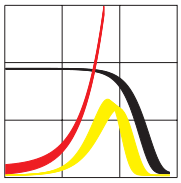

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# Migration and first-time parenthood: Evidence from Kyrgyzstan

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# Migration and first-time parenthood: Evidence from Kyrgyzstan

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**Abstract**: In this paper, we investigate the reproductive behavior of young women and men in Kyrgyzstan, with special emphasis on the demographic adjustment strategies of internal migrants in this post-Soviet Central Asian republic. We employ event-history techniques to data from the "Marriage, Fertility, and Migration" survey conducted in northern Kyrgyzstan in 2005 to estimate relative risks of becoming a parent. We demonstrate to what extent migration is part of the family building process and how it is related to elevated parenthood risks shortly after resettlement. We gain additional insight by information on factors such as the geographical destination of migration, and of retrospectively stated motives for the move. In addition, we reveal clear ethnic differences in the timing of entry into parenthood in Kyrgyzstan.

***Keywords:*** *fertility; internal migration; migration; Kyrgyzstan*

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## 1. Introduction

Situated in Central Asia, Kyrgyzstan shares the feature of being a post-Soviet republic experiencing various aspects of post-socialist economic, social, and political transformation with that of belonging to a group of countries with common ties to ancient Turkish linguistic and Moslem cultural origins. Like other post-socialist societies, Kyrgyzstan experiences various features of family-demographic change that may be considered part of a possible "second demographic transition". However, like in the case of the other Central Asian republics, dominant groups of its population can also be characterized as participating still in the first demographic transition, making the country a particularly intriguing site for a study on family-demographic dynamics. In this contribution, we will provide some first insight into the family-formation dynamics in post-Soviet Kyrgyzstan, paying particular attention to the interplay between migration and childbearing behavior of its population subgroups.

Existing research on reproductive behavior and fertility in Kyrgyzstan is quite limited. A fairly well organized system of vital statistics and censuses provides general information on levels and trends in fertility, but appears underutilized: there are few publications on the topic. A particular problem is the lack of specialized studies that address various specific features of the reproductive behavior in Kyrgyzstan, such as those related to ethnic differentials in behavior and interrelations of fertility dynamics with other life-course careers and dynamics. Most issues concerning fertility in Kyrgyzstan still wait for rigorous examination. The transition to first-time parenthood is one of them, which we will study more closely in this paper by analyzing the impact of different factors on the propensity to become a parent. While existing information on fertility in Kyrgyzstan has focused on topics such as general fertility and its relation to socio-economic factors (Kadyraliev 1972, Kumskova 1983, Ryspaev 1972) or ethnical and regional differentials (Bondarskaya 1978, Sifman 1974, Jones and Grupp 1987) during the Soviet period or general fertility decline during the post-Soviet time (Denisenko 2004, Nedoluzhko 2003, Sarygulov 2001), we will emphasize the importance of migration in the individual life history and the role it plays in family formation and the timing of childbirth. By studying the reproductive behavior of internal migrants in Kyrgyzstan, we aim at gaining new insight into the dynamic interactions of migration and reproduction.

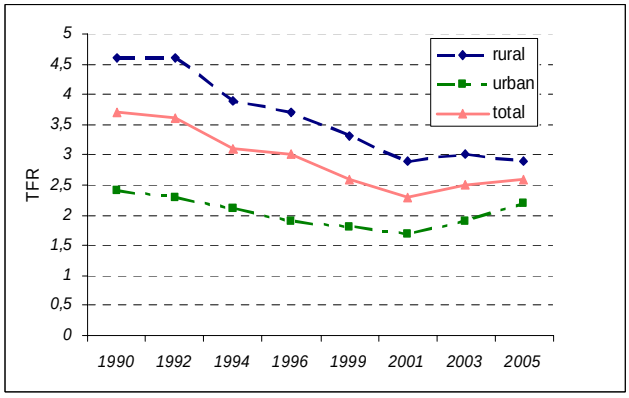
Our paper is organized as follows. First we provide an overview of recent demographic developments in the country. Then we briefly discuss our data, the study population, and the methodology we apply. We proceed to discuss the results of our

study and the information they provide on first-birth fertility dynamics in Kyrgyzstan. We end with some brief conclusions.

## 2. Fertility and migration in Kyrgyzstan

Since their independence most Soviet successor states have experienced dramatic changes in population dynamics. One of the noticeable features of the post-soviet period is a rapid fertility decline that often has been considered an adjustment to the adverse socio-economic developments during the transition period and/or a reflection of an ongoing "second demographic transition". In Kyrgyzstan the total fertility decreased by some 30 percent between 1990 and 2005. However, together with Uzbekistan and Tajikistan, it still remains a high-fertility country with a Total Fertility Rate (TFR) in 2005 of around 2.6 children per woman, rather making it exposed still to the first demographic transition. The fertility of some population sub-groups of Kyrgyzstan, like those of European origin, is below replacement level though. Significant differences in fertility also exist across regions and different types of settlements. The TFR is higher in rural than in urban areas: 2.9 versus 2.2. The developments of total fertility during the transition period are presented in Figure 1.

