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OXANA SINYAVSKAYA* – SUNNEE BILLINGSLEY**

The importance of job characteristics to women's fertility intentions and behavior in Russia

1. BACKGROUND

Increasing women's employment and fertility rates are both primary political goals of ageing European states, including Russia. As women have increasingly taken on the dual roles of earner and carer in the household, a central theme in discussions surrounding women's fertility and employment is how easily these dual roles can be combined. Comparative international research has demonstrated a link between family policies that support earning and caring and fertility decision-making (Billingsley and Ferranini, 2014). Reconciliation of these roles may also be supported by specific working conditions that allow women to more easily meet work and family demands. In this paper, we explore how fertility intentions and outcomes vary across women working in jobs with different characteristics.

We locate this study in the context of Russia, where low fertility is a pressing issue and work has been a central part of women's lives for many years. The labor market in Russia dramatically changed after 1991; a shift from heavy manufacturing, construction and agriculture toward more personal services, trade and high skilled work (Gerber, 2012) also entailed a shift in the share of public vs. private employers, flexibility of work schedules, and the loss of employment security and firm-provided social benefits in many industries, such as child care (Fajth, 1999).

We analyze two stages of fertility decision-making: fertility intentions and actual childbearing. The behaviors that lead to having or not having a child result from a sequence of states (Miller, 2011). Fertility desires, intentions and proceptive or contraceptive behavior are distinct stages in which norms and personal preferences are antecedents in the process; both stable and new perceived constraints can create temporary or permanent dissonance between desires, intentions and behaviors (Ajzen, 1991; Miller, 1994). Although fertility intentions are a strong predictor of childbearing (Schoen *et al.*, 1999; Testa and Toulemon, 2006), the gap between average intended family size and fertility rates indicates that intentions are not always realized and disparities at the individual-level indicate that intentions are not reliable pre-

* Higher School of Economics, Russia and Maastricht University, The Netherlands.
** Stockholm University and Södertörns University, Sweden.
Corresponding author: Oxana Sinyavskaya; e-mail: iisp.sinyavskaya@gmail.com.

dictors (Morgan, 2001; Morgan and Rackin, 2010). Although we are not able to link fertility intentions and outcomes directly, we study the relationship between job characteristics and both outcomes to better understand the demand for children and the determinants of having children.

We also explore how job characteristics are related to both the entrance to parenthood and second parity births. Studying both parities will give us a more complete picture of how employment characteristics are related to fertility timing and levels in Russia. Our research design thus uniquely allows us to observe multiple stages in the process of decision-making and the main events over women's reproductive life course in Russia.

Our analysis is driven by the following research question: Is childbearing, or the plan to have a child, more likely when women are working in jobs with specific characteristics in Russia? Additionally, we explore whether specific attitudes seem to explain the association between job characteristics and fertility intentions.

2. WOMEN'S EMPLOYMENT AND FERTILITY IN RUSSIA

Although female labor force participation has declined since the Soviet era, it remains high relative to other economies in transition (Linz and Semykina, 2008). In 2010, 76% of women of active ages (16-54 years old) were either employed or unemployed. The activity rate for women aged 20-24 years old was 57%; and for women aged 25 to 44 - more than 80% (91% for those aged 40-44) (Rosstat, 2011)[1].

Russia demonstrates a peculiar type of labor market adaptation to macroeconomic shocks through keeping employment relatively high, but with greater flexibility of working hours and high elasticity of wages (Gimpelson and Kapeliushnikov, 2011; Linz and Semykina, 2008; Boeri and Terrell, 2002). This model entails high levels of labor turnover, of which voluntary exits constitute a significant part of all separations (Boeri and Terrell, 2002; Gimpelson and Kapeliushnikov, 2011). Due to a lack of "return" to job tenure in terms of earnings, workers are not rewarded for developing job-specific human capital and quit jobs easily. Moreover, in the 1990s workers that were young and female were often inclined to take private sector jobs that did not involve their previous skills (Clarke and Kabalina, 2000).

Economic transformation has also caused serious structural changes in the Russian labor market (Gerber, 2012). An apparent shift from employment in industry, construction and agriculture to the service sector occurred; the proportion of workers employed in the private sector has risen from 9.6% in 1980 to

[1] However, Russian activity rates of women aged 15 to 29 years old, constantly declining from 1992, are lower than in some other Western economies (e.g., Germany, Spain, Sweden), indicating that more women enter the labor market at later ages. See: http://laborsta.ilo.org/

46.1% in 2000 and 58.8% in 2011 (Rosstat, 2004; Rosstat, 2012). Not surprisingly, employment continually shifted from large and medium enterprises to small firms and self-employment, which caused a growth in informal jobs and nonstandard employment (Gimpelson and Kapeliushnikov, 2011; Brown *et al.*, 2006). At the same time, self-employment remains very limited in Russia as compared with other CEE countries (Earle and Sakova, 2000; Gerber, 2004). Nevertheless, self-employment, particularly without employees and unregistered, is very often an alternative to unemployment and inactivity (Gerber, 2004; Lukiyanova, 2012).

Large societal and economic transformation, however, did not change gender stereotypes about typical 'male' and 'female' jobs or gender segmentation in the labor market (Ogloblin, 1999; Ogloblin, 2005; Gerber and Mayorova, 2006). Women are often unskilled workers, low- or medium-level white collar workers (clerks) and professionals, particularly in the low paid 'budgetary' (public) sector. Greater prevalence of women in lower paid jobs typical of the Soviet economy has even increased during the transition (Ogloblin, 2005; Gerber and Mayorova, 2006). Unlike men, women prefer secure forms of employment; temporary jobs, informal jobs, and self-employment are predominantly male in Russia (Lukiyanova, 2012; Karabchuk, 2012).

The socialist economy produced mainly standardized, full-time jobs (Drobniç, 1997; Buckley, 1981) and so does the Russian economy. Most women, even those with several children, work on a full-time basis (Pailhé and Sinyavskaya, 2010). The share of women employed less than 31 hours per week has never exceeded 10% of all working women, which is rather low by international standards. Combined with an unequal gender distribution of household chores and childcare (Blum *et al.*, 2009a), working full-time creates a 'double burden' for Russian women, which might negatively impacts fertility behavior.

With women employed mostly full-time, availability of other reconciliation instruments assumed even greater importance. Since late in the Soviet era, two main reconciliation policies were public childcare and maternity/parental leaves, which allow women to care for their children for a certain period of time without losing their jobs (see Teplova, 2007; Gerber and Perelli-Harris, 2012). Maternity leave[2] is paid to female employees (working under permanent or temporary employment contracts), contracted military persons, registered unemployed, and students. It can also be paid to registered self-employed women if they voluntarily contributed to the social insurance fund for at least six months before they apply for leave. Paid parental leave can be provided to any parent or close relative of the child[3] and benefits are paid in proportion to the wage.

[2] Maternity leaves starts 70 days before expected delivery, and ends 70 days after.

[3] Paid parental leave starts immediately after maternity leave and lasts until a child is 18 months old. At that time, women employed before childbirth can also get unpaid mparental leave until a child's 3rd birthday. In most cases parental leaves are taken by mothers.

Since 2007, the Russian government has expanded child care benefits to people who are not employed. These benefits are equal to the minimum level of the paid parental leave benefit, differentiated by birth order (higher for the second and subsequent birth) and paid until a child is 18 months. There is no explicit regulation under what conditions registered self-employed women can take parental leave; however, self-employed are just as entitled to child care benefits as women who are not employed or who are informal workers.

Although family policies were introduced by the governments, the availability of many family-related benefits and the variation in the quality of formal childcare was strongly related to employment status and firm characteristics in the USSR (Teplova, 2007). In the 1990s, most kindergartens were either closed or provision shifted from employers to municipalities.

