Family formation during economic crisis and civil war: trends in first marriage and first birth in late- and post-Soviet Tajikistan

Abstract

Tajikistan offers an interesting opportunity to contribute to two neglected research areas: the demography of post-Soviet Central Asia, and marriage and fertility responses to conflict in the developing world. Here, given the inadequate nature of official registration data, the first focus is to describe trends in family formation in the years before and after Tajikistan's independence in 1991. Birth history data from three nationally representative surveys are used to calculate age and parity specific first marriage and first birth rates. The second focus is to assess to what extent these trends reflect a particular response to the Tajik civil war (1992-1997), and to what extent they should be situated within a wider context of late-Soviet and post-Soviet social and economic change, including the restructuring of the *perestroika* period (1985-91) and the dramatic collapse of the independence years (1991-). Results show a significant increase in family formation from the early *perestroika* period to the early post-independence period, especially at younger ages. However, from the mid-1990s there were dramatic declines, with a 60% drop in the marriage rate in less than a decade. Trends for Tajikistan are compared to those in Kyrgyzstan and Uzbekistan. Given the similarities with trends in these neighbouring Central Asian republics, the paper concludes that the results for Tajikistan are most helpfully situated within a wider late- and post-Soviet context. Nevertheless, the reduction in marriage rates in Tajikistan has been severe even by Central Asian standards. This might reflect the loss of young men in the civil war, but also the particularly extensive labour emigration which has reduced the number of young men available for marriage. Further research is required on the links between labour migration and family formation in Central Asia.

Keywords: post-Soviet, Central Asia, Tajikistan, fertility, marriage, family formation, perestroika, economic crisis, civil war

Introduction: social and economic change in pre- and post-independence Tajikistan

There have been relatively few studies examining the demography of post-Soviet Central Asia (Gentile 2005), despite the potential for contributing to the literature on the effect of dramatic social and economic change on marital and fertility behaviour (Agadjanian 1999). Here, interest lies in assessing trends in family formation – specifically, first marriage and first birth – in the years before and after Tajikistan's independence from the Soviet Union in 1991.

This was a time of dramatic social, political and economic change. In the second half of the 1980s, President Gorbachev ushered in the era of *perestroika* or 'restructuring' of the Soviet economy. The aim was to develop a more efficient Soviet, yet still socialist, economy which would provide an improved standard of living for its citizens (Buckley 1992). The focus was on decentralisation and increasing the scope for decision making at a local level, reflected in the shift in control of state enterprises from ministries to workers' collectives. State enterprises became free to determine output based on demand. Meanwhile the 1988 Law on Cooperatives, enacted to encourage individual entrepreneurial behaviour, permitted private ownership of businesses in certain sectors. The widespread changes during the *perestroika* era were such that they were considered a watershed in people's lives (Agadjanian and Makarova 2003). However, they cannot be regarded as a success, with the Soviet economy showing signs of deterioration by the beginning of the 1990s. But while economic decline started during the *perestroika* years, in Tajikistan it greatly accelerated following independence. The withdrawal of subsidies from Moscow and the disruption of trading relationships, together with the transition to a free-market economy, all contributed to the decline (Falkingham 2005). By 1994, real wages were just 6% of 1989 levels (TransMONEE 2006) – the most dramatic decline in any post-Soviet or post-socialist country. Unemployment increased, while the system of social welfare collapsed (United Nations Development Programme 2000; De Soto et al. 2001). Vast swathes of the population were plunged into poverty. By the end of the millennium,

95% of Tajikistan's population were classed as living below the official minimum subsistence level (Falkingham 2003). The early post-independence period was also marked by a bloody civil war, lasting until 1997 but with the peak in fighting in the latter half of 1992. Given the severity of the economic crisis and civil unrest in post-Soviet Tajikistan, the country offers an interesting case study of the effects of dramatic socioeconomic change on family formation. However, to my knowledge there has been no thorough quantitative study examining first marriage or first birth rates in the transition and post-independence periods.

Context: Tajikistan and family formation

Historically, women in Tajikistan have married at an early age. In pre-Soviet times, a typical age at marriage was 14 to 16 (Tett 1996). Marriages were arranged by close family members and involved the payment of a *kalym* or bride price paid by the bridegroom or his family (Abdullaev and Akbarzadeh 2002:171). Following marriage, women become part of the husband's household, typically a large extended family living in a house or compound. The *kelin* ('incomer') had a lowly position within her new household, though her status improved with childbearing, particularly if she gave birth to sons (Falkingham 2000). The Soviet system attempted to transform Tajik family life. It advocated the nuclear family, building apartments in urban areas designed to be too small for extended families. The hope was that, through geographical separation of generations, Tajiks would be more open to a modern, Soviet way of life (Harris 2006). In these efforts, they had only limited success. Nuclear families are in the minority even today, while the influence of the extended family remains: 'senior family members retain a lifetime's veto power over the actions of younger members' (Harris 2004:38). Similarly, while laws were passed banning marriage without the consent of the bride and the payment of *kalym*, these practices remained widespread throughout the Soviet era, and there were still occasional instances of polygamy (Atkin 1989). Meanwhile, despite Soviet efforts to reduce wedding expenditure, the traditional elaborate and lengthy festivities

remained popular. These examples illustrate that, despite widescale social change, tradition has remained important. As in Eastern Europe, a sharp distinction arose between public and family life, with the family the only remaining 'private' institution and non-official form of socialisation (Sobotka 2002; Coleman and Philipov WP).

It is equally true, of course, that there were dramatic increases in the participation of women in education and employment during the Soviet era. The spread of compulsory education for women, first to age 14 and then to age 17, was particularly important to the gradual increase in the age at first marriage – and more so than the legislation introduced to raise the legal minimum age for both sexes to 18, which could be subverted if so desired by delaying official marriage registration for several months or years after the *nikoh* Muslim ceremony (Tett 1996). By the end of the 1980s, very early marriages were rare – with women typically marrying in their late teens or early twenties. Overall, however, and partly because of isolation from trends towards Islamisation and feminism beyond the Soviet Union (Harris 2004), 'traditional patterns of behaviour continued to dominate gender relations' (Falkingham 2000:9) – and this was reflected in demographic behaviour. Marriage remained nearly universal and, as elsewhere in Central Asia, there was a swift progression from marriage to childbearing (Tabyshalieva 1997). Non-marital births were relatively rare, representing an estimated 7% of total births in 1989 (TransMONEE 2006).

Family formation in Central Asia during *perestroika* and post-independence

Very few studies have examined trends in family formation in Central Asia in the years immediately preceding and subsequent to the end of the Soviet Union in 1991. An exception is Agadjanian's (1999) research on ethnic differences in marriage and fertility in Kazakhstan, which also analyses temporal changes in age at marriage. Using 1995 survey data, he shows that women who married after 1987 had a significantly later age at first marriage than those getting married before. However,

the crude categorization into only two time periods precludes assessment of any differences between the *perestroika* and post-independence periods. Further, and importantly, the analysis is restricted to ever-married women, so any changes in marriage rate remain undetected. In contrast, Agadjanian and Makarova's (2003) study on Uzbekistan uses Cox regression - meaning unmarried women, as well as those ever-married, are considered in their analysis. Using retrospective survey data from 1996, they find that women who reached marriageable age during the *perestroika* period before independence were more likely to have married by a given age than those from preceding cohorts. However, for those reaching marriage age during the post-independence era, marriage dropped back to pre-*perestroika* levels.

Agadjanian and Makarova (2003) present four possible explanations for the distinctiveness of the *perestroika* period. First, the trend for 'conspicuous consumption' in wedding ceremonies was strengthened as economic restructuring, including the legalisation of private business activity, promoted the accumulation of private wealth. While, as elsewhere in the Soviet Union, marriages were already a platform for family demonstrations of wealth, their fieldwork suggests that the scale of celebrations in Uzbekistan had reached new heights by the end of the 1980s – to such an extent that 'the race to affirm and display the family's socioeconomic position through lavish wedding ceremonies may have prompted many families to marry off their daughters earlier' (p.459). Second, the concomitant increase in dowry requirements may have encouraged families to marry their daughter before any further increases. Third, an increase in Uzbek nationalism may have helped encourage the traditional preference for early marriage. Fourth, the rapid changes of the *perestroika* period, and rumours of future unclear changes, may have encouraged families to find a husband who would look after their daughter in uncertain times. Importantly, Agadjanian and Makarova argue that the subsequent decline in marriage rate did not represent a simple reversion to pre-*perestroika* levels - but was a specific reaction to the economic decline of the post-independence period, such that Soviet-era levels of wedding expenditure were no longer sustainable. Trends in first births,

meanwhile, largely followed those in first marriage, 'pointing to a persistently strong connection between marriage and the onset of childbearing' throughout the pre- and post-independence periods (p.463).

Like neighbouring Uzbekistan, Tajikistan experienced the economic restructuring of the late Soviet *perestroika* period. Based on Agadjanian and Makarova's study, therefore, we might hypothesise that marriage rates, and therefore first birth rates, increased in the late 1980s and early 1990s – particularly given Tett's (1996:188) qualitative evidence that, as in Uzbekistan, weddings in Tajikistan were 'accepted as a vehicle for displaying [family wealth and] status' and that the scale of wedding celebrations had reached unprecedented levels by the end of the Soviet period. Further, like Uzbekistan, Tajikistan experienced dramatic economic decline in the post-independence period – in fact, based on trends in GDP and real wages, Tajikistan's decline was even more severe (see TransMONEE 2006). We might therefore hypothesise that, owing to economic constraints, the marriage rate declined in post-independence Tajikistan. However, unlike elsewhere in Central Asia, the post-independence period in Tajikistan saw a civil war, which peaked in the latter half of 1992 but which did not fully end until 1997. The possible impact of the civil war on family formation should also be taken into account.

Family formation during civil war

There is an established literature on the impact of war on developed country populations (for example, Winter (1976; 1985)). However, the demographic responses to war in developing countries, especially fertility responses, have not been extensively studied (Agadjanian and Prata 2002). Post-independence Tajikistan therefore offers a valuable opportunity to contribute to the literature. The impact of conflict on fertility is potentially complex: the uncertainty, difficulties and dangers may discourage childbearing – but they may serve to encourage it as a form of risk

insurance, particularly in a developing country context. As well as influencing conscious childbearing decisions, war can have a direct impact on fertility through increasing mortality at the reproductive ages, and through reduced coital frequency as a result of temporary spousal separation. The situation is further complicated when one considers that, as in Tajikistan, periods of civil conflict often coincide with and exacerbate periods of economic difficulty – which in turn can affect reproductive behaviour. Existing studies reflect this complexity by illustrating that there is no 'typical' demographic response to military conflict in the developing world. Thus, Lindstrom and Berhanu (1999) show that conception probabilities decreased during years of military unrest in Ethiopia (as well as during famine and economic crisis) while Agadjanian and Prata (2002) similarly find evidence for a drop in fertility during wartime in Angola, followed by a subsequent post-war rebound. On the other hand, Khlat et al. (1997) find no evidence for a significant decline in fertility in Beirut, Lebanon, during the civil war. Differing responses to war reflect Sillanpää's (2002) argument that the demographic impact varies according to the length and severity of the conflict, together with the ability of the population to adapt.

What lessons can we learn from these studies when applying them to the Tajik case? First, local context is important. Indeed, Lindstrom and Berhanu (1999:259) explicitly state that they 'are cautious about the generalisibility of our [demographic] results to other settings' given that the conditions in Ethiopia represented a particular convergence of not only war and economic decline, but also famine and political repression. A second lesson to learn is that the effect of war depends critically on the scale of measurement. Agadjanian and Prata (2001) find it difficult to establish any connection between the war in Angola and fertility on a longer (decadal) time scale – and contrast this with the clear annual fluctuations. As they point out, while fertility declined during the war period, over a longer time scale the war may actually have slowed fertility decline by keeping childhood mortality high and inhibiting efforts to widen access to maternal and child health care and to contraception. Spatial scale, too, is important, particularly when the military conflict is limited to

certain areas within a country. In their 2002 study, Agadjanian and Prata find that the wartime decline in fertility was restricted to those regions most affected by the conflict, plus the capital Luanda.