**Figure 1:** Total Fertility Rates of Kyrgyzstan, by type of settlement, 1990-2005



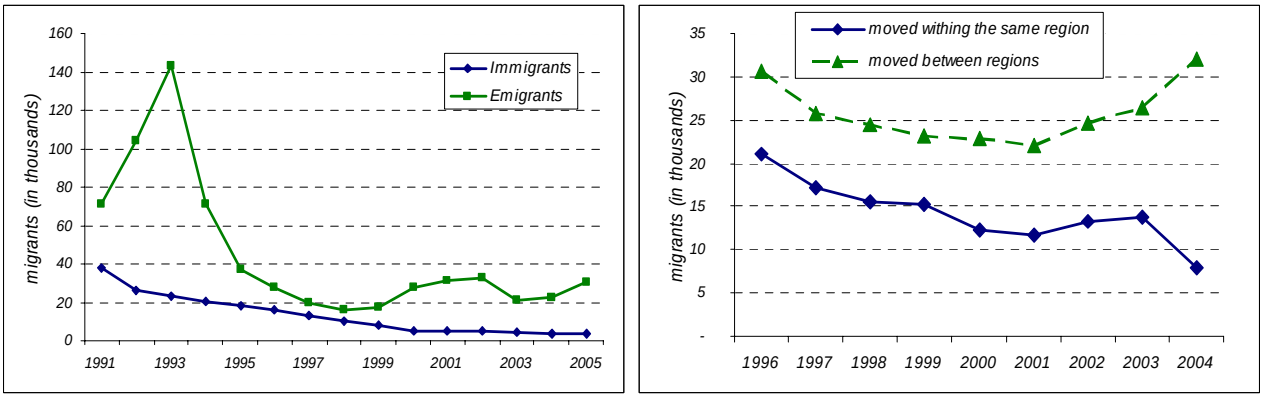

Source: National Statistical Committee of the Kyrgyz Republic

Another distinctive demographic characteristic of most countries of the former Soviet Union (FSU) is mass migration, which has led to dramatic changes in population compositions. In Kyrgyzstan, large-scale emigration peaked in the early 1990s when socioeconomic hardships and uncertainty about the future caused tens of thousands of people to leave the country (Figure 2a). External migratory exchange has predominantly taken place with the Russian Federation and with neighboring

Kazakhstan and Uzbekistan. Among non-FSU countries we find Germany and Israel as main destinations.

**Figure 2:** Migration movements of Kyrgyzstan

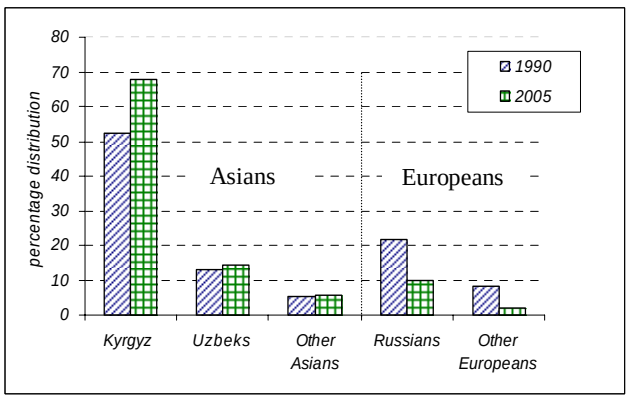
(a) External migration, 1991-2005 (b) Internal migration, 1996-2004




Source: As for Figure 1.

The most important feature of the emigration from Kyrgyzstan is its ethnic selectivity. The large-scale exodus of Russians and other people of European origin (hereafter referred to as "Europeans") has profoundly changed the ethnic composition of Kyrgyzstan's population, leading to a more mono-ethnic, "Asian" population (Figure 3).

**Figure 3:** Ethnic structure of the population of Kyrgyzstan




Source: As for Figure 1.

Changes in the ethnic structure of the country, in relation with longstanding differentials in the reproductive norms of Asians and Europeans – the present TFR is around 2.9-3.1 for Kyrgyz and Uzbeks, respectively, and 1.3 for Russians – have sometimes been regarded a possible 'trigger' for aggregate fertility increase in Kyrgyzstan and areas of it (Kumskov 2002). Recent data from the National Statistical Committee partly supports this assumption, indicating that TFR in the capital, which

receives the main share of internal migrants while simultaneously losing Europeans by means of emigration, has increased in the last few years.

The mass emigration during the post-Soviet period has been accompanied by high internal migration as well. Following the exodus of Europeans, traditionally residing in urban areas (mostly in the capital Bishkek and the neighboring Chui region), native Kyrgyz have moved in as housing and job opportunities increased in these areas. Internal migration has contributed with an average of 7,000 people annually to the population of the Chui region and Bishkek. Meanwhile other regions of the country have experienced negative internal net migration. Official data suggests that migration between regions have been more intensive than intra-regional mobility (Figure 2b). Moreover, since 2000 inter-regional migration has increased. Other features of post-soviet internal migration in Kyrgyzstan are as follows:

- women comprise the majority (close to 60 per cent) of both inter- and intraregional migrants;
- the overwhelming majority of migrants are native Kyrgyz;
- young people aged 15-34 constitute around 60 per cent of the migrants.