The "gap between policy and practice" identified by Dulk and Peper (2007) in the Netherlands also exists in Russia; firms differ in terms of work-life policies, particularly those related to childbearing and childrearing. While childcare may not be provided in or near the workplace, industry-specific provision continues in the form of childcare subsidies or preferential treatment through short-listing women who are in the queue for childcare (e.g., civil servants, military personnel, police, and teachers). Russian employers may also violate a ban on firing pregnant women and mothers with small children or refuse to follow maternity and parental leave regulation. Much research has confirmed a deterioration of job rights during the development of the private sector in Russia, including reimbursement of sick leave or maternity/parental leaves (Clarke and Kabalina, 2000; Liborakina, 2001; Linz and Semykina, 2008)[4]. According to Linz and Semykina (2008), the perception of job insecurity is lower among women working in public sector jobs or who have a high occupational status such as managers and professionals.

Following the beginning of the economic transition, the total fertility rate (TFR) in Russia fell from 2.2 children per woman in 1987 to 1.37 in 1993 and 1.16 in 1999 (Zakharov, 2008). By 2011, it had increased to 1.6[5], which is still substantially below the population replacement rate. Completed cohort fertility does not fluctuate as dramatically, although it is steadily declining, and for the cohorts born in the 1970-1980s it will be no more than 1.6 children per woman (Zakharov, 2008). Most women eventually have at least one child, and the proportion of childless women remains low compared to some developed countries (Frejka, 2008; Zakharov, 2008). Even though the two-child family has become much less prevalent (Philipov and Jasilioniene, 2008; Billingsley, 2011; Frejka, 2008; Frejka and Sobotka, 2008), the two-child ideal family model is still dominant in Russia and women with three or more children are increasingly fewer.

[4] However, Gerber and Perelli-Harris (2012) did not confirm lower compliance of employers with maternity leave regulation.

[5] http://demoscope.ru/weekly/app/app4007e.php.

The calendar of young adult life course events is condensed for Russians, particularly women, with many events happening at almost the same age - completing education, finding the first job, forming a partnership and entering parenthood (Blum *et al.*, 2009b). GGS data show that almost 30% of women born in 1965-74 had their first birth before completing education (Blum *et al.*, 2009b). Russia has not escaped the widespread postponement of parenthood visible across Europe in recent decades; however, it is developing at a slower speed than in Central and Eastern Europe (CEE). The mean age at first birth was 22.5 in 1994, 24.0 in 2004, and 24.8 in 2010[6]. Also, many studies indicate that despite increased contraceptive use in cohorts born in 1970s or later, a significant number of pregnancies, particularly the first ones, are still unintended (Mills, 2004; Zakharov, 2008; Perelli-Harris and Gerber, 2011).

Research on the relationship between reconciliation issues related to women's employment and fertility in Russia is sparse. Gerber and Perelli-Harris (2012) found that the probability of taking an extended maternity leave varied across branches, with fewer women taking longer leaves in health care and social protection, communication, public administration, finance and insurance. They conclude that maternity leave helps reconcile women's employment with fertility since it supports women's attachment to the labor force after the first birth and increases probabilities of second conceptions.

3. THEORETICAL CONSIDERATIONS

3.1 *Job characteristics and fertility*

According to economic theory, decisions on whether and when to have a (another) child depend on a comparison of benefits and costs associated with childbearing that are subject to budget constraints. Costs of having children include direct costs of raising children, and indirect costs that include lost earnings by a woman when she takes a break from employment to care for a child, as well as earnings that could be lost due to her human capital erosion related to career interruption (Walker, 1995). Additionally, theoretical links have been made between childbearing and family-friendly work cultures, career prospects, earnings, social status, penalties related to leave-taking, and non-pecuniary benefits. At the heart of many of these discussions is the "reconciliation" issue: the ease with which women can reconcile the demands of work and family is relevant to their employment and fertility choices. Three major policy instruments are directed at reconciliation, including individual taxation, paid maternity / parental leaves, and child care (Esping-Andersen, 2009).

Availability of formal and informal child care substitutes maternal child care, which increases a mother's time available for work, decreases her period of unemployment after childbirth, and stimulates earlier first births through the reduction of opportunity costs (Happel *et al.*, 1984). Direct costs of having chil-

dren depend on the prices of childcare. Universal access to full time, free or subsidized child care eliminates (in full or partly) the consideration of this cost to childbearing decision-making (Del Boca, 2002; Del Boca *et al.*, 2008; Heckman and Walker, 1990). Earnings-related benefits paid during the period of parental leave reduce opportunity costs of having children and thus may contribute to the positive correlation between female employment and fertility that has recently materialized (Heckman and Walker, 1990; Gauthier, 2007; Björklund, 2006; Gerber and Perelli-Harris, 2012). However, maternity / parental leaves that are too long may lead to lengthy career interruptions and thus increase opportunity costs of childbearing and lead to the deterioration of human capital (Neyer and Andersson, 2008; Brodmann *et al.*, 2007; Esping-Andersen, 2009).

Besides reconciliation of work and family demands being facilitated at the institutional level, factors at the firm level may also be relevant. Work culture and work conditions may alter the uptake or supply of statutory family-related benefits. Dulk and Peper (2007: 56) propose two dimensions of organizational work-life culture that can influence whether employees make use of work-life provisions: First, managers, co-workers and the organization offer varying degrees of support for making use of the policies. The second dimension refers to the barriers workers face such as the demands of one's job. Highly competitive environments, for example, are likely to encourage voluntary disregard of benefits. These mechanisms imply that the most supportive work environment for childbearing is only as supportive as statutory rights decided at the national level. However, certain firms may facilitate dual roles of earning and caring more than others, regardless of the policy context, because they may have a more family-friendly workplace culture. The idea of a family-friendly culture includes aspects such as flexibility of work hours and work location, as well as absence allowance (McDonald, 2005).

Labor market institutions mediate the effect of reconciliation policy instruments on the compatibility of female employment and fertility as well. Paid maternity / parental leaves and other statutory guarantees are often related to permanent employment, and thus may contribute to postponement of childbearing in countries with high levels of unemployment and temporary jobs. Empirical studies have found a positive association between permanent contracts and entering parenthood in Italy, Spain and France (De la Rica and Iza, 2005; Pailhé and Solaz, 2011; Vignoli *et al.*, 2012) and the transition to a second birth in Europe (Adsera, 2011). Greater availability of part-time jobs expands opportunities of women with several and particularly small children to be employed. In Scandinavian countries, part-time employment is often used by women as a temporary solution between maternity leave and full-time employment (Esping-Andersen, 2009). Also, flexible forms of employment (shorter hours, flexible working schedule, etc.) facilitate childcare arrangements and may also contribute to higher fertility (Del Boca, 2002; Del Boca *et al.*, 2008).

A large public sector provides employment that is thought to provide both secure and flexible work conditions, including part-time opportunities, flexible work schedules and absence allowance. Particularly in Scandinavian countries (Esping-Andersen, 2002), public sector employment has been important for women being able to combine motherhood with employment and increasing fertility. Large public sector employment, and the availability of part-time or flexible schedules specifically, appear to be positively related to fertility decisions to some other European countries as well (Ariza *et al.*, 2003; Adsera, 2011; Conti and Sette, 2013; Billari *et al.*, 2009). However, Ariza (2003), found part-time employment to be conducive to work-family conciliation only in some contexts across Europe (notably Belgium, Ireland and the Netherlands) and neither research based on the US (Budig, 2003) nor on Spain (Martín García, 2010) found a difference between full-time and part-time jobs in their effect on fertility.