During the Tajik civil war, forces loyal to Tajikistan's communist party, largely from Khojand (in Sogd) and Kulyab (Khatlon), faced opposition largely from the Garm (RRS) and Badakhshan regions (Horowitz 2003). Figures for the number of casualties in the war are hard to establish; the International Crisis Group (2001) estimate that 60,000 to 100,000 people were killed between 1992 and 1997, from a total population of 5.1 million (at the time of the 1989 census). Many more were displaced by the conflict: 500,000-600,000 people were internally displaced, mainly people in and around Kurgan-Tyube fleeing to Dushanbe (and some to Badakhshan); an estimated 70,000-100,000 fled to Afghanistan (Foroughi 2002; Lynch 2002), the overwhelming majority of whom had returned to their permanent place of residence by 1997 (Rowland 2002). The key feature of the conflict was its concentration in space and time. As Brown (1998) reports, the most severe fighting took place in the last six months of 1992 and was concentrated in Kurgan-Tyube and Kulyab (both in what is now Khatlon). By the beginning of 1993, the outcome of the civil war had been effectively decided when Communist forces took control of Dushanbe (Atkin 1997). While the main fighting had ended, the period of civil unrest continued. Guerrilla operations were launched by the opposition from across the border in Afghanistan, and there was sporadic fighting in early 1993 in the upper Garm valley (in the RRS *oblast*), where opposition forces were still in control (Jawad and Tadjbakhsh 1995). Armed gangs were also active, interested in material gain as well as destabilising the Communist regime. Crime levels escalated across the country. Thus 'assassinations, hostage-taking, rapes, murders and robberies during the daylight became common' (Shemyakina 2006:7) and a 'way of life' (Harris 2004:29) - particularly in Dushanbe, Khatlon and RRS- until towards the end of the 1990s.

The net impact of the Tajik civil war on family formation has yet to be established. The large number of casualties, primarily young men, would clearly have had a significant negative impact on the marriage market, particularly in Kurgan-Tyube and Kulyab. The destruction of property was also especially severe in these areas, with evidence that Garmis and Pamiris returned to their villages around Kurgan-Tyube to find little left of their homes (Jawad and Tadjbakhsh 1995). The forced displacement of the population, and the damage suffered to property, had serious implications for living standards for those directly affected – in the midst of a more general and deepening economic crisis. In such a context, the expected Malthusian response would be the postponement of family formation and a reduction in marriage and first birth rates. However, since in a patrilineal and patrilocal society like Tajikistan women become members of their husbands household (Harris 2004), Shemyakina (2006:13) speculates that in times of economic crisis accentuated by conflict 'girls may…be married off to lift the [economic] burden from their families'. This resonates with Agadjanian and Prata's (2001:340) tentative explanation for a decrease in age at first birth during civil war in Angola.

There is also evidence which suggests that the increase in violent crime was an important contributor to people's behaviour in the period, particularly since it was more extended than the relatively brief period of intense fighting – and that this unrest may have actually served to encourage family formation. Harris (2004:29) argues that the violence of 'murders, brutal robberies, abductions and rapes… has now entered public consciousness, leaving behind a legacy of fear that continues to exert a powerful effect', even in the new millennium after the crime levels started to subside. Shemyakina (2006) gives an insight into how this affected day-to-day life in the 1990s, showing how households protected their most vulnerable members by keeping them at home. Older girls were sometimes prevented from attending school for fear of sexual assaults or harassment on the way. This has contributed to the post-independence decline in female attendance at school and in higher education, particularly of girls from Grade 9 onwards (see Falkingham (2000) and United Nations Development Programme (2000)). Linked to this trend has been an apparent desire to marry off daughters to

protect them from the dangers of violent crime. Thus Harris (2006:83) recounts the story of Nahdiya, a mother of five in Dushanbe in 1995: 'It was shortly after the main fighting in the civil war had ended and the news was full of stories of girls being abducted and raped. This scared Nahdiya so much that she decided the safest thing to do was to marry her daughter to remove her from danger. She could study later, when things quietened down'. This accords with journalistic accounts that 'during the civil war, parents married off their young daughters in order to protect them from kidnapping and rape by soldiers on both sides' (British Broadcasting Corporation 2006).

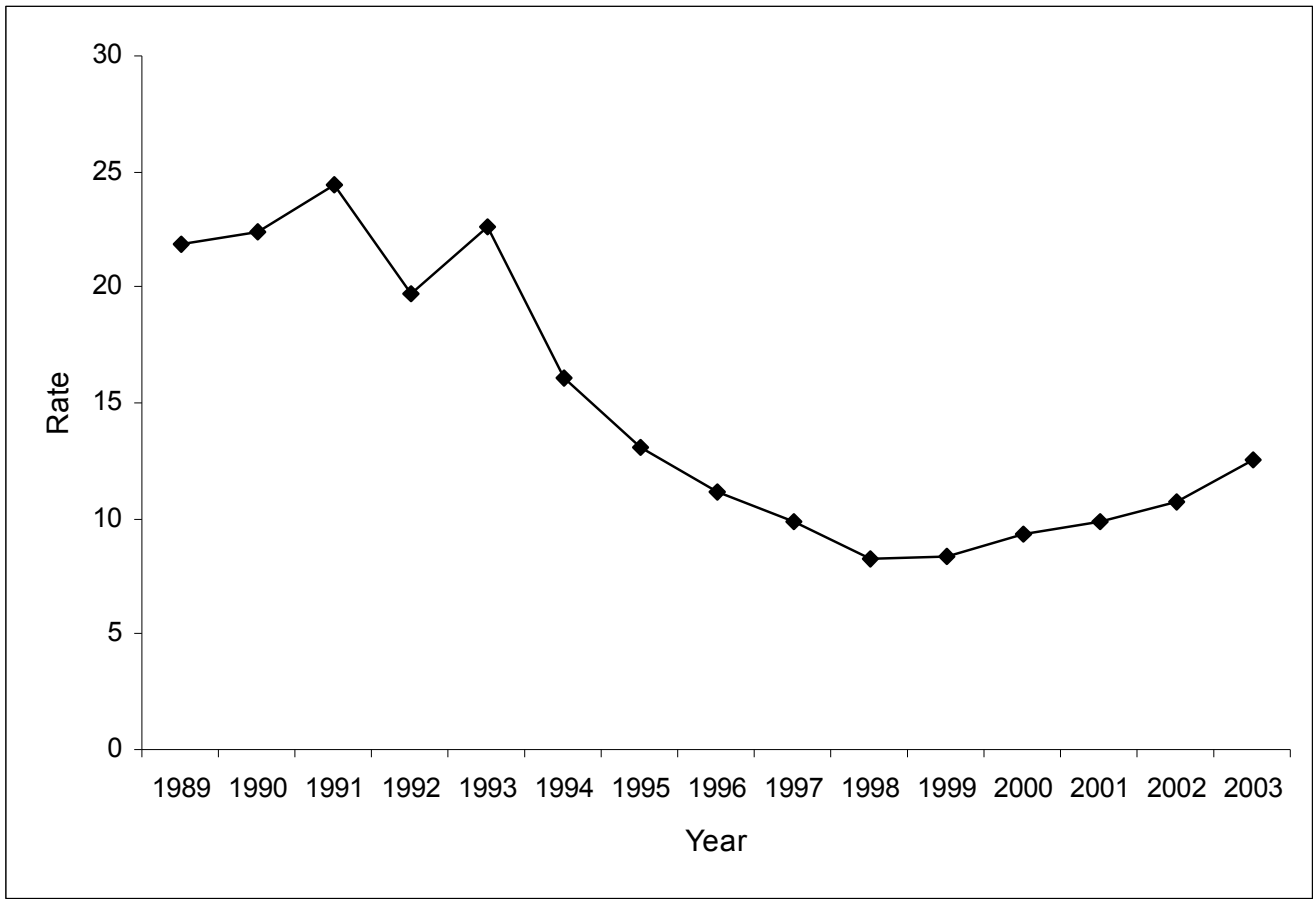
There are therefore conflicting hypotheses as to the demographic effect of the Tajik civil war, which demand thorough quantitative examination. Did the loss of men of marriageable age, together with the economic costs of the conflict, serve to reduce marriage and first birth rates? Or did security and economic concerns actually provide stimuli for families to marry off their daughters? And over and above any impact on particular geographical areas, is there evidence that the conflict significantly affected family formation in the post-independence period at a national level: do trends in Tajikistan differ significantly from those in neighbouring Uzbekistan, which experienced economic crisis but not civil war?

Official data on family formation in Tajikistan

Official vital registration data suggest that marriage propensity peaked in 1991, fell sharply during 1992, and then fell dramatically from 1994 before a slight recovery from the end of the 1990s (Figure 1). However, official data in Tajikistan are inadequate for a reliable assessment of temporal trends. Indeed, even before independence, the date of registration with Soviet authorities was never a reliable indicator of the date of the religious ceremony *nikoh*, after which the couple would live together. Underage marriages were concealed from the authorities by delaying registration at the civil registry office (ZAGS), sometimes for several years. Considering official data alone therefore

leads to systematic bias in the estimation of age at marriage since underage marriages, and also often the children born from them, remain unrecorded. Even for 'legal' marriages, there might be a gap before registration, while some couples disregarded registration altogether. As Harris (2004:39) summarises, compared to the *nikoh*, 'civil registration was of little importance to Tajiks' and was viewed simply as a means of providing access to resources like family allowances. In the post-independence context, with the virtual collapse of the social security system (see Falkingham 2000), the motivation for registration has further reduced – particularly given the introduction of a registration fee. Qualitative accounts suggest that polygamy has increased since independence (Tabyshalieva 1997), but since this is illegal these unions are also unrecorded. Overall, Dikaev (2005) reports one estimate which suggests that only half of all marriages are now officially registered. Therefore, while the official data in Figure 1 show declines in crude marriage rates in 1992 and from 1994, this may simply reflect reduced registration of marriages and not necessarily reduced rates of union formation during *nikoh*. Further, just as with official data on marriages, there are serious concerns about the registration coverage for births in post-independent Tajikistan. These are discussed in more detail elsewhere (Clifford 2007), but it is worth noting here that first births to underage women are particularly likely to go unrecorded, biasing estimates of age- and parity-specific fertility rates.

Figure 1 (Non-decremental) first marriage rates for women (marriages per 1,000 mid-year population aged 15-44) based on vital registration data



Source: TransMONEE (2006).

A further weakness of the official data relates to how trends in family formation are measured. Trends in mean age at first marriage, as presented in United Nations (2002), and mean age at first birth are insensitive to underlying changes in rate. Meanwhile, crude marriage rates do not distinguish between different rates for different ages. I have found no source of official data which lists age-specific marriage rates over time in Tajikistan - a potentially significant omission given that women at different ages may have responded in different ways to the changes of the *perestroika* and post-independence years. Information is provided on the age specific fertility rate, but no parity-specific information is available to allow an examination of the trend in the rate of first births.

Approach

This paper seeks to make a clear contribution to the sparse literature on family formation in pre- and post-Soviet Central Asia. Unlike Agadjanian's (1999) study on Kazakhstan, changes in the rate of marriage at different ages, rather than simply trends in the mean age at marriage, are considered. Further, unlike Agadjanian and Makarova's (2003) paper on Uzbekistan, this study adopts an explicitly period perspective to the analysis of temporal change. Agadjanian and Makarova's study essentially represented a cohort analysis, defining the periods of comparison not by the year of marriage but by when a woman turned 16. Therefore, it is not entirely clear when the peak in marriage actually occurred. Given that the median age at marriage for ever-married women in the sample is 19.6 years, the peak in marriage hazard for those reaching 16 between 1986 and 1990 inclusive may reflect a peak in marriage rates in the early 1990s – probably in the early post-independence period. Given the time involved in deciding upon and planning a marriage, this does not deny the importance of the *perestroika* period to the increase in marriage rate. Nevertheless, as Ní Bhrolcháin (1992; 1996) argues, if we are looking to changes in a particular period as potential explanators for marital and fertility trends, it would seem wise to adopt a period framework when measuring these trends. It is also important to note that changes in a particular period may not impact women uniformly. Indeed, Agadjanian and Makarova's hypothesis regarding the importance of conspicuous consumption in marriage ceremonies has an implicit age dimension – that it may have prompted many families to marry off their daughters *earlier*. The effect may therefore be particularly strong for younger unmarried women. In other words, there may be a potentially interesting age-period interaction effect which can only be detected through analysing period age-specific marriage rates. This represents a change in focus from Agadjanian and Makarova's formulation – as Ní Bhrolcháin (1992:612) points out, instead of asking why particular cohorts are marrying or beginning childbearing at earlier ages, we should ask 'why [marriage or] birth rates at

younger ages are particularly high in a specified…period'. This is the approach adopted in this paper.