The demographic dynamic of the former Soviet Central Asia that has been most prominently addressed is the external migration. A large number of studies have focused on the emigration of individuals of European origin, often considered the result of real or perceived discrimination (Becker et al. 2003, Demakov 1997, Nedoluzhko 2000, Subbotina 1997, Tishkov 1994). In contrast, internal migration and other demographic adjustments to socioeconomic adversity, like postponement of marriage formation and childbearing, have been poorly addressed (Agadjanian 1999). Due to lack of adequate data, in the case of Kyrgyzstan these important issues have received almost no attention. To overcome this shortcoming, a survey on young people's marital and reproductive strategies and their migration experience was carried out in northern Kyrgyzstan in 2005. In the present study, we use data from this survey for an event-history analysis of the first-birth dynamics of young people in post-Soviet Kyrgyzstan.

## 3. Data, research method, and study population

Our analysis is based on data derived from a retrospective survey named "Marriage, Fertility, and Migration in Kyrgyzstan" being co-organized by the first author and conducted in May-September 2005 in urban and rural areas of northern Kyrgyzstan. The study was designed to compare the demographic adjustment

strategies of two distinct groups of Kyrgyzstan's population – Europeans and Asians. This explains the location of the survey to the northern regions (Chui, Issyk-Kul and the capital Bishkek), where more than 90 per cent of all minority Europeans reside. In rural areas, where the share of Europeans is low, primary sampling units were selected with a probability proportional to the size of the non-Kyrgyz population in the settlement (i.e. the bigger share of non-natives, the higher probability that the settlement will appear in the sample). Within such sampling units, a stepwise random selection of first households and then respondents was made. Due to the specific sampling strategy and the unbalanced geographic distribution of ethnic groups in Kyrgyzstan, the survey is not representative of the entire country's population, but provides unique information on the marital, reproductive, and migratory behavior and attitudes of young Europeans and Asians in the surveyed areas.

The survey contains retrospective information on each respondent's education, employment, migration history, his/her record of marriage, cohabitation and childbearing, as well as other socioeconomic and demographic characteristics of the individuals; all events are identified with the accuracy of a month. The study population consists of 756 men and 772 women: Total sample size is 1528. Respondents' ages range between 18 and 29 years with a mean age of 23.1 years (23.4 for women and 22.8 for men). 29% of respondents had a child at the time of survey; 38% had experienced a migration past age 15.

In our analysis we focus on the event of the birth of a first child and use multiplicative intensity-regression (or proportional-hazard) models to analyze the propensity to become a parent. Computation is based on number of first births (440 occurrences), as reported by the respondents, and the respective exposure times under risk of becoming a parent. The basic time variable is the number of months elapsed since a respondent's $15^{th}$ birthday.

The composition of the study population of our analysis is presented in Table 1, which contains occurrences and exposure times, by each of the variables we apply in our modeling. We have defined three time-constant and seven time-varying covariates in order to test our main hypotheses and to study the association of various migration characteristics (destination of resettlement and time since and reason for migration) with the propensity to become a parent. Note that the exposures refer to the number of months as childless counted from age 15, and the information on migration characteristics refer to the time after any first migration post age 15 until the occurrence of a first birth or censoring at the time of interview.