Having the flexibility to manage one's own schedule in particular may allow women to combine employment and parenthood with less conflict (Glass and Camarigg, 1992). The type of work schedule may also influence the accessibility of childcare arrangements and whether women are able to combine motherhood with work. Parents may choose different work schedules to increase the total parental time spent with children (Presser, 1989); shift work and non-standard flexible schedules can also facilitate the use of various kinds of formal and informal child care (Brewster and Rindfuss, 2000). However, studies have shown that work in the evenings can reduce the time spent on parental childcare (Rapoport and Le Bourdais, 2008); evening and night shifts or irregular work schedules may also lead to higher levels of stress and depression among parents (Perry-Jenkins *et al.*, 2007). Whether employers offer childcare facilities (Dulk and Peper, 2007) would also improve women's capacity to combine childrearing and careers. Although rates of self-employment have been negatively linked to fertility in OECD countries (Adsera, 2004), there is some evidence that self-employment is an option for mothers of young children in the US (Wellington, 2006) and that flexibility in work schedule is a motivation behind self-employment in Russia (Lukiyanova, 2012).

On the basis of theory and past research we expect (H1) a positive influence on all childbearing outcomes of public sector employment, permanent employment, part-time work, self-employment, and having a flexible schedule or location of work. In the particular case of Russia, we assume public sector jobs to be more secure and "family-friendly", as in other contexts, and private sector jobs to compensate less "family-friendliness" by being (but not necessarily) better paid. Permanent or fixed-term contracts are strongly related to many statutory guarantees (sick leaves, maternity or parental leaves, or annual paid vacation), as Russian legislation mandates these rights for employees with labor contracts only. We expect self-employed individuals to

have more flexible working hours and the possibility to work some time at home, which should alleviate the conflict between work and care roles.

3.2 *Decision-making across the reproductive life-course*

Women have long been argued to have fixed preferences toward work and having children (Heckman and Willis, 1977) as well as preferences about when they enter parenthood. The Theory of Planned Behavior (TPB) (Ajzen, 1991; Fishbein and Ajzen, 1975) has been widely used in social-psychological and demographic literature to explain the specific process underlying childbearing decision-making and behavior and has been instrumental to understanding the myriad factors that shape this process. Key contributions of this theoretical perspective are 1) childbearing behavior is based on rational choice and purposeful action, and that 2) fertility desires, intentions and behavior[7] are all discrete states in a multi-step process. The first stage in this process revolves around desires, which come closest to the unbound preferences individuals have toward the timing of entering parenthood and family size. On the basis of these desires and taking into account constraints (such as fecundity, partner's desires, income and wealth), plans for childbearing in the future are made, which are referred to as intentions. Fertility intentions predict behavior inasmuch as they are parity-specific and refer to timing in the near future. Fertility behavior and outcomes are the realization of fertility intentions, to the extent that a pregnancy is planned, but realization may be interrupted by new or stable perceived constraints. Dissonance between intentions and behavior may also occur due to unintended births, which reflects the influence of actual behavioral control (Ajzen and Fishbein, 2005).

In keeping with research that identifies multiple stages in the childbearing decision-making process, we analyze both intentions and actual childbearing in this study, which allows for variation in the influence of job characteristics at different stages of the childbearing process. No a priori reasons exist to expect job characteristics to influence intentions and conceptions differently according to the literature. H2: Our second hypothesis is that the relationship between job characteristics and both intentions and behavior operates similarly. However, we may consider intentions to have a child in the near future as indicating that an individual feels close to being ready to have a child, whereas the event of conception indicates that the required conditions have indeed been met (to the extent that conception occurs through proceptive behavior). In this sense, we may expect conceptions to point more closely to the conditions considered most conducive to childbearing. On the other

[7] We use the words "behavior" and "outcome" in this paper to indicate the event of a birth, but acknowledge that proceptive/contraceptive behavior may not lead to the desired outcome and that a birth may not be a result of proceptive behavior (Miller and Pasta 1995).

hand, intentions more purely reflect motivations behind childbearing because they are not influenced by unplanned pregnancies, as conceptions may be (Thomson, 2003).

Women's employment situation and childbearing behavior are the outcomes of a series of decisions and considerations that women undertake, as well as external constraints. Which decision comes first, in terms of work or childbearing, has been the subject of debate, and findings suggest that employment and fertility processes are interdependent (Budig, 2003). In particular, women may both sort themselves into jobs based on their childbearing plans or preferences and manifest their fertility desires as intentions and behavior when conditions support childbearing. Taking the interdependence of employment and childbearing decision-making processes as a starting point, we assume women choose jobs based on career and childbearing plans, particularly those that make it more convenient to have children and continue working - such as jobs with flexibility regarding where and when the job is done (Desai and Waite, 1991). In addition, working in a job with certain characteristics may enable women to transform desires into intentions and act on those intentions.

Women may have attitudes toward work and employment that reflect their specific orientation toward family and career as well as how conflicting they perceive these two roles. Desai and Waite (1991) find that the relationship between fertility and employment depends somewhat on this orientation, as the convenience of combining the demands of work and family does not influence work and childbearing for strongly work-committed women. Budig (2003) observed the relationship between work and fertility net of the influence of attitudes and found that attitudes toward work, children and gender equality influenced both fertility and employment outcomes. Likewise, we expect (H3) women who believe work and family roles conflict will have lower fertility intentions and fewer births whereas women who have strong family orientations will have higher fertility intentions and more births.

The influence of employment and fertility processes on each other shifts over time (Budig, 2003). In particular, we may expect changes depending on women's stage in her life course (childless vs. parent), which indicates that there may be parity differences in how the relationship between employment characteristics and childbearing functions. Some evidence also suggests that preferences themselves may change over the life course; in particular, new mothers experience a decline in work commitment that is temporary (Evertsson, 2013). In addition, women may adjust their preferences as a result of the learning they experienced when entering parenthood (Billingsley and Ferranini, 2014; Brewster and Rindfuss, 2000; Stolzenberg and Waite, 1977; Neyer *et al.*, 2011). When women are childless, they may be able to assess or imagine how family and work aspirations may conflict as they make career and family choices, but entering parenthood gives first-hand knowledge of this.

After entering parenthood and returning to work, new mothers have learned more about how easy it is to combine work and parenting and whether they can overcome constraints related to employment (e.g. to find a new job), which may influence whether a second child is planned (Billari *et al.*, 2009; Dommermuth *et al.*, 2011). Changing preferences may partially explain the dissonance that can be observed at different moments in the life course between intended family size, fertility desires, parity-specific intentions, and fertility behavior/ outcomes. On the whole, we expect (H4) job characteristics to be more related to parity decisions and behavior related to the second child rather than the first. For mothers, we should see that women who plan to have another child and return to work will work in a job that facilitates reconciliation or is easy to exit and re-enter; likewise, women who desire a second child will be more able to plan this birth if job conditions are suitable.

In terms of how parity-specific transitions relate to general fertility patterns in Russia, we are mostly observing the determinants of the timing of first births when we observe childless women's fertility intentions and behavior because having at least one child remains essentially universal in Russia (Zakharov, 2008); if employment circumstances are related to the timing of first childbearing, we argue that 1) women foresee the need for work that facilitates combining parenthood and employment, or 2) they have chosen work that is easy to leave and re-enter (Desai and Waite, 1991). When we examine how the work situation influences second birth intentions or behavior, we are observing the influence on both the timing and occurrence of the second birth.