This study also seeks to contribute to the literature on the demography of conflict in the developing world. Most studies examining the impact of conflict on natality have tended to focus on the effect on fertility as a whole – even though it seems highly plausible that the response of childless women might be very different to those with several children. Agadjanian and Prata's (2002) study of Angola, which examined parity-specific trends during wartime, is therefore unusual. However, since the survey they used did not contain information on current marital status, or on the exact dates of entry into marital union, they were not able to control for marital status when examining trends in fertility at low parities. They were also unable to examine changes in marriage rates during the war period. As they point out, this is less of an issue in Angola, where the link between marriage and childbearing is less strong. In the Tajik context, however, where marriage is nearly universal and childbearing overwhelmingly takes place within marriage, it is important to decompose any effect of conflict on first births into constituent trends in first marriage rates and first birth rates within marriage. Further, to my knowledge no study has examined whether the effect of conflict on family formation varies according to the age of the woman. This is considered in the current paper by analysing the effect of periods of conflict on age-specific marriage or first birth rates. This is equivalent, in a modelling approach, to examining the significance of a three way interaction between period, age and (in the case of births) parity.

The approach in this paper is inspired by Ní Bhrolcháin and Dyson (2007). Their starting point is that demography should be concerned with aggregate behaviour: 'aggregate phenomena and demographic change through time should be at the heart of demography, and therefore represent a central object of causal investigation in the discipline' (p.1). But, as they point out, most recent demographic research has neglected both the aggregate and the temporal. To a large extent, this has

reflected the preponderance of household survey data, which tend to be cross-sectional in nature and which tend to collect information on individual rather than aggregate level variables. A typical approach has attempted to explain variation in a demographic outcome in a regression framework using these individual-level covariates. Causal analysis at a higher level has been neglected. This is important since relationships at an individual level need not hold at an aggregate level, and since potentially interesting macro-level explanations are ignored. In the current context, marriage and fertility in Tajikistan could be explained in terms of age, region, ethnicity, educational status and income –at the expense of analysing the aggregate changes over time, and the way in which these relate to macro-level social and economic changes during *perestroika* and after independence. The approach in this paper therefore represents a conscious attempt to consider the aggregate and the temporal. It also chooses to use descriptive statistics, in the form of marriage and first birth rates, rather than regression models. This is not to deny the potential utility of a modelling approach *per se* – but simply a reflection that the survey does not contain information on macro-level, temporally varying covariates which might be useful as explanators or control variables. The rates presented are readily interpretable, while the significance of a period's rates can be gauged in relation to any of the other periods by comparing the extent to which the confidence intervals for the rates overlap. In the absence of a regression framework, temporal trends in the rates calculated using the survey data are interpreted, in the words of Ní Bhrolcháin and Dyson (p.29), 'in the nature of old-fashioned quantitative investigation, often descriptive, and often requiring a form of *bricolage*, knitting together diverse strands of evidence'.

Data and Method

This paper draws on data from three nationally representative surveys to examine trends in family formation in Tajikistan: the 2003 Tajikistan Living Standards Survey (TLSS), and the Multiple Indicator Cluster Surveys (MICS) of 2000 and 2005. Each included a female questionnaire with a

section on the fertility history of respondents. The numbers of women interviewed in the three surveys were 6,196, 6,206 and 10,626 respectively.

Compared to vital registration data, survey data are a more accurate reflection of temporal trends in the titular Tajik population. The Russian population in Tajikistan, in particular, was demographically distinctive. Their emigration in large numbers since the end of the *perestroika* years would have had a substantial compositional effect on the temporal trends in family formation as recorded by vital registration data. Further, survey data allow an assessment of trends unaffected by any changes in registration coverage. In the case of marriage, for example, the 2005 MICS asked the question 'In what month and year did you first marry or start living with a man as if married?'- thereby seeking the date of *nikoh,* the Muslim rite which is the basis of marriage (Dikaev 2005), rather than merely the date of the secular registration procedure. This is a more accurate reflection of the date of union and, given the significant under-registration issues, a more complete one. Robustness to under-registration is particularly valuable in the context of civil conflict, which can severely disrupt registration procedures. Indeed, one of the reasons for the relative paucity of studies on the demography of conflict may be the lack of reliable data. Khlat et al (1997), in the absence of alternatives, had to estimate fertility trends in wartime Beirut indirectly using hospital maternity registers. Survey data also permit the calculation of decremental rates in which the denominator is specific to those 'at risk' of the event in question – and rates which are disaggregated by age and/or parity. Table 1 presents definitions of the rates calculated in this paper. These rates represent an improvement on the non-decremental crude rates which have been calculated using Tajikistan's vital registration data.

Table 1 Definition of rates

First birth parity-specific fertility rate	$\frac{B_{t,1}}{W_{t,0}} \times 1000$	$B_{t,1}$=births of order 1 to women during period *t* $W_{t,0}$=woman years lived while of parity 0 during period *t*
First birth age-parity specific fertility rate	$\frac{B_{t,x,1}}{W_{t,x,0}} \times 1000$	$B_{t,x,1}$=births of order 1 to women in age group *x* during period *t* $W_{t,x,0}$=woman years lived while of parity 0 and age group *x* during period *t*
First birth parity-specific marital fertility rate	$\frac{B_{t,m,1}}{W_{t,m,0}} \times 1000$	$B_{t,m,1}$=births of order 1 to married women during period *t* $W_{t,m,0}$=woman years lived while married and of parity 0 during period *t*
First marriage rate	$\frac{M_{t,1}}{W_{t,u}} \times 1000$	$M_{t,1}$=single women marrying in period *t* $W_{t,u}$=woman years lived while single during period *t*
Age-specific first marriage rate	$\frac{M_{t,x,1}}{W_{t,x,u}} \times 1000$	$M_{t,x,1}$=single women in age group *x* marrying in period *t* $W_{t,x,u}$=woman years lived while single and in age group *x* during period *t*

Source: after Ní Bhrolcháin (2001a; 2001b)

There are also disadvantages to using survey data. First, sampling variability places limits on the disaggregation of fertility rates. Since annual rates are subject to substantial sampling error, estimates are presented for three-year periods. These periods are chosen to reflect the temporal context: births between 1990 and 1992 largely reflect conceptions in the years immediately preceding independence in 1991; those in the period 1993-95 reflect conceptions during the years of dramatic post-independence economic decline, and during the height of the civil war in the second half of 1992; births in the period 1996-1998 reflect conceptions during the very difficult economic conditions of the mid-1990s; those between 1999-2001 reflect conceptions in the post-conflict period, and in a slightly more positive economic context in which GDP started to increase slowly.

Standard errors, calculated using Tukey's jackknife (Appendix 1) which accounts for the clustered survey design, are presented with estimates for all periods to help assess the statistical significance of trends. Where possible, rates from the three different surveys are directly compared for corroboration purposes. Second, since each survey collects information for women aged 15-49 at the time of the survey, data are truncated in periods before the survey, with rates based on a progressively younger sample of women (see Ní Bhrolcháin 1993). Here, to ensure comparability across time, rates are calculated based on the marriages/births and exposure to women aged 30 and under, for periods where the age distribution of women is complete up to age 30. Thus rates are reconstructed for a period of around 20 years before each survey. Indeed, since first marriages and first births are concentrated at a relatively young age, truncation is not a significant problem. Since only the woman's age in completed years is provided in the TLSS survey, each woman is assumed to be exactly *x* and a half years old at the time of the survey. No such assumption was necessary for the 2000 and 2005 MICS, where information on the mother's year and month of birth was provided.

Results: family formation in Tajikistan

Table and Figure 2 show trends in the first birth parity specific fertility rate in Tajikistan in the late Soviet and post-independence years. Rates are specified as the number of births of order *n* in a period per 1000 woman years at parity *n-1*. Here, data from all three surveys are presented side-by-side, for corroboration purposes. All three surveys suggest that first birth rates peaked in the early post-independence years. Indeed, since the confidence intervals for the estimates do not overlap, the MICS 2000 and MICS 2005 surveys indicate that first birth rates in the period 1993-95 were significantly higher than in 1987-89 - a period reflecting conceptions in the early *perestroika* years. But age-parity specific fertility rates suggest that this increase was not evenly distributed across all ages. There is no evidence for any significant increase in first birth rates at ages 20-24 or 25-29 over the corresponding period (data not shown). However, all three surveys show significant increases at

ages 15-19 from 1987-89 to 1993-95 – while both the MICS 2000 and TLSS 2003 data suggest that the rate in the 1993-95 period was significantly higher than in the immediately preceding period 1990-92 (Table and Figure 3). Therefore, while first birth rates increased overall, the increase was particularly marked at the younger ages. In contrast, after the early post-independence period, there were dramatic declines in first birth rates. All three surveys show significant declines from 1993-95 to 1996-98, while the MICS 2005 data suggest further declines thereafter – such that in less than a decade first birth rates had more than halved (Table and Figure 2). Unlike the increase in the early post-independence years, the subsequent decrease extended across ages, with significant declines at 20-24 (data not shown) as well as 15-19 (Table and Figure 3).

Table and Figure 2 First birth parity-specific fertility rates: estimates from three different surveys

Year	MICS 2000		TLS 2003		MICS 2005	
1981-83	131.1	*119.2 144.4*				
1984-86	126.4	*115.1 139.1*	122.9	*111.0 136.4*		
1987-89	114.7	*103.2 127.7*	125.0	*113.8 137.4*	127.2	*116.0 139.8*
1990-92	123.3	*112.7 135.0*	115.9	*104.6 128.6*	148.1	*136.6 160.1*
1993-95	145.6	*133.9 158.4*	135.4	*124.6 147.3*	153.1	*140.4 167.3*
1996-98	95.9	*86.8 106.1*	92.3	*83.3 102.5*	100.8	*91.6 111.1*
1999-2001			82.4	*73.4 92.8*	84.7	*76.4 94.2*
2002-04					69.0	*62.4 76.4*

Note: figures in italics are the lower and upper bounds of 95% confidence intervals.

