; 4) Clerks; 5) Service workers and shop and market sales workers; 6) Skilled agricultural and fishery workers; 7) Craft and related trades workers; 8) Plant and machine operators and assemblers; 9) Elementary occupations; 0) Armed forces (very few women reported this category). I collapsed these groups into the following categories to emphasize occupational prestige: Managers – group 1; Professionals – group 2 ;Technicians – group 3; Service – groups 4 and 5; Trade – groups 6, 7, 8, 9, and 0.

**Non-activity.** The ULMS asked respondents who reported being non-employed in December of 1986, 1992, or 1997 a series of questions about their non-employment spells. Respondents were directed to report all non-employment activities, including 1) On pregnancy or childbirth leave, 2) On parental leave, 3) Homemaker, 4) Non-working student/pupil, attending school (15 years old or older), 5) Child (14 years old or younger, 6) Non-working retired, 7) Non-working disabled or long-term illness, 8) In training program from the employment office, 9) Unemployed, looking for a job, 10) Military service, 11) Imprisonment, 12) Other. I collapsed these groups into the following categories: Parental leave – groups 1 and 2; Homemaker – group 3; Retired – groups 6, 7, and 12; Student – groups 4 and 5; Seeking a job – groups 8 and 9.

**Parental leave.** Whether the respondent was on parental leave in 1986, 1992, or 1997 is one of the main measures of interest. The question specifically refers to taking leave to look after a child, implying a temporary absence from the labor force, as opposed to “looking after the household,” which implies little intention to return to work. The lag period of ten months between the main date of interest and the start of the hazard model

ensures that women did not report parental leave based on the second pregnancy. An ANOVA analysis indicates that the duration of parental leave increased significantly throughout the period, from an average of 49 months in 1986 to 66 months in 1992 and 70 months in 1997.

**Education.** This measure is included as highest level of education measured at the time of the survey.

**Residence.** Fertility varies greatly by region and urban residence in Ukraine. Fertility rates are significantly higher in the West than in Central and Eastern regions and in urban areas. Therefore, region and urban residence are included in the models as control variables. While these indicators were measured at the time of the survey, it is unlikely that changes in residence would have significantly impacted the outcomes.

**Age at first birth.** Because women are less likely to have additional children as they approach the end of their reproductive years, woman's age at first birth is included as a control variable.

**Duration between birth of child and month of interest.** Women who had their first child earlier within the five year period would have been less likely to be on maternity leave in the month of interest (Dec. 1986, 1991, and 1997). Therefore, I control for this timing effect by including a variable measuring the number of months between the birth of the first child and the month of interest.

**Log-time.** The log of time is included as a control variable to capture non-linearities in aging effects.<sup>2</sup>

## RESULTS

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<sup>2</sup> I also tested models with time and time-squared, but neither of these controls produced significant results.

### **Economic Uncertainty – Men’s unemployment**

Contrary to explanations of economic uncertainty, men’s participation in the labor force had no effect on the timing of second births. Interaction terms indicating a change over time also were not significant. There was no significant variation by occupational category or activity status and the effect of men’s unemployment behavior did not change over time. Models are not shown in this paper, but are available upon request from the author.

### **Second Demographic Transition – Women’s occupational status**

Women’s second birth timing did not vary by occupational category or by occupational category over time, as indicated by the insignificant results of the interaction terms. Models restricted to working women show no difference by occupational category. When all types of activity are included, only parental leave is consistently different from other categories. Therefore, I focus on these results.

### **Parental leave**

The model presented in Table 2 shows the changing relationship between parental leave and childbearing. The estimates are the exponentiated raw logistic coefficients; the coefficients are the multiplicative effects on the odds of having a second birth in any one-month interval. A coefficient greater than 1.00 represents a positive effect on the odds, while a coefficient less than 1.00 represents a negative effect.

**(Table 2 about here)**

Table 2 provides evidence that the relationship between parental leave and childbearing changed throughout the post-Soviet period. Women who were on parental leave in 1997 had second birth rates that were almost twice as high as women who were

on parental leave in 1986, a result significant at the 0.05 level. The sum of the raw beta coefficients for the interaction term and main effects (Table 3) indicate that the effects of parental leave on second birth rates increased 20% from 1986 to 1992 (although this increase is not significant) and 54% from 1986 to 1997 (significant at the 0.05 level). These findings indicate that there has been an increase in the association between parental leave and second birth rates; the effect of parental leave on fertility has grown stronger over time.