4. FERTILITY INTENTIONS

4.1 *Data and methods*

We analyze fertility intentions using the Russian Generations and Gender Surveys (GGS), a part of the international Generations and Gender Program (GGP), which 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"[8]. Three waves of the Russian GGS were conducted in 2004, 2007 and 2011 using a multistage probability sample representing the whole population of Russian Federation. In the first wave (11,261 respondents aged 18-79 years old), the response rate was particularly low in the urban areas of St. Petersburg and Moscow (around 15%), but was 57% in all other areas (Kosolapov and Zakharov, 2005). The total samples of the second and third waves are respectively 11,117 (18-82 years) and

[8] http://www.unece.org/pau/ggp/welcome.html. See more in (Vikat *et al.*, 2008).

11,184 respondents (18-86 years), which include both panel and new respondents. The total sample attrition for seven years is 50% (balanced panel sample: 5,622 observations), and it is unequally distributed across different settlements and regions[9]. Due to the small number of panel cases and the unequal distribution of the sample attrition, we pool the waves into a cross-sectional sample and take into account correlation between repeated observations of the individual by computing standard errors that are adjusted for clustering at the individual level.

Two working analytical samples are derived from the total pooled GGS sample: one for first birth intentions and another for second birth intentions. To study the first birth intentions, we restrict our sample to childless female respondents under 40 (born 1964-1993). The second birth intention analyses are based on a sample of female respondents under 40 with only one biological child under 14. Since first births remain almost universal in Russia (Zakharov, 2008), there is no need to control for selectivity of the sample of women with parity one. The corresponding working samples include 2,160 and 1,862 respondents, respectively. We have two dependent variables in this section: (1) intention to have a first child, (2) intention to have a second child. The dependent variable is based on respondents' replies to the following GGS question: "Do you intend to have a/another child during the next three years?" with responses coded from 1 "definitely no", 2 "probably no", 3 "probably yes", 4 "definitely yes". We use ordinal logistic regression to estimate the correlates of intentions to have a (another) child, which allows the outcome to vary along a continuum of certainty (Thomson and Brandreth, 1995; Thomson, 1997).

4.2 *Measures*

Our main explanatory variables include women's activity status and job characteristics. Based on respondent's replies about the main activity at the time of interview, women are categorized as employed (employees, self-employed, working students, and working pensioners), unemployed, on leave (for women with 1 child) or those with no labour force participation (NLFP) (housewives, non-employed students, non-employed pensioners, or those inactive due to serious illness or disability).

For employed women the *main indicators of interest* used in this analysis are firm ownership, type of contract and being self-employed, "family-friendly" job characteristics (part-time employment, flexible working schedule for family reasons, possibility to work at home, and access to childcare services or child-related leave benefits provided by the firm), and working schedule.

Firms are grouped into three categories of ownership: private firms, which

[9] The models will include a dummy variable to capture whether the survey took place in either St. Petersburg or Moscow, or Primorskyi krai, which should account for any bias introduced by this low response rate.

also include informal workers; public firms; and those with mixed ownership (see Appendix A-1).

In GGS there are four contract types: permanent labor contract, fixed-term labor contract, contractor's agreements, and verbal agreements (no contract). Given a small number of female respondents in our working samples employed by fixed-term labor contracts or contractor's agreements, we merged them into a single category. In addition, data on firm ownership, type of contract, availability of statutory benefits and possibility to have a flexible schedule are available in GGS for employees only. Thus, we explicitly control not only for the type of contract but also for whether a respondent is self-employed or not in all our models.

Among other job characteristics available in GGS, we include the type of work schedule: day-time on weekdays, shift work, timetable, or other (including evenings and weekends and irregular work) (see Appendix A-2 for more information on the categories). GGS also provides other information about "family-friendly" job characteristics such as whether respondents are entitled to childcare services or child-related leave benefits provided by the firm, allowed flexible time arrangements for personal reasons, work partly at home, work full-time or part-time. The number of hours normally worked is also provided and we construct a part-time measure as a combination of answers "part-time employment" and works less than 31 hour per week (the normal duration of a working week in Russia is 40 hours for most jobs, and 36 hours for some occupations, such as teachers).

Since we cannot explicitly control for an income effect (women's wage) on fertility intentions, we control here for occupational class status. Following Billingsley's (2011) study on Russia, we control for occupational class with a measure modeled after the European Socioeconomic Classification (SeC), which is based on the Erikson-Goldthorpe-Portocarero (EGP) schema (See Appendix A-3).

We introduce two attitudinal variables related to combining paid employment and motherhood. They measure the extent to which respondents agree with certain statements. The first measures the personal importance of paid employment versus homemaking: "*Looking after the home or family is just as fulfilling as working for pay*". The second captures the subjective consequences of the work-family conflict: "*A pre-school child is likely to suffer if his/her mother works*". Replies to both statements are coded with a 5-grade scale from "strongly agree" to "strongly disagree". In the final specifications of our models we use them recoded into binary variables ("agree" and "strongly agree" vs. other replies). To assess the moderating effect of attitudes on the relationship between employment characteristics and fertility intentions, we introduce interactions between attitudes and our employment characteristics.

In regression analyses of fertility intentions we control for the effects of the following variables: age (and age squared), women's educational enrollment and level (low, middle or high[10]), number of siblings, partnership status (in cohabiting union, or not), urban/rural residence, whether the respondent was surveyed in St. Petersburg, Moscow, or Primorsky krai, and year of survey. For second birth intentions, we also control for child's age.

4.3 *Descriptive analyses*

Descriptive analysis of the analytical samples shows that among childless women below 40 years old, 45% are NLFP and 6% unemployed (share of NLFP declines from 84% among 17-19 year old childless females; to 47% in a 20-24 group, and to 17% among 25-29-year-old). For women with one child below 14-years-old, 18% are NLFP, 4% are unemployed and 16% on maternity/parental leave.

We also assess how family-friendly different types of contract, firm ownership and self-employment appear to be in contemporary Russia (Table 1). The majority of female employees have access to either sick leave or paid maternal and parental leave when necessary. However, some respondents may not know if they have a right to paid leave (Liborakina, 2001), as coverage does not reach 100% even for public sector jobs and permanent labor contracts in which legislated rights are the most likely to be upheld. Indeed, coverage of legal arrangements appears higher among women who have already entered parenthood (not shown here). In whole, coverage by permanent labor contracts and availability of different leaves are strongly correlated, which indicates high compliance of employers with the current regulation of leaves. As expected, public sector jobs provide better access to statutory arrangements.

On average, only about 6% of female employees reported that their employers could provide free or subsidized childcare when necessary. Not surprisingly, privileged access to formal childcare is higher among women employed in the public sector.

As we expected, flexibility of employment is higher among self-employed; almost a third of them work (always or sometimes) at home and over a third work part-time. Informal employment also compensates a lack of statutory guarantees and security with greater flexibility. The least flexible is permanent paid employment. Public sector employment is less flexible with the exception of the possibility to work shorter hours, which is not surprising given that a significant proportion of public sector employment accounts for education and health.

[10] Respondents have low education if they completed primary vocational education or less and do not have full secondary school; they have high education when they graduated from the university.