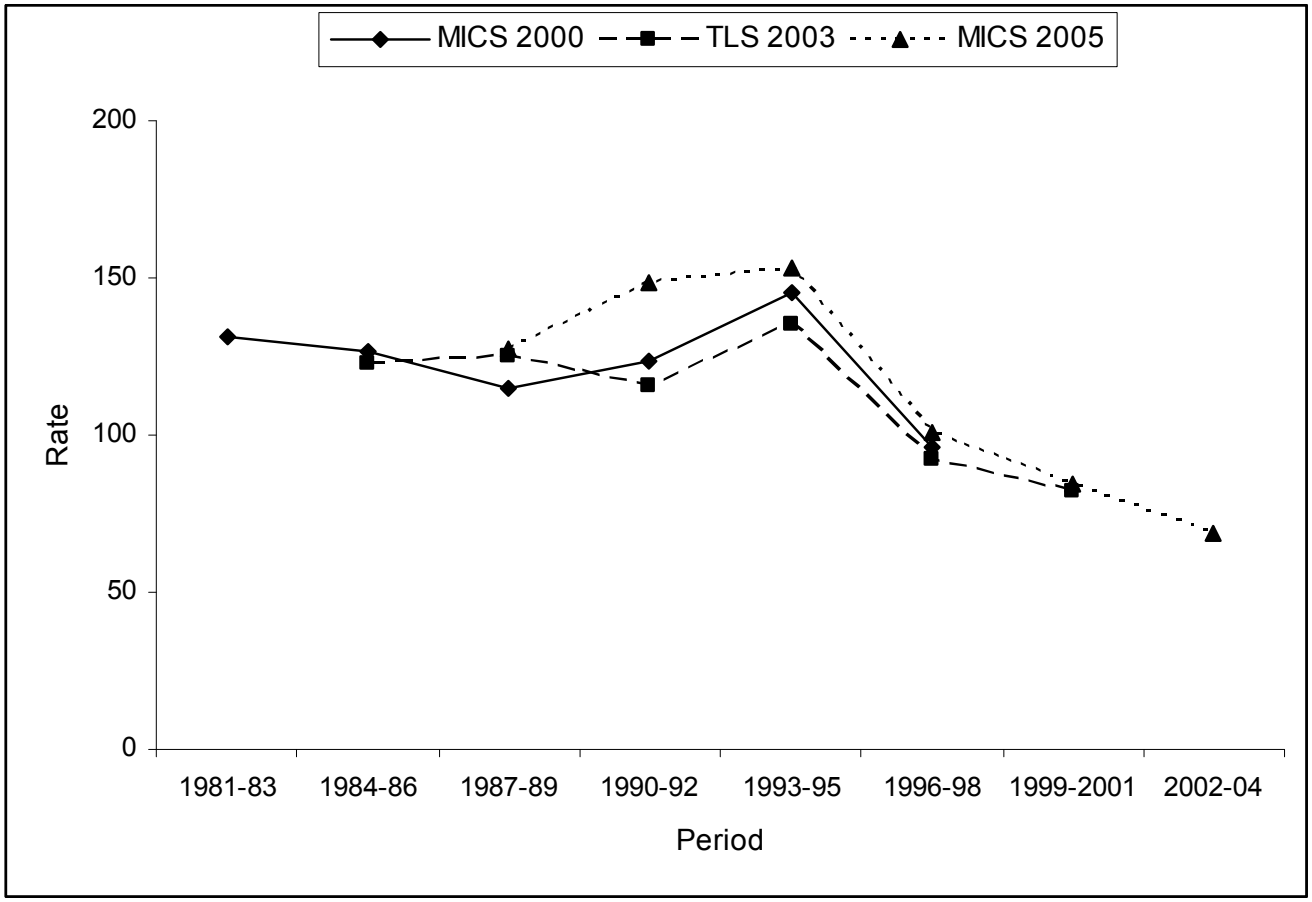
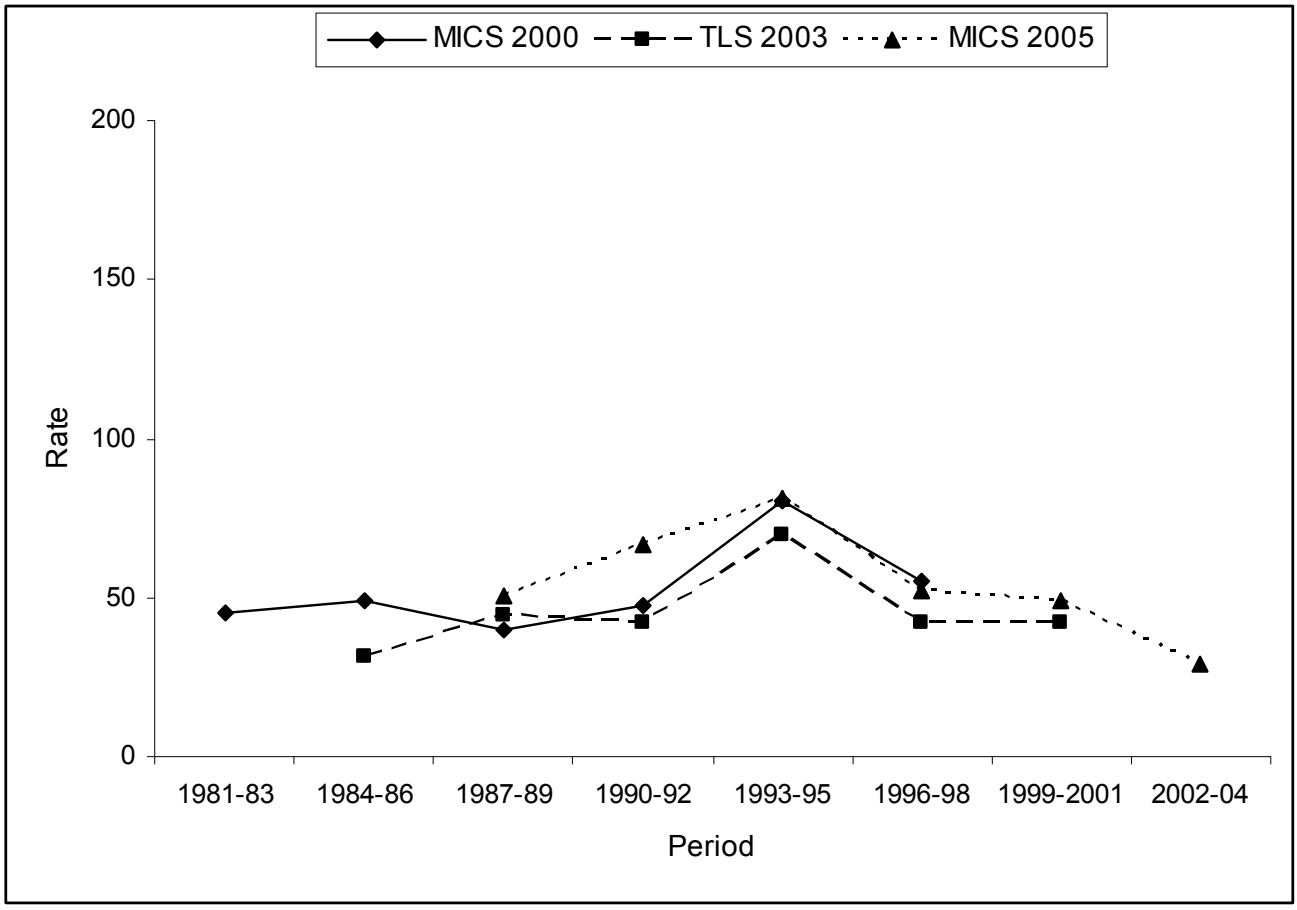


Table and Figure 3 First births to 15-19 year olds: age-parity specific fertility rates; estimates from three different surveys

Year	MICS 2000			TLS 2003			MICS 2005		
1981-83	45.5	*37.1*	*56.3*						
1984-86	49.2	*40.8*	*59.9*	31.4	*24.5*	*40.8*			
1987-89	39.5	*31.8*	*49.6*	44.2	*36.7*	*53.9*	50.8	*42.5*	*61.1*
1990-92	47.2	*39.5*	*56.9*	42.4	*34.5*	*52.7*	66.9	*57.1*	*79.0*
1993-95	80.3	*70.8*	*91.5*	69.6	*59.5*	*82.0*	81.6	*71.0*	*94.1*
1996-98	54.9	*47.9*	*63.2*	41.9	*34.9*	*50.8*	51.8	*43.8*	*61.6*
1999-2001				41.9	*34.6*	*51.1*	49.2	*42.0*	*57.9*
2002-04							29.5	*24.3*	*36.1*

Note: figures in italics are the lower and upper bounds of 95% confidence intervals.



To what extent are these trends a reflection of changes in first marriage rates, and to what extent are they a reflection of changes in first birth propensity within marriage? Table 4 presents first marriage rates calculated using MICS 2005 data. Unfortunately, corresponding estimates could not be made for the other surveys. The 2000 MICS did not collect information on marriage, while in the TLSS data both woman's age at interview and age at first marriage are only provided in completed years, such that the marriage could have occurred at any point within a two year window – complicating estimation of the exposure to marriage. This contrasts with the precise information on month and year of the woman's birth and marriage date provided in the 2005 MICS. Note also that the periods chosen for comparison in Table 4 are different to the first birth rate periods, which were chosen to account for gestation. Therefore, just as births in the period 1993-95 reflect conceptions during the years of dramatic post-independence economic decline, so marriages in the period 1992-94 reflect a similar context.

Results suggest a similar pattern to the corresponding MICS 2005 estimates for first births – with evidence for a significant increase in the first marriage rate from the early perestroika years (1986-88) to the early post-independence years (1992-94), followed by dramatic declines in marriage rates thereafter. Just as for first births, the initial increase in marriage rates was particularly marked for younger women (Table and Figure 5), with no evidence for significant change in the rates for the 20-24 or 25-29 age groups, while the subsequent decrease extended to the 20-24 as well as the 15-19 group. In contrast, there is no evidence for any significant change in first birth propensity within marriage (Table and Figure 6), and no evidence for any age-specific trends. This strongly suggests that the peak in first births, particularly first births at a young age, in the early post-independence period reflects corresponding changes in first marriage rates. Similarly, the dramatic decline in first birth rates from the mid-1990s is a function of the dramatic decline in first marriage rates – which declined by around 60% in less than a decade. In other words, the traditional strong progression from first marriage to first birth has been maintained. This shows parallels with the situation in

Uzbekistan (Agadjanian and Makarova 2003), where post-independence increases in contraceptive use are restricted to older women seeking to limit their family size (Barbieri et al. 1996; Buckley et al. 2004). In Tajikistan, too - where prevalence is low compared to other Central Asian republics - contraception is only used by older women at higher parities (Harris 1998b; Tajikistan State Committee on Statistics and United Nations Children's Fund 2006). Explaining late-Soviet and post-Soviet trends in first births therefore essentially becomes a problem of explaining the trends in marriage.

Comparing survey estimates with vital registration data

The trends in marriage reflected by the survey data show distinct differences to those based on vital registration (VR) data. Survey estimates suggest that marriage rates peaked during 1992-94 (Figure 3). Therefore, while VR data indicate that marriage levels declined in this early post-independence period (Figure 1), this decline is likely to reflect a decrease in registration coverage. The drop in 1992, in particular, is suggestive of decreased registration during the peak in the civil conflict; VR fertility data (not shown) also show a dramatic decline in 1992 and both marriage and fertility declines are most severe in those regions most affected by the fighting. Meanwhile, VR data suggest a recovery in the marriage rate from the late 1990s. In contrast, survey estimates show further significant declines in marriage rates from 1998-2000 to 2001-03. There are two possible reasons for the increase in the VR rate. First, there may have been an increase in registration coverage. Second, and more likely, is that the increase is an artefact of crude measurement. Since the VR rates in Figure 1 are non-decremental rates, with the exposure including those not 'at risk' of first marriage, they are vulnerable to distortions introduced by compositional changes. In other words, the apparent increase in marriage rate since 2000 might simply reflect a higher proportion of unmarried women available for marriage following the earlier decline in marriage propensity. Overall, the difference between the two temporal trends underscores the importance of using survey data, robust to underregistration, and of calculating decremental rates.

Table and Figure 4 First marriage rates for women

Period	MICS 2005	
1986-88	163.8	*148.4 181.0*
1989-91	196.5	*181.4 213.1*
1992-94	209.5	*191.7 229.2*
1995-97	137.2	*124.7 151.1*
1998-2000	113.4	*102.7 125.5*
2001-03	82.7	*74.6 91.8*

Note: Figures in italics are the lower and upper bounds of 95% confidence intervals.