Nonetheless, being on parental leave was not sufficient to counteract the overall decline in fertility during this period. When period effects are included in the calculations, the second birth rates for women on parental leave in 1997 were still only 47% of rates for women not on parental leave in 1986. On the other hand, second birth rates for women not on parental leave in 1997 were only 31% of the rates for women not on parental leave in 1986. These results suggest that extended parental leave prevented a decline in fertility by 16%. Of course, it is impossible to tell whether the women who took parental leave would have had higher fertility rates regardless of the actual act of taking parental leave.

The results also suggest that there has been a reversal in the effects of parental leave on fertility, although the reversal is not significant. In 1986, women on parental leave had second birth rates that were 21% lower than women who were not on parental leave in 1986. Possibly, women in 1986 were better able to combine work and childbearing, or Soviet state support facilitated having additional children while working. Selection effects could also be operating. Because state-sponsored maternity leave in 1986 was restricted to one year, women who were on parental leave for an extended time

may have faced obstacles that prevented working and childbearing. It is difficult to know from this analysis why the effects reversed.

Given that these findings represent changes that occurred within 20 years, it is not surprising that the significance of the results is not particularly strong. What is most important is the direction of the change, which is consistent throughout the period.

### *Associations with parental leave*

An analysis of the predictors and correlates of parental leave helps to shed light on the type of people who stay on parental leave and adjudicate between different explanations of the changing relationship between work and childbearing. Table 4 shows estimated log-odds from a logistic regression of period, political attitudes and education on parental leave. Period is not significantly associated with parental leave, indicating that women are no more or less likely to be on parental leave in 1986, 1991, or 1997. Education is only weakly associated with parental leave; women who completed vocational education were 54% more likely to be on parental leave, but the other levels of education were not significant. The relationship between education and parental leave did not change over time with one exception: women with a high school education in 1991 had a log-odds of being on parental leave that was 2.5 times as high as other women in the model.

The relationship between a lack of political opinion and parental leave, however, does change over time. The ULMS asked respondents to choose the type of political system which they would prefer for their children. I have collapsed the five response categories into three dummy variables: Western, Soviet, and “don’t know.” This question



was only asked at the time of the survey, not before the birth, so no conclusions about causality can be made. The childbearing experience could change attitudes, or the relationship between attitudes and childbearing could change over time. Women who reported “don’t know” in 1997 are 2.64 times more likely to be on parental leave than the other women in the model (significant at the 0.05 level). Thus, one can conclude that women on parental leave in the later period have weaker political opinions.

**(Table 3 about here)**

Parental leave is not associated with husband’s employment status, casting doubt on the emerging breadwinner model hypothesis. Simple correlations between husbands’ employment status and parental leave indicate that while the percent of husbands working declines in each period, there is very little difference by parental leave. Logistic regression models show no relationship between husbands’ labor force participation, either for main effects or interaction terms for any year, and for analyses which only include interviewed husbands. However, as discussed above, husbands’ information is subject to extreme non-response bias, since only 60% of husbands were interviewed.

**DISCUSSION**

The analysis undertaken in this study provides little evidence for explanations of economic uncertainty or women’s changing career orientation. Men’s employment status, job seeking behavior, and occupation had no significant effect on second birth rates, and the relationship between unemployment and second birth rates did not change over time. While one can argue that the operationalization of economic uncertainty on the individual level is crude, these results support other studies that show no consistent relationship

between men's unemployment and fertility in the former Soviet Union (Kohler and Kohler 2002, Perelli-Harris 2006). The analysis also shows that women's second birth rates did not significantly vary by occupation or change over time. Women with higher occupational status do not appear to be changing their fertility behavior more than women with lower occupational status. Although other aspects of the Second Demographic Transition may be emerging, there is little support for the hypothesis that more career oriented women are increasingly limiting childbearing.