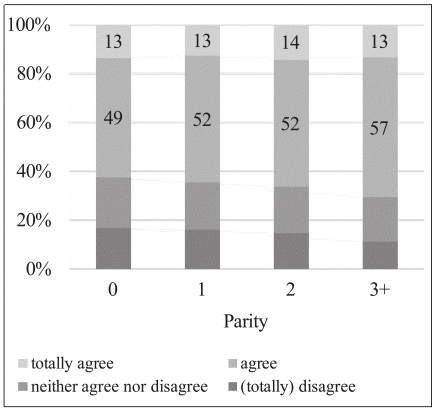
Table 1 – *Job characteristics across types of contract and firm ownership in Russia, GGS 2007-2011 (per cent)*

	Statutory arrangements				Beyond statutory arrangements	Part-time (shorter hours included)	Possibility to work at home or have flexible working hours		
	maternity leave	parental leave	both	sick leaves	subsidized / free childcare		flexible working hours	(at least some) work at home	sometime at home, sometime at the office
Self-employed	n/a	n/a	n/a	n/a	n/a	34.9	n/a	31.0	18.6
Employees:	85.3	82.5	82.3	86.5	6.6	10.6	23.8	1.7	1.0
- by the type of contract:									
Permanent labor contract	91.9	88.9	88.7	92.8	6.6	10.4	22.5	1.5	1.0
Temporary labor contract or subcontract	73.5	70.1	69.3	74.6	9.5	12.1	27.3	3.0	1.1
Verbal agreement	19.6	20.3	19.6	24.1	1.9	11.4	36.1	1.9	1.3
- by firm ownership:									
Private firm / person	71.8	67.7	67.2	73.6	3.0	6.4	29.7	1.8	1.1
Public	98.4	97.1	97.0	98.9	10.4	16.0	17.9	1.3	0.6
Mixed	95.4	91.2	91.2	95.4	6.9	6.5	21.3	3.7	2.8
Total	81.1	78.4	78.2	82.2	6.2	11.8	22.7	3.2	1.9

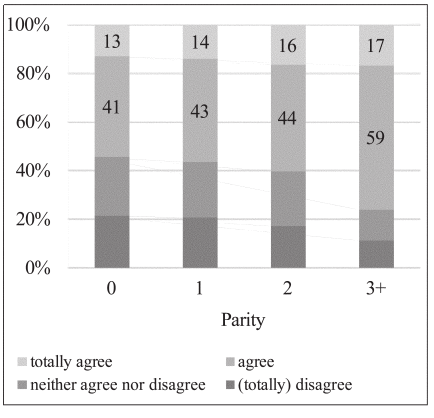
Note: The sample includes all women below 40 in paid employment at the time of the survey.

We also present women's attitudes toward employment and motherhood. Despite the long tradition of women's high labor force participation, the majority of Russian women believe that looking after the home or family is just as fulfilling as working for pay (Figure 1). The proportion of women that agrees with this statement increases with parity. In addition, more than half of the respondents believe that preschool children suffer when their mothers work. The proportion of women who believe mothers' employment entails negative consequences for children increases with parity. Even among childless women and women with one child, most of whom are employed, the proportion of those who believe there is a conflict remains high. This may be a manifestation of traditional attitudes toward childcare, such as the belief that the mother should play a more crucial role in childrearing[11], or it may reflect the frustration and consequences related to the limited availability of high-quality formal childcare.

Figure 1 – *Attitudes of women toward family and employment in Russia, by parity, GGS 2004-2011*



a. Looking after the home or family is just as fulfilling as working for pay



b. A pre-school child is likely to suffer if his/her mother works

4.4 *Regression analyses*

Selected results of the ordered logistic regressions of intentions to have a first and a second child are presented in Tables 2 and 3, respectively. Full model

[11] The deep inner conflict between work and family orientations is confirmed by Soviet researches as well. In the Soviet Union, family was a major source of life satisfaction and family values dominated attitudes of married women in the 1970s (Golofast, 2006). A survey on possible (projected) time use of young workers conducted in the 1960s showed that almost 42% of them aimed at spending time with the family and 23% on education, compared to only 8% on the main job and 6% on an additional job (Zdravomyslov and Yadov, 2003).

results are presented in Appendix A-4. We construct three models for each parity. Model 1 for intentions includes the same variables as Model 1 for conceptions: the basic control variables, labor market status, occupational class as well as firm ownership and whether the respondent is self-employed. The reference categories are being an employee, and working for a private firm. The only variable significantly reducing the odds of planning the first birth (Table 2) is being NLFP. This may indicate that inactive women want to postpone their first birth until they get a job. No variable of interest is significant at least at 5% level in Model 1 for second birth intentions (Table 3). However, self-employment is related to higher odds of planning a second birth than being an employee (significant at 10% level).

Model 2 introduces "family-friendly" characteristics, schedule type and contract types (that can be interpreted as a proxy for stability and access to statutory guarantees) into the first model. The most important factor for intentions to become a mother or to have a second child in the next three years is the possibility to work at home at least some time, which gives women more flexibility in arranging childcare and caring for a sick child. Flexibility of employment is more valued by women with 1 child, which is confirmed not only by a larger coefficient of this variable but also by the significant association of having the possibility to change the work schedule for family reasons. Odds ratios of first birth intentions are also higher for women having a timetable schedule (e.g., 24 hours work and 48 hours rest), which can also be interpreted as a flexible work schedule. Interestingly, the introduction of "family-friendly" job characteristics reduces the statistical significance of the association between self-employment and second birth intentions. Contrary to expectations, public sector employment is negatively related to plans to have a first birth, and insignificant (although positive) for plans to have a second child. The group of public sector employees is heterogeneous (e.g. employed in education, health care, civil service, etc.) but we can assume that, on the whole, public sector wages and benefits are more related to tenure than in the private sector, which may encourage women to postpone the birth of the first child.

Model 3 includes two additional attitudinal variables. Women who believe they can feel as fulfilled taking care of children and the home as they do in paid employment tend to have higher odds of positive fertility intentions, particularly related to first births. The belief in a potentially negative effect of mother's employment on children is associated with lower odds of positive second birth intentions. Introducing attitudes into the model hardly changed the correlation between employment characteristics and fertility intentions. The introduction of the interactions between attitudes and job characteristics did not improve the model fit overall, and we do not present these results.

Table 2 – *Ordered logistic regression of first birth intentions in Russia: the effect of employment characteristics, childless women*

	M1: Labor market		M2: M1 + "Family-friendly"		M3: M2 + Attitudes	
	Odds	Robust s.e.	Odds	Robust s.e.	Odds	Robust s.e.
Labor market status / self-employment						
NLFP	0.50 *	0.14	0.58 #	0.18	0.57 #	0.18
Unemployed	1.05	0.25	1.21	0.35	1.21	0.35
Employee	1		1		1	
Self-employed	1.07	0.33	1.10	0.38	1.09	0.38
Firm ownership						
Private firm	1		1		1	
Public firm	0.79 #	0.10	0.75 *	0.10	0.75 *	0.10
Other firm	0.86	0.16	0.84	0.15	0.83	0.15
Occupation						
Manual worker	0.76	0.21	0.69	0.19	0.69	0.20
Low mid-grade employee	1		1		1	
Interm.employee	1.13	0.17	1.07	0.16	1.08	0.17
Professional/salariat/self-employed	1.12	0.17	1.08	0.16	1.10	0.17
Type of contract						
Permanent labor contract			1.20	0.24	1.19	0.23
Temporary labor contract / subcontract			0.96	0.23	0.96	0.22
Verbal agreement (no contract)			1		1	
"Family-friendly" job characteristics						
Employed part-time			0.94	0.18	0.94	0.18
Work sometimes at home, sometimes at the office			2.26 *	0.89	2.23 *	0.88
Flexible schedule for family reasons			1.04	0.13	1.04	0.13
Free / subsidized childcare			1.52 #	0.35	1.49 #	0.34
Schedule						
Weekday schedule			1		1	
Shift work			1.03	0.19	1.03	0.19
Timetable			1.75 *	0.47	1.75 *	0.46
Other			1.01	0.26	1.01	0.26
Attitudes						
Agrees that a preschool child is likely to suffer if her/his mother works					1.00	0.08
Agrees that looking after the home / family is just as fulfilling as working for pay					1.19 *	0.10
Statistics						
N	2160		2160		2160	
ll	-2616.5		-2610.1		-2607.9	

Note: Model controls for being surveyed in St. Petersburg, Moscow or Primorsky krai, number of siblings, partnership status, urban/rural location, educational attainment, age, and year of survey.
Statistical significance: # = 10%, * = 5%, ** = 1%, *** = 0.1%.