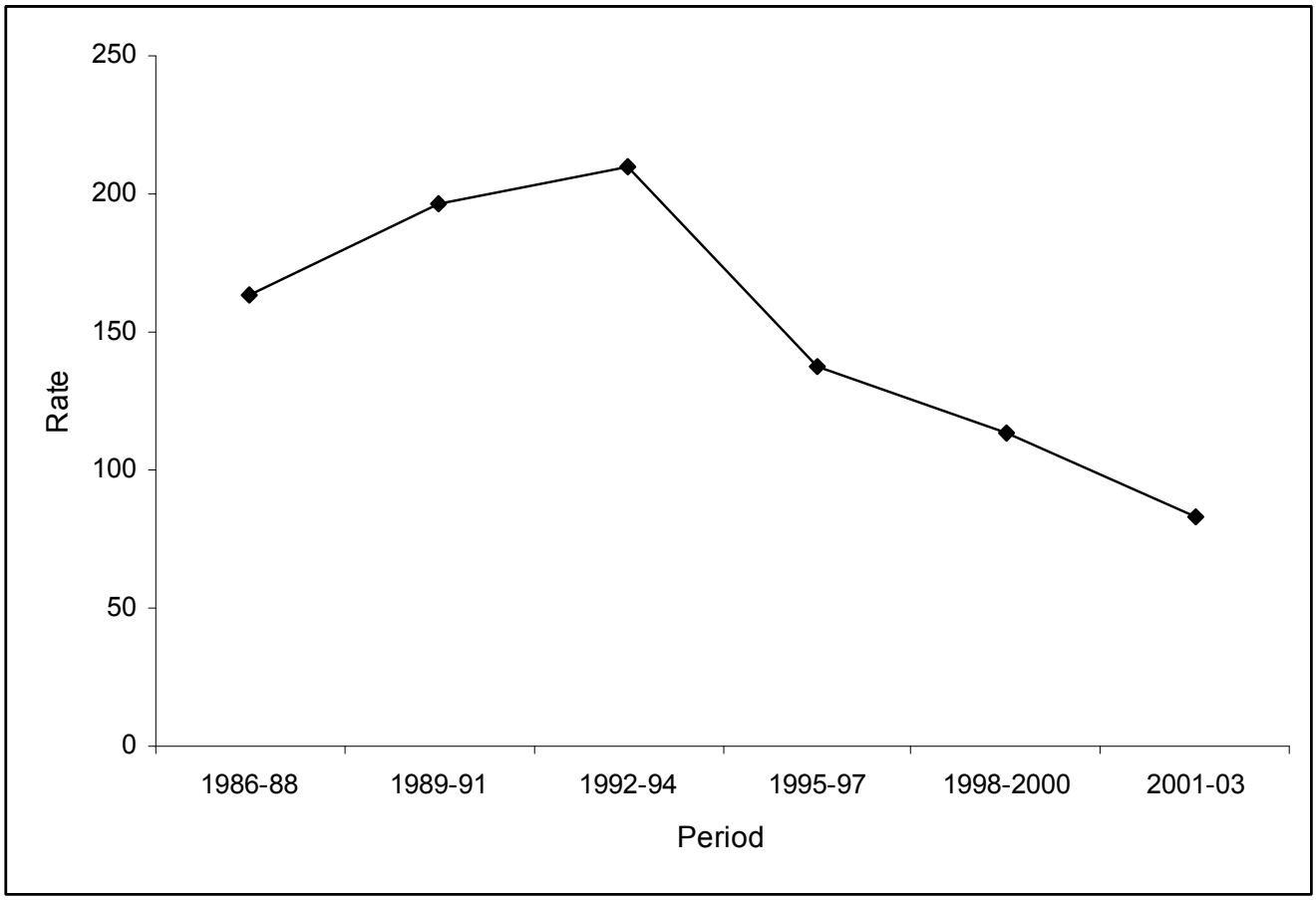


Table and Figure 5 First marriages for 15-19 year old women: age-specific marriage rates

Period	MICS 2005	
1986-88	125.2	*110.2 142.5*
1989-91	146.5	*129.9 166.1*
1992-94	179.4	*161.7 199.5*
1995-97	111.9	*99.3 126.5*
1998-2000	90.2	*80.0 102.0*
2001-03	57.0	*49.3 66.1*

Note: Figures in italics are the lower and upper bounds of 95% confidence intervals.

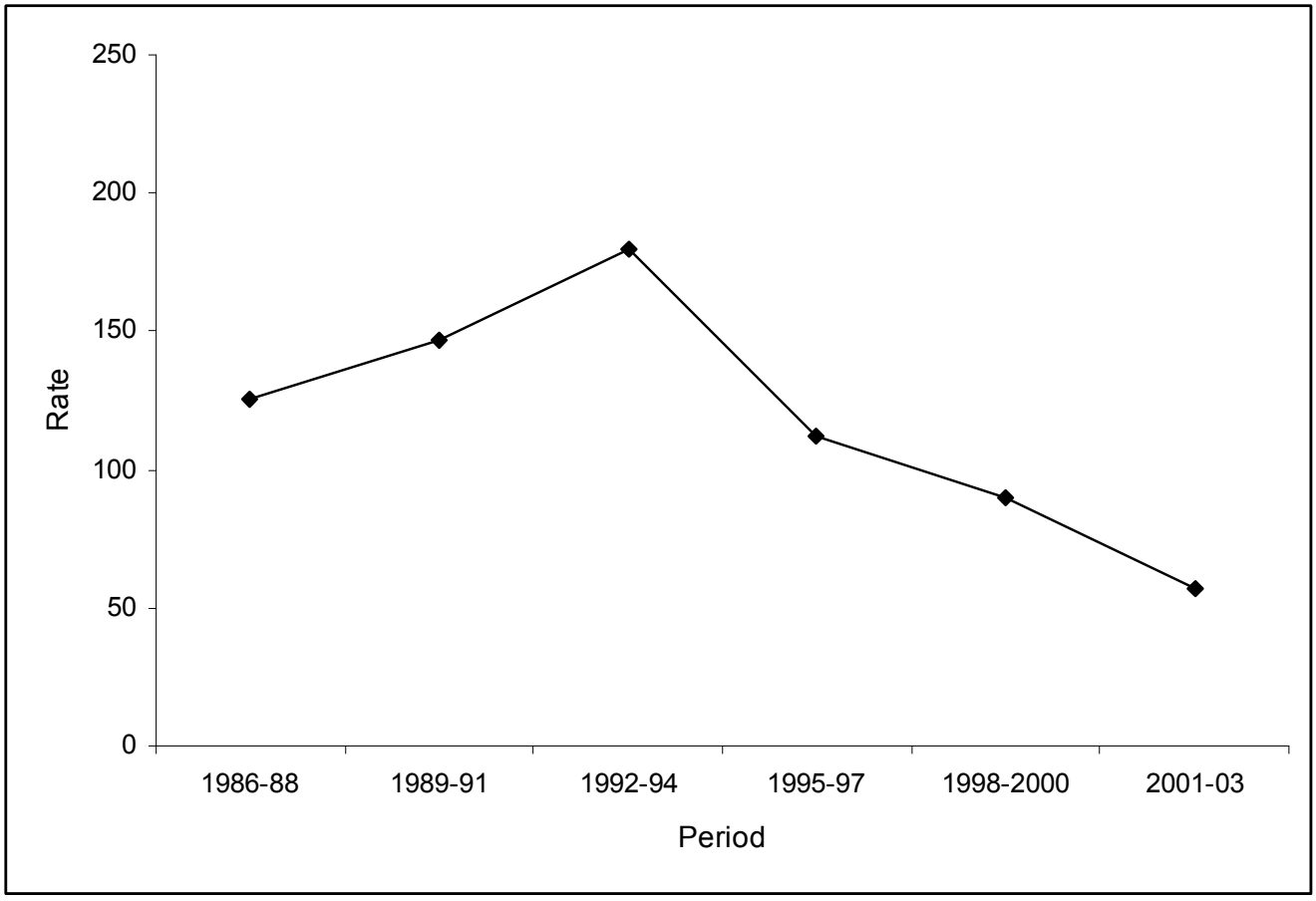
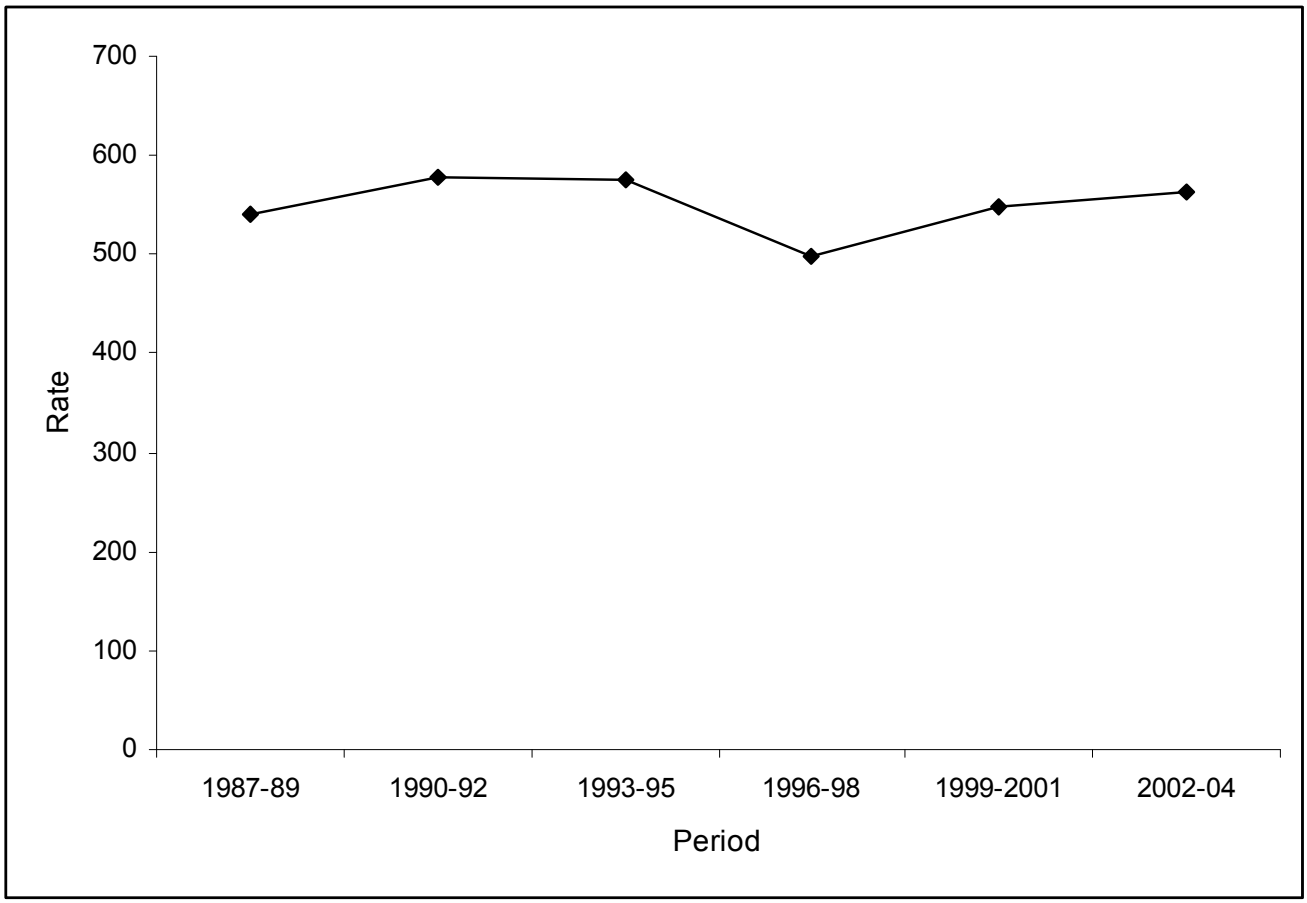


Table and Figure 6 First birth parity-specific marital fertility rate

Period	MICS 2005	
1987-89	539.6	*493.9 589.7*
1990-92	578.4	*538.0 621.7*
1993-95	574.8	*531.6 621.8*
1996-98	497.0	*451.7 546.9*
1999-2001	548.0	*496.9 604.3*
2002-04	562.4	*516.3 612.6*

Note: Figures in italics are the lower and upper bounds of 95% confidence intervals.



Discussion

Increase in marriage rates during the transition period

What caused the increase in marriage rates from the beginning of the *perestroika* years to the early post-independence period? Since Agadjanian and Makarova (2003) also found evidence for an increased propensity to marry during the transition period in Uzbekistan, it makes sense to revisit the possible explanations that they present and evaluate them in a Tajik context. The first relates to how the trend towards 'conspicuous consumption' in wedding ceremonies strengthened during *perestroika* – and that the race to affirm a family's status was such that families married their daughters off at an earlier age. Agadjanian and Makarova start by outlining the importance of marriage in Uzbekistan. Even in a Soviet context, where the lack of investment opportunities and the economy of shortages precluded other demonstrations of wealth, the tendency for displaying family status through the wedding ceremony and associated gift exchanges has been particularly strong. The qualitative research of Tett (1996), conducted during 1990 and 1991, suggests that this tradition is also strong in Tajikistan. The village in Central Tajikistan where she carried out her research reflected 'a culture obsessed with marriage ceremonies. Weddings, past and present, were a constant topic of village discussion. They were the most elaborate and expensive set of ceremonies ever performed in village life…[and] a central focus for the village social calendar' (p.120). It provided 'one of the few vehicles for display of [wealth] that was thoroughly approved of by the villagers' (p.188). The tradition of gift exchanges was well established, with the most extensive gifts associated with the dowry and the *kalym* ('bride price'). How much families had given became widely known: as Tett (p.182) points out, 'skimping on the *kalym* or dowry was hard to hide, because the goods were displayed in the bride's room after the bridal journey, hung in groups showing which side had given what. Thus the women who attended… could rapidly assess the relative levels of expenditure'.