The study does indicate that the relationship between parental leave and fertility changed after Ukraine gained Independence. Compared to Soviet women, post-Soviet women on parental leave decided to have second children at higher rates than women not on parental leave. The change in relationship indicates that the childbearing behavior of working and non-working women diverged. As discussed in the theoretical framework, the divergence could be due to relaxed Soviet work requirements allowing women to stay at home to raise children, accompanied by the expression of underlying gender norms in behaviors such as parental leave and childbearing behavior. The change in relationship also reflects an increase in opportunity costs for working women, costs that discouraged work disruptions. The decline in childcare facilities and maternity leave benefits most likely made it more difficult to combine work and childbearing. On the other hand, non-working women who wanted to have a second child may have found that working provided insufficient benefits to warrant an immediate return to the labor force. As jobs with flexibility and shorter hours became harder to find, women may have decided to complete childbearing sooner, in order to return to a career. These explanations could be

occurring separately or in combination; unfortunately, with this data, it is difficult to test which one is most appropriate.

The results of this study suggest that Ukraine is not simply experiencing a general shift towards the Second Demographic Transition. While some strata of the population may be postponing or eliminating higher parity births due to changing values and belief structures, others may be adopting more conservative behaviors that accord with their concept of distinct gender roles. Although this dataset provides little evidence to directly support the emergence of the breadwinner model - no association between parental leave and husband's employment status appeared for any period – the data do show an increasing association between lack of political opinion and parental leave. This evidence suggests that women who stay on parental leave in the post-Soviet period are less likely to adopt Western values. Therefore, even though the majority of Ukrainians still only have one child, the society seems to have begun experiencing a series of new trends – the postponement of first births by more highly educated women (Perelli-Harris 2006), increasing cohabitation and non-marital births (Derzhkomstat 2005), and a tendency for women who stay at home with their first child to have a second.

Note that the strengthening association between parental leave and fertility occurred concurrently with changes in parental leave policy. The duration of state-sponsored parental leave was expanded from 18 months to three years in 1992, the middle of the study period. Although state-sponsored allowances did not completely cover childcare expenses – they were barely tokens of support - they still may have encouraged women to take longer periods of parental leave. According to focus group respondents, Ukrainians expected the state to provide social assistance for three years

after the birth of a child, and even blamed the low fertility rate on the lack of state support (Perelli-Harris 2003). Thus, given the expectation for state-support in this society, an increase in child allowances for women on parental leave may in fact lead to an increase in fertility. Just such an increase occurred in April 2005; the Ukrainian government legislated a one-time payment of 3,384 hryvna (\$677) after the birth of a child, and 5114 hryvna (\$1023) to be paid throughout the course of the next year. It will be interesting to observe whether this payment has any effect on fertility.

In conclusion, this paper argues for an alternative explanation for the decline to very low fertility in the former Soviet Union. Thus far, very little micro-level evidence has been found for either the economic uncertainty or Second Demographic Transition arguments. Although these explanations may indirectly account for some of the decline, they neglect setting-specific nuances, especially regarding gender norms and cultural values. Rather than assuming that all individuals are on a path to becoming more autonomous, self-interested, and career-oriented, it is prudent to recognize the heterogeneity in the population. With the decline of Soviet work ideology, some couples may be acting on entrenched beliefs about the role of women in the home. As the evidence in this paper shows, these women now have higher second birth rates than working women.

**Table 1. Descriptive statistics by women's first birth cohort**

	<b>1986</b>	<b>1991</b>	<b>1997</b>
<b>N</b>	<b>320</b>	<b>308</b>	<b>260</b>
<b>Parental leave (%)</b>	22	27	29
<b>Other activities (%)</b>			
Working	73	61	52
Student	3	6	10
Job seeking	1	6	7
Activity missing	2	4	2
<b>Husband's employment (%)</b>	58	56	52
of those who were interviewed	95	88	85
(missing)	39	37	40
<b>Woman's education (%)</b>			
Less than secondary	9	6	7
Lower vocational	11	12	18
Technical	24	23	26
College degree	31	34	29
	25	24	19
<b>Region (%)</b>			
West	26	26	29
Central	26	22	22
East	48	52	48
<b>Urban (%)</b>	55	55	55
<b>Mother's age at first birth (mean)</b>	23	23	23