Table 3 – *Ordered logistic regression of second birth intentions in Russia: the effect of employment characteristics, women below 40 with 1 biological child below 14*

	M1: Labor market		M2: M1 + "Family-friendly"		M3: M2 + Attitudes	
	Odds	Robust s.e.	Odds	Robust s.e.	Odds	Robust s.e.
Labor market status / self-employment						
NLFP	1.02	0.19	1.43	0.39	1.45	0.40
Unemployed	1.10	0.27	1.55	0.49	1.55	0.49
On leave	0.93	0.18	1.31	0.37	1.31	0.37
Employee	1		1		1	
Self-employed	1.68 #	0.48	1.72	0.67	1.73	0.67
Firm ownership						
Private firm	1		1		1	
Public firm	1.13	0.14	1.17	0.15	1.16	0.15
Other firm	0.96	0.22	0.95	0.21	0.93	0.21
Occupation						
Manual worker	0.70 #	0.13	0.70	0.14	0.71 #	0.14
Low mid-grade employee	1		1		1	
Interm.employee	1.09	0.16	1.10	0.17	1.10	0.17
Professional/salariat/self-employed	0.96	0.15	0.97	0.15	0.95	0.15
Type of contract						
Permanent labor contract			1.21	0.28	1.21	0.29
Temporary labor contract / subcontract			1.65 #	0,47	1.64 #	0.47
Verbal agreement (no contract)			1		1	
"Family-friendly" job characteristics						
Employed part-time			0.95	0.17	0.96	0.17
Work sometimes at home, sometimes at the office			3.97 **	1,97	4.01 **	1.99
Flexible schedule for family reasons			1.36 *	0,17	1.34 *	0.17
Free / subsidized childcare			1,13	0,25	1.11	0.24
Schedule						
Weekday schedule			1		1	
Shift work			1.08	0.21	1.07	0.20
Timetable			1.20	0.31	1.20	0.31
Other			0.96	0.27	0.98	0.28
Attitudes						
Agrees that a preschool child is likely to suffer if her/his mother works					0.83 *	0,08
Agrees that looking after the home / family is just as fulfilling as working for pay					1.12	0.10
Statistics						
N	1862		1862		1862	
ll	-2353.40		-2344.02		-2341.13	

Note: Model controls for being surveyed in St. Petersburg, Moscow or Primorsky krai, number of siblings, partnership status, urban/rural location, educational attainment, age, and year of survey.
Statistical significance: # = 10%, * = 5%, ** = 1%, *** = 0.1%.

5. CONCEPTION LEADING TO A BIRTH

5.1 *Data and methods*

The Employment and Education Survey (EES)[12] was used to study fertility behavior and employment histories. It was administered in 2005 to 18-55 year old men and women who were a sub-sample of the 2004 Russian GGS sample. It covers all childbearing, employment and educational activity over the life of the respondent since January of the year he or she turned 17. The response rate for this survey was 86%[13]. We include only women born in 1970 or later, which means we observe women from age 17 up to age 35 in this sample. We exclude women born before 1970 to focus on birth cohorts that came of age when the transition from communism had already begun.

We have two dependent variables in this section as well: (1) the hazard of having a first child and (2) the hazard of having a second child. Because we are interested in circumstances at the time of conception and the decision to continue a pregnancy, we focus on the 8th month before a live birth, rather than the actual birth. We refer to this moment of time as first conception or second conception, regardless of whether the respondent had other conceptions that did not lead to live births. We use piecewise constant event history models to estimate the relative risks of a first or second birth, which allows the baseline hazard to vary according to pre-determined time segments. In the analysis of the first birth, respondents are observed from January of the year they turn 17[14] until 8 months before the first birth occurs or before the interview. Age is the process time used in the first birth hazard analysis. The window of observation for the second birth analysis begins the month of the first birth and continues until 8 months before the second birth occurs or before the interview. Age of the first child is the process time used in the second birth analysis. There are 1,482 childless women to observe and 944 women with one child.

5.2 *Measures*

Our independent variables related to work and education are all time-varying. As in the previous analyses, we differentiated firm ownership as public, pri-

[12] The Education and Employment Survey for Russia was conducted by the Max Planck Institute for Demographic Research (Rostock), the Independent Institute of Social Policy (Moscow), and the Demoscope Independent Research Center (Moscow) (Bühler *et al.*, 2007).
[13] For information about the technical aspects of this survey and its sample, see: (Independent Institute for Social Policy 2005).
[14] Since EES data only record histories from January of the year in which the respondent turns 17, all information recorded in the months before that January are censored. Eliminating respondents who had their first child before the explanatory variables can be introduced excludes 118 men and women, 81 of which conceived in their 16th year. 17 more respondents were excluded because they did not know the year of their first birth.

vate or mixed and whether the respondent was self-employed or not. Fewer measures of job characteristics are available in EES than GGS. We are able to observe whether the respondent worked part-time (less than 31 hours per week) or full-time. The other measure of job characteristics is respondents' work schedule: day-time on weekdays, shift work, timetable or other (including evenings and weekends).

We also control for occupational class to observe job characteristics and work culture net of characteristics that are related to status, income and autonomy. We include the following time-varying control variables: urban/rural residence, educational enrollment and level, and marital status. We also include the following time-constant covariates: whether the respondent was surveyed in St. Petersburg or Moscow, and number of siblings. For the second conception analysis, age at first birth is also included.

5.3 *Regression analyses*

Because there is a selection into employment after the birth of a first child, we first describe the basic pattern of labor market participation. Focusing on women born 1970 or later that have at least one child by the time they are surveyed, we can see that 56% of these women are not participating in the labor force three years before entering parenthood, many of whom are still studying. This share declines over the next few years. For women who had not yet had a second child, 21% are not participating in the labor market five years after the birth of the first child. A great majority of these women were also not employed one year before the birth of their first child.

Tables 4 and 5 present relative risks related to first and second conceptions, respectively. Full model results are presented in Appendix A-5. Model 1 includes the control variables, labor market status, occupational class as well as the first variables of interest, which are whether the respondent is self-employed or working in the public sector. For first conceptions, women who were not participating in the labor market were more likely to enter parenthood relative to women who were working. There were no significant differences in the timing of parenthood among women working in different occupational classes when other job characteristics were controlled. Women working in both publicly-owned firms and mixed ownership firms had higher first conception risks than women in privately owned firms. No other associations were statistically relevant, including the difference between being self-employed or not. In Model 2, how much and when women were scheduled to work were included as well, but these factors were not relevant to differences among women in the timing of their first birth.

Different associations appeared for second conceptions. Quite unique to

second births, being self-employed is associated with a higher conception risk (2.9). Public sector employment is not associated with second conceptions, nor is occupational class. When controlling for other job characteristics (Model 2), the statistical significance of the association between self-employment weakened somewhat, which indicates that the relevant characteristics of self-employment may have something to do with when and how much the respondent worked. However, neither part-time work nor particular schedules were significantly associated with second child conceptions. Similar to first conceptions, women were more likely to conceive a child when they were not participating in the labor market. They were also more likely to transition to a second child when they were unemployed.