**Table 1:** Sample composition for the analysis of first-birth risks in northern Kyrgyzstan, 1990-2005

| | Exposures (months) | | Occurrences (first births) | |
|---|---|---|---|---|
| **TIME-CONSTANT COVARIATES** | N | % | N | % |
| **Gender** | | | | |
| man | 66135 | 53.0 | 112 | 25.5 |
| woman | 58544 | 47.0 | 328 | 74.5 |
| **Ethnicity** | | | | |
| European | 43172 | 34.6 | 147 | 33.4 |
| Russified Asian | 43723 | 35.1 | 123 | 28.0 |
| Non-Russified Asian | 37784 | 30.3 | 170 | 38.6 |
| **Place of birth** | | | | |
| Bishkek | 26149 | 21.0 | 68 | 15.5 |
| medium/small town | 36393 | 29.2 | 119 | 27.0 |
| village | 56650 | 45.4 | 230 | 52.3 |
| abroad | 5487 | 4.4 | 23 | 5.2 |
| **TIME-VARYING COVARIATES** | | | | |
| **Age** | | | | |
| 15-18 | 54757 | 43.9 | 33 | 7.5 |
| 18-20 | 29415 | 23.6 | 103 | 23.4 |
| 20-22 | 19721 | 15.8 | 108 | 24.5 |
| 22-24 | 11615 | 9.3 | 113 | 25.7 |
| 24-26 | 6036 | 4.8 | 57 | 13.0 |
| 26-29 | 3135 | 2.5 | 26 | 5.9 |
| **Employment** | | | | |
| employed | 25542 | 20.5 | 138 | 31.4 |
| non-employed | 99137 | 79.5 | 302 | 68.6 |
| **Education** | | | | |
| no degree and in education | 8600 | 6.9 | 3 | 0.7 |
| basic secondary and in education | 34456 | 27.6 | 8 | 1.8 |
| general secondary or vocational and in education | 26669 | 21.4 | 64 | 14.5 |
| basic secondary: out of education | 6428 | 5.2 | 34 | 7.7 |
| general secondary or vocational: out of education | 44214 | 35.5 | 291 | 66.1 |
| higher: out of education | 4312 | 3.5 | 40 | 9.1 |
| **Destination of migration** | | | | |
| no migration after age 15 | 98899 | 79.3 | 239 | 54.3 |
| migrated to Bishkek | 13908 | 11.2 | 74 | 16.8 |
| migrated to medium/small town | 7064 | 5.7 | 61 | 13.9 |
| migrated to village | 3851 | 3.0 | 59 | 13.4 |
| migrated abroad | 957 | 0.8 | 7 | 1.6 |
| **Time since migration** | | | | |
| no migration after age 15 | 98899 | 79.3 | 239 | 54.3 |
| 1st year since migration | 5991 | 4.8 | 45 | 10.2 |
| 2nd year since migration | 4869 | 3.9 | 33 | 7.5 |
| 3rd year since migration | 3830 | 3.1 | 25 | 5.7 |
| 4th-5th years since migration | 5449 | 4.4 | 41 | 9.3 |
| 5+ years since migration | 5641 | 4.5 | 57 | 13.0 |
| **Cause of migration** | | | | |
| no migration after age 15 | 98899 | 79.3 | 239 | 54.3 |
| moved with parents/family | 3471 | 2.8 | 23 | 5.2 |
| for marriage | 1375 | 1.1 | 60 | 13.6 |
| for work | 4419 | 3.5 | 32 | 7.3 |
| to study | 13701 | 11.0 | 69 | 15.7 |
| other reasons | 2814 | 2.3 | 17 | 3.9 |
| **Union status** | | | | |
| not in union | 113359 | 90.9 | 43 | 9.8 |
| in union | 11320 | 9.1 | 397 | 90.2 |

In our modeling of first-birth risks, we expect to find that:

- risks are lower for men than for women, because men become parents at higher ages;
- higher levels of education are conducive to later family formation and thus to lower risks of entry into parenthood;
- first-birth risks are higher among currently employed people, since those who have a job can better afford having a child. However, taking dominant gender relations and childcare obligations into account, we allow for the possibility that this general expectation may not hold for women;
- migrants to rural areas are more likely to marry and have a child at relatively young ages, thus parenthood risks for these groups of Kyrgyzstan's population are higher than for those who moved to urban settlements;
- since the majority of births occur in conjugal (and especially in officially registered) unions, people 'in a union' have higher first-birth risks than singles.

Our specific hypotheses are discussed in more detail in the following section where we also present and discuss our results.

## 4. Covariates and model results

The relative risks of first-time parenthood for young people in Kyrgyzstan are presented in Table 2. It gives the main effects of our various categorical covariates on the propensity to become a parent. Below, we give a more detailed account of the definition of our key variables and discuss the various associations we find between these factors and first-birth rates in Kyrgyzstan.

### 4.1 'Ethnicity'

We put the word 'ethnicity' within quotation marks because of our broad definition of this concept. In our case, we define three categories from a combination of a question on the language respondents reported they speak most of the time outside of home and the reported ethnic origin of respondents: we classified individuals of Asian origin who speak Russian as 'Russified Asian' and those who speak other languages (mostly Kyrgyz) as 'Non-russified Asian'. A category of 'European' includes Russians (91%) and other respondents of European origin. Differences in the necessity, choice or chance to speak Russian differentiate our two groups of Asians in the extent to which they are exposed to the influence of a

different cultural and socioeconomic environment. The use of Russian language could be caused by living and working in multiethnic communities, by receiving education in Russian or simply by having Russian or Russian-speaking friends. Russian continues to be the language of interethnic communication and education (due to lack of textbooks in any other language, including Kyrgyz) and thus the language of political and economical power. One further aspect of the language is that it also can act as a mediator of the culture associated with it. We assume that the impact of Russian and any other language and culture that operate through media are important in forming individuals' preferences, including the reproductive ones. In total, we assume that 'Europeans' and 'Russified Asians' are more likely than 'Non-Russified Asians' to adjust their reproductive strategies to the possibilities and constraints of their professional careers, something that may be evident in a later entry into parenthood for the former groups than for the latter.

Our study population is relatively evenly distributed between these three "ethnic" groups (Table 1), reflecting the fact that Russian-speaking individuals were over-sampled in the survey. Our analysis indicates that the 'Russified' group of Asians is significantly different from both other ethnic groups of our study population as concerns their first-birth behavior and that they do not appear in an intermediate position (Table 2). Instead, they have the lowest risk of entry into parenthood: about 30% lower than the Europeans and 50% lower than the 'non-Russified Asians', i.e., they tend to postpone their parenthood relative to the other two groups. An interaction between 'age' and 'ethnicity' (not shown) reveals that first-birth risks of Europeans peak at lower ages than for 'Non-Russified' Asians. This finding contradicts the common assumption that early family formation would dominate among all Central Asian groups. It is supported by census data, which suggest that Russian women indeed have somewhat lower age at first birth than Kyrgyz women.