Agadjanian and Makarova argue that in Uzbekistan during the *perestroika* period, when economic restructuring promoted the accumulation of private wealth, these customs were strengthened – reflected in increasingly lavish celebrations and gift exchanges – strengthening the role of marriage as a vehicle for displaying wealth to such an extent that marriage rates increased. Is there evidence for similar changes in Tajikistan? Tett argues that the scale of gift exchanges had reached unprecedented levels by the end of the Soviet period as the dowries and *kalym* increased and the ceremonies 'had become increasingly lavish and expensive' (p.187). She situates these inflationary pressures within the Soviet period more generally, and the associated rise in living standards coupled with the lack of opportunities to display wealth, rather than the peculiarities of the *perestroika* period. Indeed, Agadjanian and Makarova acknowledge that the inflationary processes in Uzbekistan dated from the 1970s - but argue that they were accelerated during the *perestroika* years. Definite conclusions of this kind for Tajikistan are hindered by a lack of a qualitative research on changes in the level of marriage celebrations over the *perestroika* period.

Turning to Agadjanian and Makarova's (2003) other possible explanations for the increase in marriage rates, assessment of the importance of the increase in dowry requirements during the *perestroika* period - and the subsequent pressure on families to marry their daughters before any further increases could take place - is similarly hindered by the lack of information on such changes in Tajikistan. The third possible explanation relates an increase in anti-Soviet nationalism to a resurgence of the traditional preference for early female marriage. In Tajikistan, as elsewhere in Central Asia, the policy of *glasnost* ('openness') gave a voice to nationalistic opinion. This was especially manifest in the push for an improvement in the status of the Tajik language. As Akbarzadeh (1996) outlines, following intense opposition pressure Tajik was made the national language in July 1989 – the first of the Central Asian republics to take such a step. But overall nationalist sentiment remained rather weak in Tajikistan – and in Central Asia generally compared to other regions of the Soviet Union (Juska 1999) – and it is unlikely that this was the factor behind the

surge in marriage. Indeed, Agadjanian and Makarova acknowledge that there is a danger of overstating the extent of nationalist resurgence during the period.

More promising, therefore, as an explanation is that the increase in marriage propensity reflected a response to the anxieties and uncertainties generated by *perestroika*: 'in a climate of escalating rumours about imminent but unclear changes and an increasing general sense of insecurity, parents may have preferred to find a husband for their daughter quickly so that he and his family would look after her in uncertain times' (Agadjanian and Makarova 2003:460-1). Agadjanian and Makarova place particular emphasis on the uncertainty regarding cultural norms and the role of women – but the uncertainty was pervasive, also extending to other aspects of life and affected by the suite of concurrent changes. *Perestroika* represented a time of reform, political machinations within the Communist party, and of economic decline. The promise of improved life-styles through reform contrasted sharply with day-to-day reality. Thus Buckley (1992:7), discussing the impact on Soviet women, notes that 'by 1989, to many women daily life seemed harder than ever before. Glasnost has exposed many problems in need of analysis… it had revealed, condemned and deplored, but not delivered'. There was also increased display of public dissatisfaction with living standards. In Tajikistan, for example, dissatisfaction eventually led to unrest and rioting, starting in early 1991. Overall, writing at the end of the *perestroika* period, Buckley (1992:8) concludes that 'change in the USSR is currently rapid, turbulent, chaotic and unpredictable'. In such a climate, a rational response might be to postpone long-term commitments like marriage – but Sobotka (2004) usefully points out that the effect of uncertainty on family formation is complex and dependent on context: it is likely to vary across time and space, by population group, and by the type of uncertainty. In Tajikistan, the context is one in which marriage celebrations serve to reaffirm ties with the local community – ties which play an important economic and social role in people's lives (Tett 1996). Marriage also represents an investment in a household's future: as Tett argues, family ties, centred around the household unit, were seen as a crucial means for adapting to the shortcomings of the economic

system throughout the Soviet era. During the difficult *perestroika* years, arranging a marriage for a son, or particularly their daughter, would have been seen as an important means of securing their future. Here, marriage might therefore be considered as one of the 'global strategies' of which Friedman et al. (1994:382) speak, in which rational actors seek to reduce uncertainty regarding 'whole strings of future courses of action' by 'bind[ing] themselves to courses of action which are largely independent of future states of the world'.

Importantly, the data from the three surveys suggest that family formation peaked in the early post-independence years, rather than the *perestroika* period. While much of the increase in first marriage and first birth rates took place during *perestroika*, this increase continued in the immediate post-Soviet period. In particular, estimates of age-parity specific rates from the MICS 2000 and TLS 2003 surveys suggested a significant increase in first births to 15-19 year olds from 1990-1992 to 1993-1995 (Table 3). It seems very likely that at least part of this increase reflects a continuing response to the changes of the *perestroika* era, given the time involved in choosing a partner and arranging the wedding ceremonies. However, part may also reflect a particular response to the changes of the post-independence years, given the qualitative evidence cited earlier that for some families security concerns associated with the civil conflict provided extra motivation for them to find a husband for their unmarried daughters.

The significance of increases in family formation for women aged 15-19, and the lack of evidence at higher ages, underscores the importance of considering age-specific marriage and first birth rates. There is strong support for the suggestion that the changes in the *perestroika* and early post-independence period did not affect women uniformly, and that the effect may have been particularly strong for younger unmarried women. The explanation lies in the strong cultural expectation, even before *perestroika*, that women should be married at a relatively young age (albeit significantly later than in pre-Soviet times). Marriages typically took place when the bride was in her late teens or

early twenties. While some brides also married aged 24 or 25, 'it was unusual for a girl to be any older and remain unmarried' (Tett 1996:109). In a sense, therefore, there has always been a strong pressure for women to be married before 25 – or risk being labelled an 'old maid' (see Harris 2004:86). What was new about the transition years was the pressure for younger women, as well as those in their 20s, to be married off. Whether the increased propensity for family formation is attributed to the strengthening of 'conspicuous consumption', as a response to uncertainty, or the effect of civil conflict, one or more of these acted to encourage a higher proportion of families to marry off their teenage daughters than in previous periods.

Decrease in marriage rates from the mid-1990s

The fall in first marriage rates since the mid-1990s is dramatic – a fall of 60% in less than a decade. This decrease is of a different order than the increase in the transition years, such that from the mid-1990s rates are significantly lower than the pre-*perestroika* years. Therefore, while there has undoubtedly been a decrease in marriage registration in the post-independence era, the decline in crude marriage rates calculated using vital registration data also reflect a real and significant decline in propensity for marriage. The economic crisis has undoubtedly played a key role in this decline. Conducting a marriage in Tajikistan is expensive: as Tett (1996:187) argues, 'for many households it represented one of the biggest expenses that ever occurred during the household's life cycle. Building a new house, for example, was popularly reckoned to cost around 7000 roubles [at the time of her fieldwork in 1990 and 1991]. Conducting full scale marriages for two sons in a household… could easily cost a similar amount. Indeed, a fully fledged wedding in 1991 would often cost around 10,000 roubles (although the individual households would not bear all of the costs themselves)'. The dramatic economic crisis of the post-independence years has undermined the ability to pay for such lavish ceremonies, with strong evidence that celebrations have been scaled down. Thus Gomart (2003:66), reflecting on fieldwork carried out in 1996 in nine sites across the country, reports that

'under the counsel of the mullah, some communities had agreed to decrease the expense of weddings… which could bankrupt a household. Thus, at many sites, wedding ceremonies were confined to close relatives… in isolated villages, weddings were often held in winter to avoid unexpected guests and keep costs down'. Not only did economic conditions encourage simpler ceremonies – it also meant that some households decided to defer marriage altogether. Thus Abdullaev and Akbarzadeh (2002:166) attribute the decline in official marriage figures to economic hardship as well as the artefact of reduced registration. Importantly, the decline in marriage rates is only evident from the mid-1990s, a few years after the beginning of the economic crisis. This probably reflects the depleting effect of the early post-independence period on household resources accumulated during previous years, and the consequent inability to draw further on such resources as economic hardships continued. Unlike the earlier increase in the marriage rate, the decrease in marriage extended across all ages, indicating that the decline in available resources affected marriage propensity irrespective of the age of the daughter.

While the direct effect of economic hardship is important, there are strong indications that other factors have also contributed to the dramatic decline in marriage rates. In particular, there is qualitative evidence for a sharp gender imbalance in the post-independence years – with a lack of men of marriageable age. This is a function of both the loss of young men during the civil conflict, and the large-scale labour migration during the post-independence years. One source estimates that Tajikistan may be the largest emigrant labour supplier per capita in the world (Erlich 2006). Certainly the extent of migration, most of it undocumented, is much higher than official statistics would suggest. Other estimates of the scale of the migration vary, reflecting the difficulty in measuring dynamic and often temporary migration flows. The different figures are collated by Olimova and Bosc (2003). According to the Department of External Migration, 250,000 migrants from Tajikistan were staying in other CIS countries in 1997. According to the State Border Committee, 1.2 million Tajiks were working abroad in 2001 - a remarkable figure given that the total

permanent population of Tajikistan was only 6.13 million at the time of the 2000 census (Rowland 2005). A survey carried out by Sharq in 2003 showed that 632,000 people had left the country to look for a job since 2000, and that 26% of all households had at least one household member working abroad (Olimova and Bosc (2003). Attracted by employment and higher wages, an estimated 84% of these labour migrants went to Russia. The length of stay abroad varies: many migrate seasonally, leaving in February or March and returning in October or November; some stay away for years at a time; some don't return to Tajikistan. Significantly, labour migrants are overwhelmingly male. Olimova and Bosc identify two main age groups: the 'fathers', aged 40-49, and the 'sons', aged 20-29, who are often trying to earn money so that they can marry or build a house. As they point out, since a large proportion of migrants are young men, the effect is to remove many eligible bachelors from the marriage market. This has had a direct influence on women's ability to find a partner. Thus Harris (1998a) reports, of the Garmi villages in Khatlon, that 'the absence of young men of marriageable age has made it extremely difficult to find spouses for the girls and there are increasing numbers of unmarried girls aged 22 or 23 [which was previously unheard of]'. Qualitative accounts of an increase in polygamy (Tabyshalieva 1997) and the emergence of 'kept women', who are paid to cohabit, reflect reactions to the gender imbalance.

It is worth noting that the decrease in marriage rate has taken place in a context of a significant decrease in school enrolment and attendance, especially for girls at the secondary ages (United Nations Development Programme 2000; TransMONEE 2006). Meanwhile, while unemployment has increased across the board in the post-Soviet era, it has increased most significantly among the young. Also, as Falkingham (2000) outlines, post-independence changes have not been gender neutral: not only has unemployment increased most significantly among women, but also women have suffered by being concentrated in the lowest–paid sectors, including agriculture, education and health – where wages are insufficient to live on. Overall, in a context of decreasing education and employment opportunities for young women, the Tajik decrease in family formation contrasts

sharply with the processes observed in post-socialist Central Europe, where postponement of first births has been attributed partly to women's new employment opportunities and career prospects (Sobotka 2004). Further, as Sobotka notes, in Central and Eastern Europe the decrease in the marriage rate has been accompanied by a surge in extra-marital childbearing. In Tajikistan, in contrast, there is no evidence for such a dramatic increase. Meanwhile, marriages have largely continued to be arranged rather than 'love matches'. Thus Harris (2006) estimates that traditionalist families remain very much the norm, with even in central Dushanbe no more than 10% of families displaying 'modernistic' tendencies such as acceptance of love matches.