Table 4 – *Piecewise constant hazard analysis of first conception in Russia, women born 1970 or later*

	Model 1		Model 2	
	Relative risk	S.E.	Relative risk	S.E.
NLFP	1.37 *	0.17	1.54 **	0.21
unemployed	1.18	0.24	1.33	0.27
SeC1: manual worker	1.03	0.15	1.04	0.15
SeC2: low-mid grade employee	1		1	
SeC3: interm. employee/manager	1.07	0.12	1.11	0.13
SeC4: professional/salariat	0.98	0.14	1.07	0.16
Employee	1		1	
Self-employed	0.73	0.35	0.76	0.38
Private firm	1		1	
Public firm	1.42 **	0.15	1.49 ***	0.16
Other firm	1.49 *	0.30	1.53 *	0.31
Employed part time			0.87	0.15
Weekday schedule			1	
Shift work			1.13	0.14
Timetable			0.87	0.12
Other			0.75	0.38
No. of subjects		1,482		
No. of failures		920		
Time at risk		106,641		
Number of observations		20,521		

Note: Model controls for being surveyed in St. Petersburg or Moscow, number of siblings, urban/rural location, partnership status, educational attainment and age.
Statistical significance: # = 10%, * = 5%, ** = 1%, *** = 0.1%.

Table 5 – *Piecewise constant hazard analysis of second conception in Russia, women born 1970 or later*

	Model 1		Model 2	
	Relative risk	S.E.	Relative risk	S.E.
NLFP	1.43 #	0.29	1.65 *	0.37
unemployed	1.79 #	0.60	2.06 *	0.72
SeC1: manual worker	0.83	0.22	0.88	0.23
SeC2: low-mid grade employee	1		1	
SeC3: interm. employee/manager	0.95	0.19	0.97	0.19
SeC4: professional/salariat	1.03	0.28	1.15	0.33
Employee	1		1	
Self-employed	2.91 *	1.56	2.74 #	1.54
Private firm	1		1	
Public firm	1.23	0.23	1.29	0.25
Other firm	1.30	0.42	1.37	0.45
Employed part time			0.72	0.23
Weekday schedule			1	
Shift work			1.15	0.26
Timetable			0.84	0.19
Other			1.59	0.98
No. of subjects		944		
No. of failures		301		
Time at risk		64,199		
Number of observations		14,083		

Note: Model controls for being surveyed in St. Petersburg or Moscow, number of siblings, urban/rural location, educational attainment, partnership status, age of first child and mother's age.
Statistical significance: # = 10%, * = 5%, ** = 1%, *** = 0.1%.

6. CONCLUSIONS AND DISCUSSION

This study assessed how job characteristics were related to fertility intentions and outcomes in Russia in recent years and for recent cohorts. Work conditions influence the degree to which women face reconciliation issues in their family and career roles. Russia is a case in which women remain firmly committed to employment and parenthood. Given the strong commitment to work or the financial pressure to work, as well as strong norms regarding universal childbearing at a relatively young age, differences across types of employment may have been unimportant to childbearing in Russia. However, our study reveals that specific job characteristics are related to childbearing in the Russian context. In addition, we find some differences between what factors are important to the timing of parenthood and the decision to have a second child.

Based on previous studies we expected to find a positive effect on all fertility outcomes of public sector employment, self-employment, and perma-

nent employment (H1). However, for the transition to parenthood we found no significant influence of either self-employment or type of contract. Public sector employment has different effects on intentions to become a mother and on the first conceptions; it is negative and weakly significant (10% level) for intentions, and positive and significant for conceptions. In addition, first conceptions are positively associated with employment in firms with mixed ownership. Furthermore, we have found that not participating in the labor market significantly reduces plans to have a first child but increases first conceptions. Effects of the factors explaining decisions to have a second child are more consistent. As we expected, self-employment has a positive influence on both intentions (weak) and conceptions. Not participating in the labor market and unemployment are positively related to second conceptions, and insignificant (but also positive) for a second birth intentions. Neither public sector employment, nor permanent employment are significant for second birth outcomes.

Although we had no a-priori reasons to expect different effects of job characteristics on intentions and behavior (H2), we observed a few discrepancies between influences of factors on intentions and behavior related to the timing of parenthood. We propose two explanations. First, previous studies have shown that a significant share of first pregnancies is unplanned because of low contraceptive use (Zakharov, 2008; Perelli-Harris and Gerber, 2011). It may be that there is systematic variation in women who experience unplanned pregnancies; for example, women who are not employed may be more likely to have unplanned pregnancies. For this reason, intentions may particularly be important to study as they show the factors women consider important were they to have complete control over their fertility. Second, under the conditions of strong social pressure on women to have children at relatively early ages (Zakharov, 2009), the most important factor of the timing of first births becomes having a partner. This means that intentions to have a first child may easily change as soon as a woman changes her partnership status and, therefore, the transition to parenthood is less dependent on employment developments.

We expected specific job characteristics to be associated with intentions and behavior related to the second child more than the first (H4), partially because of factors specifically related to the Russian context: the universal character of entering parenthood in Russia (the commitment to parenthood is unconditional) and very limited postponement of the first births. The possibility to work at home appears to be a powerful predictor of fertility intentions for both the first and second child, which confirms our hypothesis about the importance of employment flexibility to childbearing behavior. Having a flexible working schedule is not related to intentions to become a mother but, as we anticipated, is positively related to the intentions to have a second child. Furthermore, introducing specific job characteristics improves the models' goodness of fit more in the case of second birth intentions than the first. Indi-

cators of flexibility were not available in the data used to study conceptions, but neither part-time work nor different types of schedule were associated with differences in first or second conceptions. This means that the positive relationship between working in the public sector and first conception is not due to the type of schedule women have (although we were not able to account for flexible schedules) or part-time work.

Because the relationship between work and fertility is known to be interdependent (Budig, 2003), we anticipated that women both sort themselves into jobs based on their childbearing plans or preferences and manifest their fertility desires as intentions and behavior when conditions support childbearing. In addition, attitudes related to work and family roles have been shown to be important to both fertility and work choices (Desai and Waite, 1991; Budig, 2003), and we anticipated that women who believe there is a conflict between work and family roles will have lower fertility intentions and fewer births, whereas women with strong family orientations will have higher fertility intentions and more births (H3). To check this hypothesis we analyzed the effects of attitudes toward mother's employment and toward being a housewife on fertility intentions. As we expected, women who believe that looking after the home or family is just as fulfilling as working for pay have higher first birth fertility intentions; however, this factor is not significantly related to second birth intentions. Similarly, negative attitudes toward working mothers, which were not significantly related to first birth intentions, became negatively correlated with second birth intentions.

We make no causal claims in this study as theory and evidence lead us to believe women may choose their jobs based on fertility plans just as much as they may make childbearing plans based on their employment situation. We explored the importance of underlying attitudes and found that although they were important to first and second birth intentions, they did not attenuate the relationships between employment conditions and fertility intentions.

To summarize our results according to main themes, the entrance into parenthood appears to occur earlier for women working in jobs with flexibility (in terms of work space), family-friendly cultures (public sector) and who feel they can achieve fulfillment through taking care of a child. Second child decision-making is also more likely to be positive among women working in jobs with flexible work spaces and jobs with more family-friendly characteristics, as well as among self-employed women; likewise, we see lower transition rates for women expecting a conflict between work and care roles.

Studying the relationship between employment characteristics and childbearing necessarily focuses on women who are employed. In this way, all estimated relationships are specific only to those childless women who enter the labor force before entering parenthood, which is not a widespread norm in Russia given that slightly less than a third of women enter parenthood before

finishing their education (Blum *et al.*, 2009b), as well as specific to mothers who return to work after entering parenthood and before having a second birth. For this reason, the women most relevant in this study are those who may be a select group; in particular, they may have stronger attachment to the labor market or have more success in the labor market. Future research may address this selection process more directly. We also want to point out that we were not able to study the influence of partners' occupational characteristics, which is an important determinant of intentions and births (Kaufman and Bernhardt, 2012).