**Table 2:** Relative risks of entry into parenthood, young women and men in Kyrgyzstan, 1990-2005

| | Model 1 | P-value | Model 2 | P-value | Model 3 | P-value |
|---|---|---|---|---|---|---|
| **Age** | | 0.000 | | 0.000 | | 0.000 |
| 15-18 | 1 | | 1 | | 1 | |
| 19-20 | 2.70 | | 2.71 | | 2.63 | |
| 21-22 | 4.07 | | 4.26 | | 3.96 | |
| 23-24 | 6.80 | | 7.31 | | 6.58 | |
| 25-26 | 6.75 | | 7.41 | | 6.47 | |
| 27-29 | 6.14 | | 6.90 | | 6.10 | |
| **Gender** | | 0.000 | | 0.000 | | 0.000 |
| man | 1 | | 1 | | 1 | |
| woman | 4.11 | | 4.08 | | 3.73 | |
| **Ethnicity** | | 0.000 | | 0.000 | | 0.000 |
| European | 1 | | 1 | | 1 | |
| Russified Asian | 0.68 | | 0.68 | | 0.69 | |
| Non-russified Asian | 1.24 | | 1.22 | | 1.19 | |
| **Employment** | | 0.029 | | 0.036 | | 0.058 |
| employed | 1 | | 1 | | 1 | |
| non-employed | 1.27 | | 1.26 | | 1.24 | |
| **Education** | | 0.000 | | 0.000 | | 0.000 |
| no degree and in education | 1 | | 1 | | 1 | |
| basic secondary and in education | 0.60 | | 0.60 | | 0.60 | |
| general secondary or vocational and in education | 1.89 | | 1.81 | | 2.06 | |
| basic secondary: out of education | 5.70 | | 5.44 | | 5.64 | |
| general secondary or vocational: out of education | 4.96 | | 4.74 | | 4.79 | |
| higher: out of education | 4.33 | | 4.32 | | 4.94 | |
| **Place of birth** | | 0.788 | | 0.840 | | 0.839 |
| Bishkek | 1 | | 1 | | 1 | |
| medium/small town | 1.01 | | 1.00 | | 0.99 | |
| village | 0.90 | | 0.91 | | 0.90 | |
| abroad | 0.91 | | 0.93 | | 0.90 | |
| **Destination of migration** | | 0.000 | | 0.000 | | 0.270 |
| no migration after age 15 | 0.82 | | 0.80 | | 0.69 | |
| migrated to Bishkek | 1 | | 1 | | 1 | |
| migrated to medium/small town | 1.46 | | 1.44 | | 1.26 | |
| migrated to village | 2.53 | | 2.37 | | 1.63 | |
| migrated abroad | 1.12 | | 1.01 | | 0.95 | |
| **Time since migration** | | | | 0.537 | | 0.999 |
| no migration after age 15 | | | 1 | | 1 | |
| 1st year since migration | | | 1.27 | | 0.96 | |
| 2nd year since migration | | | 1.14 | | 1.04 | |
| 3rd year since migration | | | 1.00 | | 1.02 | |
| 4th-5th years since migration | | | 0.91 | | 1.03 | |
| 5+ years since migration | | | 0.84 | | 1.00 | |
| **Cause of migration** | | | | | | 0.000 |
| no migration after age 15 | | | | | 1.35 | |
| moved with parents/family | | | | | 1 | |
| for marriage | | | | | 3.54 | |
| for work | | | | | 1.20 | |
| to study | | | | | 0.99 | |
| other reasons | | | | | 1.12 | |
| Log-likelihood: | -2558.6334 | | -2556.5914 | | -2537.9617 | |

### 4.2 Education

Our survey data provide information on each stage of respondents' educational and employment careers. Based on this information we have constructed time-varying covariates that allow us to track patterns in parenthood risks during periods when respondents are in and out of education and in and out of the labor market. For our educational covariate we define six levels that reflect both the educational enrolment and attainment.

The fact that education is an important determinant of fertility behavior seems to be universally recognized. However educational enrollment and attained educational level play different roles. While being a student impedes childbearing, a completed education can be viewed as a factor that increases the propensity to become a parent. For individuals with a higher level of attained education, though, this may not be the case, since career development and parenthood sometimes may be competing life careers.

Our model results (Table 2) show that for those who have not finished their studies parenthood risks are much lower than for graduates, i.e., the finding of 'incompatibility of education and parenthood' that has been reported for so many other countries applies to Kyrgyzstan as well. The level of educational attainment itself seems to be somewhat positively associated with 'deferred' parenthood – respondents with only a basic educational degree have the highest parenthood risks.