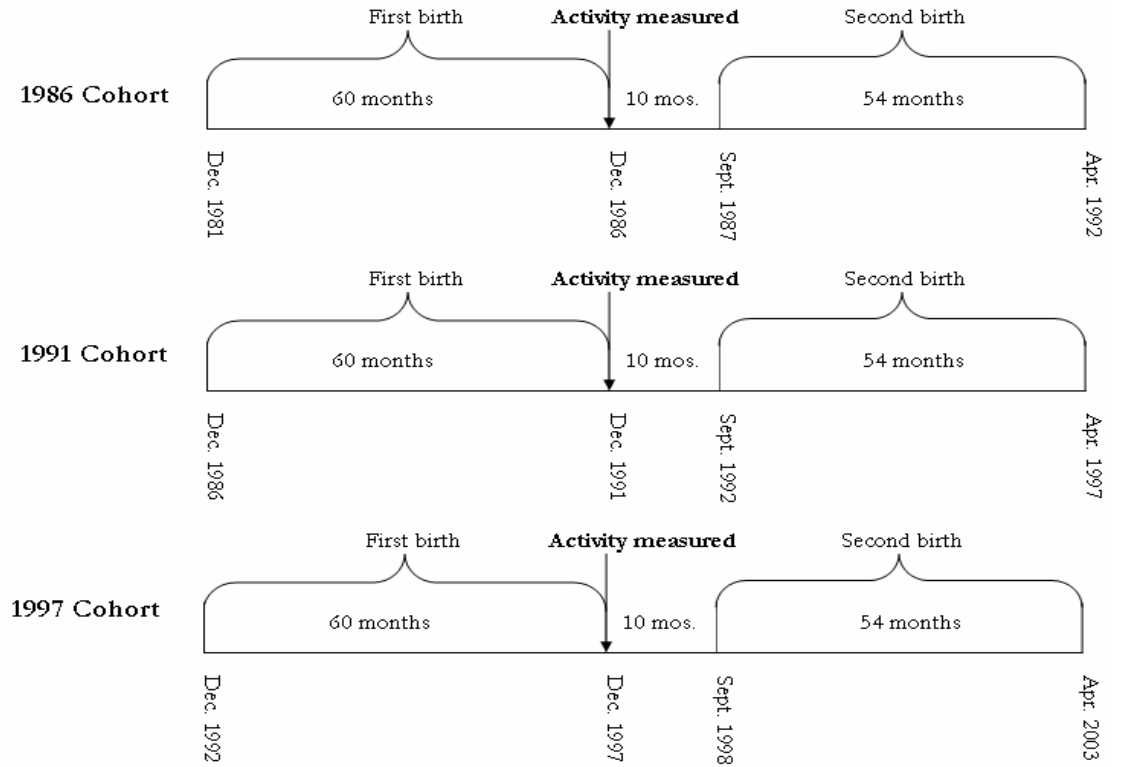
**Table 2. Discrete-time hazard model estimates of the influence of parental leave on second birth rates**

<b>Parental leave</b>		
All parental leave	0.79	
Interaction: parental leave in 1991	1.51	
Interaction: parental leave in 1997	1.95	*
<b>Period (Ref: 1986)</b>		
Period 1991	0.48	***
Period 1997	0.31	***
<b>Education (Ref: University)</b>		
Less than HS	0.89	
High School	0.94	
Vocational	1.14	
Technical	0.80	
<b>Region (Ref: West)</b>		
East	0.64	**
Central	0.62	**
<b>Urban</b>	0.80	
<b>Husband</b>		
Husband worked	1.05	
Husband interviewed	1.29	
<b>Controls</b>		
Months since 1st birth	1.00	
Mother's age at 1st birth	0.94	***
Log-time since main measure	0.86	**

**Table 3. Logistic regression estimates of covariates on parental leave**

<b>Period (Ref: 1986)</b>	
Period 1991	1.32
Period 1997	0.864
<b>Political attitudes (Ref: Western)</b>	
Main effect Soviet	1.169
Main effect don't know	0.799
Soviet and 1991	0.851
Soviet and 1997	1.529
Don't know and 1991	1.467
Don't know and 1997	3.039 *
<b>Education (Ref: University)</b>	
Less than HS	1.533
High School	1.352
Vocational	1.156
Technical	1.552 *
<b>Urban</b>	0.764
<b>Husband</b>	
Husband worked	0.807
Husband interviewed	1.47

**Figure 1. The temporal ordering of measurement and second birth timing for the three first birth cohorts.**





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