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Appendix A – Data sources and information used to construct some employment variables

A1 – *Three categories of firm ownership*

		Categories used to construct firm ownership	
		GGS	*EES*
0	*Private*	Newly established private enterprise Former state, privatized enterprise Worked for a private person Self-employed	Newly established private enterprise Former state, privatized enterprise Worked for a private person
1	*Public*	State or municipal enterprise Non-for-profit, public organization International organization, regional office of a foreign company	State or municipal enterprise Non-for-profit, public organization International organization, regional office of a foreign company
2	*Other*	Mixed property enterprise Other	Mixed property enterprise Other

A2 – *Four-level occupational class schema*

Categories used to construct occupational class	
GGS	*EES*
1 - Lower technical occupations; Routine occupations; Self-employed occupations in agriculture	1 - Unqualified worker; Qualified worker; Agricultural employee; Farmer
2 - Lower services, sales and clerical occupations	2 - Employee who performs relatively simple tasks (salesperson, typist, clerk, security guard, etc.)
3 - Intermediate occupations; Lower supervisory and lower technician occupations; Small employer and self-employed occupations, excluding agriculture	3 - Highly qualified worker; Team-leader; Foreman; Employee who performs more complex tasks implying some autonomy (bookkeeper, draftsperson-designer, employee of the personnel department, nurse with basic medical education, librarian, etc.); Self-employed in an industry, trade, service sphere, with or without employees
4 - Large employers, higher grade professional, administrative and managerial occupations; Lower grade professional, administrative and managerial occupations and higher grade technician and supervisory occupations	4 - Leader with a significant managerial authority with the right to make important decisions (director of an enterprise, organization, executive director, CEOs, etc.); Employee who performs autonomously an important task or has a few subordinates (researcher/scholar, head of department, teacher, doctor, etc.); Self-employed lawyer, doctor, notary, who has a private practice with or without employees

A3 – *Four-categories working schedule*

		Categories used to construct 4 groups of working schedule	
		GGS	*EES*
0	*Weekday*	At day-time on weekdays	At day-time on weekdays
1	*Shift work*	The working hours change periodically	Work in shifts
2	*Timetable*	Timetable (e.g., every fourth day, or pilot's work) Two or more working periods each working day	Timetable (e.g., every fourth day, or pilot's work) Another schedule, timetable
3	*Other*	At nights/evenings/early in the mornings	At nights/evenings
		On weekends	On weekends
		Work on call	Short working day/week
		Irregular working times	Administrative (forced) leave
		Some other arrangement of working time	

A4 – *Probability of first and second birth intentions in Russia: full model, women below 40 without (for 1st intentions) and with one biological child below 14 years old (for 2nd intentions); ordered logistic regression odds ratios and robust standard errors*

	Intention to have… in 3 years			
	1st child		2nd child	
	Odds	Robust s.e.	Odds	Robust s.e.
Female age centered	0.96 ***	0.01	0.95 ***	0.01
Age squared centered	0.98 ***	0.00	0.99 ***	0.00
Female education: In education	1		1	
Low	0.73	0.21	1.09	0.32
Middle	0.84	0.23	1.04	0.30
High	0.94	0.26	1.22	0.36
Number of siblings: no sibling	1.10	0.12	0.92	0.12
1 sibling	1		1	
2	1.25 #	0.15	0.94	0.12
3+ siblings	1.09	0.17	1.07	0.17
1st child age centered			0.99	0.02
1st child age squared centered			0.99 #	0.00
In partnership	3.15 ***	0.35	1.89 ***	0.19
Urban citizen	1.03	0.12	1.18	0.15
Surveyed in area with low response rate / high sample attrition:				
Moscow, St. Petersburg	0.71 **	0.09	1.28	0.20
Primorsky krai	0.71 #	0.13	0.70	0.18
other regions	1		1	
Year of survey: 2004	1		1	
2007	1.01	0.10	1.11	0.10
2011	0.97	0.10	1.36 **	0.15
Labor market status / sector				
NLFP	0.50 *	0.14	1.02	0.19
Unemployed	1.05	0.25	1.10	0.27
On leave			0.93	0.18
Employee	1		1	
Self-employed	1.07	0.33	1.68 #	0.48
Firm ownership				
Private firm	1		1	
Public firm	0.79 #	0.10	1.13	0.14
Other firm	0.86	0.16	0.96	0.22
Occupation				
Manual worker	0.76	0.21	0.70 #	0.13
Low mid-grade employee	1		1	
Interm.employee	1.13	0.17	1.09	0.16

...Cont'd...

A4 – *Cont'd*

	Intention to have… in 3 years			
	1st child		2nd child	
	Odds	Robust s.e.	Odds	Robust s.e.
Professional/salariat/self-employed	1.12	0.17	0.96	0.15
/cut1	-2.57 ***	0.35	-0.38	0.35
/cut2	-1.07 **	0.35	0.97 **	0.35
/cut3	0.86 *	0.34	2.84 ***	0.36
Statistics				
N		2160		1862
ll		-2616.51		-2353.40

Note: Female age is centered around the mean (28.96 years old); child's age is centered around the mean (6.63 years old).
Statistical significance: # = 10%, * = 5%, ** = 1%, *** = 0.1%.

A5 – *First and second birth conception relative risks in Russia: full model, women born 1970*

	First conception		Second conception	
	Relative risk	S.E.	Relative risk	S.E.
Age: 17-19	1		1.64 #	0.43
20-22	1.16 #	0.09	1	
23-25	0.87	0.10	0.84	0.15
26-28	0.63 **	0.10	0.85	0.18
29-31	0.48 **	0.13	0.85	0.22
32-35	-		0.70	0.29
Education: in education	0.60 ***	0.07	0.30 *	0.18
low	0.66 ***	0.07	1.05	0.17
middle	1		1	
high	0.69 **	0.08	0.95	0.17
Number of siblings: no siblings	1.13	0.11	1.19	0.22
1	1		1	
2	1.14	0.10	1.51 **	0.23
3+	0.71 **	0.08	2.40 ***	0.40
First child's age: less than a year			1	
1 year old			3.92 ***	1.14
2 years old			5.24 ***	1.59
3 years old			3.87 ***	1.33
4 years old			4.89 ***	1.70
5 years old			7.34 ***	2.38
6-10 years old			5.70 ***	2.41
11+ years				
Surveyed in St. Pet or Moscow	0.42 ***	0.09	0.92	0.35
Urban residence	0.82 **	0.06	0.85	0.11
In a cohabiting partnership	11.05 ***	0.92	3.58 ***	0.8
NLFP	1.37 *	0.17	1.43 #	0.29
unemployed	1.18	0.24	1.79 #	0.60
SeC1: manual worker	1.03	0.15	0.83	0.22
SeC2: low-mid grade employee	1		1	
SeC3: interm. employee/manager	1.07	0.12	0.95	0.19
SeC4: professional/salariat	0.98	0.14	1.03	0.28
Employee	1		1	
Self-employed	0.73	0.35	2.91 *	1.56
Private firm	1		1	
Public firm	1.42 **	0.15	1.23	0.23
Other firm	1.49 *	0.30	1.30	0.42

...Cont'd...

A5 – *Cont'd*

	First conception		Second conception	
	Relative risk	S.E.	Relative risk	S.E.
No. of subjects	1,482		944	
No. of failures	920		301	
Time at risk	106,641		64,199	
Number of observations	20,521		14.083	

Statistical significance: # = 10%, * = 5%, ** = 1%, *** = 0.1%.