Even though education is assumed to play an important role in the formation of reproductive strategies, we have failed to find any interaction with this factor that could improve the model fit or reveal interesting differentials in first-birth risks. This also holds for the interaction with gender. The inclusion of the educational attainment of respondents' parents (results are not shown) also failed to produce interesting patterns.

### 4.3 Employment

The association of labor-force participation with the timing and level of fertility is a common research topic (see e.g., Andersson 2000, Becker 1981, Bernhardt 1993, Hoem 1993, Hoem and Hoem 1989). In our analysis, we define an employment factor with just two levels, employed and non-employed, where employment is counted irrespective of whether the respondent was in a full- or part-time job. We expect that individuals with a secure position in the labor force, other

things being equal, have higher first-birth risks, i.e., that employment and fertility are positively related. In Kyrgyzstan with its high poverty rate and scanty parenthood benefits, having a job appears a necessary condition for family building. This applies first of all to men – males are main breadwinners in traditional families of Kyrgyzstan, though the role of dual-earner couples is about to regain its importance in the fragile household economies of the country's inhabitants.

The results of an interaction of our employment variable with gender reveal that first-birth risks are higher for employed than for non-employed men while the opposite holds for women (Table 3). This suggests that non-symmetrical gender roles are important in Kyrgyzstan, and that career development of women may require such demographic adjustments as postponement of childbearing and limitation of family size. The results indicate the existence of incompatibility of parenthood with women's employment, something that tends to be particularly evident in societies where childrearing is the full responsibility of the mother.

**Table 3:** Relative risks of entry into parenthood in Kyrgyzstan: risk of employed relative to that of non-employed for women and men

| Employment status | men | women |
|---|---|---|
| non-employed | 1 | 1 |
| employed | 1.53 | 0.57 |

Note: controlled for age, ethnicity, education, place of birth, and migration.

One further interesting finding appears in the three-way interaction of 'employment', 'gender', and 'ethnicity' (results not shown). This interaction reveals that the positive effect of a man's employment on his first-birth risk differs by his ethnic group. For European men who are not established in the labor market, the propensity to have a child is reduced by more than 60 per cent, while for Asian men this effect is much more moderate – parenthood risks for non-employed are only 9-12 per cent lower than for the employed. The latter fact could be explained by the role of family support. Asians traditionally have more extended families that provide help for members in need.

### 4.4 Migration

The demographic literature offers several hypotheses related to the complex interrelation between migration and fertility. Most often researchers support or challenge the "adaptation", "socialization", "selectivity", or "disruption" assumptions

concerning fertility in relation to migration (e.g., Abbasi-Shavazi and McDonald 2000, Hervitz 1985, Kulu 2005, Kulu and Billari 2004, Singley and Landale 1998). In our study, we want to concentrate on testing whether migration mainly is related to disruptive or triggering effects on fertility, which are the two possible patterns of association that we consider most relevant to search for in a study on the transition to first time parenthood. We suppose that both effects may be important, depending on the particular situation, and that different combinations of factors may strengthen one of them while depressing the other. Migration certainly requires some adaptation to the new environment, for example in finding housing, getting a job, etc., and demographic adjustments such as postponement of family formation are likely to be connected to such adaptation. Disruptive effects on fertility may be stronger for those who have experienced an urban-to-rural or rural-to-urban migration than for those who have moved within urban or rural settlements: In the first case migrants should cope not only with the difficulties of adjustment to the new community, but to the new style of living as well. Hiday (1978) refers to this issue as overcoming social distance.

Triggering effects on fertility of migration may appear if migration is related to family formation in the first hand. Support for the importance of such associations is provided by Andersson (2004) and Andersson and Scott (2005), who found that migration often appears related to family building and has been connected with elevated first-birth risks of newly arrived immigrants to Sweden. In our case, we expect such a migration effect to be most prominent for women, since they traditionally move after any migrant partner – or more often move to join a partner at the place of destination. Our survey data show that marriage was the cause of migration for 25% of first-migrating women but only for 3% of migrant men.

Both possible disruptive and triggering effects will appear with a short-term influence on fertility, and in order to detect them we need to be careful in taking time since migration into account. The importance of the time dimension when analyzing the impact of migration on fertility has been demonstrated by Andersson (2004).

We do not attempt to deal more firmly with further migration-related hypotheses, such as those of “adaptation” related to adjustment of fertility to the long-term constraints in the destination area or “socialization” related to family-size preferences produced in childhood. These matters would better be covered in a study that also included higher-order births. In addition, we disregard “selectivity” issues (Farber & Lee, 1984) related to the dynamic nature of fertility preferences. Since we

only have information on such preferences at the time of interview, we cannot say anything about prior preferences and how they could have been related to previous moves.

To study the disruptive or triggering nature of internal migration on first-birth fertility of young migrants in Kyrgyzstan we have worked with the following five covariates: (1) Place of birth; (2) Place of residence at age 15; (3) Destination of migration; (4) Time since migration; (5) Reason for migration. The last three variables all refer to any first migration at age 15 or above, i.e., at childbearing age. Our specific assumptions on the link between migration and fertility are as follows:

- Recent migration experience lowers risks of entry into parenthood since the necessary adjustment to new environments induces postponement of issues related to family formation. We expect this to hold unless family formation is the very reason for the resettlement.
- Migration for marriage causes elevated first-birth risks during the years immediately following resettlement.