Establishing the demographic importance of the civil conflict

To what extent did the increase in marriage rates during the transition period represent not just a response to the changes during *perestroika*, but also a reaction to the security and economic concerns prompted by the civil conflict? And to what extent did the subsequent decrease in marriage reflect the loss of men during the fighting? One possible way to assess the demographic importance of the civil war is to examine whether the areas most affected by the conflict have seen the most acute changes in marriage and first birth rates. However, there is no indication from the survey data that the increase in family formation in the post-independence period was particularly strong in Khatlon or RRS, the regions most affected by the conflict and civil unrest. Further, there is no sign that the subsequent drop in marriage rates was particular to these regions. However, a number of caveats should be noted here. These results may simply reflect both the crude scale of analysis - in comparison to the localised nature of the conflict within particular regions - and the lack of statistical power to examine spatial differences in trends, even at the crude regional level, given the sample sizes involved. Spatio-temporal analysis of this kind is also compromised by internal migration: a woman's place of residence at the time of the survey may not reflect her place of residence throughout the analysis period. While Rowland (2005) points out that the vast majority of those

displaced by the civil conflict had returned to their previous place of residence by 1997, he also documents the dramatic increase in the Tajik population in Dushanbe in the post-independence period – indicative of migration into the capital. Overall, therefore, the lack of evidence for spatial differences in the survey trends need not preclude the importance of civil conflict to either the increased propensity for family formation in the early post-independence years, or the subsequent decline in marriage and first birth rates.

The potential for more refined analysis examining spatial differences in temporal trends is noted. The 1999 Tajikistan Living Standards Survey asked whether the household dwelling had been damaged during the civil war. It would be possible, therefore, to identify those districts (*raions*) most affected by the civil war – and examine whether these *raions* showed distinctive trends in first birth rates using data from the 2003 TLSS. In a similar way, Olimova and Bosc (2003) list the districts most affected by labour migration – so it would be possible to examine whether there were particular declines in family formation in these areas. Meanwhile, the 2003 TLSS is rare in recording information on the migration history of household members since 1998 – offering a valuable opportunity to reconstruct more recent trends in migration, and to directly link this to trends in first births recorded in the same survey at various spatial levels (Paper 3). However, the focus of the current paper is national trends. The importance of the civil conflict, and of labour migration, at the local level is not in dispute. What is more in doubt is whether these have acted to influence trends in family formation at a national scale.

Placing Tajikistan's results within a wider context

Key to understanding the trends in Tajikistan is an appreciation of the wider spatial context. How unusual are these trends in family formation compared with other Central Asian republics? Just as Khlat et al. (1997) compared fertility trends in Beirut during the civil war with other Arab cities over

the corresponding period, so an assessment of the distinctiveness of the Tajik case can be made by comparing its trends with those in neighbouring Uzbekistan and Kyrgyzstan, both of which experienced economic crisis but not civil war. In the absence of a true counterfactual, the experience of these countries can provide some indication of what trends in Tajikistan may have been in the absence of civil conflict – and therefore a guide to the relative importance of economic changes and civil war as macro-level explanators for temporal trends in family formation. Therefore, 2005/6 MICS data for Kyrgyzstan, and from the 2002 Uzbekistan Health Examination Survey (UHES), are used here. These nationally representative surveys interviewed 7,043 and 5.463 women respectively. Trends in marriage rates and age-specific marriage rates are calculated for the late Soviet and post-independence period. Given the lack of research on marital behaviour in post-Soviet Central Asia – particularly from a period perspective – these represent interesting substantive analyses in their own right. Table 7 presents key information on the three countries.

Table 7 Selected characteristics of Tajikistan, Uzbekistan and Kyrgyzstan

	Tajikistan	**Uzbekistan**	**Kyrgyzstan**
Population (2007 est.)[1]	7.1m	27.8m	5.3m
Total fertility	3.96 (2000-02)[2]	2.92 (2000-02)[3]	3.37 (1995-97)[4]
Peak % fall in GDP (relative to 1989 levels)[5]	60.8 (1996)	16.6 (1995)	49.4 (1995)
Casualties in civil conflict	60,000-100,000[6]	-	-

1 Central Intelligence Agency (2007) 2 Author's analysis of TLSS 2003 3 Kamilov et al. (2004) 4 Kasiev et al. (1998) 5 TransMONEE (2006) 6 International Crisis Group (2001).

Table 8 and Figure 7 compare the trends in first marriage rates for the three countries. Tajikistan shows the strongest increase in marriage propensity from the beginning of *perestroika* to the early post-independence years, with no evidence for a significant change in marriage rate in either Kyrgyzstan or Uzbekistan from 1986-88 to 1992-94. However, in all three countries there were significant increases in early marriage over this period (Table 9 and Figure 8). The similarity in these trends suggests that the changes which each country experienced during the *perestroika* years were the most important factors in encouraging early marriage, such that Tajikistan's trends are not

simply a reflection of the peculiarity of the civil conflict. Nevertheless, the unusual strength of the trends in Tajikistan might suggest either that the *perestroika* changes were particularly strongly felt here, or that the security concerns in the immediate post-independence period provided further motivation for families to marry off their daughters.

More widely, these results situate the peak in early marriage in Central Asia specifically in the early post-independence period. Thus the peak in marriage hazard in Uzbekistan for those reaching 16 between 1986 and 1990, noted by Agadjanian and Makarova (2003), is a reflection of the peak in marriage rates in 1992-94. The survey estimates also provide a reliable estimate of cross-sectional international differences in marriage propensity. Crude marriage rates synthesised by TransMONEE (2006) indicate that rates in the early post-independence period were very similar in Kyrgyzstan and Tajikistan, and highest in Uzbekistan. The survey estimates suggest, however, that marriage propensity was highest in Tajikistan, with a rate significantly higher than in Kyrgyzstan. The disparity between the survey and vital registration figures serves to illustrate the particular problem of under-registration in official Tajikistan statistics.

While the increase in marriage rates during the transition years was strongest in Tajikistan, Tajikistan's trends from the mid-1990s are even more distinctive. It has seen the most dramatic decrease in marriage rates: in 1992-94, it had the highest marriage propensity, significantly higher than Kyrgyzstan; by 2001-03, its rate was significantly lower than Kyrgyzstan. The drop in marriage rates in Tajikistan from 1992-1994 to 1995-97 was particularly dramatic, and sets it apart from the still substantial but more gradual changes in Uzbekistan and Kyrgyzstan. It is true that rates in all post-Soviet republics have declined - indicating that post-independence economic crisis, common to each of the countries, played an important role. Indeed, Agadjanian and Makarova (2003) observe that by the mid-1990s in Uzbekistan more and more people were postponing weddings for financial reasons. But the decline in Tajikistan was particularly severe. Tajikistan did experience the most

severe economic decline of all three republics in terms of the decline in GDP (Table 7) and real wages – but this is unlikely to explain why the decline in the marriage rate was so much more significant. The mortality of males during the civil war, a situation unique to Tajikistan, may therefore have served to accentuate the decline in marriage. Temporally, the peak in mortality during the early post-independence years would help to explain the particularly steep decline in marriage rate in the mid-1990s.

More research is required, however, into the reasons for Tajikistan's distinctiveness. While the number of casualties in the civil war was significant (60,000-100,000 according to the ICG (2001)), it is not clear that it would have been sufficient to underpin such a collapse in marriage, particularly given that many of those who died were already married. Certainly, in terms of the numbers involved, the loss of men through labour migration dwarfs the effect of civil war mortality. There is strong evidence that labour migration in Tajikistan took off in the mid-1990s - 'population movements abroad for work became a mass phenomenon…in 1994' (Umarov 2006:93); 'labour migration surged in 1994 and 1995'(Olimova and Bosc 2003:8) – and continued to increase. Temporally, this accords with the dramatic decline in marriage rates. The scale of emigration may help to explain Tajikistan's distinctiveness. But migration of the Kyrgyz population to Russia also started to gain pace at this time (Ergeshbayev 2006) and has reached significant levels, as it has in Uzbekistan. Indeed, labour migration has been a key feature of post-Soviet demographics across Central Asia. While Erlich (2006) speculates that Tajikistan might be the largest per capita exporter of labour of all, it is difficult to find reliable statistics as a basis for such international comparison. Unfortunately, official figures cannot provide a guide: since most of the migration is 'informal and illegal', they do not reflect the true numbers involved. A systematic review of the various estimates of labour migration in Central Asia, encompassing temporal trends and international comparisons, would therefore be a welcome addition to the literature – and add further to analysis of post-Soviet trends in family formation.

If our understanding of the trends is still at a preliminary stage, these results nevertheless provide a valuable insight into the extent of change in marital behaviour in post-Soviet Central Asia. Becker and Hemley (1998) examine crude marriage rates from vital registration data in Kazakhstan, Kyrgyzstan and Uzbekistan, but the trends are vulnerable to probable decreases in the level of marriage registration. Further, they only consider trends until 1994. Agadjanian and Makarova's (2003) study on Uzbekistan only examines change until 1996 and concludes that post-independence rates compare with those of the pre-*perestroika* era. With the benefit of a longer temporal perspective, and reliable estimates of marriage rates unaffected by under-registration, this study illustrates the true scale of the post-Soviet collapse in marriage rates in Central Asia. It also unambiguously shows that, even in a Central Asian context, the decline in Tajikistan was particularly severe.

Table 8 and Figure 7 First marriage rates for women in Uzbekistan, Kyrgyzstan and Tajikistan

Period	**Uzbekistan** UHES 2002			**Kyrgyzstan** MICS 2005/6			**Tajikistan** MICS 2005		
1983-85	149.7	*132.9*	*169.1*						
1986-88	160.4	*143.5*	*179.5*	136.1	*120.6*	*154.3*	163.8	*148.4*	*181.0*
1989-91	178.9	*160.7*	*200.0*	164.4	*145.6*	*185.7*	196.5	*181.4*	*213.1*
1992-94	186.4	*168.1*	*207.2*	153.4	*136.8*	*172.1*	209.5	*191.7*	*229.2*
1995-97	158.2	*143.8*	*173.9*	118.2	*104.4*	*134.3*	137.2	*124.7*	*151.1*
1998-2000	108.0	*95.6*	*122.5*	120.4	*104.7*	*139.0*	113.4	*102.7*	*125.5*
2001-03				107.5	*94.3*	*122.9*	82.7	*74.6*	*91.8*

Note: Figures in italics are the lower and upper bounds of 95% confidence intervals.