We define migration as a residential change for a period of at least 6 months that is associated with the crossing of an administrative border of a settlement, and control for the characteristics of any first migration after age 15 (for 63% of the migrants there was only one adulthood migration). Going beyond the common rural-urban dichotomy in migration research, we distinguish four types of settlements for areas of origin and destination: The capital Bishkek, medium/small town, village, and abroad.

Our main results on the association of migration with first-birth fertility are demonstrated in Table 2, where we provide a step-wise modeling starting with the inclusion of 'destination of migration' and then adding 'time since migration' and 'reason for migration'. Such an approach allows us to detect interrelations of variables in the way the inclusion of a new covariate alters the estimated effects of previously included factors.

We have elaborated with different combinations of migration variables. Unfortunately, neither "place of birth" nor "place of residence at age 15" reveal any consistent pattern or significant difference in first-birth risks, and we exclude the latter variable from our modeling. In contrast, the destination of migration turns out to be a strong predictor of first-time parenthood. First-birth risks are highest for migrants to villages and lowest for those who moved to Bishkek, i.e., risks decrease with increasing settlement size at destination. Possible explanations are that migration

to urban settlements, and especially to the capital, often is caused by a desire to find better job or to obtain education beyond levels available in rural areas. In such cases, a postponement of childbearing is reasonable. However, we also observe that in general parenthood risks are higher for migrants than for non-migrants, regardless of the destination of the move.

Models 2 and 3 of Table 2 reveal that migration caused by marriage increases the first-birth propensity past migration (Model 3), which should come as no surprise, and that this tendency entirely explains the elevated fertility that is observed during the first two years following migration. Like other studies that account properly for time since migration, Model 2 reveals elevated fertility shortly after migration. The addition of our information on self-reported causes of migrations in Model 3 explicitly and elegantly picks up the effect of marriage formation and causes the effect of time since migration to vanish. A further demonstration of the duration effects of Model 2 is provided in Table 4, where we display the interaction effect of 'time since migration' and gender.

**Table 4:** Relative risks of entry into parenthood in Kyrgyzstan: risk by time since first migration past age 15 for women and men

| Time since migration | men | women |
|---|---|---|
| no migration after age 15 | 1 | 1 |
| 1st year since migration | 1.58 | 3.32 |
| 2nd year since migration | 2.07 | 2.85 |
| 3rd year since migration | 2.45 | 2.33 |
| 4th-5th years since migration | 1.65 | 2.33 |
| 5+ years since migration | 2.48 | 1.78 |

Note: controlling for age, ethnicity, employment, education, place of birth, and destination of migration.

The interaction reveals that first-birth fertility of women is more strongly elevated shortly after a migration, while the first-birth risks of men peak at some years later after their migration. This suggests that men indeed often act as forerunners in couple migration, with women subsequently joining their man for marriage and family formation. A similar gender-specific pattern of duration-specific fertility of migrants has been demonstrated by Toulemon and Mazuy (2004) for foreign-born immigrants to France.

We have experimented with several other interactions as well, and found that recent migration driven by the motive to find or change job or to pursue education rather lowers parenthood risks shortly after migration. This appears in the interaction

effect of time since and cause of migration (results not shown) and can be taken as evidence of some disruptive or delaying influences of such migration on first-birth fertility. We have further experimented with various combinations of rural-urban origins and destinations, but found no support for the hypothesis about the importance of 'overcoming social distance'; the destination of migration seems to be more important than the type of migration itself.

### 4.5 Union status

In a last step, we have experimented with the inclusion of a variable for union status into or models. We do not distinguish between officially registered marriages and civil consensual unions. Nevertheless, it should be noted that marriage remains the prevailing form of co-residential union in Kyrgyzstan. Thus, among our respondents we find just 5 percent of men and 8 percent of women ever in a consensual union at the time of interview (around 20 percent of all women and men ever in union). These numbers conform reassuringly well to figures of the National Statistical Committee (Kudabaev et al. 2004).

Since union formation is an intervening factor between our main covariates and first-birth fertility, it is debatable to what extent it makes sense to include a factor for union status into our models. Nevertheless, we provide an account of the inclusion of such a factor into a simplified version of our models in an Appendix to this paper. It reveals that the risk of becoming a parent is 54 times higher for respondents in a union than for singles. The introduction of 'union status' diminishes the effects of all other covariates but improves the statistical fit of the model.

To gain further insight into the interplay of migration with first-birth fertility, we use this covariate to run an interaction between union status and a simplified migration variable with just the levels ever and never migrated (Table 5). It reveals that the association of migration experience with first-time parenthood is the opposite for singles and young people in a union. Single migrants have reduced first-birth fertility as compared to single non-migrants (with both groups having very low absolute levels of first-birth fertility) while migrants living in couple display the elevated fertility as compared to non-migrants that we demonstrated already in Table 2.

**Table 5:** Relative risks of entry into parenthood in Kyrgyzstan: risks of migrants relative to non-migrants for singles and people in a union

| Migration experience | Union status | |
|---|---|---|
| | not in union | in union |
| never migrated (after age 15) | 1 | 1 |
| ever migrated (after age 15) | 0.72 | 1.18 |

Note: controlling for age, gender, ethnicity, employment, education, and place of birth.

## 5. Summary and conclusions

The present study has provided new and valuable insight into the family-formation dynamics of young people in post-Soviet Kyrgyzstan in general, and into the interplay of migration and family formation in particular. Our main findings concerning the pathways of young women and men in Kyrgyzstan to become a parent can briefly be summarized as follows:

- 'Russified Asians', ceteris paribus, are more inclined than others to opt for a demographic adjustment strategy that translates into postponed parenthood. We speculate that this reflects their exposure to a richer set of opportunities in the new Kyrgyz Republic than those available to Europeans and non-Russified Asians.
- Being in education lowers first-birth risks to a fraction of the risks of those who have finished education; while for those who have completed studies, risks tend to decline with increasing educational level attained. Like for most other settings, there seems to be a normative sequencing of finishing educational activity before considering becoming a parent.
- For women in Kyrgyzstan childbearing and labor-force participation are competing life strategies and employment lowers the propensity to become a mother. In contrast, for men employment increases the propensity to become a father.
- First-birth risks are higher for migrants than for non-migrants. This fact can be explained by the positive association of migration with family formation: the triggering effects on fertility of family-related migration tend to dominate over the potentially disruptive effects of other types of migration.
- In any analysis of the influence of migration on fertility, one needs to properly account for the timing of the migration event, since various short-term duration effects are prominent in the childbearing dynamics of migrants.

- The destination of a migration matters for subsequent fertility: first-birth risks are highest for those who have moved to a village and lowest for migrants to the capital Bishkek.

Our finding that migration motivated by marriage tends to trigger first-birth fertility is not surprising in itself. Nevertheless, our access to information on such subjective aspects of migration, in combination with our longitudinal data on migration and family-demographic life histories proved to be very useful. It allowed us to gain much better insight into the nature of different general aspects of the interrelation of migration and fertility dynamics than what we otherwise would have been able to provide. Findings that otherwise just would have formed the basis for speculation and formulation of various elaborate hypotheses now can stand as they are. In particular, they appear to be of more general importance than simply that of reflecting the very specific behavior of internal migrants in Kyrgyzstan. Similar duration effects of migration on first-birth dynamics have been observed for entirely different types of migrants (cf. Andersson 2004, Toulemon and Mazuy 2004). This suggests that, just as in the case of the timing of the onset of childbearing relative to the completion of education, there are strong behavioral regularities in how people locate their vital events relative to that of a migration, with marriage and entry into parenthood being much more common after a migration than when such an activity is still not accomplished.

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**Appendix:** Relative risks of entry into parenthood, young women and men in Kyrgyzstan, 1990-2005

| | Model 1 | P-value | Model 2 | P-value |
|---|---|---|---|---|
| **Age** | | 0.000 | | 0.007 |
| 15-18 | 1 | | 1 | |
| 19-20 | 2.73 | | 1.76 | |
| 21-22 | 4.16 | | 1.70 | |
| 23-24 | 6.83 | | 2.19 | |
| 25-26 | 6.74 | | 1.69 | |
| 27-29 | 5.97 | | 1.38 | |
| **Gender** | | 0.000 | | 0.000 |
| man | 1 | | 1 | |
| woman | 4.06 | | 1.89 | |
| **Ethnicity** | | 0.000 | | 0.056 |
| European | 1 | | 1 | |
| Russified Asian | 0.64 | | 0.92 | |
| Non-russified Asian | 1.24 | | 1.22 | |
| **Employment** | | 0.017 | | 0.656 |
| employed | 1 | | 1 | |
| non-employed | 1.30 | | 1.05 | |
| **Education** | | 0.000 | | 0.002 |
| no degree and in education | 1 | | 1 | |
| basic secondary and in education | 0.59 | | 0.55 | |
| general secondary or vocational and in education | 1.71 | | 0.86 | |
| basic secondary: out of education | 6.10 | | 1.61 | |
| general secondary or vocational: out of education | 4.92 | | 1.38 | |
| higher: out of education | 3.97 | | 1.27 | |
| **Place of birth** | | 0.689 | | 0.629 |
| Bishkek | 1 | | 1 | |
| medium/small town | 0.90 | | 0.85 | |
| village | 0.84 | | 0.92 | |
| abroad | 0.91 | | 0.77 | |
| **Migration experience** | | 0.000 | | 0.219 |
| never migrated (after age 15) | 1 | | 1 | |
| ever migrated | 1.76 | | 1.14 | |
| **Union status** | | | | 0.000 |
| not in union | | | 1 | |
| in union | | | 54.29 | |
| Log-likelihood: | -2571.1882 | | -2062.6546 | |