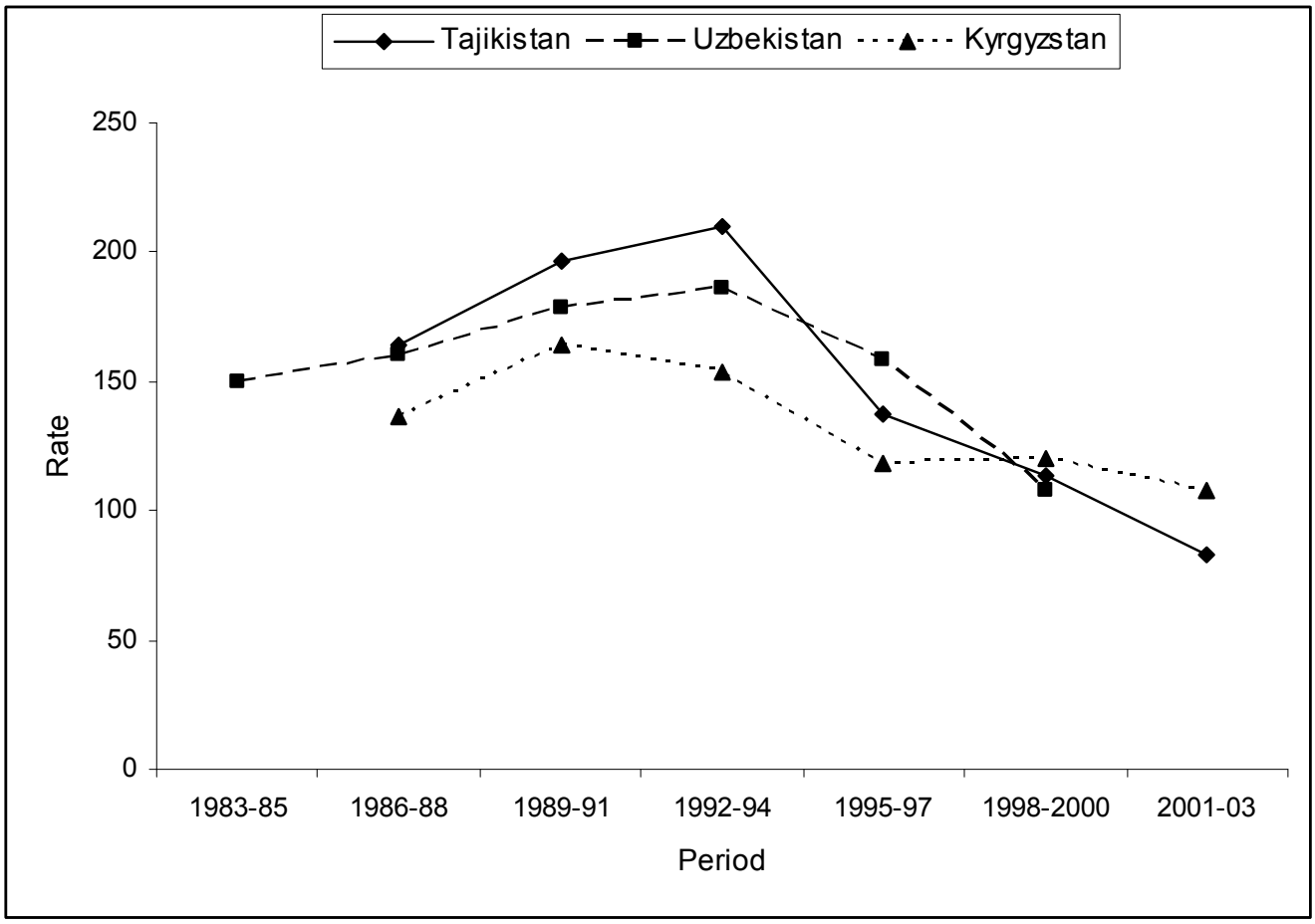
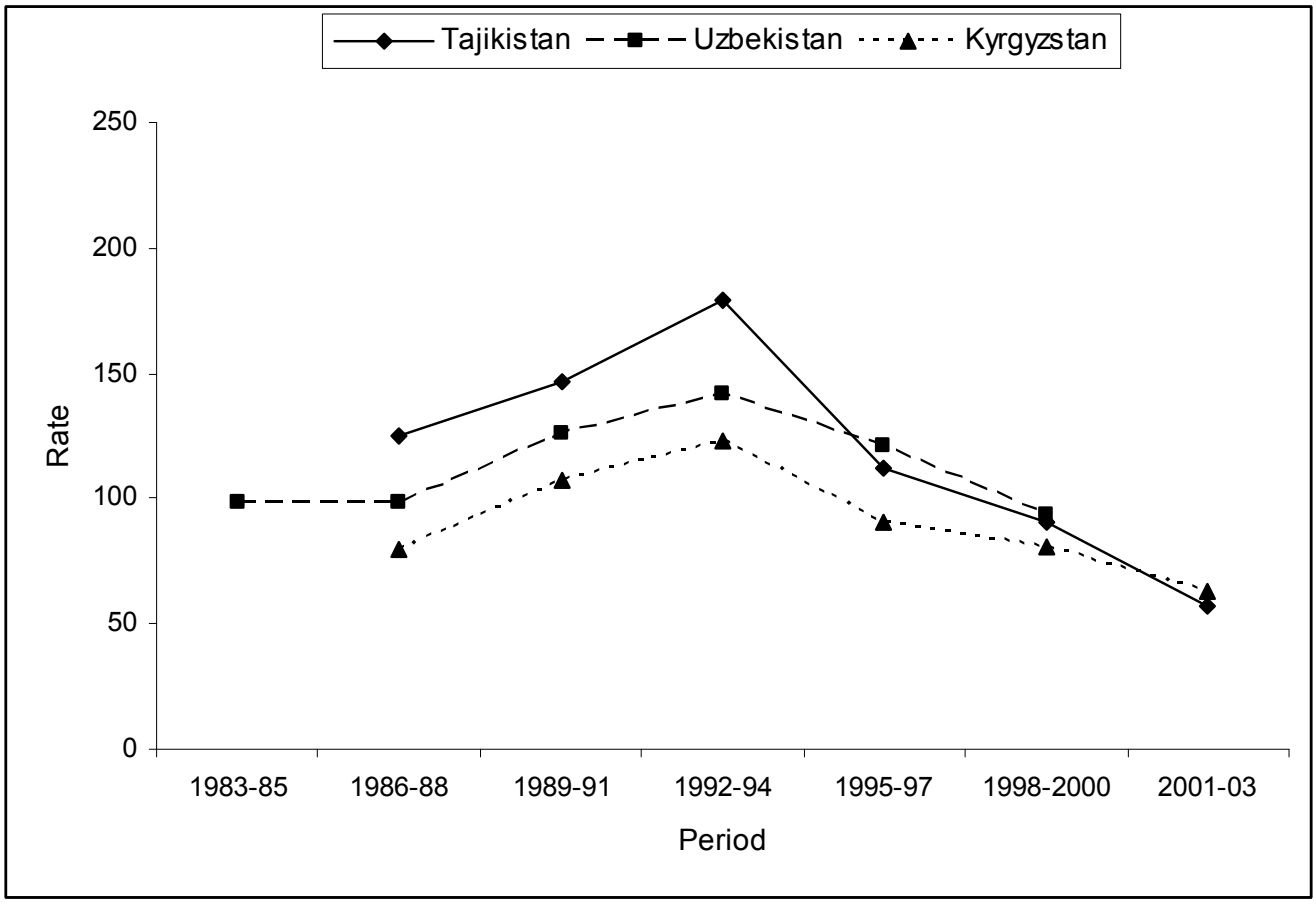


Table 9 and Figure 8 Age-specific first marriage rates for women aged 15-19 in Uzbekistan, Kyrgyzstan and Tajikistan

Period	**Uzbekistan** UHES 2002			**Kyrgyzstan** MICS 2005/6			**Tajikistan** MICS 2005		
1983-85	98.1	*82.3*	*117.7*						
1986-88	98.2	*82.5*	*117.4*	79.8	*64.4*	*99.7*	125.2	*110.2*	*142.5*
1989-91	126.3	*110.2*	*145.6*	107.7	*91.6*	*127.2*	146.5	*129.9*	*166.1*
1992-94	141.4	*124.6*	*161.0*	123.2	*106.7*	*143.0*	179.4	*161.7*	*199.5*
1995-97	120.8	*105.9*	*138.0*	90.2	*76.2*	*107.7*	111.9	*99.3*	*126.5*
1998-2000	93.4	*80.8*	*108.5*	80.6	*66.8*	*98.3*	90.2	*80.0*	*102.0*
2001-03				62.8	*51.6*	*77.0*	57.0	*49.3*	*66.1*

Note: Figures in italics are the lower and upper bounds of 95% confidence intervals.



Agenda for future research: linking Central Asia with Eastern Europe

The analysis here, placing trends in Tajikistan within the context of neighbouring Uzbekistan and Kyrgyzstan, could usefully be extended to consider first marriage and first birth rates in the other Central Asian republics of Kazakhstan and Turkmenistan. Further research is also required on the links between labour migration and family formation in Central Asia. It would be interesting, given appropriate data, to examine trends in (age-specific) marriage rates for men. Importantly, too, research on post-Soviet family formation would benefit from more studies which compare trends in different places, rather than focus on a specific country without an appreciation of the wider context. It would be particularly illuminating to link trends in Central Asia with those in post-Soviet Eastern Europe and the Caucasus. Undoubtedly these regions are culturally, historically and demographically very different. Nevertheless, all have emerged from what Sobotka (2002:42) has termed the 'socialist greenhouse' – an environment which had served to encourage childbearing, or at least undermine reasons to reduce it – and all have faced severe economic crises.

Further, as in Central Asia, there are signs of a shift to earlier family formation in Eastern Europe and Caucasus during the *perestroika* and early post-independence years. Perelli-Harris (2005) notes the decreasing mean age at first birth in Ukraine during the late-Soviet period, while Kohler and Kohler (2002) note a similar trend in Russia during the early 1990s. Vital registration data show increases in age-specific fertility at ages 15-19 over this period in many of the ex-Soviet states, with particularly strong rises in Lithuania, Moldova and Armenia (albeit with peaks in different years; see TransMONEE (2006)). Sobotka's (2004) useful aggregate analysis relates the lack of postponement of family formation in the Eastern European ex-Soviet states to the extent of the crisis in the region, drawing on Friedman et al.'s (1994) theory to speculate that family formation may represent a strategy for reducing uncertainty regarding the future. Given the very different cultural norms regarding marriage, it would be interesting to examine further the apparent parallels between ex-

Soviet states in Eastern Europe and Central Asia in their demographic response to the dramatic changes of the transition years. The importance of labour migration to the subsequent decrease in first birth propensity reflects a further theme with the potential to reveal similarities between former Soviet states in different regions. Thus far, however, if there are few studies examining the demography of post-Soviet Central Asia, hardly any seriously examine any links between Central Asian and Eastern European trends.

Conclusions

Family formation in Tajikistan peaked in the early post-independence years, with significant increases in first marriage and first birth rates compared to the early *perestroika* period. The increased propensity was most marked in the 15-19 age group. Given the similarities with trends in neighbouring Uzbekistan and Kyrgyzstan, the trends are most helpfully situated within a wider post-Soviet context, rather than the peculiarities of the Tajik case alone. The changes of the *perestroika* years would seem to be important. In particular, the possible strengthening of 'conspicuous consumption', in which family wealth and status are displayed through wedding celebrations, may have encouraged a higher proportion of families to marry off their teenage daughters than in previous periods – though a lack of qualitative research on changes in the level of marriage celebrations over the *perestroika* period precludes a more definite assessment. The anxieties and uncertainties generated by *perestroika* may also have served to encourage higher rates of family formation at young ages. This does not deny the importance of the civil war and insecurity as a stimulus for marriage at a local level, nor that in the short-term the conflict may have accentuated the increased propensity for first marriage and first birth at a national level.

There were dramatic decreases in both first marriage and first birth rates in Tajikistan from the mid-1990s, across all ages. The reduced marriage propensity evident in official figures is therefore not

just an artefact of reduced registration. Since there were also significant decreases in Kyrgyzstan and Uzbekistan, the wider post-Soviet economic crisis is likely to have played an important role in the reduction in family formation. Nevertheless, the drop in Tajikistan was particularly acute. This may partly reflect the loss of young men in the civil war, but also the particularly extensive labour emigration which has reduced the number of young men available for marriage. Methodologically, it is hard to separate out the relative effect of economic crisis, civil war and labour migration – but analytically, it is undesirable to do so since ultimately they are intertwined: the civil war served to exacerbate the economic crisis, while labour migration was prompted by the depth of this crisis (Olimova and Bosc 2003) and in some cases by the desire to escape from the forced draft of young men to fight (Gomart 2003). It is therefore more helpful to identify the confluence of factors which have underpinned the collapse of marriage rates in Tajikistan – a collapse so acute that is distinctive even in a Central Asian context.

Beyond the Tajik context, these results provide strong support for Agadjanian's (1999:426) hypothesis that, when faced with dramatic social and economic crisis, 'people do not change all components of their demographic behaviour equally and uniformly' and that changes in nuptiality may not necessarily mirror wider changes in reproductive behaviour. Indeed, in Tajikistan the response of women to the changes of the transition and post-independence periods varied dramatically according to their stage of family building. While there were significant declines in total fertility and higher order birth rates in the early post-independence period (Clifford 2007), there were concurrent increases in the propensity for first marriage and first birth, particularly at an early age. Meanwhile, the relatively stable higher order birth rates from the mid-1990s (Clifford 2007) contrast with the dramatic declines in family formation. This has important methodological implications. Since temporal trends in the component elements of overall fertility can differ to such an extent, it is critical to consider rates which are specific by parity and age. This paper therefore ends not only by echoing Ní Bhrolcháin and Dyson's (2007) call for more research relating temporal

trends to macro-level phenomena, but also by insisting that such research places emphasis on the disaggregation of component trends – producing a richer, more textured account of the demographic response to social and economic change.

Appendix I – Jackknife calculation of standard errors

Taken from Ren (2004):

The Jackknife repeated replication method derives estimates of complex rates from each of several replications of the parent sample and calculates standard errors for these estimates using simple formulas. Each replication considers *all but one* cluster in the calculation of the estimates. Pseudo-independent replications are thus created. The variance of a rate r is calculated as follows:

$$SE^2(r) = \text{var}(r) = \frac{1}{k(k-1)} \sum_{i=1}^{k} (r_i - r)^2$$

in which

$$r_i = kr - (k-1)r_{(i)}$$

where r is the estimate computed from the full sample of clusters

$r_{(i)}$ is the estimate computed from the reduced sample of clusters (*i-th* cluster excluded), and

k is the total number of clusters

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